

DIBYENDU SARKAR

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Professor, Earth and Environmental Studies Department
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March 2011

A) ACADEMIC TRAINING:

1. **Sep 2003:** Professional Geologist (PG) Certification, Texas Board of Professional Geoscientists
2. **Aug 1993 - Dec 1997:** Graduate Studies for Ph.D. in the Department of Geological Sciences, University of Tennessee at Knoxville. [Ph.D. awarded: December, 1997; Concentration: Environmental Geochemistry]
3. **Aug 1992 - Jun 1993:** Graduate Studies in the Department of Geology, University of Maryland at College Park. [Transferred to UTK in August'93]
4. **Jan 1989 - May 1991:** Graduate Studies for M.S. in the Department of Geology, University of Calcutta, India. [M.Sc. (Geology) Degree awarded: June'91; Concentration: Geochemistry]
5. **Sep 1985 - Oct 1988:** Bachelor of Science (Honors) Program at the University of Calcutta, India. [Major: Geology; Minors: Physics, Mathematics, English; B.Sc. (Honors) Degree awarded: October'88]

B) WORK EXPERIENCE:

(I) Professor, Earth and Environmental Science Studies Department, Montclair State University, Montclair, NJ, Aug, 2008 –

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Director, Environmental Management Program, Montclair State University, Aug, 2008 –

(II) Assistant and Associate Professor, Earth and Environmental Science Department - Environmental Science Program, University of Texas at San Antonio, Oct, 2000 – Aug, 2008.

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Associate Dean for Graduate Studies and Research, College of Sciences, University of Texas at San Antonio, May, 2006 – Apr, 2008..

TEACHING:

MSU

- **Fall'2008:** Research Projects in Environmental Management-I (ENVR 895), Independent Study (ENVR 704)
- **Spring'2009:** Research Projects in Environmental Management-II (ENVR 896), Colloquium in Earth and Environmental Studies (ENVR 704-01), Independent Study (ENVR 704)
- **Summer'2009:** Independent Study (ENVR 531)
- **Fall'2009:** Research Projects in Environmental Management-I (ENVR 895), Quantitative Instrumental Methods (ENVR 704-02), Colloquium in Earth and Environmental Studies (ENVR 704-01), Doctoral Dissertation (ENVR 900)

- Spring'2010: Research Projects in Environmental Management-II (ENVR 896), Colloquium in Earth and Environmental Studies (ENVR 704-01), Independent Study (ENVR 704)

UTSA

- Spring'2001: Aqueous Geochemistry (GEO 6203), Independent Study (ES 6953, graduate level, GEO 4953, undergraduate level), Master's Thesis (GEO 6983).
- Summer'2001: Independent Study (ES 6953).
- Fall'2001: Instrumental Environmental Methods for Environmental Analysis (ES 6013); Principles of Geochemistry (GEO 3374), Independent Study (ES 6953), Master's Thesis (GEO 6983, ES 6983).
- Spring'2002: Aqueous Geochemistry (GEO 6203); Environ Quality Colloquium (ES 6941); Master's Thesis (GEO 6983, ES 6983).
- Summer' 2002: Independent Study (ES 6953); Master's Thesis (ES 6983).
- Fall'2002: Instrumental Environmental Methods for Environmental Analysis (ES 6013); Principles of Geochemistry (GEO 3374), Independent Study (ES 6953), Master's Thesis (GEO 6983, ES 6983).
- Spring'2003: Aqueous Geochemistry (GEO 6203); Environ Quality Colloquium (ES 6941); Independent Study (ES 6953), Masters Thesis (GEO 6983, ES 6983).
- Summer' 2003: Independent Study (ES 6953); Master's Thesis (GEO 6983).
- Fall'2003: Instrumental Environmental Methods for Environmental Analysis (ES 6013); Environ Quality Colloquium (ES 6941), Independent Study (ES 6953), Master's Thesis (GEO 6983, ES 6983).
- Spring'2004: Aqueous Geochemistry (GEO 6203/ES 6223); Independent Study (ES 6953), Master's Thesis (GEO 6983, ES 6983).
- Summer' 2004: Independent Study (ES 6953); Master's Thesis (ES 6983).
- Fall'2004: Instrumental Environmental Methods for Environmental Analysis (ES 6013); Environmental Quality Colloquium (ES 6941), Independent Study (ES 6953, graduate level; GEO 4953, undergraduate level), Master's Thesis (ES 6983).
- Spring'2005: Independent Study (ES 6953, graduate level), Master's Thesis (GEO 6983, ES 6983) + One Course Buyout.
- Summer' 2005: Independent Study (ES 6953); Master's Thesis (ES 6983), Doctoral Research (ES 7213).
- Fall'2005: Env. Methods Colloquium (EES 6941), Independent Study (EES 6953), Master's Thesis (EES 6983), Doctoral Research (EES 7213) + One Course Buyout.
- Spring'2006: Aqueous Geochemistry (EES 6203), Independent Study (EES 6953), Master's Thesis (EES 6983), Doctoral Research (EES 7213) + One Course Buyout.
- Summer'2006: Independent Study (EES 6953); Master's Thesis (EES 6983), Doctoral Research (EES 7213), Doctoral Dissertation (EES 7313).
- Fall'2006: Instrumental Environmental Methods for Environmental Analysis (EES 6013); Survey – Environmental Science (EES 5013); Graduate Seminar in Environmental Science and Engineering (EES 5981), Master's Thesis (EES 6983), Doctoral Research (EES 7213), Doctoral Dissertation (EES 7313).
- Spring'2007: Graduate Seminar in Environmental Science and Engineering (EES 5981), Independent Study (ES 6953, graduate level), Master's Thesis (GEO 6983, ES 6983), Doctoral Research (EES 7213), Doctoral Dissertation (EES 7313).+ One Course Buyout.

- Summer'2007: Independent Study (EES 6953); Master's Thesis (EES 6983), Doctoral Research (EES 7213), Doctoral Dissertation (EES 7313).
- Fall'2006: Instrumental Environmental Methods for Environmental Analysis (EES 6013); Environ Quality Colloquium (ES 6941), Directed Research (EES 5973); Master's Thesis (EES 6983), Independent Study (EES 6953), Doctoral Research (EES 7213), Doctoral Dissertation (EES 7313).
- Spring'2008: Independent Study (ES 6953, graduate level), Master's Thesis (GEO 6983, ES 6983), Doctoral Research (EES 7213), Doctoral Dissertation (EES 7313).
- Summer' 2008: Master's Thesis (EES 6983), Doctoral Research (EES 7213), Doctoral Dissertation (EES 7313).

RESEARCH:

Developed a research program in Environmental Quality, Remediation and Risk Assessment at MSU; Developed and directed the Environmental Geochemistry Laboratory at UTSA; Advised more than 20 graduate students and 10 post-doctoral research associates.

Example topics:

- reclamation of radium-enriched wastewater for golf course irrigation in Sarasota, FL; hydrogeochemical studies of water and sediments in a hyper-eutrophic sludge-disposal lake in San Antonio, TX;
- innovative methods to remove arsenic from groundwater (patent application will be filed soon from this translational research; field testing in West Bengal, India pending approval);
- innovative methods for clean-up of perchlorate-contaminated water (in reference to contaminated Air Force Base sites – patent application will be filed soon);
- removal of chromium from naval shipyards (wastewater discharge);
- hydrogeochemical tracer studies of groundwater-surface water interactions in Comal Springs, TX resulting in high algal activities in the groundwater discharge zone;
- effects of slow-release nutrient sources (sewage sludge) in petroleum hydrocarbon biodegradation;
- geochemical speciation and bioavailability of arsenic in pesticide-applied soils and its ultimate effect on human health risk assessment;
- understanding the relationship between geochemical speciation and potential carcinogenicity of arsenic and lead species (in-vivo studies with nude mice and human cell lines);
- arsenic-phosphorus interactions in pesticide-contaminated soils amended with water treatment residuals from a remedial perspective;
- chemically catalyzed phytoremediation of arsenic-contaminated soils;
- effects of various agronomic practices on soil and water quality;
- in-situ stabilization of arsenic in roxarsone-enriched poultry litter using a traditional and a novel, inexpensive nanosorbent;
- biosorption of metals by glomalin in soil organic matter;
- chemical and phytoremediation of lead in soils in residential properties contaminated by lead-based paints;
- development of advanced gas adsorption methods for predicting the degree of chromium retention by subsurface sediments;
- development and optimization of a new in-vitro method to estimate potential bioaccessibility of

metals;

- development of new analytical methods for metal speciation in a variety of matrices;
- development of a new hyphenated analytical technique (LC-ESI-MS) to identify and quantify phytochelatins in response to metal stress;
- geochemical fate and remediation of antibiotics in the environment;
- green remediation of antimony and tungsten in soils and water;
- green remediation of metals in shipyard stormwater;
- reclamation of abandoned coal mine sites in Pennsylvania and Eastern India;
- phytoremediation of TNT contaminated soil and water;
- fate of nitrous oxide in concentrated animal feeding operations

Supervision of:

Post-Doctoral Research Associates:

- Dr. R. Datta (2002-2004)
- Dr. S. Shrivastava (2003 –2004)
- Dr. S. Kumaraswamy (2004-2005)
- Dr. H. Mohammed (2004 - 2005)
- Dr. S. Sharma (2004 - 2006)
- Dr. K. Makris (2004 - 2008)
- Dr. KMS Sumathy (2005 – 2006)
- Dr. Badal Mandal (2005 – 2006)
- Dr. Sudipta Rakshit (2009 – present)
- Dr. Ramesh Attinti (2010 – present)

Visiting Scholars:

- Dr. M. Barbooti, SRF Scholar from Iraq (2009 - Present)
- Dr. D. Ray, Fulbright Scholar from India (2010)
- Mr. Antonio Caporale, Pre-doctoral Scholar from Italy (2010)

Graduate Students: Chacharee Therapong (Ph.D. Summer-2007), Shahida Quazi, Rachana Nagar (Ph.D. Summer-2008) Melissa Haddad (MS-Fall 2002); Michael Ferguson (MS-Fall 2003), Marina Parra-Noonan (MS-Spring 2004), Vandana Vandanapu (MS-Summer 2005), Alpana Khairom (MS-Summer 2005), Neal Simpson (MS-Spring 2006), Abraham Frias (MS-Summer 2006); Jason Salazar (MS-Fall 2007); John Branom (MS-Spring 2008); Christopher Amy (MS-Summer 2008), Summer Barber (MS-Summer 2008), Michael Hardy (MS-Summer 2008, PhD-Fall 2008 onwards), Pravin Punamiya (MS-Summer 2008, MS-Summer 2008, PhD-Fall 2008 onwards), Padmini Das (MS-Summer 2008, MS-Summer 2008, PhD-Fall 2008 onwards).

SERVICE:

INTERNAL SERVICE:

MSU: Director of the PhD Program in Environmental Management – responsible for day-to-day program management, program development, student recruitment and retention, student advising, program advertisement, community outreach, professional networking, liaison with upper administration, and other relevant administrative duties.

Serving on the following Departmental, College, and University **COMMITTEES:**

- Earth and Environmental Studies Curriculum Committee, 2008 – 2009

- Earth and Environmental Studies Facilities Committee, 2009 -
- Earth and Environmental Studies Student Recruitment Committee, 2008 –
- Earth and Environmental Studies Faculty Search Committee
 - Member, Environmental Remediation Search
 - Chair, Environmental Economics Search
- Sustainability Institute Executive Committee, College of Science and Mathematics, 2008 –
- Co-chair, Environmental Management PhD Program Executive Committee, 2008 -
- CSAM Deans Administrative Council, 2008 –
- Graduate Council - CSAM Alternate, 2009 –
- General Education Committee - CSAM Alternate, 2009 –
- CELS Building Committee, 2009 –
- Academic Writing Support for Non-Native English Speakers Advisory Committee, 2010 -

UTSA: Associate Dean for Graduate Studies and Research at the College of Sciences (CoS) – responsible for supervising routine day-to-day activities of the office and the administrative associate; evaluating current research policies of the College; planning and implementing new policies to improve recruitment and retention of graduate students and to ensure quality graduate education at CoS-UTSA; representing CoS in various university committees and meetings; initiating and developing collaborative relationships with international universities and organizations (e.g., Anna U, India; El Colegio Nacional, Mexico, CONACYT, Mexico).

Other internal administrative positions:

- Director, Environmental Geochemistry Laboratory (2001 to 2008): Number of people under supervision: 18 (in 2006-07)
- Faculty Project and Development Specialist, College of Sciences (2001 – present)
- Chair, Graduate Studies Committee, Environmental Sciences (2001 – 2006)

Served on a variety of **UTSA committees**. A select few are:

- Elected Faculty Representative of the College of Sciences in University Assembly, 2005 – 2007.
- Chair, Research Vision Committee, College of Sciences, 2006 – 2008
- Chair, Presidential Dissertation Awards Committee, 2006
- Chair, Graduate Studies Committee, Environmental Science, 2001 – 2006
- Chair, Assistantship Committee, Center for Water Research, 2003 – 2005.
- Member, Strategic Planning Committee, UTSA, 2006.
- Member, Budget Committee, College of Sciences, 2007
- Member, MBRS SCORE Budget Committee, 2005 – 2007
- Member, MBRS SCORE Grievance Committee, 2005 - 2007
- Member, Intellectual Property Committee, College of Sciences, 2004 - 2008
- Member, Doctoral Studies Committee, Environmental Science and Engineering, 2003 – 2004
- Member, Conflict-of-interest Committee, UTSA, 2006 – 2007
- Member, IAS Advisory Council, UTSA, 2006 -
- Member, Parking Construction Focus Group, UTSA, 2006
- Member, Graduate Council, UTSA, 2002-2003
- Member: Graduate Faculty, UTSA, 2000 – 2008
- Member: Graduate Assistantship Committee, Environmental Science, 2001 – 2006
- Member: Assistantship Committee, Center for Water Research, 2001-2003
- Member: Hydrogeology Search Committee, Geology, 2001, 2003

- Member: Microbiology Search Committee, Environmental Science, 2002
- Chair: Isotope Geochemistry Search Committee, Geology, 2003
- Chair: Environmental Toxicology Search Committee, Environmental Sci., 2004
- Member: PhD Proposal Committee, Environmental Science & Engineering, 2000
- Member: B.S. Proposal Committee, Environmental Science, 2002 – 2004
- Member: Curriculum Committee, Environmental Science, 2001 - 2007
- Member: Scheduling Committee, Environmental Science, 2001 – 2007

EXTERNAL SERVICE:

Please refer to ITEM (G) in the vitae.

(III) Research Scientist and Principal Investigator, Dept. Soil and Water Science, University of Florida, Gainesville, Jan, 1998 - Oct, 2000.

- Project 1: Reuse of Carlton Reject Water: Fate and transport of radium in soils.
- Project 2: Fate and transport of phosphorus in sludge-amended systems.
- Project 3: Bioavailability of molybdenum in sludge-amended soils.
- Project 4: Biogeochemistry of phosphorus in land applied sewage sludge, commercial fertilizers, and animal manures.
- Project 5: Phosphorus contamination potential of groundwater associated with land application of domestic and animal waste products in Florida

(IV) Graduate Teaching Assistant, Dept. Geological Sciences, University of Tennessee, Knoxville, Aug, 1993 - Dec, 1997.

- Laboratory Instructor: Physical Geology (GEO 101), Environmental Geology (GEO 102), and Economic Geology (GEO 480).
- Teaching Assistant: Geochemistry (GEO 460), Field Methods in Hydrogeology (GEO 595), Contaminant Hydrogeology (GEO 590); Rock-Prep Lab Assistant.

(VI) Teaching Assistant, Dept. Geology, University of Maryland, Aug, 1992 – Jul, 1993.

- Laboratory Instructor: Physical Geology (GEOL 101).
- Teaching Assistant: Environmental Geology (GEOL 220)

(VII) Research Fellow, Center for Study of Man and Environment, Calcutta, India, Jan, 1992 – Jul, 1992

- Program: Development of an Environmental Management Plan for Chakdah and Haringhata Blocks, Nadia District in West Bengal, India.
- Duties: Site Assessment; Field hydrogeological Mapping; Contamination analysis.

C) REFEREED BIBLIOGRAPHY:

IA. Book/Research Monograph

1. **D. Sarkar, R. Datta, and R. Hannigan (2007)** Concepts and Applications in Environmental Geochemistry. Elsevier, Amsterdam, The Netherlands. ISBN# 978-0-08-046522-7; 761 pp.

2. **O'Connor, G.A., D. Sarkar, D.A. Graetz, and H.A. Elliott (2002)** Characterizing forms, solubility, bioavailabilities, and mineralization rates of phosphorus in biosolids, commercial fertilizers, and manures. IWA Publishing. 164 pp.

IIA. Journal Articles and Book Chapters

1999

1. **Sarkar, D., M.E. Essington, and K.C. Misra (1999)** Adsorption of mercury(II) by variable charge surfaces of quartz and gibbsite. *Soil Sci. Soc. Am. J.* 63: 1626-1636.
2. **Sarkar, D., G.A. O'Connor, G.J. Ruple, and J.B. Sartain (1999)** Reuse of EDR reject water: II. Fate and transport of ²²⁶Ra. *Soil Crop Sci. Soc. F. J.* 58: 38-44.
3. **Ruple, G.J., D. Sarkar, G.A. O'Connor, and J.B. Sartain (1999)** Reuse of EDR reject water: I. Effects on Bermudagrass yield. *Soil Crop Sci. Soc. F. J.* 58: 31-38.

2000

4. **Sarkar, D., M.E. Essington, and K.C. Misra (2000)** Adsorption of mercury(II) by kaolinite. *Soil Sci. Soc. Am. J.* 64(6): 1968-1975.
5. **Anjos, J.T., D. Sarkar, and G.A. O'Connor (2000)** Characterizing extractable phosphorus in biosolids and biosolids-amended soils. *Environmental Studies J.* 20(2-3): 68-76.

2001

6. **Sarkar, D. and G.A. O'Connor (2001)** Estimating available molybdenum in biosolids amended soil using iron-oxide impregnated filter paper. *Commun. Soil Sci. Plant Anal.* 32(13): 2033-2048.
7. **Sarkar, D. and G.A. O'Connor (2001)** Using the Pi soil test to estimate plant available phosphorus in biosolids amended soil. *Commun. Soil Sci. Plant Anal.* 32(13): 2049-2063.
8. **Sarkar, D. and M.E. Essington (2001)** Response to 'Comments on Adsorption of mercury(II) by variable charge surfaces of quartz and gibbsite.' *Soil Sci. Soc. Am. J.*, 65(4): 1349-1350.

2003

9. **Datta, R. and D. Sarkar (2003)** Total and bioavailable arsenic in three ecological zones in Florida. *Nat. Assoc. Environ. Prof. Proc.* V.28, 15pp.
10. **Sarkar, D., R. Datta, and A. Frias (2003)** Biogeochemistry of arsenic in pesticide-applied soils: Preliminary results from an incubation study. *Nat. Assoc. Environ. Prof. Proc.* V. 28, 15pp.
11. **Sarkar, D. and R. Datta (2003)**. A modified in-vitro method to assess bioavailable arsenic in pesticide-applied soils. *Environ. Pollution* 126: 263 - 266.
12. **Haddad, M.J. and D. Sarkar (2003)** Glomalinal, a newly discovered component of soil organic matter. Part-I: Environmental significance. *Environ. Geosci.*, 10(3): 91 - 98.
13. **Haddad, M.J. and D. Sarkar (2003)** Glomalinal, a newly discovered component of soil organic matter. Part-II: Influence of soil properties. *Environ. Geosci.* 10(3): 99 - 106.
14. **Sarkar, D (2003)** Preliminary studies on mercury analysis in the presence of iron-oxide phases using static headspace analysis. *Environ. Geosci.* 10(4): 151 - 155.
15. **Casunuran, V.B., S.B.H. Bach, and D. Sarkar (2003)** Rapid analysis of organo-phosphorus pesticides in soils. *Environ. Geosci.* 10(4): 139 - 150.

2004

16. **Datta, R. and D. Sarkar (2004)** Biotechnology in phytoremediation of metal contaminated soil. *Proc. Ind. Nat. Sci. Acad.-B.* 70(1): 101-111.
17. **Branom, J.R. and D. Sarkar (2004)** Phosphorus bioavailability in sediments of a sludge-disposal lake. *Environ. Geosci.* 11(1): 42 - 52.
18. **Sarkar, D. and R. Datta (2004)** Arsenic fate and bioavailability in two soils contaminated with sodium arsenate pesticide. *Bull Environ. Contamin. Toxicol.* 72(2): 240-247.
19. **Datta, R. and D. Sarkar (2004)** Arsenic geochemistry in three soils contaminated with sodium arsenite pesticide: An incubation study. *Environ. Geosci.* 11(2): 85-95.
20. **Datta, R. and D. Sarkar (2004)** Effective integration of soil chemistry and plant molecular biology in phytoremediation of metals: An overview. *Environ. Geosci.* 11(2): 53-63.
21. **O'Connor, G.A., D. Sarkar, S.R. Brinton, H. Elliott, and F.G. Martin (2004)** Phytoavailability of biosolids-phosphorus. *J. Environ. Qual.* 33(2): 703-712.
22. **Sarkar, D. and G.A. O'Connor. (2004)** Bioavailability of phosphorus in biosolids-amended soils. Phase-I: Greenhouse Study. *Commun. Soil Sci. Plant Anal.* 35 (11-12): 1569-1589.
23. **Sarkar, D., M. Parra-Noonan, and R. Datta. (2004)** Distribution of arsenic in chemically variant dipping vat site soils. *Bull Environ. Contamin. Toxicol.* 73: 838-845.
24. **Sarkar, D. and R. Datta (2004)** Health Risk from Soil Arsenic: Does one size fit all. *Arch. Environ. Health*, 59(7): 337-341.

2005

25. **Datta, R. and D. Sarkar. (2005)** Consideration of soil properties in assessment of human health risk from exposure to arsenical pesticide applied soils. *Integr. Environ. Assess. Mgmt.* 1(1): 55-59.
26. **Sarkar, D., M.C. Ferguson, R. Datta, and S. Birnbaum. (2005)** Bioremediation of petroleum hydrocarbons in contaminated soils: Comparison of biosolids addition, carbon supplementation, and monitored natural attenuation. *Environ. Pollution.* 136: 187-195.
27. **Sarkar, D., R. Datta, and S. Sharma. (2005)** Fate and bioavailability of arsenic in organo-arsenical pesticide applied soils. Part-I. Incubation Study. *Chemosphere*, 60: 188-195.
28. **Manz, L.R., D. Sarkar, and W.W. Hammond (2005)** Water resources and water quality in the Rio Grande valley of Texas: Current status and future projections. *Environmental Geosciences*, 12: 193-206.
29. **Sarkar, D (2005)** Soil phosphorus availability and its impact on surface water quality. In J. Lehr (ed) *Encyclopedia of Water. Vol. 3, Surface and Agricultural Water.* John Wiley and Sons, New York, NY, pp. 701-706.
30. **Sarkar, D, R. Datta, and A. Davani (2005)** Remediation of contaminated soils. In J. Lehr (ed) *Encyclopedia of Water. Vol. 5, Ground Water.* John Wiley and Sons, New York, NY, pp. 432-436.
31. **Datta, R. and D. Sarkar (2005)** Phytoextraction of Zn and Cd from soils using hyper-accumulator plants. In J. Lehr (ed) *Encyclopedia of Water. Vol. 5, Ground Water.* John Wiley and Sons, New York, NY, pp. 369-374.

32. **Datta, R. and D. Sarkar (2005)** Phytoremediation of selenium-laden soils. In J. Lehr (ed) Encyclopedia of Water. John Wiley and Sons, New York, NY, pp. 397-401.
33. **Sarkar, D., V. Vandanapu, and R. Datta (2005)** Soil nitrogen management impact on quality of surface and subsurface water. In J. Lehr (ed) Encyclopedia of Water. **Vol. 3**, Surface and Agricultural Water. John Wiley and Sons, New York, NY, pp. 694-701.
34. **Datta, R. and D. Sarkar (2005)** Genetics of metal tolerance and accumulation in higher plants. In J. Lehr (ed) Encyclopedia of Water. **Vol. 5**, Ground Water. John Wiley and Sons, New York, NY, pp. 284-290.
35. **Datta, R., D. Sarkar, A. Khairom, and C. Therapong (2005)** Phytoremediation of constructed wetlands. In J. Lehr (ed) Encyclopedia of Water. **Vol. 3**, Surface and Agricultural Water. John Wiley and Sons, New York, NY, pp. 364-371.
36. **Johnston, T., R. Datta, and D. Sarkar (2005)** Phytoextraction and phytostabilization: Technical, economic and regulatory considerations of the soil-lead issue. In J. Lehr (ed) Encyclopedia of Water. **Vol. 5**, Ground Water. John Wiley and Sons, New York, NY, pp. 365-369.
37. **Quazi, S., D. Sarkar, and R. Datta (2005)** Lead: Health effects. In J. Lehr (ed) Encyclopedia of Water. **Vol. 2**, Water Quality and Resource Development. John Wiley and Sons, New York, NY, pp. 432-440.
38. **Sarkar, D. and R. Datta (2005)** Arsenic concentrations and bioavailability in soils as a function of soil properties: A Florida case study. In M.N.V. Prasad, R. Naidu, and K. Sajwan (ed.) Trace Elements in the Environment. CRC Press, Boca Raton, Florida, pp.77-93.

2006

39. **Makris, K.C., D. Sarkar, and R. Datta (2006)** Aluminum-Based Drinking-Water Treatment Residuals: A Novel Sorbent for Perchlorate Removal. *Environ Pollution*. 140: 9-12.
40. **Nagar, R., D. Sarkar, and R. Datta (2006)** Effect of sewage sludge addition on soil quality in terms of metal concentrations. *Bull Environ. Contamin. Toxicol.*, 76(5): 823-830.
41. **Simpson, N., D. Sarkar, R. Datta, and S. Sharma (2006)** Effects of Sewage Sludge Disposal on Metal Contents in the Sediments and Water of Mitchell Lake, San Antonio, TX. *Bull Environ. Contamin. Toxicol.*, 77(1): 104 – 111.
42. **Makris, K.C., D. Sarkar., and R. Datta (2006)** Evaluating a waste by-product as a novel sorbent for arsenic. *Chemosphere*, 64(5): 730 – 741.
43. **Sarkar, D., K.C. Makris, R. Datta, and Khairom, A (2006)** Effect of remedial treatment on phosphorus availability in an arsenical pesticide contaminated soil. *Bull Environ. Contamin. Toxicol.*, 77(1): 297 - 304.
44. **Israr, M., S. Sahi, R. Datta, and D. Sarkar (2006)** Bioaccumulation and physiological effects of mercury in *Sesbania drummondii* *Chemosphere*, 65: 591 – 598.
45. **Andra, S.S., D. Sarkar, R. Datta, and S.K. Saminathan (2006)** Lead in soils collected from residential properties in Baltimore and San Antonio. *Bull Environ. Contamin. Toxicol.*, 77: 643 - 650.
46. **Sarkar, D., R. Datta, S. Sharma, and K. Sand (2006)** Arsenic biogeochemistry and human health risk assessment in organo-arsenical pesticide applied acidic and alkaline soils – Incubation study. *Science of the Total Environment*, 372: 39 - 48.

47. **Makris, K.C., D. Sarkar, R. Datta, P. Ravikovitch, and A.V. Neimark (2006)** Using nitrogen and carbon dioxide molecules to probe arsenic(V) bioaccessibility in soils. *Environmental Science and Technology*, 40: 7732 - 7738.

2007

48. **Makris, K.C., K.M. Shakya, R. Datta, D. Sarkar, and D. Pachanoor (2007)**. High uptake of 2,4,6 trinitrotoluene by vetiver grass – potential for phytoremediation? *Environ. Pollution*, 146: 1 – 4.
49. **Sarkar, D., K.C. Makris, V. Vandanapu, and R. Datta (2007)**. Adsorption of arsenic in soils amended with water treatment residuals. *Environ. Pollution*, 146: 414 - 419.
50. **Sarkar, D., K.C. Makris, R. Datta, and M. Parra-Noonan (2007)** Effect of soil properties on arsenic fractionation and bioaccessibility in cattle and sheep dipping vat site soils *Environ. International*, 33: 164 - 169.
51. **Makris, K.C., K.M. Shakya, R. Datta, D. Sarkar, and D. Pachanoor (2007)** Chemically-Catalyzed Uptake of 2,4,6-Trinitrotoluene by *Vetiveria zizanioides*. *Environ. Pollution*, 148: 101-106.
52. **Makris, K.C., D. Sarkar, J.G. Parsons, R. Datta, and J. Gardea-Torresdey (2007)**. Surface arsenic speciation of a drinking water treatment residual using X-Ray absorption spectroscopy. *J. Coll. Interf. Sci.*, 311: 544-550.
53. **Datta, R., K.C. Makris, and D. Sarkar (2007)**. Arsenic fractionation and bioaccessibility in two alkaline Texas soils incubated with sodium arsenate. *Arch. Environ. Contamin. Toxicol.*, 52: 475-482.
54. **Sarkar, D., S. Quazi, K.C. Makris, R. Datta, and A. Khairom (2007)**. Arsenic bioaccessibility in a soil amended with drinking water treatment residuals in the presence of phosphate fertilizer. *Arch. Environ. Contamin. Toxicol.*, 53: 329-336.
55. **Makris, K.C., K.M. Shakya, R. Datta, D. Sarkar, and D. Pachanoor**. Chaotropic effects on uptake of 2,4,6 trinitrotoluene by wheat grass (*Triticum aestivum*). *Plant and Soil*, 295: 229-237.
56. **Datta, R., Sarkar, D., Punamiya, P., and Nagar, R. (2007)** Response to Letter to the editor re: Datta et al., 2006 (Boyce et al.). *Sci Total Environ.* 388 (2007)376-378.
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58. **Datta, R., K.C. Makris, and D. Sarkar (2007)** Effects of incubation time and initial load on arsenic bioaccessibility in three Florida soils amended with sodium arsenate. In D. Sarkar, R. Datta, and R. Hannigan (ed.) *Concepts and Applications in Environmental Geochemistry*. Elsevier, Amsterdam, The Netherlands, pp. 327-344.
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92. **Saminathan, K.P.M.S., Sarkar, D., Datta, R., and Andra, S.S. (2006)** Role of Chelating Agents in Enhancing Lead Uptake by Vetiver Grass (*Vetiveria zizanioides* L.) from Lead Based-Paint Contaminated Residential Soils. Agronomy Abstracts.
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114. **Das, P., K. C. Makris, R. Datta, D. Sarkar, P. A. Punamiya (2008)** Urea-Catalyzed Extractability of 2,4,6-Trinitrotoluene from Contaminated Soils: Preliminary Results. *AAPG Abstracts*.
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117. **Smith, B.D., D. Sarkar (2008)** Reconnaissance Study of Perchlorate Contaminated Sites. *AAPG Abstracts*.
118. **Nagar, R., D. Sarkar, K.C. Makris, R. Datta (2008)** Long-Term Monitoring of Organoarsenical Degradation in Drinking- Water Treatment Residual-Amended Soils. *AAPG Abstracts*.
119. **Hardy, M., D. Sarkar, K. Makris, R. Datta (2008)** Using a Waste By-Product to Remove Metals from Contaminated Shipyard Stormwater. *AAPG Abstracts*.
120. **Quazi, S., D. Sarkar, R. Datta (2008)** Effect of Soil Ageing on Arsenic Bioaccessibility and Geochemical Speciation: A Greenhouse Study. *AAPG Abstracts*.
121. **Makris, K.C., S. S. Andra, D. Sarkar, R. Datta, S. B. Bach, C. Mullens (2008)** Nitrous Oxide Solubility in Animal Waste Suspensions. *AAPG Abstracts*.
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135. **Punamiya, P., Barber, S., Das, P., Sarkar, D., and Datta, R. (2009)** Phytoextraction of lead using a metal-accumulating grass (*Vetiveria zizanioides*) in the presence of an arbuscular mycorrhizal fungus, *Glomus mosseae*, *HDC-SETAC Conference Proceedings*.
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139. **Rakshit, S., Sarkar, D., and Punamiya, P. (2009)** Oxytetracycline Sorption on Magnetite, *Proceedings of the 36th Northeast Regional Meeting of ACS*.
140. **Punamiya, P., Sarkar, D., Datta, R. (2009)** Aluminum Based Drinking Water Treatment Residuals as a Novel Sorbent to Immobilize Oxytetracycline: Effects of Solution Properties, *Proceedings of the 36th Northeast Regional Meeting of ACS*.

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144. **Coleman A, Datta R, Sarkar D., and Simpson T. (2009)** Effect of Heavy Metals On Fresh Water Turtles of a Sludge-Amended Lake in South Texas. *Agronomy Abstracts*.
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149. **Rakshit, S., Punamiya, P., Datta, R., and Sarkar, D. (2010)** Sorption of oxytetracycline on magnetite-water interface. *Goldschmidt Abstracts*.

D) PAPER PRESENTATIONS (only those in society meetings listed here):

1. **Sarkar, D., K.C. Misra, and M.E. Essington (1996)** Adsorption of mercury onto variable charge surfaces. **Oral Presentation** in the symposium: Sorption of metals: Artifacts of time, experimental conditions, and data interpretation/apparent capacity factors. *Soil Science Society of America National Meeting, Indianapolis, Nov 3-8, 1996*.
2. **Sarkar, D., M.E. Essington, and K.C. Misra (1997)** Adsorption of mercury onto silica: Experimental Study. **Oral Presentation** in the symposium: Groundwater Geochemistry, Microbiology, and Bioremediation. *Geological Society of America SE Meeting, Auburn, Mar 27-28, 1997*.
3. **Sarkar, D., M.E. Essington, and K.C. Misra (1997)** Sorption of Mercury by Silica: Influence of Competing Metals. **Oral Presentation** in theme Session: Environmental Geochemistry. *American Geophysical Union Spring National Meeting, Baltimore, May 27-30, 1997*.
4. **Sarkar, D., G.A. O'Connor, and J.B. Sartain (1998)** Fate and transport of ²²⁶Ra in sandy soils of Florida. * **Oral Presentation** in the symposium: Soils and Environmental Quality. *Soil and Crop Science Society of Florida Annual Meeting, Daytona Beach, Sep 16-18, 1998*.

5. **Sarkar, D. and M.E. Essington (1998)** Modeling Hg adsorption by kaolinite. **Poster Presentation** in the *Soil Science Society of America National Meeting, Baltimore, Oct. 18-22, 1998.*
6. **Sarkar, D. and G.A. O'Connor (1999)** Bioavailability of biosolids-P. **Oral Presentation** in the symposium: Phosphorus assessment in soils and waters. *Soil Science Society of America National Meeting, Salt Lake City, Oct 31 – Nov 4, 1999.*
7. **Sarkar, D. and G.A. O'Connor (2000)** Bioavailability of phosphorus in biosolids-amended soils: A comparative study. **Poster Presentation** in the *Soil Science Society of America National Meeting, Minneapolis, Nov 5-11, 2000.*
8. **Manz, L.R., Hammond, W.W. and Sarkar, D. (2001)** The status of water resources and water quality along the Rio Grande in Texas. **Oral Presentation** in the Symposium: Environmental Issues facing the U.S.-Mexico Border in *American Chemical Society Southwestern Section Annual Meeting. Oct 17-20, 2001.*
9. **Romeo, V. and Sarkar, D. (2001)** Water quality in three San Antonio lakes. **Oral Presentation** in the Symposium: Environmental Issues facing the U.S.-Mexico Border in *American Chemical Society Southwestern Section Annual Meeting. Oct 17-20, 2001.*
10. **Haddad, M.J. and Sarkar, D. (2001)** Environmental significance of glomalin in soil organic matter. **Oral Presentation** in the Symposium: Environmental Issues facing the U.S.-Mexico Border in *American Chemical Society Southwestern Section Annual Meeting. Oct 17-20, 2001.*
11. **Sarkar, D. and M. Essington (2001)** Adsorption of lead and nickel by kaolinite. **Poster Presentation** in the *Soil Science Society of America National Meeting, Charlotte, Oct 20-25, 2001.*
12. **Haddad, M.J. and Sarkar, D. (2002)** Glomalin in soil organic matter as a function of soil properties. **Oral Presentation** in the Symposium: Soil Carbon in the *Soil Science Society of America National Meeting, Indianapolis, Nov 10-14, 2002.*
13. **Casunuran, V., Bach, S.B.H. and Sarkar, D. (2002)** Direct soil analysis of organophosphorus Pesticides using DIP-MS. **Poster Presentation** in the *Soil Science Society of America National Meeting, Indianapolis, Nov 10-14, 2002.*
14. **Datta, R. and Sarkar, D. (2003)** Preliminary studies on arsenic speciation and bioavailability in pesticide-applied soils. **Oral Presentation** in the Symposium: Water-Rock-Life Interaction in the *Geological Society of America-SE/SC Joint Meeting, Memphis, Mar 12-14, 2003.*
15. **Sarkar, D. and Branom, J. (2003)** Biogeochemistry of phosphorus in a eutrophic lake. **Oral Presentation** in the Symposium: Water-Rock-Life Interaction in the *Geological Society of America-SE/SC Joint Meeting, Memphis, Mar 12-14, 2003.*
16. **Parra-Noonan, M. and Sarkar, D. (2003)** Bioavailability of arsenic in contaminated soils from cattle-dip vat sites. **Oral Presentation** in the Symposium: Risk Assessment in *National Association of Environmental Professionals Annual Meeting, San Antonio, Jun 23-25, 2003.*
17. **Sarkar, D., R. Datta, and A. Frias (2003)** Biogeochemistry of arsenic in pesticide-applied soils. **Oral Presentation** in the Symposium: Risk Assessment in *National Association of Environmental Professionals Annual Meeting, San Antonio, Jun 23-25, 2003.*
18. **Datta, R. and Sarkar, D. (2003)** Total and bioavailable arsenic in soils of three ecological zones of Florida. **Poster Presentation** in *National Association of Environmental Professionals Annual Meeting, San Antonio, Jun 23-25, 2003.*

19. **Sarkar, D., Datta, R., and Ferguson, M. (2003)** Biodegradation of petroleum hydrocarbons in soils: Effects of biosolids addition and role of carbon. **Poster Presentation** in the *Midcontinent Section Meeting of AAPG, Tulsa, OK, Oct 12-14, 2003*.
20. **Datta, R. and Sarkar, D. (2003)** Should Soil Properties be Considered In Assessing Human Health Risk Resulting from Exposure to Arsenic-enriched Soils? **Oral Presentation** in the symposium: New Technologies and Geologic Insights in the Practice of Environmental Geosciences in the *Midcontinent Section Meeting of AAPG, Tulsa, OK, Oct 12-14, 2003*.
21. **Sarkar, D., R. Datta and L. Schwandes (2003)** Soil Nutrients in Three Ecological Zones of Florida. **Poster presentation** in the session, "Management zones and spatial variability" in the *Annual Meetings of Soil Science Society of America (SSSA), Denver, Colorado, Nov. 2 - 6, 2003*.
22. **Datta, R, D. Sarkar and C. Therapong (2003)** Evaluation of Arsenic Stress on Grass Seedlings. **Oral presentation** in the symposium, "Sources, behavior and phytoavailability of soil arsenic" in the *Annual Meetings of Soil Science Society of America (SSSA), Denver, Colorado, Nov. 2 - 6, 2003*.
23. **Datta, R. and D. Sarkar (2003)** Influence of Soil Properties on Arsenic Bioavailability in Soils Contaminated with Arsenical Pesticides. **Oral presentation** in symposium, "Sources, behavior and phytoavailability of soil arsenic" in the *Annual Meetings of Soil Science Society of America (SSSA), Denver, Colorado, Nov. 2 - 6, 2003*.
24. **Therapong, C., R. Datta and D. Sarkar (2003)** Arsenic Stress Response in Monocot Seedlings. **Poster presentation** in the session, "Bioavailability and contaminant toxicology" in the *Annual Meetings of Soil Science Society of America (SSSA), Denver, Colorado, Nov. 2 - 6, 2003*.
25. **Sarkar, D. and Parra-Noonan, M. (2003)** Geochemical Fate of Arsenic in Cattle-Dip Vat Site Soils. **Oral presentation** in the symposium, "Sources, behavior and phytoavailability of soil arsenic" in the *Annual Meetings of Soil Science Society of America (SSSA), Denver, Colorado, Nov. 2 - 6, 2003*.
26. **Branom, J.R. and D. Sarkar (2003)** Phosphorus in Sediments of a Sludge Disposal Lake. **Oral presentation** in the symposium, "Phosphorus in manures" in the *Annual Meetings of Soil Science Society of America (SSSA), Denver, Colorado, Nov. 2 - 6, 2003*.
27. **Parra-Noonan, M., Sarkar, D., and Datta, R. (2004)** Geochemical fate of arsenic in cattle-dip vat site soils from Australia. **Oral Presentation** in the Symposium: Environmental Geology in the *Geological Society of America-SC Meeting, College Station, TX, Mar. 14-16, 2004*.
28. **Khairom, A., Sarkar, D. and Datta, R. (2004)** Preliminary studies on arsenic and phosphorus bioavailability in chemically amended soils. **Oral Presentation** in the Symposium: Environmental Geology in the *Geological Society of America-SC Meeting, College Station, TX, Mar. 14-16, 2004*.
29. **Branom, J.R. and Sarkar, D. (2004)** Water Quality in a Eutrophic Sludge Disposal Lake. **Oral Presentation** in the Symposium: Environmental Geology in the *Geological Society of America-SC Meeting, College Station, TX, Mar. 14-16, 2004*.
30. **Sharma, S., Datta, R. and Sarkar, D. (2004)** Arsenic geochemistry in soils contaminated with organo-arsenical pesticide. **Oral Presentation** in the Symposium: Environmental Geology in the *Geological Society of America-SC Meeting, College Station, TX, Mar. 14-16, 2004*.

31. **Sarkar, D. and Datta, R. (2004)** Role of soil properties in assessment of human health risk from exposure to arsenic-enriched soils. **Oral Presentation** in the Symposium: Environmental Geology in the *Geological Society of America-SC Meeting, College Station, TX, Mar. 14-16, 2004.*
32. **Branom, J.R. and Sarkar, D. (2004)** Geochemical Forms of Phosphorus in Sediments of a Sludge Disposal Lake. **Poster Presentation** in the session: Environmental Technology: Case Studies in the *American Association of Petroleum Geologists Annual Meeting, Dallas, TX, Apr. 18-21, 2004.*
33. **Simpson, N. and Sarkar, D. (2004)** Heavy Metals in Sediments of a Sludge Disposal Lake. **Poster Presentation** in the session: Environmental Technology: Case Studies in the *American Association of Petroleum Geologists Annual Meeting, Dallas, TX, Apr. 18-21, 2004.*
34. **Frias, A. and Sarkar, D. (2004)** Bioavailability of Arsenic in Pesticide-Applied Cotton Soils of Texas. **Poster Presentation** in the session: Environmental Geology and Geochemistry in the *American Association of Petroleum Geologists Annual Meeting, Dallas, TX, Apr. 18-21, 2004.*
35. **Therapong, C., Datta, R., and Sarkar, D. (2004)** Comparative Arsenic Stress Response in Monocot Seedlings. **Poster Presentation** in the session: Environmental Geology and Geochemistry in the *American Association of Petroleum Geologists Annual Meeting, Dallas, TX, Apr. 18-21, 2004.*
36. **Datta, R. and Sarkar, D. (2004)** Effect of Soil-Aging on Geochemical Fate of Arsenic in Pesticide-Contaminated Soils. **Poster Presentation** in the session: Environmental Geology and Geochemistry in the *American Association of Petroleum Geologists Annual Meeting, Dallas, TX, Apr. 18-21, 2004.*
37. **Datta, R. and Sarkar, D. (2004)** Human health risk from exposure to soil arsenic: Does one size fit all? **Oral Presentation** in the Symposium: Current Perspectives in Environmental Biogeochemistry-I in the *Geological Society of America Annual Meeting, Denver, CO, Nov. 6-10, 2004.*
38. **Vandanapu, V., Sarkar, D., Datta, R., and Sharma, S. (2004)** Arsenic adsorption and desorption by water treatment residuals: Preliminary results. **Oral Presentation** in the Symposium: Current Perspectives in Environmental Biogeochemistry-I in the *Geological Society of America Annual Meeting, Denver, CO, Nov. 6-10, 2004.*
39. **Khairom, A., Sarkar, D., and Datta, R. (2004)** Bioavailability of arsenic and phosphorus in a sandy soil amended with water treatment residuals. **Oral Presentation** in the Symposium: Current Perspectives in Environmental Biogeochemistry-I in the *Geological Society of America Annual Meeting, Denver, CO, Nov. 6-10, 2004.*
40. **Simpson, N.W., Sarkar, D., Sharma, S., and Datta, R. (2004)** Heavy metal geochemistry in sludge-affected sediments of Mitchell Lake, Texas. **Oral Presentation** in the Symposium: Current Perspectives in Environmental Biogeochemistry-I in the *Geological Society of America Annual Meeting, Denver, CO, Nov. 6-10, 2004.*
41. **Frias, A.R., Sarkar, D., and Datta, R. (2004)** Geochemical forms and bioavailability of arsenic in pesticide-applied cotton soils of Texas: An incubation study. **Oral Presentation** in the Symposium: Current Perspectives in Environmental Biogeochemistry-II in the *Geological Society of America Annual Meeting, Denver, CO, Nov. 6-10, 2004.*
42. **Therapong, C., Datta, R., and Sarkar, D. (2004)** Arsenic stress response in rice: Comparison between organic and inorganic pesticides. **Oral Presentation** in the

- Symposium: Current Perspectives in Environmental Biogeochemistry-II in the *Geological Society of America Annual Meeting, Denver, CO, Nov. 6-10, 2004.*
43. **Quazi, S., Sarkar, D., Datta, R., and Sharma, S. (2004)** Greenhouse study on arsenic speciation and bioavailability in two pesticide-contaminated soils of Florida: Preliminary results. **Oral Presentation** in the Symposium: Current Perspectives in Environmental Biogeochemistry-II in the *Geological Society of America Annual Meeting, Denver, CO, Nov. 6-10, 2004.*
 44. **Nagar, R., Sarkar, D., Datta, R., Khairom, A., Vandanapu, V., and Quazi, S. (2004)** Effect of sewage sludge addition on heavy metal concentrations in agricultural soils. **Poster Presentation** in the Symposium: Current Perspectives in Environmental Biogeochemistry in the *Geological Society of America Annual Meeting, Denver, CO, Nov. 6-10, 2004.*
 45. **Sarkar, D. and Parra-Noonan, M, and Datta, R. (2004)** Bioavailability of arsenic in cattle dipping vat site soils as a function of soil chemistry. **Poster Presentation** in the Symposium: Current Perspectives in Environmental Biogeochemistry in the *Geological Society of America Annual Meeting, Denver, CO, Nov. 6-10, 2004.*
 46. **Amy, C.D., Sarkar, D., and Datta, R. (2004)** In-situ stabilization of arsenic in soils amended with water treatment residuals. **Poster Presentation** in the Symposium: Current Perspectives in Environmental Biogeochemistry in the *Geological Society of America Annual Meeting, Denver, CO, Nov. 6-10, 2004.*
 47. **Sharma, S., Datta, R., and Sarkar, D. (2004)** Effect of equilibration time on arsenic bioavailability in two Florida soils contaminated with arsenical pesticide. **Poster Presentation** in the Symposium: Current Perspectives in Environmental Biogeochemistry in the *Geological Society of America Annual Meeting, Denver, CO, Nov. 6-10, 2004.*
 48. **Birnbaum, S.J., Sarkar, D., Datta, R., and Ferguson, M.C. (2004)** Treat it or leave it? A bench-scale view comparing monitored natural attenuation with two forms of biostimulation. **Oral Presentation** in the Symposium: Current Perspectives in Environmental Biogeochemistry-I in the *Geological Society of America Annual Meeting, Denver, CO, Nov. 6-10, 2004.*
 49. **Quispe, M.A., Therapong, C., Datta, R., and Sarkar, D. (2005)** Arsenic Remediation Potential of Vetiver Grass. **Oral Presentation** in the Symposium: Environmental Geoscience and Hydrogeology in the *39th Annual Meeting of the South Central Section of Geological Society of America, San Antonio, TX, April 1-2, 2005.*
 50. **Quazi, S., Sarkar, D., Datta, R. and Sharma, Saurabh (2005)** Consideration of Arsenic Bioavailability in Human Health Risk Assessment: Preliminary Greenhouse Results. **Oral Presentation** in the Symposium: Environmental Geoscience and Hydrogeology in the *39th Annual Meeting of the South Central Section of Geological Society of America, San Antonio, TX, April 1-2, 2005.*
 51. **Khairom, A., Sarkar, D., and Datta, R. (2005)** Bioavailability of Arsenic and Phosphorus in a Florida Soil Amended with Water Treatment Residuals: Effect of Equilibration Time. **Oral Presentation** in the Symposium: Environmental Geoscience and Hydrogeology in the *39th Annual Meeting of the South Central Section of Geological Society of America, San Antonio, TX, April 1-2, 2005.*
 52. **Barber, S.J., Simpson, N.W., Sharma, S., Sarkar, D., and Datta, R. (2005)** Bioavailability of Heavy Metals in Sediments of a Sludge Disposal Lake. **Oral Presentation** in the Symposium: Environmental Geoscience and Hydrogeology in the *39th*

Annual Meeting of the South Central Section of Geological Society of America, San Antonio, TX, April 1-2, 2005.

53. **Nagar, R., Sarkar, D., Sharma, S., and Datta, R. (2005)** Potential Phytoavailability of Heavy Metals as a Function of Soil Properties in Biosolids-Amended Soils. **Oral Presentation** in the Symposium: Environmental Geoscience and Hydrogeology in the 39th *Annual Meeting of the South Central Section of Geological Society of America, San Antonio, TX, April 1-2, 2005.*
54. **Juckett, M., Quazi, S., Morales, M., Smith, B., Wang, X., and Sarkar, D. (2005)** Cursory examination of water quality in the San Antonio river basin. **Oral Presentation** in the Symposium: Environmental Geoscience and Hydrogeology in the 39th *Annual Meeting of the South Central Section of Geological Society of America, San Antonio, TX, April 1-2, 2005.*
55. **Nagar, R., Sarkar, D., Datta, R., and Sharma, R. (2005)** Effect of Solution Properties on Arsenic Adsorption by Drinking Water Treatment Residuals. **Poster Presentation** in the Symposium: Biogeochemistry of Metals and Arsenic in Environmental Systems - II in the *2005 Joint Assembly of the AGU, SEG, NABS and SPD/AAS, New Orleans, LA, May 23-27, 2005.*
56. **Vandanapu, V., Sarkar, D., Datta, R., and Makris, K.C. (2005)** Arsenic Adsorption and Desorption by Drinking Water Treatment Residuals: Incubation Studies. **Poster Presentation** in the Symposium: Biogeochemistry of Metals and Arsenic in Environmental Systems - II in the *2005 Joint Assembly of the AGU, SEG, NABS and SPD/AAS, New Orleans, LA, May 23-27, 2005.*
57. **Makris, K.C., Sarkar, D., and Datta, R. (2005)** Arsenite Sorption by Drinking Water Treatment Residuals: Redox Effects. **Oral Presentation** in the Symposium: Biogeochemistry of Metals and Arsenic in Environmental Systems - I in the *2005 Joint Assembly of the AGU, SEG, NABS and SPD/AAS, New Orleans, LA, May 23-27, 2005.*
58. **Quazi, S., Sarkar, D., Khairom, A., Datta, R., and Sharma, S. (2005)** Bioavailability Of Arsenic In Arsenical Pesticide-Amended Soils: Preliminary Greenhouse Study. **Oral Presentation** in the Symposium: Biogeochemistry of Metals and Arsenic in Environmental Systems - I in the *2005 Joint Assembly of the AGU, SEG, NABS and SPD/AAS, New Orleans, LA, May 23-27, 2005.*
59. **Sharma, S., Sarkar, D., and Datta, R. (2005)** Effect of Soil Properties on the Geochemical Speciation of Arsenic in Contaminated Soils: A Greenhouse Study. **Poster Presentation** in the Symposium: Biogeochemistry of Metals and Arsenic in Environmental Systems - II in the *2005 Joint Assembly of the AGU, SEG, NABS and SPD/AAS, New Orleans, LA, May 23-27, 2005.*
60. **Mohamed, H., Therapong, C., Andra, S., Datta, R., and Sarkar, D. (2005).** Phytoavailability of Arsenic in pesticide-Applied Soils: Effect of Chemical Remediation. **Oral Presentation** in the Symposium: Pollutants in Lotic Systems - III in the *2005 Joint Assembly of the AGU, SEG, NABS and SPD/AAS, New Orleans, LA, May 23-27, 2005.*
61. **Sharma, S., Sarkar, D., and Datta, R. (2005)** Soil Arsenic Phases in Two Texas Soils with Variable Chemistry: Effects of WTR Amendment. **Oral Presentation** in Symposium: Arsenic in the Environment at the *ASA-CSSA-SSSA International Meeting, Salt Lake City, UT, Nov 6-10, 2005*
62. **Quazi, S., Sarkar, D., Khairom, A., and Datta, R. (2005)** Arsenic Bioavailability in a Soil Amended with Water Treatment Residuals in the Presence of Phosphorus: Effect of

- Amendment Rates. **Oral Presentation** in Symposium: Arsenic in the Environment at the ASA-CSSA-SSSA *International Meeting, Salt Lake City, UT, Nov 6-10, 2005*
63. **Nagar, R., Sarkar, D., Makris, K., and Datta, R. (2005)** Arsenic Sorption by Water Treatment Residuals as a Function of pH in the Presence of Competing Ligands. **Oral Presentation** in Symposium: Arsenic in the Environment at the ASA-CSSA-SSSA *International Meeting, Salt Lake City, UT, Nov 6-10, 2005*
 64. **Datta, R., and Sarkar, D. (2005)** Geochemistry of Arsenic in Pesticide-Applied Soils: from Laboratory to Greenhouse. **Oral Presentation** in Symposium: Arsenic in the Environment at the ASA-CSSA-SSSA *International Meeting, Salt Lake City, UT, Nov 6-10, 2005*
 65. **Makris, K., Sarkar, D., and Datta, R. (2005)** A Novel Sorbent for Perchlorate: Preliminary Results. **Oral Presentation** in Symposium: Arsenic in the Environment at the ASA-CSSA-SSSA *International Meeting, Salt Lake City, UT, Nov 6-10, 2005*
 66. **Pachanoor, D.S., Datta, R., Sarkar, D., and Therapong, C. (2005)** Antioxidant Responses of Monocot Seedlings to Arsenical Pesticides. **Poster Presentation** in Symposium: Arsenic in the Environment at the ASA-CSSA-SSSA *International Meeting, Salt Lake City, UT, Nov 6-10, 2005*
 67. **Sarkar, D., Makris, K., and Datta, R. (2005)** Arsenic (III) and Phosphorus Fractionation in the Arsenical Pesticide-Applied State Soil of Texas Amended with WTRs: an Incubation Study. **Poster Presentation** in Symposium: Arsenic in the Environment at the ASA-CSSA-SSSA *International Meeting, Salt Lake City, UT, Nov 6-10, 2005*
 68. **Vandanapu, V., Sarkar, D., Makris, K., and Datta, R. (2005)** Arsenic Adsorption and Desorption by Drinking-Water Treatment Residuals: an Isotherm Study. **Poster Presentation** in Symposium: Arsenic in the Environment at the ASA-CSSA-SSSA *International Meeting, Salt Lake City, UT, Nov 6-10, 2005*
 69. **Barber, S.J., Sarkar, D., Simpson, N., Sharma, S., and Datta, R. (2005)** Heavy Metals Release in Mitchell Lake as a Function of Sediment Properties. **Poster Presentation** in Symposium: Trace Elements in Soils and Plants at the ASA-CSSA-SSSA *International Meeting, Salt Lake City, UT, Nov 6-10, 2005*
 70. **Andra, S.S.P., Datta, R., Sarkar, D., and Mohamed, H. (2005)** Characterization of Lead-Contaminated Residential Soils: An Appraisal for Phytoremediation. **Poster Presentation** in Symposium: Trace Elements in Soils and Plants at the ASA-CSSA-SSSA *International Meeting, Salt Lake City, UT, Nov 6-10, 2005*
 71. **Andra, S.P., Datta, R., Sarkar, D., and Saminathan, S.K. (2006)** A Greenhouse Study on Lead Uptake and Antioxidant Enzyme Activities in Vetiver Grass (*Vetiveria zizanioides*) as a Function of Lead Concentration and Soil Physico-Chemical Properties. **Oral Presentation** in the 2006 *Joint Assembly of the AGU, GS, MAS, MSA, SEG and UGM, Baltimore, MD, May 23-26, 2006.*
 72. **Quazi, S., Sarkar, D., Sylvia, V., and Datta, R. (2006)** Correlation Between An In-vitro Method And An In-vivo Method In Assessing Bioavailable Arsenic In Two Pesticide-Amended Soils. *Eos Trans.* **Oral Presentation** in the 2006 *Joint Assembly of the AGU, GS, MAS, MSA, SEG and UGM, Baltimore, MD, May 23-26, 2006.*
 73. **Pachanoor, D.S., Andra, S.P., Datta, R., and Sarkar, D. (2006)** Lead phytoremediation potential of Vetiver grass: a hydroponic study. **Poster Presentation** in the 2006 *Joint Assembly of the AGU, GS, MAS, MSA, SEG and UGM, Baltimore, MD, May 23-26, 2006.*
 74. **Saminathan, S.K., Sarkar, D., Datta, R., and Andra, S.P. (2006)** Geochemistry of Lead in Contaminated Soils: Effects of Soil Physico-Chemical Properties. **Poster Presentation**

- in the 2006 Joint Assembly of the AGU, GS, MAS, MSA, SEG and UGM, Baltimore, MD, May 23-26, 2006.
75. **Therapong, C., Datta, R., Sarkar, D. and Pachanoor, D.S. (2006)** Arsenic Accumulation by *Pteris vittata* L. in Two Chemically Variant Soils Treated with Arsenical Pesticides - Greenhouse Study. **Poster Presentation** in the 2006 Joint Assembly of the AGU, GS, MAS, MSA, SEG and UGM, Baltimore, MD, May 23-26, 2006.
 76. **Quispe, M.A., Datta, R., Sarkar, D., and Sharma, S. (2006)** A greenhouse study on arsenic remediation potential of Vetiver grass (*Vetiveria Zizanioides*) as a function of soil physico-chemical properties. **Poster Presentation** in the 2006 Joint Assembly of the AGU, GS, MAS, MSA, SEG and UGM, Baltimore, MD, May 23-26, 2006.
 77. **Shakya, K.M., Sarkar, D., Datta, R., Makris, K.C., and Pachanoor, D.S. (2006)** Uptake of 2,4,6-Trinitrotoluene (TNT) by Vetiver grass (*Vetiveria ziznioides* L.) -- Preliminary results from a hydroponic study. **Poster Presentation** in the 2006 Joint Assembly of the AGU, GS, MAS, MSA, SEG and UGM, Baltimore, MD, May 23-26, 2006.
 78. **Nagar, R., Sarkar, D., Datta, R., and Makris, K.C. (2006)** Solution pH effects on arsenic removal by drinking water treatment residuals in presence of metals and ligands. **Oral Presentation** in the 2006 Joint Assembly of the AGU, GS, MAS, MSA, SEG and UGM, Baltimore, MD, May 23-26, 2006.
 79. **Salazar, J., Sarkar, D., Datta, R., and Sharma, S. (2006)** Adsorption of Roxarsone onto Drinking Water Treatment Residuals: Preliminary Studies. **Poster Presentation** in the 2006 Joint Assembly of the AGU, GS, MAS, MSA, SEG and UGM, Baltimore, MD, May 23-26, 2006.
 80. **Sarkar, D. and Xie, H. (2006)** Research and Graduate Studies in Environmental Science at UTSA – Collaborative opportunities with Mexican Colleagues. Invited **Oral Presentation** in the *Joint CONACYT-UTSA Conference, Mexico City, August 31, 2006.*
 81. **Ravikovitch, P.I., Neimark, A. V., Makris, K.C., Sarkar, D., and Datta, R. (2006)** Using nitrogen and carbon-di-oxide adsorption to estimate arsenic (V) bioaccessibility in soils. **Poster Presentation** in the *American Institute of Chemical Engineers Annual Meeting, San Francisco, November 12 – 17, 2006.*
 82. **Sharma, S., Datta, R., Sarkar, D. and Nagar, R. (2006)** Geochemical Speciation and Bioavailability of Arsenic in Chemically Variant Soils Amended with Sodium Arsenite: A Greenhouse Study. **Poster Presentation** in the *Joint Annual International Meeting of the American Society of Agronomy, Soil Science Society of America and Crop Science Society of America, Indianapolis, November 10 – 14, 2006.*
 83. **Datta, R., Makris, K.C., Sarkar, D. Ravikovitch, P.I., and Neimark, A.V. (2006)** Microporosity effects on arsenic (V) bioaccessibility in soils. **Oral Presentation** in the *Joint Annual International Meeting of the American Society of Agronomy, Soil Science Society of America and Crop Science Society of America, Indianapolis, November 10 – 14, 2006.*
 84. **Nagar, R., Sarkar, D., Makris, K.C., and Datta, R. (2006)** Effects of Solution Properties on Arsenic Immobilization in Drinking Water Treatment Residuals-Amended Soils: Incubation Study. **Oral Presentation** in the *Joint Annual International Meeting of the American Society of Agronomy, Soil Science Society of America and Crop Science Society of America, Indianapolis, November 10 – 14, 2006.*
 85. **Sarkar, D., Nagar, R., Datta, R., and Makris, K.C. (2006)** Surface complexation of arsenate onto drinking water treatment residuals. **Poster Presentation** in the *Joint Annual*

- International Meeting of the American Society of Agronomy, Soil Science Society of America and Crop Science Society of America, Indianapolis, November 10 – 14, 2006.*
86. **Quazi, S., Sarkar, D., Makris, K.C. and Datta, R., (2006)** Fate and Stability of soil-borne arsenic in the human stomach. **Oral Presentation** in the *Joint Annual International Meeting of the American Society of Agronomy, Soil Science Society of America and Crop Science Society of America, Indianapolis, November 10 – 14, 2006.*
 87. **Therapong, C., Datta, R., Sarkar, D., and Pachanoor, D. (2006)** Biochemical Stress Responses in Arsenic Hyperaccumulator Fern *Pteris vittata*: A Comparative Greenhouse Study Using Organic and Inorganic Arsenical Pesticides. **Poster Presentation** in the *Joint Annual International Meeting of the American Society of Agronomy, Soil Science Society of America and Crop Science Society of America, Indianapolis, November 10 – 14, 2006.*
 88. **Saminathan, K.P.M.S., Sarkar, D., Datta, R., and Andra, S.S. (2006)** Role of Chelating Agents in Enhancing Lead Uptake by Vetiver Grass (*Vetiveria zizanioides* L.) from Lead Based-Paint Contaminated Residential Soils. **Poster Presentation** in the *Joint Annual International Meeting of the American Society of Agronomy, Soil Science Society of America and Crop Science Society of America, Indianapolis, November 10 – 14, 2006.*
 89. **Andra, S.S., Datta, R., Sarkar, D., and Pachanoor, D. (2006)** Involvement of Phytochelatins in Lead Accumulation and Tolerance in Vetiver Grass. **Oral Presentation** in the *Joint Annual International Meeting of the American Society of Agronomy, Soil Science Society of America and Crop Science Society of America, Indianapolis, November 10 – 14, 2006.*
 90. **Shakya, K.M., Makris, K.C., Datta, R., Pachanoor, D., Sarkar, D., and Das, P. (2006)** Uptake and Biotransformation of 2,4,6-Trinitrotoluene (TNT) by Wheat (*Triticum aestivum*). **Poster Presentation** in the *Joint Annual International Meeting of the American Society of Agronomy, Soil Science Society of America and Crop Science Society of America, Indianapolis, November 10 – 14, 2006.*
 91. **Pachanoor, D., Therapong, C., Datta, R., Sarkar, D., and Punamiya, P. (2006)** Effect of Arsenical Pesticides on antioxidant Enzymes in Rice: A comparative Greenhouse Study using Organic and Inorganic Arsenical Pesticides. **Poster Presentation** in the *Joint Annual International Meeting of the American Society of Agronomy, Soil Science Society of America and Crop Science Society of America, Indianapolis, November 10 – 14, 2006.*
 92. **Barber, S., Datta, R., and Sarkar, D. (2006)** The Effects of an Endomycorrhizal Fungus *Glomus mosseae* on the Uptake of Lead by Vetiver Grass. **Poster Presentation** in the *Joint Annual International Meeting of the American Society of Agronomy, Soil Science Society of America and Crop Science Society of America, Indianapolis, November 10 – 14, 2006.*
 93. **Bach, S.B.H., Andra, S.S., Datta, R., Sarkar, D., and Mullens, C.P. (2007)** Identification, characterization and quantification of lead-binding proteins in a Hyperaccumulator Using HPLC-ES-MS. **Poster Presentation** in the *American Society of Mass Spectrometry Annual Meeting, Indianapolis, June 3-7, 2007.*
 94. **Nagar, R., Sarkar, D., Datta, R., Makris, K.C., and Quazi, S. (2007)** Long-Term Effectiveness Of Drinking-Water Treatment Residuals In Reducing Soil Arsenic Bioaccessibility: A Greenhouse Study. **Poster Presentation** in the *Geological Society of America Annual Meeting, Denver, October 28-31, 2007.*
 95. **Das, P., Datta, R., Sarkar, D., Makris, K.C., Ovuegbe, A., and Punamiya, P. (2007)** Chemically-Catalyzed Uptake Of 2,4,6-Trinitrotoluene By Vetiver Grass *Vetiveria*

- Zizanioides in Soil. **Poster Presentation** in the *Geological Society of America Annual Meeting, Denver, October 28-31, 2007.*
96. **Andra, S., S., Datta, R., Sarkar, D., and Saminathan, S. K. P. M. (2007)** Effects of Chelating Agents on Phytoextraction of Lead by Vetiver Grass from Lead Contaminated Soils. **Poster Presentation** in the *Geological Society of America Annual Meeting, Denver, October 28-31, 2007.*
 97. **Sarkar, D., and Hardy, M. (2007)** Using A Waste By-Product To Remove Metals From Contaminated Shipyard Stormwater. **Poster Presentation** in the *Geological Society of America Annual Meeting, Denver, October 28-31, 2007.*
 98. **Nagar, R., Sarkar, D., Makris, K.C., Datta, R. and Sylvia, V.L. (2007)** WTRs as a Remedial Agent For Arsenic-Contaminated Soils: In-Vitro and in-vivo studies. **Oral Presentation** in the *Joint Annual International Meeting of the American Society of Agronomy, Soil Science Society of America and Crop Science Society of America, New Orleans, November 4-8, 2007.*
 99. **Quazi, S., Makris, K.C., Sarkar, D., Datta, R. and Patel, M. (2007)** Effects of a Common Gastric Bacterium on Soil Arsenic Bioaccessibility and Speciation in the Human Stomach. **Oral Presentation** in the *Joint Annual International Meeting of the American Society of Agronomy, Soil Science Society of America and Crop Science Society of America, New Orleans, November 4-8, 2007.*
 100. **Andra, S.S., Datta, R., Sarkar, D., Mullens, C., and Bach S. B.H. (2007)** Induction of Phytochelatin and Low Molecular Weight Thiols in *Vetiveria zizanioides* in Response to Lead. **Oral Presentation** in *Joint Annual International Meeting of the American Society of Agronomy, Soil Science Society of America and Crop Science Society of America, New Orleans, November 4-8, 2007.*
 101. **Patel, P., Datta, R., Punamiya, P., Sarkar, D., Israr, M. and Sahi, S. (2007)** Arsenic Distribution and Localization in the Fronds of the Hyperaccumulator Fern *Pteris vittata*. **Oral Presentation** in the *Joint Annual International Meeting of the American Society of Agronomy, Soil Science Society of America and Crop Science Society of America, New Orleans, November 4-8, 2007.*
 102. **Punamiya, P., Makris, K.C., Datta, R., and Sarkar, D. (2007)** Low-Level Colorimetric Determination of Arsenic in the Presence of Phosphorus in Soil Solutions. **Oral Presentation** in the *Joint Annual International Meeting of the American Society of Agronomy, Soil Science Society of America and Crop Science Society of America, New Orleans, November 4-8, 2007.*
 103. **Hardy, M., Makris, K.C., Sarkar, D., and Datta, R. (2007)** A Packed Bed Reactor System to Treat Chromium-Contaminated Shipyard Stormwater. **Oral Presentation** in the *Joint Annual International Meeting of the American Society of Agronomy, Soil Science Society of America and Crop Science Society of America, New Orleans, November 4-8, 2007.*
 104. **Makris, K.C., Andra, S.S., Quazi, S., Sarkar, D., Bach, S., and Datta, R. (2007)** Probing Roxarsone Degradation in Animal Waste with the Aid of Electrospray Mass Spectrometry. **Oral Presentation** in the *Joint Annual International Meeting of the American Society of Agronomy, Soil Science Society of America and Crop Science Society of America, New Orleans, November 4-8, 2007.*
 105. **Sarkar, D., Nagar, R., Makris, K.C., and Datta, R. (2007)** Modeling Arsenate Adsorption by Water Treatment Residuals. **Poster Presentation** in the *Joint Annual*

- International Meeting of the American Society of Agronomy, Soil Science Society of America and Crop Science Society of America, New Orleans, November 4-8, 2007.*
106. **Datta, R., Makris K.C., Salazar, J., Quazi, S., and Sarkar, D. (2007)** Novel Chemical Amendment to Reduce Arsenic Availability in Poultry Litter. **Poster Presentation** in the *Joint Annual International Meeting of the American Society of Agronomy, Soil Science Society of America and Crop Science Society of America, New Orleans, November 4-8, 2007.*
 107. **Quazi, S., K. Makris, D. Sarkar, R. Datta, P. Punamiya (2007)** Geochemical fate of arsenic in swine litter. **Poster Presentation** in the *Annual Fall Meeting of the American Geophysical Union, San Francisco, December 9-14, 2007.*
 108. **Andra, S., R. Datta, D. Sarkar, S. Saminathan (2007)** Enhancing Potentially Plant-Available Lead Concentrations in Contaminated Residential Soils Using a Biodegradable Chelating Agent. **Poster Presentation** in the *Annual Fall Meeting of the American Geophysical Union, San Francisco, December 9-14, 2007.*
 109. **Punamiya, P, M. J. Patel, R. Datta, D. Sarkar (2008)** Phytoextraction of Lead in Soil Using Lead-Accumulating Grass (*Vetiveria Zizanioides*) in the Presence of Beneficial Arbuscular Mycorrhizal Fungi. **Poster Presentation** in the *American Association of Petroleum Geologists Annual Meeting, San Antonio, April 20-23.*
 110. **Das, P., K. C. Makris, R. Datta, D. Sarkar, P. A. Punamiya (2008)** Urea-Catalyzed Extractability of 2,4,6-Trinitrotoluene from Contaminated Soils: Preliminary Results. **Poster Presentation** in the *American Association of Petroleum Geologists Annual Meeting, San Antonio, April 20-23.*
 111. **Patel, M.J., S. Barber, R. Datta, D. Sarkar (2008)** Effect of *Glomus Mosseae* on Lead Uptake by the *Vetiveria Zizanioides*. **Poster Presentation** in the *American Association of Petroleum Geologists Annual Meeting, San Antonio, April 20-23.*
 112. **Andra, S.P., R. Datta, D. Sarkar, S. M. Saminathan (2008)** Soil Properties Governing Potentially Plant Available Lead in Contaminated Residential Sites. **Oral Presentation** in the *American Association of Petroleum Geologists Annual Meeting, San Antonio, April 20-23.*
 113. **Smith, B.D., D. Sarkar (2008)** Reconnaissance Study of Perchlorate Contaminated Sites. **Poster Presentation** in the *American Association of Petroleum Geologists Annual Meeting, San Antonio, April 20-23.*
 114. **Nagar, R., D. Sarkar, K.C. Makris, R. Datta (2008)** Long-Term Monitoring of Organoarsenical Degradation in Drinking- Water Treatment Residual-Amended Soils. **Poster Presentation** in the *American Association of Petroleum Geologists Annual Meeting, San Antonio, April 20-23.*
 115. **Hardy, M., D. Sarkar, K. Makris, R. Datta (2008)** Using a Waste By-Product to Remove Metals from Contaminated Shipyard Stormwater. **Poster Presentation** in the *American Association of Petroleum Geologists Annual Meeting, San Antonio, April 20-23.*
 116. **Quazi, S., D. Sarkar, R. Datta (2008)** Effect of Soil Ageing on Arsenic Bioaccessibility and Geochemical Speciation: A Greenhouse Study. **Poster Presentation** in the *American Association of Petroleum Geologists Annual Meeting, San Antonio, April 20-23.*
 117. **Makris, K.C., S. S. Andra, D. Sarkar, R. Datta, S. B. Bach, C. Mullens (2008)** Nitrous Oxide Solubility in Animal Waste Suspensions. **Oral Presentation** in the *American Association of Petroleum Geologists Annual Meeting, San Antonio, April 20-23.*

118. **Bach, S., C. Mullens., D. Sarkar, K.C. Makris (2008)** Aqueous arsenic speciation by nanospray and electrospray mass spectrometry. **Oral Presentation** at the *American Chemical Society National Meeting, New Orleans, April 6-10.*
119. **Datta, R., D. Sarkar, S.P. Andra, S. Bach (2008)** Role of lead speciation in soil and plant in phytoremediation of contaminated soils using vetiver grass. **Oral Presentation** at the *American Chemical Society National Meeting, New Orleans, April 6-10.*
120. **Sarkar, D., R. Datta, K.C. Makris, R. Nagar, S. Quazi (2008)** Immobilization of soil arsenic using water treatment residuals: Potential to develop into a cost-effective remediation method? **Oral Presentation** at the *American Chemical Society National Meeting, New Orleans, April 6-10.*
121. **Andra, S.S., R. Datta, D. Sarkar, S.K.M. Saminathan (2008)** Chelate-Assisted Phytoextraction Potential of Vetiver Grass in Reducing Human Bioaccessibility of Soil Lead. **Poster Presentation** at the *American Society of Agronomy Southern Branch Meeting, Dallas, February 3-5.*
122. **Das, P., K.C. Makris, D. Sarkar, R. Datta, P. Punamiya (2008)** TNT Adsorption in Chemically Variant Soils: Preliminary Studies. **Oral Presentation** at the *American Society of Agronomy Southern Branch Meeting, Dallas, February 3-5.*
123. **Punamiya, P., R. Datta, M. Patel, D. Sarkar, P. Das (2008)** Effect of Arbuscular Mycorrhizal Fungi on Cadmium Uptake by Brassica juncea: An Incubation Study. **Oral Presentation** at the *American Society of Agronomy Southern Branch Meeting, Dallas, February 3-5.*
124. **Patel, M.J., R. Datta, P. Punamiya, D. Sarkar, S. Sahi (2008)** Antioxidative Responses and Arsenic Localization in the Arsenic-Hyperaccumulator Chinese Brake Fern (*Pteris vittata* L.). **Oral Presentation** at the *American Society of Agronomy Southern Branch Meeting, Dallas, February 3-5.*
125. **Andra S.S., R. Datta, D. Sarkar, S.K.P.M. Saminathan (2008)** A Chemically Catalyzed Phytoremediation Model for Lead-Paint Contaminated Residential Soils: Greenhouse Study. **Oral Presentation** at the *Joint Annual Meeting of GSA-SSSA-ASA-CSSA, Houston, October 5-9.*
126. **Punamiya, P., R. Datta, D. Sarkar, S. Barber, M.J. Patel, P. Das (2008)** Symbiotic Role of Glomus Mosseae in Lead Phytoextraction Using Vetiver Grass. **Oral Presentation** at the *Joint Annual Meeting of GSA-SSSA-ASA-CSSA, Houston, Oct 5-9.*
127. **Nagar, R., Sarkar, D., R. Datta, K.C. Makris (2008).** Bioaccessibility and Speciation of An Organoarsenical in Drinking-Water Treatment Residual Amended Soil: A Long Term Greenhouse Study. **Poster Presentation** at the *Joint Annual Meeting of GSA-SSSA-ASA-CSSA, Houston, October 5-9.*
128. **Hardy M.A., D. Sarkar, R. Datta (2008)** Water Treatment Residuals Remove Copper, Lead, and Zinc from Acidic Wastewater. **Poster Presentation** at the *Joint Annual Meeting of GSA-SSSA-ASA-CSSA, Houston, October 5-9.*
129. **Quazi, S. D. Sarkar, R. Datta (2008)** Effects of Inorganic and Organic Arsenical Pesticides on Rice Growth and Development: A Comparative Greenhouse Study. **Poster Presentation** at the *Joint Annual Meeting of GSA-SSSA-ASA-CSSA, Houston, Oct 5-9.*
130. **Punamiya, P., R. Datta, D. Sarkar, P. Das (2008)** Effect of Cadmium on Antioxidant Enzymes in the Presence of Beneficial Arbuscular Mycorrhizal Fungi: An Incubation Study Using *Brassica Juncea* (Indian mustard). **Poster Presentation** at the *Joint Annual Meeting of GSA-SSSA-ASA-CSSA, Houston, October 5-9.*

131. *Punamiya P, Sarkar D, Datta R, Makris K. (2009)*, Rapid and inexpensive arsenic determination method in water and soil extracts in the presence of phosphorus. **Oral Presentation** at the New Jersey Water and Environment Association (NWJEA), meeting Atlantic City, NJ. May 11-15.
132. *Das P, Datta R, Sarkar D, Makris K, Shakya, K, Pachanoor D. (2009)* Urea catalyzed phytoremediation of 2,4,6 dinitrotoluene contaminated water by vetiver grass (*Vetiveria zizanioides*) and wheat (*Triticum aestivum*). **Oral Presentation** at the New Jersey Water and Environment Association (NWJEA) meeting, Atlantic City, NJ. May 11-15.
133. *Das P, Datta R, Sarkar D, Punamiya P, Makris K (2009)* Chemically enhanced phytoextraction of 2,4,6 trinitrotoluene by vetiver grass from a low organic matter containing soil. **Poster Presentation** at the Society of Environmental Toxicology and Chemistry - Hudson Delaware Chapter (HD-SETAC) New York. April 23 - 24.
134. *Punamiya P, Datta R, Barber S, Das P, Sarkar D (2009)* Phytoextraction of lead using a metal accumulating grass (*Vetiveria zizanioides*) in the presence of arbuscular mycorrhizal fungus, *Glomus mosseae* **Poster Presentation** at the Society of Environmental Toxicology and Chemistry - Hudson Delaware Chapter (HD-SETAC) New York. April 23 - 24.
135. *Hardy M, Sarkar D, Datta R (2009)* Removal of metals from shipyard stormwater using residues of drinking water treatment **Poster Presentation** at the Society of Environmental Toxicology and Chemistry - Hudson Delaware Chapter (HD-SETAC) New York. April 23 - 24.
136. *Das P, Punamiya P, Datta R, Sarkar D, Makris KC (2009)* Enhanced Uptake and Biotransformation of 2, 4, 6-Trinitrotoluene (TNT) by Vetiver Grass (*Vetiveria zizanioides* L.) from Soil. **Oral Presentation** at the Joint Annual International Meeting of the American Society of Agronomy, Soil Science Society of America and Crop Science Society of America, Pittsburg, PA Nov 1-5, 2009.
137. *Punamiya P, Agyin-Birikorang S, Sarkar D, Das P and Datta R (2009)* Oxytetracycline Adsorption and Desorption by Drinking Water Treatment Residuals: Preliminary Results. **Oral Presentation** at the Joint Annual International Meeting of the American Society of Agronomy, Soil Science Society of America and Crop Science Society of America, Pittsburg, PA Nov 1-5, 2009.
138. *Coleman A, Datta R, Sarkar D, Simpson T (2009)* Effect of Heavy Metals On Fresh Water Turtles of a Sludge-Amended Lake in South Texas. **Oral Presentation** at the Joint Annual International Meeting of the American Society of Agronomy, Soil Science Society of America and Crop Science Society of America, Pittsburg, PA Nov 1-5, 2009.
139. *Hardy M, Sarkar D, Datta R (2009)* A Green, Cost-Effective Soil Amendment for Mine Site Reclamation. **Oral Presentation** at the Joint Annual International Meeting of the American Society of Agronomy, Soil Science Society of America and Crop Science Society of America, Pittsburg, PA Nov 1-5, 2009.
140. *Datta, R., Das, P., Sarkar, D., and Andra, S. (2009)* A Phytoremediation Model for Lead and TNT contaminated soils. **Poster Presentation** at the Annual SERDP-ESTCP Conference, Department of Defense, Washington DC. Dec 1 - 3, 2009.
141. *Punamiya, P., Sarkar, D., Datta, R. (2010)* Interaction and effect of solution chemistry on sorption of oxytetracycline on Fe-based drinking-water treatment residuals. **Oral Presentation** at the 26th Annual Meeting of the Society of Environmental

Toxicology and Chemistry - Hudson Delaware Chapter (HD-SETAC) Stockton, NJ. April 21 – 22, 2010.

142. **Datta, R., Smith, S., Das, P., Punamiya, P., Ramanathan, D., Sarkar, D. (2010)** Uptake of Tetracycline from Hydroponic Systems by Vetiver Grass. **Poster Presentation** at the 26th Annual Meeting of the Society of Environmental Toxicology and Chemistry - Hudson Delaware Chapter (HD-SETAC) Stockton, NJ. April 21 – 22, 2010.
143. **Sarkar, D., Hardy, M., and Datta, R. (2010)** Beneficial reuse of a municipal waste byproduct for reclamation of abandoned mine sites. **Poster Presentation** at the 27th Joint 2010 Mining Reclamation Conference, Pittsburgh, PA. June 5 - 10, 2010.
144. **Rakshit, S., Punamiya, P., Datta, R., and Sarkar, D. (2010)** Sorption of oxytetracycline on magnetite-water interface. *Goldschmidt Abstracts*.

E) INVITED PRESENTATIONS:

- 1999: Georgia Southwestern State University
- 2000: Savannah River Ecology Laboratory
- 2001: Air and Waste Management Association
- 2002: Southwest Research Institute
- 2006: CONACYT – Mexico
- 2006: Daniel B. Stephens and Associates
- 2007: Indiana University at Bloomington
- 2008: University of Alberta
- 2008: Louisiana State University
- 2008: Michigan Technological University
- 2008: Columbia University
- 2009: Kean University
- 2009: University of Calcutta, India
- 2010: University of Massachusetts at Boston
- 2011: Richard Stockton College of New Jersey

F) NON-REFEREED BIBLIOGRAPHY:

I. Final Project Reports

1. **O'Connor, D. Sarkar, and J.B Sartain (1998)** Reuse of Carlton Reject Water (Final Report; Sarasota County Utilities, SPA # 96108-C)
2. **G.A. O'Connor and D. Sarkar (1999)** Fate of land applied residuals bound phosphorus (Final Report; Florida Department of Environmental Protection, Contract # WM661)
3. **G.A. O'Connor and D. Sarkar (2001)** Phosphorus contamination potential of groundwater associated with land application of domestic and animal waste products (Final Report; Water Resources Research Center – US Geological Survey)
4. **D. Sarkar (2004)** Geochemical speciation and human bioavailability of arsenic in pesticide applied soils: Phase-I: In-Vitro Studies (Final Report; Advanced Research Program-Texas Higher Education Coordinating Board)
5. **D. Sarkar and R. Datta (2006)** A novel phytoremediation method using vetiver grass to cleanup lead-based paint-contaminated soils (Final Report; Lead Technical Studies – Department of Housing and Urban Development)

6. *Makris, K.C., D. Sarkar, M. Hardy, and R. Datta (2007)* A new method to cleanup chromium enriched stormwater in naval shipyards – Phase-I (Final Report; Small Business Innovation Research – Department of Defense)
7. *D. Sarkar and R. Datta (2008)* Biogeochemistry of arsenic in Superfund site soils (Final Report; Science to Achieve Results - United States Environmental Protection Agency)

II. Instructional Manuals

1. *Segovia, A, D. Sarkar (1993)* Exercises in Environmental Geology. UMCP Press.
2. *G.A. O'Connor and D. Sarkar (1999)* QA/QC Manual for the Soil Chemistry Laboratory, Soil and Water Science Department, University of Florida.
3. *D. Sarkar and R. Datta (2003)* QA/QC Manual for the Environmental Geochemistry Laboratory, Earth and Environmental Science Department, University of Texas at San Antonio.

III. Thesis and Dissertation

1. *Sarkar, D (1991)* Geology of the area around Kunchia, Purulia District, West Bengal, India, with observations on gold prospecting. M.Sc. Thesis – University of Calcutta.
2. *Sarkar, D (1997)* Adsorption of mercury onto variable charge surfaces. Ph.D. Dissertation – University of Tennessee at Knoxville. UMI Publication # 9840337.

G) SIGNIFICANT PROFESSIONAL SERVICES:

- **Associate Editor:** Environmental Geosciences, 2001 -
- **Associate Editor:** Geosphere, 2005 –
- **Editorial Board Member:** Chemosphere, 2006 – 2009
- **Editorial Board Member:** Environmental Pollution, 2005–
- **Editorial Board Member:** International Journal Applied Environmental Science, 2005 –
- **Editorial Board Member:** International Journal of Environmental Science and Technology, 2009 -
- **Guest Editor (Special Editions):** Environmental Geosciences – Issue #1: Environmental Analyses and Modeling (V. 10, No. 4, December 2003); Issue #2: Nutrients and Environmental Quality (V. 11, No. 1, March 2004); Issue#3: Environmental Biogeochemistry (V. 11, No. 2, June 2004)
- **Invited Reviewer:**
 - **Journals:** Soil Science Society of America Journal, Journal of Environmental Quality, Environmental Science and Technology, Water Research, Separation Science and Technology, Geoderma, Chemosphere, Geosphere, Environmental Geosciences, Vadose Zone Journal, Restoration Ecology, Environmental Pollution, Bioresource Technology, Science of the Total Environment, Environmental Modelling and Software Journal, Environmental Geology, Bioremediation Journal, Journal of Environmental Management, Journal of Agricultural and Food Chemistry, Journal of Hazardous Materials, Water, Air, and Soil Pollution, Proceedings of Indian National Science Academy, International Journal of Environmental Science and Technology, etc.
 - **Book:** McGraw-Hill, Elsevier, American Chemical Society.

- **Funding Agencies:** National Science Foundation, U.S. Department of Agriculture, U.S. Geological Survey – National Institute of Water Resources, Texas Institute of Water Research, U.S. Civilian Research & Development Foundation, Azerbaijan National Science Foundation, Natural Environment Research Council, United Kingdom.
- **Symposium Chair:** Annual Goldschmidt Conference, Knoxville, June 2010. Title: Geochemistry and biogeochemistry of toxic elements in the environment.
- **Oral and Poster Session Chair:** Annual meeting of the American Association of Petroleum Geologists – Division of Environmental Geosciences, San Antonio, April 2008.
- **Symposium Chair:** Spring meeting of the American Chemical Society, New Orleans, April 2008. Title: Speciation of arsenic and other trace elements in soils and sediments.
- **Symposium Chair:** Joint Annual meeting of the Geological Society of America, Soil Science Society of America, American Society of Agronomy, and Crop Science Society of America, Houston, October 2008. Title: Urban geochemistry and associated human and ecological health issues.
- **Organizer (w/ Dr. Eusebio Juriasti of Mexico):** Joint CONACYT-UTSA Conference, Mexico City, August 31, 2006.
- **Invited Judge:** Symposium titled: Groundwater Issues: Resource, Exploration, Exploitation, and Remediation. American Association of Petroleum Geologists National Meeting, Dallas, TX, 2004.
- **Member-at-Large:** Research Grants Committee, Geological Society of America, 2006 –
- **Member, Education Committee:** American Society of Agronomy, 2007 -
- **Chair, Public Outreach Committee:** Division of Environmental Geosciences, American Association of Petroleum Geologists, 2007 –
- **Member, Public Outreach Committee:** American Association of Petroleum Geologists, 2007 –
- **Committee Member (Hydrogeology):** Division of Environmental Geosciences, American Association of Petroleum Geologists, 2007 –
- **Committee Member (Publications):** Division of Environmental Geosciences, American Association of Petroleum Geologists, 2001 –
- **Faculty Advisor,** UTSA Student Chapter of National Association for Environmental Professionals, 2001-2002.
- **Symposium Chair:** American Chemical Society (Southwestern) Annual Meeting. *October 2001*. Title: Environmental Issues facing the U.S.-Mexico Border.
- **Symposium Chair:** Joint Annual Meeting (International) of Soil Science Society of America, American Society of Agronomy, and Crop Science Society of America. *November 2002*. Title: Soil Carbon.
- **Symposium Chair:** Annual Meeting of Geological Society of America. *November 2004*. Title: Current Perspectives in Environmental Biogeochemistry (**Oral-I; Oral-II; and Poster**).
- **Symposium Chair:** Joint Annual Meeting (International) of Soil Science Society of America, American Society of Agronomy, and Crop Science Society of America. *October 2005*. Title: Trace Elements in Soils and Plants.
- **Member, Graduate Faculty,** University of Alabama, 2005 –
- **Member, Graduate Faculty,** Michigan Technological University, 2009 –
- **Member, Graduate Faculty,** University of Massachusetts at Boston, 2010 –

- **Technical Auditor**, Center for Nuclear Waste and Regulatory Analysis, Southwest Research Institute, 2005.
- **Scientific Consultant**, Center for Nuclear Waste and Regulatory Analysis, Southwest Research Institute, 2005 -
- **Member, Committee on Emerging Contaminants**, New Jersey Department of Environmental Protection, 2008 –
- **Member, Attenuation Processes for Metals and Radionuclides Team**, Interstate Technology and Regulatory Council, 2008 –
- **Member, Registration Committee**, Henry Hudson 400 Conference, 2009.
- **Board of Directors**, Society of Environmental Toxicology and Chemistry – Hudson Delaware Chapter, 2010 -
- **Member** of the following professional societies:
 - Soil Science Society of America, 1996 -
 - American Society of Agronomy, 1996 –
 - Geological Society of America, 1996 -
 - Division of Environmental Geosciences, American Association of Petroleum Geologists, 1996 –
 - American Geophysical Union, 1997 –
 - American Association for the Advancement of Science, 1998 –
 - The Universities Council on Water Resources, 2002 –
 - Association of Agricultural Scientists of Indian Origin, 2005 –
 - Clay Mineral Society, 2007 -
 - National Association for Environmental Professionals, 2001-2003.

H) **HONORS, AWARDS, AND OTHER SPECIAL RECOGNITIONS:**

- ***Outstanding Teacher of Environmental Geosciences Award, 2008*** American Association of Petroleum Geologists
- ***President’s Distinguished Achievement Award for Research Excellence, 2006*** University of Texas at San Antonio.
- ***Early Career Award in Research, 2005*** Southern Branch of the American Society of Agronomy.
- ***Outstanding Young Scientist Award, 2004*** Association of Agricultural Scientists of Indian Origin (AASIO).
- ***Top 40 Under 40 San Antonio Rising Star Award, 2004*** San Antonio Business Journal.
- ***Faculty Research Award, 2001, University of Texas at San Antonio.***
- Based on ***G.A. O’Connor and D. Sarkar, 1999 (Item# D-I-2)***, Rule 62-640.500(4), Florida Administrative Code was implemented. Ref: Drew, M (2000), “Implementation of Rule 62-640.500(4), Florida Administrative Code.” Program Guidance Memo, Florida Department of Environmental Protection. DOM-00-05.
- ***WHO’S WHO in Geosciences, American Geological Institute, 1999.***
- Based on ***G.A. O’Connor, D. Sarkar, and J.B Sartain, 1998 (Item# D-I-1)***, Rule 62-610.865, Florida Administrative Code was modified. Ref: Drew, M (2000), “Blending of concentrate with reclaimed water.” Program Guidance Memo, Florida Department of Environmental Protection. DOM-00-04.

- *Coffee Cup Society Award, 1995 and 1997*, Department of Geological Sciences, University of Tennessee as the graduate student with the highest GPA.
- *Science Alliance Fellowship, 1993*, University of Tennessee.
- *Honors in Geology, 1988*, in the B.S. Program, University of Calcutta.
- *National Scholarship, 1983* (for placement in “Top 100” of the graduating class of more than 250,000 students in the statewide school leaving examination).

I) **FUNDED GRANTS:**

I. Research (External):

- *Geological Society of America Graduate Student Research Grant, 1996, \$1500/1y (Direct):* Adsorption of mercury onto variable charge surfaces (*PI*).
- *Water Environment Research Foundation Grant, 1999, \$311,935/2y (Total):* Biogeochemistry of phosphorus in land applied sewage sludges, commercial fertilizers, and animal manures: Phase-I: Greenhouse Studies (*Joint-PI*; PI - Dr. G.A O’Connor, University of Florida).
- *Water Research Resources Center – U.S. Geological Survey Research Grant, 2000, \$57,380/y (Total):* Phosphorus contamination potential of groundwater associated with land application of domestic/animal waste products (*PI*; Joint PI - Dr. G.A. O’Connor, University of Florida).
- *Advanced Research Program - Texas Higher Education Coordinating Board, 2001, \$98,000/2y (Direct):* Geochemical speciation and human bioavailability of arsenic in pesticide-applied soils: Phase-I: In-Vitro Studies (*PI*; Proposal Ranked 2nd in the State of Texas in ARP program).
- *United States Environmental Protection Agency, 2002, \$391,473/2y (Total):* Biogeochemistry of arsenic in contaminated soils of Superfund sites (*PI*; Proposal ranked 1st nationally in the Hazardous Substances Research program; Co-I – Dr. Rupali Datta, University of Texas at San Antonio).
- *Advanced Research Program Supplemental Teachers Grant-Texas Higher Education Coordinating Board, 2003, \$8100/1y (Direct):* speciation and human bioavailability of arsenic in pesticide-applied cotton soils of Texas (*PI*).
- *National Institute of Health - SCORE, 2004-07, \$414,550 (Total):* Novel Remediation Methods to Lower Human Health Risk from Exposure to Arsenic-Enriched Soils (*PI*; Co-I – Dr. Rupali Datta, University of Texas at San Antonio).
- *San Antonio Life Sciences Institute - REF, 2004-05, \$199,990 (Direct):* A multi-disciplinary approach to reduce human bioavailability and carcinogenicity of soil arsenic (*PI*; Joint PI - Dr. Bandana Chatterjee, UT Health Science Center, SA)
- *Department of Housing and Urban Development - Lead Technical Studies Program, 2004 - 2006, \$372,767 (Total):* A novel phytoremediation method using vetiver grass to cleanup lead-based paint-contaminated soils (*PI*; Joint PI - Dr. Rupali Datta, University of Texas at San Antonio)
- *Department of Defense – Small Business Innovation Research, Phase-I, 2006-2007, \$100,000 (Total):* A new method to clean up chromium enriched stormwater in Naval shipyards (*Principal*)
- *Department of Defense – Small Business Innovation Research, Phase-II, 2008-2010, \$750,000 (Total):* A new method to clean up chromium and metal enriched stormwater in Naval shipyards (*Principal*)

- ***Housing and Urban Development – Lead Technical Studies, 2011-2013, \$499,694 (Total):*** A Novel Phytoremediation Method using Vetiver Grass to Cleanup Lead-Based Paint Contaminated Soils: Phase II – Field Study (*PI*)
- ***New Jersey Water Resources Research Institute (NJWRRI), 2011-2012, \$14,996 (Total):*** Scrap Tire and Water Treatment Residuals as Novel “Green” Sorbents for Removal of Common Metals from Polluted Urban Storm Water Runoff (*Joint-PI*)
- ***National Science Foundation, 2010-2014, \$390,320 (Total):*** REU Site: Transdisciplinary environmental science research on forest lakes in Northwest New Jersey (*Co-PI*)
- ***National Science Foundation, 2010-2011, \$ 28,050 (Total):*** Upgrade of the Optical ICP at Montclair State University (*Co-PI*)

II. Research (Internal):

1. ***Scholarly Activities Research Incentive Fund (SARIF), University of Tennessee, 1997, \$3000/1y (Direct):*** Adsorption of mercury by a multicomponent surface: An experimental-modeling approach (*Co-PI with Dr. K.C. Misra*).
2. ***Start-up Funds, 2000, \$150,000:*** UTSA.
3. ***Faculty Research Award, 2001, \$5000/1y (Direct):*** UTSA.
4. ***Instrument Grant for the purchase of ICP-MS, 2002, \$150,000:*** UTSA.
5. ***Start-up Funds, 2008, \$325,000:*** MSU

J) SUPERVISION OF THESIS (only those as Major Advisor listed here):

I. UNIVERSITY OF TEXAS AT SAN ANTONIO:

1. ***Melissa Haddad, Fall 2002.*** MS Thesis in Environmental Science

Publications:

- i. ***Haddad, M.J. and D. Sarkar (2003)*** Glomalin, a newly discovered component of soil organic matter. Part-I: Environmental significance. *Environ. Geosci.*, 10(3): 91 - 98.
- ii. ***Haddad, M.J. and D. Sarkar (2003)*** Glomalin, a newly discovered component of soil organic matter. Part-II: Influence of soil properties. *Environ. Geosci.* 10(3): 99 - 106.
- iii. ***Haddad, M.J. and Sarkar, D. (2002)*** Glomalin in soil organic matter as a function of soil properties. *Agronomy Abstracts*.
- iv. ***Haddad, M.J. and Sarkar, D. (2001)*** Environmental significance of glomalin in soil organic matter. *ACS Abstracts with Program*.

Awards and Honors:

- a) ***Geological Society of America Graduate Student Research Grant, 2002, \$2000:*** Glomalin in soil organic matter as a function of soil properties (First Environmental Science graduate student from UTSA to have won this award)
- b) ***Soil Science Society of America Best Student Paper Contest, 2002:*** Glomalin in soil organic matter as a function of soil properties (Third Place nationally; first UTSA graduate student to have own this prestigious award).

2. **Michael Ferguson, Fall 2003.** MS Thesis - Geology, titled: Biodegradation of petroleum hydrocarbons in contaminated soils: Effects of biosolids addition and role of carbon.

Publications:

- i. **Sarkar, D., M.C. Ferguson, R. Datta, and S. Birnbaum.** Bioremediation of petroleum hydrocarbons in contaminated soils: Comparison of biosolids addition, carbon supplementation, and monitored natural attenuation. *Environ. Polln.* 136: 187-195.
- ii. **Birnbaum, S.J., Sarkar, D., Datta,R., and Ferguson, M.C. (2004)** Treat it or leave it? A bench-scale view comparing monitored natural attenuation with two forms of biostimulation. *Geological Society of America Abstracts with Program*, V. 36, No. 5.
- iii. **Sarkar,D., Datta, R., and Ferguson, M. (2003)** Biodegradation of Petroleum Hydrocarbons in Soils: Effects of Biosolids Addition and Role of Carbon. *AAPG Abstracts*.

3. **Marina Parra-Noonan, Spring 2004.** MS Thesis in Geology

Publications:

- i. **Sarkar, D., K.C. Makris, R. Datta, and M. Parra-Noonan (2007)** Effect of soil properties on arsenic fractionation and bioaccessibility in cattle and sheep dipping vat site soils *Environ. International*, 33: 164 - 169.
- ii. **Sarkar, D., M. Parra-Noonan, and R. Datta (2006).** Distribution of arsenic in chemically variant dipping vat site soils. *Bull Environ. Contamin. Toxicol.* 73: 838-845.
- iii. **Sarkar, D. and Parra-Noonan, M, and Datta, R. (2004)** Bioavailability of arsenic in cattle dipping vat site soils as a function of soil chemistry. *Geological Society of America Abstracts with Program*, V. 36, No. 5.
- iv. **Parra-Noonan, M., Sarkar, D., and Datta, R. (2004)** Geochemical fate of arsenic in cattle-dip vat site soils from Australia. *Geological Society of America Abstracts with Program*, V. 36, No. 1.
- v. **Parra-Noonan, M. and Sarkar, D. (2003)** Bioavailability of arsenic in contaminated soils from cattle-dip vat sites. *NAEP Abstracts with Programs*.
- vi. **Sarkar, D. and Parra-Noonan, M. (2003)** Geochemical Fate of Arsenic in Cattle-Dip Vat Site Soils. *Agronomy Abstracts*.

4. **Alpana Khairom, Summer 2005.** M.S. Thesis in Environmental Science

Publications:

- i. **Sarkar, D., K.C. Makris, R. Datta, and Khairom, A (2006)** Effect of remedial treatment on phosphorus availability in an arsenical pesticide contaminated soil. *Bull Environ. Contamin. Toxicol.*, 77(1): 297 - 304.
- ii. **Sarkar, D., S. Quazi, K.C. Makris, R. Datta, and A. Khairom (2007).** Arsenic bioaccessibility in a soil amended with drinking water treatment residuals in the presence of phosphate fertilizer (IN PRESS – available via web: *Arch. Environ. Contamin. Toxicol*).
- iii. **Datta, R., D. Sarkar, A. Khairom, and C. Therapong (2005)** Phytoremediation of constructed wetlands. *In* J. Lehr (ed) *Encyclopedia of*

- Water. **Vol. 3**, Surface and Agricultural Water. John Wiley and Sons, New York, NY, pp. 364-371.
- iv. **Quazi, S., Sarkar, D., Khairom, A., and Datta, R. (2005)** Arsenic Bioavailability in a Soil Amended with Water Treatment Residuals in the Presence of Phosphorus: Effect of Amendment Rates. *Agronomy Abstracts*.
 - v. **Khairom, A., Sarkar, D., and Datta, R. (2005)** Bioavailability of arsenic and phosphorus in a Florida soil amended with water treatment residuals: Effect of equilibration time. *Geological Society of America Abstracts with Program*, V. 37, No. 3.
 - vi. **Quazi, S., Sarkar, D., Khairom, A., Datta, R., and Sharma, S. (2005)** Bioavailability Of Arsenic In Arsenical Pesticide-Amended Soils: Preliminary Greenhouse Study. *Eos Trans. AGU*, 86(18), Jt. Assem. Suppl, Abstract B31A-02.
 - vii. **Khairom, A., Sarkar, D. and Datta, R. (2004)** Preliminary studies on arsenic and phosphorus bioavailability in chemically amended soils. *Geological Society of America Abstracts with Program*, V. 36, No. 1.
 - viii. **Khairom, A., Sarkar, D., and Datta, R. (2004)** Bioavailability of arsenic and phosphorus in a sandy soil amended with water treatment residuals. *Geological Society of America Abstracts with Program*, V. 36, No. 5.
 - ix. **Nagar, R., Sarkar, D., Datta, R., Khairom, A., Vandanapu, V., and Quazi, S. (2004)** Effect of sewage sludge addition on heavy metal concentrations in agricultural soils. *Geological Society of America Abstracts with Program*, V. 36, No. 5.

5. **Vandana Vandanapu, Summer 2005.** M.S. Thesis in Environmental Science

Publications:

- i. **Sarkar, D., K.C. Makris, V. Vandanapu, and R. Datta (2007).** Adsorption of arsenic in soils amended with water treatment residuals. *Environ. Pollution*, 146: 414 - 419.
- ii. **Sarkar, D, V. Vandanapu, and R. Datta (2005)** Soil N management impact on quality of surface and subsurface water. In J. Lehr (ed) *Encyclopedia of Water. Vol. 3*, Surface and Agricultural Water. John Wiley and Sons, New York, NY, pp. 694-701.
- iii. **Vandanapu, V., Sarkar, D., Makris, K., and Datta, R. (2005)** Arsenic Adsorption and Desorption by Drinking-Water Treatment Residuals: an Isotherm Study. *Agronomy Abstracts*.
- iv. **Vandanapu, V., Sarkar, D., Datta, R., and Makris, K.C. (2005)** Arsenic Adsorption and Desorption by Drinking Water Treatment Residuals: Incubation Studies. *Eos Trans. AGU*, 86(18), Jt. Assem. Suppl., Abstract B33B-05.
- v. **Vandanapu, V., Sarkar, D., Datta, R., and Sharma, S. (2004)** Arsenic adsorption and desorption by water treatment residuals: Preliminary results. *Geological Society of America Abstracts with Program*, V. 36, No. 5.
- vi. **Nagar, R., Sarkar, D., Datta, R., Khairom, A., Vandanapu, V., and Quazi, S. (2004)** Effect of sewage sludge addition on heavy metal

concentrations in agricultural soils. *Geological Society of America Abstracts with Program*, V. 36, No. 5.

Awards and Honors:

Geological Society of America Graduate Student Research Grant, 2004, \$1700: Arsenic geochemistry in water treatment residual amended soils (Second EES graduate student from UTSA to have won this prestigious award)

6. *Neal Simpson, Spring 2006.* MS Thesis in Environmental Science

Publications:

- i. *Simpson, N., D. Sarkar, R. Datta, and S. Sharma (2006)* Effects of Sewage Sludge Disposal on Metal Contents in the Sediments and Water of Mitchell Lake, San Antonio, TX. *Bull Environ. Contamin. Toxicol.*, 77(1): 104 – 111.
- ii. *Barber, S.J., Sarkar, D., Simpson, N., Sharma, S., and Datta, R. (2005)* Heavy Metals Release in Mitchell Lake as a Function of Sediment Properties. *Agronomy Abstracts*.
- iii. *Barber, S., Simpson, N., Sharma, S., Sarkar, D., and Datta, R. (2005)* Bioavailability of heavy metals in sediments of a sludge-disposal lake. *Geological Society of America Abstracts with Program*, V. 37, No. 3.
- iv. *Simpson, N. and Sarkar, D. (2004)* Heavy Metals in Sediments of a Sludge Disposal Lake. *AAPG Abstracts*.
- v. *Simpson, N.W., Sarkar, D., Sharma, S., and Datta, R. (2004)* Heavy metal geochemistry in sludge-affected sediments of Mitchell Lake, Texas. *Geological Society of America Abstracts with Program*, V. 36, No. 5.
- vi. *Barber, S.J., Sarkar, D., Simpson, N., Sharma, S., and Datta, R. (2005)* Heavy Metals Release in Mitchell Lake as a Function of Sediment Properties. *Agronomy Abstracts*.

7. *Abraham Frias, Fall 2006.* MS Thesis in Environmental Science

Publications:

- i. *Sarkar, D., R. Datta, and A. Frias (2003)* Biogeochemistry of arsenic in pesticide-applied soils: Preliminary results from an incubation study. *Nat. Assoc. Environ. Prof. Proc.* V. 28, 15pp.
- ii. *Frias, A. and Sarkar, D. (2004)* Bioavailability of Arsenic in Pesticide-Applied Cotton Soils of Texas. *AAPG Abstracts*.
- iii. *Frias, A.R., Sarkar, D., and Datta, R. (2004)* Geochemical forms and bioavailability of arsenic in pesticide-applied cotton soils of Texas: An incubation study. *Geological Society of America Abstracts with Program*, V. 36, No. 5.
- iv. *Sarkar, D., Frias, A., and Datta, R. (2005)* Biogeochemistry of arsenic in pesticide-applied cotton soils of Texas: Effects of application rate and equilibration time. *Agronomy Abstracts*.

Awards and Honors:

2nd Prize in Student Oral Presentation Competition, 2005. Southern

Branch of the American Society of Agronomy (First EES graduate student from UTSA to have won this prestigious award)

8. **Chacharee Therapong, Summer 2007.** Ph.D. dissertation in Environmental Science and Engineering

Publications:

- i. **Datta, R., D. Sarkar, A. Khairom, and C. Therapong (2005)** Phytoremediation of constructed wetlands. *In* J. Lehr (ed) Encyclopedia of Water. **Vol. 3**, Surface and Agricultural Water. John Wiley and Sons, New York, NY, pp. 364-371.
- ii. **Datta, R., D. Sarkar, H. Mohamed, and C. Therapong (2007)** Remediation of arsenical pesticide applied soils using water treatment residuals: Preliminary greenhouse results. *In* D. Sarkar, R. Datta, and R. Hannigan (ed.) Concepts and Applications in Environmental Geochemistry. Elsevier, Amsterdam, The Netherlands, pp. 543-560.
- iii. **Datta, R., D. Pachanoor, C. Therapong, and D. Sarkar.** Influence of arsenate-phosphate interactions on arsenic stress in rice seedlings (IN REVIEW: Environ Exp. Botany).
- iv. **Therapong, C., Datta, R., Sarkar, D. and Pachanoor, D.S. (2006)** Arsenic Accumulation by *Pteris vittata* L. in Two Chemically Variant Soils Treated with Arsenical Pesticides - Greenhouse Study. *Eos Trans. AGU*, 87, Jt. Assem. Suppl., Abstract B43A-18.
- v. **Pachanoor, D.S., Datta, R., Sarkar, D., and Therapong, C. (2005)** Antioxidant Responses of Monocot Seedlings to Arsenical Pesticides. *Agronomy Abstracts*.
- vi. **Quispe, M., Therapong, C., Datta, R., and Sarkar, D. (2005)** Arsenic remediation potential of Vetiver grass. *Geological Society of America Abstracts with Program*, V. 37, No. 3.
- vii. **Mohamed, H., Therapong, C., Andra, S., Datta, R., and Sarkar, D. (2005)** Phytoavailability of Arsenic in pesticide-Applied Soils: Effect of Chemical Remediation. *Eos Trans. AGU*, 86(18), Jt. Assem. Suppl., Abstract NB52A-04.
- viii. **Therapong, C., Datta, R., and Sarkar, D. (2004)** Comparative Arsenic Stress Response in Monocot Seedlings. *AAPG Abstracts*.
- ix. **Therapong, C., Datta, R., and Sarkar, D. (2004)** Arsenic stress response in rice: Comparison between organic and inorganic pesticides. *Geological Society of America Abstracts with Program*, V. 36, No. 5.
- x. **Therapong, C., Datta, R. and Sarkar, D. (2003)** Arsenic Stress Response in Monocot Seedlings. *Agronomy Abstracts*.
- xi. **Datta, R., Sarkar, D., and Therapong, C. (2003)** Evaluation of Arsenic Stress on Grass Seedlings. *Agronomy Abstracts*.

9. **Jason Salazar, Fall 2007.** MS Thesis in Environmental Science.

Publications:

- i. **Makris, K.C., J. Salazar, S. Quazi, S. Andra, D. Sarkar, S.B.H. Bach, and R. Datta.** Controlling the fate of roxarsone and inorganic arsenic in poultry litter (ACCEPTED: *J Environ Qual*).

- ii. **Datta, R., Makris K.C., Salazar, J., Quazi, S., and Sarkar, D. (2007)** Novel Chemical Amendment to Reduce Arsenic Availability in Poultry Litter. *Agronomy Abstracts*.
- iii. **Salazar, J., Sarkar, D., Datta, R., and Sharma, S. (2006)** Adsorption of Roxarsonone onto Drinking Water Treatment Residuals: Preliminary Studies. *Eos Trans. AGU, 87, Jt. Assem. Suppl., Abstract H43C-29*.

10. **John Branom, Spring 2008.** MS Thesis in Environmental Science.

Publications:

- i. **Branom, J.R. and D. Sarkar (2004)** Phosphorus bioavailability in sediments of a sludge-disposal lake. *Environ. Geosci. 11(1): 42 - 52*.
- ii. **Branom, J.R. and Sarkar, D. (2004)** Geochemical Forms of Phosphorus in Sediments of a Sludge Disposal Lake. *AAPG Abstracts*.
- iii. **Sarkar, D. and Branom, J. (2003)** Biogeochemistry of phosphorus in a eutrophic lake. *Geological Society of America Abstracts with Program, V. 36, No. 1*.
- iv. **Branom, J.R. and Sarkar, D. (2003)** Phosphorus in Sediments of a Sludge Disposal Lake. *Agronomy Abstracts*.

11. **Christopher Amy, Summer 2008.** MS Thesis in Environmental Science.

Publications:

- i. **Amy, C.D., Sarkar, D., and Datta, R. (2004)** In-situ stabilization of arsenic in soils amended with water treatment residuals. *Geological Society of America Abstracts with Program, V. 36, o. 5*.
- ii. **Sarkar, D., Amy, C., and Datta, R. (2005)** Bioavailability of arsenic in soils amended with various water treatment residuals: An incubation study. *Agronomy Abstracts*.

12. **Summer Barber, Summer 2008.** MS Thesis in Environmental Science.

Publications:

- i. **Barber, S., Datta, R., and Sarkar, D. (2006)** The Effects of an Endomycorrhizal Fungus *Glomus mosseae* on the Uptake of Lead by Vetiver Grass. *Agronomy Abstracts*.
- ii. **Barber, S.J., Sarkar, D., Simpson, N., Sharma, S., and Datta, R. (2005)** Heavy Metals Release in Mitchell Lake as a Function of Sediment Properties. *Agronomy Abstracts*.
- iii. **Barber, S., Simpson, N., Sharma, S., Sarkar, D., and Datta, R. (2005)** Bioavailability of heavy metals in sediments of a sludge-disposal lake. *Geological Society of America Abstracts with Program, V. 37, No. 3*.

13. **Michael Hardy, Summer 2008.** MS Thesis in Environmental Science

Publications:

- i. **Hardy, M., Makris, K.C., Sarkar, D., and Datta, R. (2007)** A Packed Bed Reactor System to Treat Chromium-Contaminated Shipyard Stormwater. *Agronomy Abstracts*.

- ii. **Sarkar, D., and Hardy, M. (2007)** Using A Waste By-Product To Remove Metals From Contaminated Shipyard Stormwater. Geological Society of America Abstracts with Program, V. 39, No. 6.

14. **Padmini Das. Summer 2008.** MS Thesis in Environmental Science

Publications:

- i. **Makris, K.C., Datta, R., Sarkar, D., Sakya, K. and Das, P.(2007)** Chaotropic effects on 2,4,6-trinitrotoluene uptake by wheat (*Triticum aestivum*) *Plant and Soil* 295(1-2): 229-237.
- ii. **Shakya, K., Das, P., Makris, K.C., Datta, R., Sarkar, D. and Panchoor, D. (2006)** Uptake and Biotransformation of 2,4,6-Trinitrotoluene (TNT) by Wheat (*Triticum aestivum*) (2006). *Agronomy Abstracts*.
- iii. **Das, P., Datta, R., Sarkar, D., Makris, K.C., Ovuegbe, E., and Punamiya, P. (2007)** Chemically-Catalyzed Uptake of 2, 4, 6-Trinitrotoluene by Vetiver Grass (*Vetiveria Zizanioides*) In Soil. *Geological Society of America Abstracts*.
- iv. **Das, P., Makris, K.C., Sarkar, D., Datta, R. and Punamiya, P. (2008)** TNT adsorption in chemically variant soils: Preliminary studies. *Agronomy Abstracts*.
- v. **Punamiya, P., Datta, R., Patel. M., Sarkar, D. and Das P. (2008)** Effect of arbuscular mycorrhizal fungi on Cadmium uptake by Brassica juncea: An Incubation study. *Agronomy Abstracts*.
- vi. **Das, P., Makris, K.C., Datta, R., Sarkar, D. and Punamiya, P. (2008)** Urea-Catalyzed Extractability of 2,4,6-Trinitrotoluene from Contaminated Soils. *American Association of Petroleum Geologists*
- vii. **Punamiya, P., Datta, R., Sarkar, D., Barber, S., Patel. M. and Das P. (2008)** Symbiotic role of *Glomus mosseae* in lead phytoextraction using vetiver grass. *Geological Society of America Abstracts*
- viii. **Punamiya, P., Datta, R., Sarkar, D. and Das P. (2008)** Effect of Cadmium on antioxidant enzymes in the presence of beneficial arbuscular mycorrhizal fungi: An Incubation study using Brassica juncea (Indian mustard) *Geological Society of America Abstracts*.

15. **Pravin Punamiya. Summer 2008.** MS Thesis in Environmental Science

Publications:

- i. **Datta, R., Sarkar, D., Punamiya, P., and Nagar, R. (2007)** Response to Letter to the editor re: Datta et al., 2006 (Boyce et al.). *Sci Total Environ.*388 (2007)376-378.
- ii. **Makris, K.C., Quazi, S., Punamiya, P., Sarkar, D. and Datta, R. (2007).** Fate of Arsenic in Swine waste of concentrated animal feeding operation. *Journal of Environmental Quality* (2008)37, 1626-33.
- iii. **Makris, K.C., Punamiya, P., Sarkar, D. and Datta, R. (2007).** Novel Colorimetric method overcoming phosphorus interference during trace arsenic analysis in soil solutions. *The Analyst* (2008)133, 191-196.
- iv. **Panchoor, D., Punamiya, P., Therapong, C., Datta, R. and Sarkar, D. (2006).** Effect of Arsenical Pesticides on Antioxidant Enzymes in Rice: A Comparative Greenhouse Study using Organic and Inorganic Arsenical

- Pesticides. *Agronomy Abstracts*. (ASA-CSSA-SSSA , Nov 12-16, Indianapolis, IN
- v. **Punamiya, P., Makris, K.C., Datta, R. and Sarkar, D (2007)** Low-Level Colorimetric Determination of Arsenic in the Presence of Phosphorus in Soil Solutions. *Agronomy Abstracts*. (ASA-CSSA-SSSA , Nov 4-8 ,New Orleans, LA)
 - vi. **Das, P., Datta, R., Sarkar, D., Makris, K.C., Ovuegbe, E., and Punamiya, P. (2007)** Chemically-Catalyzed Uptake of 2, 4, 6-Trinitrotoluene by Vetiver Grass (*Vetiveria Zizanioides*) In Soil. *Geological Society of America Abstracts with Program*, V.39, No.6. (GSA, 28-31 Oct, Denver, CO)
 - vii. **Patel, M., Datta, R., Punamiya, P. and Sarkar, D (2007)** Arsenic Distribution and Localization in the Fronds of the Hyperaccumulator Fern *Pteris vittata*. *Agronomy Abstracts*. (ASA-CSSA-SSSA , Nov 4-8 ,New Orleans, LA)
 - viii. **Quazi, S., Makris, K.C., Sarkar, D., Datta, R. and Punamiya, P. (2007)** Geochemical fate of arsenic in swine litter *AGU, Abstract 88(52).*(*AGU, 10–14 DEC 2007*, San Francisco, CA.
 - ix. **Punamiya, P., Patel. M., Datta, R. and Sarkar, D. (2008)** Phytoextraction of lead in soil using lead-accumulating grass (*Vetiveria zizanioides*) in the presence of beneficial arbuscular mycorrhizal fungi. *American Association of Petroleum Geologists* (AAPG, April 19-23 San Antonio, TX)
 - x. **Punamiya, P., Datta, R., Patel. M., Sarkar, D. and Das P. (2008)** Effect of arbuscular mycorrhizal fungi on Cadmium uptake by *Brassica juncea*: An Incubation study. *Agronomy Abstracts*. (ASA Southern Branch Annual Meeting February 3-5, 2008 Dallas, TX)
 - xi. **Das, P., Makris, K.C., Sarkar, D., Datta, R. and Punamiya, P. (2008)** TNT adsorption in chemically variant soils: Preliminary studies. *Agronomy Abstracts*. (ASA Southern Branch Annual Meeting February 3-5, 2008Dallas, TX)
 - xii. **Patel, M., Datta, R., Punamiya, P., Sarkar, D. and Sahi, S. (2008)** Antioxidative responses and arsenic localization in the arsenic-hyperaccumulator Chinese brake fern (*Pteris vittata* L.)*Agronomy Abstracts*. (ASA Southern Branch Annual Meeting February 3-5, 2008 Dallas, TX)
 - xiii. **Das, P., Makris, K.C., Datta, R., Sarkar, D. and Punamiya, P. (2008)** Urea-Catalyzed Extractability of 2,4,6-Trinitrotoluene from Contaminated Soils. *American Association of Petroleum Geologists*. (AAPG, April 19-23 San Antonio TX) \
 - xiv. **Barber, S., Patel, M., Datta, R., Sarkar, D. & Punamiya, P. (2008)** Effect of *Glomus mosseae* on lead uptake by the *Vetiveria Zizanioides*. *American Association of Petroleum Geologists*. (AAPG, April 19-23 San Antonio TX)
 - xv. **Punamiya, P., Datta, R., Sarkar, D., Barber, S., Patel. M. and Das P. (2008)** Symbiotic role of *Glomus mosseae* in lead phytoextraction using vetiver grass. *Geological Society of America Abstracts*
 - xvi. **Punamiya, P., Datta, R., Sarkar, D. and Das P. (2008)** Effect of Cadmium on antioxidant enzymes in the presence of beneficial arbuscular mycorrhizal fungi: An Incubation study using *Brassica juncea* (Indian mustard) *Geological Society of America Abstracts*

16. *Shahida Quazi, Summer 2008*. Ph.D. Dissertation in Environmental Science and Engineering.

Publications:

- i. **Quazi, S., Sarkar, D., and Datta, R. (2010)**. Effect of soil aging on arsenic fractionation and bioaccessibility in inorganic arsenical pesticide contaminated soils. *Appl. Geochem.* 25: 1422-1430.
- ii. **Andra, S., Makris, K., Quazi, S., Sarkar, D., Datta, R., and Bach, S. (2010)**. Organocopper complexes during roxarsone degradation in wastewater lagoons. *Environ. Sci. Pollut. Res.* 17(1): 1167-1173.
- iii. **Makris, K.C., S. Quazi, P. Punamiya, D. Sarkar, and R. Datta, (2008)** Fate of arsenic in swine waste from concentrated animal feeding operations. *J Environ Qual*, 37: 1626-1633.
- iv. **Makris, K.C., Quazi, S., Nagar, R., Sarkar, D., Datta, R., V.L. Sylvia (2008)** In-vitro model improves prediction of soil arsenic bioavailability: worst-case scenario. *Environ. Sci. Technol.*, 42: 6278-6284.
- v. **Quazi, S., D. Sarkar, and R. Datta (2005)** Lead: Health effects. In J. Lehr (ed) Encyclopedia of Water. Vol. 2, Water Quality and Resource Development. John Wiley and Sons, New York, NY, pp. 432-440.
- vi. **Quazi, S., D. Sarkar, R. Datta, and S. Sharma (2007)** Greenhouse study on arsenic speciation and bioavailability in two pesticide-contaminated soils of Florida: Preliminary results. In D. Sarkar, R. Datta, and R. Hannigan (ed.) Concepts and Applications in Environmental Geochemistry. Elsevier, Amsterdam, The Netherlands, pp. 345-362.
- vii. **Sarkar, D., S. Quazi, K.C. Makris, R. Datta, and A. Khairom (2007)**. Arsenic bioaccessibility in a soil amended with drinking water treatment residuals in the presence of phosphate fertilizer. *Arch. Environ. Contamin. Toxicol.*, 53: 329-336.
- viii. **Quazi, S., K. Makris, D. Sarkar, R. Datta, P. Punamiya (2007)** Geochemical fate of arsenic in swine litter. *EOS Trans. AGU* 88 (52).
- ix. **Quazi, S., Makris, K.C., Sarkar, D., Datta, R. and Patel, M. (2007)** Effects of a Common Gastric Bacterium on Soil Arsenic Bioaccessibility and Speciation in the Human Stomach. *Agronomy Abstracts*.
- x. **Makris, K.C., Andra, S.S., Quazi, S., Sarkar, D., Bach, S., and Datta, R. (2007)** Probing Roxarsone Degradation in Animal Waste with the Aid of Electrospray Mass Spectrometry. *Agronomy Abstracts*.
- xi. **Nagar, R., Sarkar, D., Datta, R., Makris, K.C., and Quazi, S. (2007)** Long-Term Effectiveness Of Drinking-Water Treatment Residuals In Reducing Soil Arsenic Bioaccessibility: A Greenhouse Study: *Geological Society of America Abstracts with Program*, V. 39, No. 6.
- xii. **Quazi, S., Sarkar, D., Makris, K.C. and Datta, R., (2006)** Fate and Stability of soil-borne arsenic in the human stomach. *Agronomy Abstracts*.
- xiii. **Quazi, S., Sarkar, D., Sylvia, V., and Datta, R. (2006)** Correlation Between An In-vitro Method And An In-vivo Method In Assessing Bioavailable Arsenic In Two Pesticide-Amended Soils. *Eos Trans. AGU*, 87, Jt. Assem. Suppl., Abstract B31A-02.
- xiv. **Quazi, S., Sarkar, D., Khairom, A., and Datta, R. (2005)** Arsenic Bioavailability in a Soil Amended with Water Treatment Residuals in the Presence of Phosphorus: Effect of Amendment Rates. *Agronomy Abstracts*.

- xv. **Quazi, S., Sarkar, D., Khairom, A., Datta, R., and Sharma, S. (2005)** Bioavailability Of Arsenic In Arsenical Pesticide-Amended Soils: Preliminary Greenhouse Study. *Eos Trans. AGU*, 86(18), Jt. Assem. Suppl., Abstract B31A-02.
- xvi. **Quazi, S., Sarkar, D., Datta, R., and Sharma, S. (2005)** Consideration of arsenic bioavailability in human health risk assessment: Preliminary greenhouse results. *Geological Society of America Abstracts with Program*, V. 37, No. 3.
- xvii. **Juckett, M., Quazi, S., Morales, M., Smith, B., Wang, X., and Sarkar, D. (2005)** Cursory examination of water quality in the San Antonio river basin. *Geological Society of America Abstracts with Program*, V. 37, No. 3.
- xviii. **Quazi, S., Sarkar, D., Datta, R., and Sharma, S. (2004)** Greenhouse study on arsenic speciation and bioavailability in two pesticide-contaminated soils of Florida: Preliminary results. *Geological Society of America Abstracts with Program*, V. 36, No. 5.
- xix. **Nagar, R., Sarkar, D., Datta, R., Khairom, A., Vandanapu, V., and Quazi, S. (2004)** Effect of sewage sludge addition on heavy metal concentrations in agricultural soils. *Geological Society of America Abstracts with Program*, V. 36, No. 5.

Awards and Honors:

- a) **Geological Society of America Graduate Student Research Grant, 2005, \$1500:** A greenhouse study on biogeochemistry of arsenic in pesticide-applied Florida soils: In-vitro – In-vivo Correlation (**Third** EES graduate student from UTSA to have won this prestigious award)
- b) **UTSA Presidential Dissertation Award, 2005, \$4000:** **First** EES graduate student to have received this prestigious research award.

17. **Rachana Nagar, Summer 2008.** Ph.D. Dissertation in Environmental Science and Engineering

Publications:

- i. **Nagar, R., Sarkar, D., Makris, K., and Datta, R. (2010).** Effect of solution chemistry on arsenic sorption by Fe- and Al-based drinking-water treatment residuals. *Chemosphere*. 78(8): 1028-1035.
- ii. **Nagar, R., Makris, K., Sarkar, D., Datta, R., Sylvia, V. (2009)** Bioavailability and Bioaccessibility of arsenic in a soil amended with drinking water treatment residuals. *Arch. Environ. Contamin. Toxicol*. 57(4): 755-766.
- iii. **Anderson, A., R. Nagar, and D. Sarkar (2007)** Spatial and temporal effects on surface water quality in a segment of the San Antonio River, Texas. In D. Sarkar, R. Datta, and R. Hannigan (ed.) *Concepts and Applications in Environmental Geochemistry*. Elsevier, Amsterdam, The Netherlands, pp. 591-608.
- iv. **Nagar, R., D. Sarkar, and R. Datta (2006)** Effect of sewage sludge addition on soil quality in terms of metal concentrations. *Bull. Environ. Contamin. Toxicol*. 76(5): 823-830.
- v. **Nagar, R., Sarkar, D., Datta, R., Makris, K.C., and Quazi, S. (2007)** Long-Term Effectiveness of Drinking-Water Treatment Residuals In

- Reducing Soil Arsenic Bioaccessibility: A Greenhouse Study: *Geological Society of America Abstracts with Program*, V. 39, No. 6.
- vi. **Nagar, R., Sarkar, D., Makris, K.C., Datta, R. and Sylvia, V.L. (2007)** WTRs as a Remedial Agent For Arsenic-Contaminated Soils: In-Vitro and in-vivo studies. *Agronomy Abstracts*.
 - vii. **Sarkar, D., Nagar, R., Makris, K.C., and Datta, R. (2007)** Modeling Arsenate Adsorption by Drinking-Water Treatment Residuals. *Agronomy Abstracts*.
 - viii. **Nagar, R., Sarkar, D., Makris, K.C., and Datta, R. (2006)** Effects of Solution Properties on Arsenic Immobilization in Drinking Water Treatment Residuals-Amended Soils: Incubation Study. *Agronomy Abstracts*.
 - ix. **Sarkar, D., Nagar, R., Datta, R., and Makris, K.C. (2006)** Surface complexation of arsenate onto drinking water treatment residuals. *Agronomy Abstracts*.
 - x. **Sharma, S., Datta, R., Sarkar, D, and Nagar, R. (2006)** Geochemical Speciation and Bioavailability of Arsenic in Chemically Variant Soils Amended with Sodium Arsenite: A Greenhouse Study. *Agronomy Abstracts*.
 - xi. **Nagar, R., Sarkar, D., Datta, R., and Makris, K.C. (2006)** Solution pH effects on arsenic removal by drinking water treatment residuals in presence of metals and ligands. *Eos Trans. AGU, 87, Jt. Assem. Suppl., Abstract H33B-04*.
 - xii. **Nagar, R., Sarkar, D., Makris, K., and Datta, R. (2005)** Arsenic Sorption by Water Treatment Residuals as a Function of pH in the Presence of Competing Ligands. *Agronomy Abstracts*.
 - xiii. **Nagar, R., Sarkar, D., Sharma, S., and Datta, R. (2005)** Potential phyto-availability of heavy metals as a function of soil properties in biosolids amended soils. *Geological Society of America Abstracts with Program*, V. 37, No. 3.
 - xiv. **Nagar, R., Sarkar, D., Datta, R., and Sharma, R. (2005)** Effect of Solution Properties on Arsenic Adsorption by Drinking Water Treatment Residuals. *Eos Trans. AGU, 86(18), Jt. Assem. Suppl., Abstract B33B-04*.
 - xv. **Nagar, R., Sarkar, D., Datta, R., Khairom, A., Vandanapu, V., and Quazi, S. (2004)** Effect of sewage sludge addition on heavy metal concentrations in agricultural soils. *Geological Society of America Abstracts with Program*, V. 36, No. 5.

Awards and Honors:

- c) ***Geological Society of America Graduate Student Research Grant, 2006, \$2000:*** Potential of a drinking water treatment byproduct as an amendment to lower arsenic availability in soils (**Fourth** EES graduate student from UTSA to have won this prestigious award)

18. **Kabindra Shakya.** Ph.D. in Environmental Science and Engineering (Transferred to U of NH)

Publications:

- i. **Makris, K.C., K.M. Shakya, R. Datta, D. Sarkar, and D. Pachanoor.** High uptake of 2,4,6 trinitrotoluene by vetiver grass – potential for phytoremediation? *Environ. Pollution*, 146: 1 – 4.
- ii. **Makris, K.C., K.M. Shakya, R. Datta, D. Sarkar, and D. Pachanoor (2007)** Chemically-Catalyzed Uptake of 2,4,6-Trinitrotoluene by *Vetiveria zizanioides*. *Environ. Pollution*, 148: 101-106.
- iii. **Makris, K.C., Datta, R., Sarkar, D., Sakya, K. and Das, P.(2007)** Chaotropic effects on 2,4,6-trinitrotoluene uptake by wheat (*Triticum aestivum*) *Plant and Soil* 295(1-2): 229-237.
- iv. **Shakya, K.M., Makris, K.C., Datta, R., Pachanoor, D., Sarkar, D., and Das, P. (2006)** Uptake and Biotransformation of 2,4,6-Trinitrotoluene (TNT) by Wheat (*Triticum aestivum*). *Agronomy Abstracts*.
- v. **Shakya, K.M., Sarkar, D., Datta, R., Makris, K.C., and Pachanoor, D.S. (2006)** Uptake of 2,4,6-Trinitrotoluene (TNT) by Vetiver grass (*Vetiviera ziznoides* L.) -- Preliminary results from a hydroponic study. *Eos Trans. AGU*, 87, *Jt. Assem. Suppl.*, Abstract B43A-20.

19. **Brian Smith.** Ph.D. Dissertation in Environmental Science and Engineering (Discontinued)

Publications:

- i. **Juckett, M., Quazi, S., Morales, M., Smith, B., Wang, X., and Sarkar, D. (2005)** cursory examination of water quality in the San Antonio river basin. Geological Society of America Abstracts with Program, V. 37, No. 3.
- ii. **Smith, B.D., D. Sarkar (2008)** Reconnaissance Study of Perchlorate Contaminated Sites. AAPG Abstracts.

II. MONTCLAIR STATE UNIVERSITY:

In Dissertation Research Phase:

1. **Michael Hardy.** PhD Dissertation in Environmental Management

Publications (2008 onwards):

- i. **Makris, K., Andra, S., Sarkar, D., Hardy, M., Datta, R., Bach, S., Mullens, C. (2009)** Nitrous oxide supersaturation at the liquid/air interface of animal waste. *Environ. Pollut.* 157(12): 3508-3513.
- ii. **Sarkar, D., Hardy, M., and Datta, R. (2010)** Beneficial reuse of a municipal waste byproduct for reclamation of abandoned mine sites. *ASMR Conference Proceedings*.
- iii. **Hardy, M., D. Sarkar, K. Makris, R. Datta (2008)** Using a Waste By-Product to Remove Metals from Contaminated Shipyard Stormwater. *AAPG Abstracts*.
- iv. **Hardy M.A., D. Sarkar, R. Datta (2008)** Water Treatment Residuals Remove Copper, Lead, and Zinc from Acidic Wastewater. *Agronomy Abstracts*.
- v. **Hardy, M., Sarkar, D., and Datta, R. (2009)** Removal of heavy metals from shipyard stormwater using residuals of drinking water treatment, *HDC-SETAC Conference Proceedings*.

- vi. **Hardy, M., Sarkar, D., and Datta, R. (2009)** Immobilization of Heavy Metals in Abandoned Mine Soils Amended with Al-Based Drinking Water Treatment Residuals: An Incubation Study. *Agronomy Abstracts*.

Awards and Honors:

- a. **Geological Society of America Graduate Student Research Grant, 2009, \$3110:** A novel technique utilizing a waste by-product for cost effective reclamation of abandoned mine soils (First EAES graduate student from MSU to have won this prestigious award)
- b. **3rd Prize in Student Poster Presentation Competition, 2009.** Annual Meeting of the Hudson-Delaware Chapter of the Society of Environmental Chemistry and Toxicology.

2. **Pravin Punamiya.** PhD Dissertation in Environmental Management

Publications (2009 onwards):

- i. **Punamiya, P., Datta, R., Sarkar, D., Barber, S., Patel, M., and Das, P. (2010).** Symbiotic role of *Glomus mosseae* in phytoextraction of lead in vetiver grass [*Chrysopogon zizanioides* (L.)]. *Jour.Hazard. Mater.* 177: 465-474.
- ii. **Makris, K., Sarkar, D., Salazar, J., Punamiya, P., and Datta, R. (2010)** Alternative amendment for soluble phosphorus removal from poultry litter. *Environ. Sci. Pollut. Res.* 17(1):195-202.
- iii. **Punamiya, P., Sarkar, D., Datta, R. (2010)** Interaction and effect of solution chemistry on sorption of oxytetracycline on Fe-based drinking-water treatment residuals. *HDC-SETAC Conference Proceedings*.
- iv. **Datta, R., Smith, S., Das, P., Punamiya, P., Ramanathan, D., Sarkar, D. (2010)** Uptake of Tetracycline from Hydroponic Systems by Vetiver Grass. *HDC-SETAC Conference Proceedings*.
- v. **Das, P., Datta, R., Sarkar, D., Punamiya, P., and Makris, K.C. (2009)** Chemically enhanced phytoextraction of 2, 4, 6 trinitrotoluene (TNT) by Vetiver grass from a low organic matter containing soil, *HDC-SETAC Conference Proceedings*.
- vi. **Punamiya, P., Barber, S., Das, P., Sarkar, D., and Datta, R. (2009)** Phytoextraction of lead using a metal-accumulating grass (*Vetiveria zizanioides*) in the presence of an arbuscular mycorrhizal fungus, *Glomus mosseae*, *HDC-SETAC Conference Proceedings*.
- vii. **Punamiya, P., Sarkar, D., Datta, R., and Makris, K.C. (2009)** Rapid and inexpensive arsenic determination method in water and soil extracts in the presence of phosphorus, *Proceedings of the 94th annual meeting of NJWEA*.
- viii. **Rakshit, S., Sarkar, D., and Punamiya, P. (2009)** Oxytetracycline Sorption on Magnetite, *Proceedings of the 36th Northeast Regional Meeting of ACS*.
- ix. **Punamiya, P., Sarkar, D., Datta, R. (2009)** Aluminum Based Drinking Water Treatment Residuals as a Novel Sorbent to Immobilize Oxytetracycline: Effects of Solution Properties, *Proceedings of the 36th Northeast Regional Meeting of ACS*.

- x. **Das, P., Sarkar, D., Punamiya, P., Makris, K.C., Datta, R. (2009)** Enhanced Uptake and Biotransformation of 2, 4, 6-Trinitrotoluene by Vetiver Grass (*Chrysopogon zizanioides*) from Soil. *Agronomy Abstracts*.
- xi. **Punamiya P, Agyin-Birikorang S, Sarkar D., Das P and Datta R (2009)** Oxytetracycline Adsorption and Desorption by Drinking Water Treatment Residuals: Preliminary Results. *Agronomy Abstracts*.

Awards and Honors:

- a. **Geological Society of America Graduate Student Research Grant, 2009, \$2390:** Biogeochemical fate of a veterinary antibiotic in soil-water systems. (Second EAES graduate student from MSU to have won this prestigious award)
- b. **2nd Prize in Student Poster Presentation Competition, 2009.** Annual Meeting of the Hudson-Delaware Chapter of the Society of Environmental Chemistry and Toxicology.
- c. **2nd Prize in Student Oral Presentation Competition, 2010.** Annual Meeting of the Hudson-Delaware Chapter of the Society of Environmental Chemistry and Toxicology.

3. **Padmini Das.** PhD Dissertation in Environmental Management

Publications (2009 onwards):

- i. **Das, P., Datta, R., Makris, K., and Sarkar, D. (2010).** Vetiver grass is capable of removing TNT from soil in the presence of urea. *Environ. Pollut.* 158(5): 980-983.
- ii. **Punamiya, P., Datta, R., Sarkar, D., Barber, S., Patel, M., and Das, P. (2010).** Symbiotic role of *Glomus mosseae* in phytoextraction of lead in vetiver grass [*Chrysopogon zizanioides* (L.)]. *Jour.Hazard. Mater.* 177: 465-474.
- iii. **Datta, R., Smith, S., Das, P., Punamiya, P., Ramanathan, D., Sarkar, D. (2010)** Uptake of Tetracycline from Hydroponic Systems by Vetiver Grass. *HDC-SETAC Conference Proceedings*.
- iv. **Das, P., Datta, R., Sarkar, D., Punamiya, P., and Makris, K.C. (2009)** Chemically enhanced phytoextraction of 2, 4, 6 trinitrotoluene (TNT) by Vetiver grass from a low organic matter containing soil, *HDC-SETAC Conference Proceedings*.
- v. **Punamiya, P., Barber, S., Das, P., Sarkar, D., and Datta, R. (2009)** Phytoextraction of lead using a metal-accumulating grass (*Vetiveria zizanioides*) in the presence of an arbuscular mycorrhizal fungus, *Glomus mosseae*, *HDC-SETAC Conference Proceedings*.
- vi. **Datta, R., Das, P., Sarkar, D., and Andra, S. (2009)** A Phytoremediation Model for Lead and TNT contaminated soils. *SERDP-ESTCP Abstracts*
- vii. **Das, P., Sarkar, D., Datta, R., Makris, K.C., Shakya, K.M., and Pachanoor, D. (2009)** Urea Catalyzed Phytoremediation of 2, 4, 6 Trinitrotoluene (TNT) Contaminated Water by Vetiver grass (*Vetiveria zizanioides* L.) and Wheat (*Triticum aestivum* L.), *Proceedings of the 94th annual meeting of NJWEA*.

- viii. **Das, P., Sarkar, D., Punamiya, P., Makris, K.C., Datta, R. (2009)** Enhanced Uptake and Biotransformation of 2, 4, 6-Trinitrotoluene by Vetiver Grass (*Chrysopogon zizanioides*) from Soil. *Agronomy Abstracts*.
- ix. **Punamiya, P., Agyin-Birikorang, S., Sarkar, D., Das, P., and Datta, R. (2009)** Oxytetracycline Adsorption and Desorption by Drinking Water Treatment Residuals: Preliminary Results. *Agronomy Abstracts*.

Awards and Honors:

- a. **Geological Society of America Graduate Student Research Grant, 2009, \$2310:** Development of a chemically-catalyzed phytoremediation system for 2, 4, 6-trinitrotoluene (TNT) contaminated soils (Third EAES graduate student from MSU to have won this prestigious award)
- b. **1st Prize in Student Poster Presentation Competition, 2009.** Annual Meeting of the Hudson-Delaware Chapter of the Society of Environmental Chemistry and Toxicology.
- c. **1st Prize in Student Poster Presentation Competition, 2009.** 94th Annual Meeting of the New Jersey Water Environment Association.
- d. **1st Prize in Student Poster Presentation Competition, 2009.** Annual Meeting of the Hudson-Delaware Chapter of the Society of Environmental Chemistry and Toxicology.