

Curriculum Vitae for Kevin H. Gardner

Mailing address: Department of Civil Engineering
University of New Hampshire
Durham, NH 03824
(603) 862-4334
kevin.gardner@unh.edu

Personal Information

Birth date: February 15, 1967
Birthplace: Hartford, Connecticut

Education

Clarkson University

Ph.D., Civil and Environmental Engineering (1996)
M.S., Civil and Environmental Engineering (1991)

Union College

B.S., Civil Engineering *cum laude* (1989)

Professional Registration: P.E., State of Ohio (E-62917)

Professional Experience

- Director, Environmental Research Group, June 2004-present
- Mr. and Mrs. Robert C. Davison Professorship in Environmental Engineering, 2004-2007
- Associate Professor, July, 2006-present
- Director, Recycled Materials Resource Center, January 2005-present
- Associate Research Professor, University of New Hampshire, July, 2002-June 2006
- Assistant Research Professor, University of New Hampshire, July, 1999- July, 2002
- Director, UNH Center for Contaminated Sediments Research, December, 1999-present
- George B. Mayer Assistant Professor, Case Western Reserve University, July, 1998 – July, 1999
- Assistant Professor, Case Western Reserve University, July, 1996 – July, 1999
- Instructor, Hofstra University, August, 1995 - June, 1996
- Research Assistant, Clarkson University, June, 1992 - August, 1995
- Associate Engineer, Industrial/Hazardous Waste Division, James M. Montgomery, Consulting Engineers, Inc., Walnut Creek, California, June, 1991 - June, 1992
- Research Assistant, Clarkson University, June, 1989 - May, 1991

Honors and Distinctions

WERC Memorial Faculty Award, 2005
Mr. and Mrs. Robert C. Davison Professorship in Environmental Engineering, 2004-2007
George B. Mayer Assistant Professorship of Urban and Environmental Studies, CWRU, 1998-1999.
Glennan Fellow (for innovations in teaching methods and cross-curricular studies), 1999-2000.
National Effective Teaching Institute participant, 1998.
Ph.D. Fellowship, Charles Stewart Mott Foundation / International Association of Great Lakes Research, 1993-1995.
Graduate Student Award, Division of Environmental Chemistry, American Chemical Society, 1991.
Larson Aquatic Research Support Master's Scholarship, American Water Works Association, 1990.
Ethel Kirchenbaum Memorial Prize, Union College, 1989.
Warren C. Taylor Memorial Scholarship, Union College, 1987-1989.

Professional Activities

Advisory Committee, International Symposium on Earth Science and Technology, December 1-2, 2008, Fukuoka, Japan.

Session Chair and organizer, Fifth International Conference on Remediation of Contaminated Sediments.

Leadership Group Member, Concrete Pavement Sustainability Track, National Concrete Pavement Technology Center

Corresponding Member, ASCE Committee on Sustainability

International Scientific Committee, Accelerated Carbonation for Environmental and Materials Engineering, Rome, Italy (October 1-3, 2008).

Scientific Organizing Committee, Accelerated Carbonation for Environmental and Materials Engineering, The Royal Society, London, UK.

Member, Technical Advisory Committee for SERDP National Environmental Tech. Test Sites Steering Committee, Third International Conference on Remediation of Contaminated Sediments Steering Committee, SERDP/ESTCP Workshop on Research, Demonstration, Development and Transition of Environmental Technology Needs for the In-Place Management of Contaminated Aquatic Sediments (August 10-12, 2004)

Steering Committee, 3rd USACE/US EPA/ HSRC S-SW/US Navy /NOAA and SMWG Conference "Addressing Uncertainty and Managing Risk at Contaminated Sediment Sites," October 26 - 28, 2004 St. Louis, MO.

Organizer, Society for Risk Analysis Workshop on Comparative Risk Assessment and Multicriteria Decision Analysis: A Framework for Managing Contaminated Sediments (June 22-24, 2004)

Founding Advisor, Students Without Borders (Chapter of Engineers Without Borders)

Member, Assoc. of Environmental Engineering and Science Professors Membership Committee

Research Subcommittee Chair and member, TRB ADC60: Committee for Waste Management and Resource Efficiency in Transportation

Reviewer of grant proposals, National Science Foundation

Reviewer of grant proposals, Environmental Protection Agency

Reviewer of grant proposals, Great Lakes Research Consortium

Reviewer of grant proposals, Cooperative Institute for Coastal and Estuarine Environmental Technology

Reviewer of grant proposals, Strategic Environmental Research and Development Program

Reviewer of grant proposals, Natural Sciences and Engineering Research Council of Canada

Reviewer of manuscripts, *Environmental Science and Technology*

Reviewer of manuscripts, *ASCE Journal of Environmental Engineering*

Reviewer of manuscripts, *Water Research*

Reviewer of manuscripts, *Journal of Colloid and Interface Science*

Reviewer of manuscripts, *Langmuir*

Reviewer of manuscripts, *Journal of the Air and Waste Management Association*

Reviewer of manuscripts, *Environmental Technology*

Reviewer of manuscripts, *Journal of Hazardous Materials*

Reviewer of manuscripts, *Waste Management*

Reviewer of manuscripts, *Environmental Modelling and Software*

Reviewer of manuscripts, *Journal of Soil and Sediment Contamination*

Reviewer of manuscripts, *Journal of Great Lakes Research*

Reviewer of manuscripts, *Applied Geochemistry*

Professional Society Membership

American Society of Civil Engineers (ASCE)
American Society for Engineering Education (ASEE)
Association of Environmental Engineering and Science Professors (AEESP)
American Chemical Society (ACS)
International Society for the Environmental and Technical Implications of Construction with
Alternative Materials (ISCOWA)
Society of Environmental Toxicology and Chemistry (SETAC)
Society for Risk Analysis (SRA)
Chi Epsilon
Tau Beta Pi

Consulting

2006 Wright-Pierce, Raymond, NH Wastewater Feasibility Study for Groundwater Discharge of
Treated Wastewater: Geochemistry issues
2006 CMA Engineers, Laboratory Study for Leachate Pretreatment, Franklin, NH Residue Landfill
2006 Wright-Pierce, Evaluation of Leaching Potential of Arsenic from Injection of Wolfeboro
Wastewater
2005 RETEC, Inc., Analysis of Leaching from PAH-Impacted Soils and Relationship to In-Situ
TarGOST Readings
2005 Hanson Aggregates. Mine Reclamation Using Controlled Low Strength Material Composed of
Coal Fly Ash and Cement.
2005 ICF Consulting, Inc., Review and Synthesis of Research Results from US EPA STAR Grants
on Contaminated Sediments
2002 EPA Region 2, NJ Office of Marine Resources, and Brookhaven National Laboratory,
Lightweight Aggregate Production from Dredged Material: Demonstration Project.
2001, Hill Environmental Group: assessment of arsenic mobility and natural attenuation at Paddy's
Run Road Superfund site (Ohio).
2001-2003 New Hampshire Department of Environmental Services: review of remedial approach
for arsenic attenuation at the Dover (NH) Landfill Superfund Site.
2000, New Hampshire Department of Environmental Services: review of fate and transport
modeling approach for dissolved phase organic contaminants at the Dover (NH) Landfill
Superfund Site.

Refereed Publications

Sharma, B. K.H. Gardner, J. Melton, A. Hawkins, G. Tracey, "Evaluation of Coconut Shell
Activated Carbon as a Reactive Cap Sorbent for Sequestration of PCBs in Presence of
Humic Acid," Environmental Engineering Science (In Press).

Sharma, B. K.H. Gardner, J. Melton, A. Hawkins, G. Tracey, "Effect of Humic Acid on Adsorption
of Polychlorinated Biphenyls onto Organoclay," Environmental Engineering Science (In
Press).

Sharma, B. K.H. Gardner, J. Melton, A. Hawkins, G. Tracey, "Comparison of Performance of
Activated Carbon and Organoclay as Reactive Cap Sorbents for Adsorption of PAH in
Presence of Humic Acid," Soil and Sediment Contamination: an International Journal (In
Press).

- Sharma, B. K.H. Gardner, J. Melton, A. Hawkins, G. Tracey, "Interferences Caused by Humic Acid, Fulvic Acid and NOM Present in Pore Water on Performance of Activated Carbon for Sequestration of Organic Contaminants," *Environmental Science and Technology* (Submitted).
- Bhatt, M.P., T. Masuzawa, M. Yamamoto, K.H. Gardner, "Spatial variations in chemical compositions along Langtang–Narayani river system in central Nepal, *Environmental Geology* DOI 10.1007/s00254-008-1325-x (2008).
- Liu, J., Xu, D., Xiong, L., Hills, C., Carey, P., Gardner, K.H., "Comparison of properties of traditional and accelerated carbonated solidified/stabilized contaminated soils," *Journal of Environmental Sciences* Volume 20, Issue 5, 2008, Pages 593-598
- Rauch, L. and K.H. Gardner, "Treatment of Dioxin/Furan and PCN Contaminated Sediments with Palladized Magnesium," *Chemosphere* (submitted).
- Watts, A.W., T.P. Ballesterro, K.H. Gardner, "Soil and Atmospheric Inputs to PAH Concentrations in Salt Marsh Plants," *Water, Air, & Soil Pollution* 189 (1-4): 253-263 (2008).
- Bhatt, M., K.H. Gardner, "DOC dynamics and trace metals chemistry along the heavily urbanized basin in Kathmandu Valley, Nepal" *Environmental Geology* (In Press).
- Hadnagy, E., L. Rauch, K.H. Gardner, "Dechlorination of Polychlorinated Biphenyls, Naphthalenes and Dibenzo-p-Dioxins by Magnesium-Palladium Bimetallic Particles," *J. of Environmental Science and Health, Part A: Toxic/Hazardous Substances & Environmental Engineering* A42 (2007).
- Gardner, K.H., G.M. Nystroem, and D.A. Aulisio, "Leaching Properties of Estuarine Harbor Sediment Before and After Electrolytic Remediation," *Environmental Engineering Science*, 24(4): 424-433 (2007).
- Carpenter, A.C., K.H. Gardner, J. Fopiano, C. H. Benson, T. Edil, "Life Cycle Based Risk Assessment of Recycled Materials in Roadway Construction," *Waste Management: International Journal of Integrated Waste Management, Science and Technology* 27: 1458-1464 (2007).
- Apul, D.S., K.H. Gardner, T.T. Eighmy, "Modeling Hydrology and Reactive Transport in Roads: The Effect of Cracks, the Edge, and Contaminant properties," *Waste Management: International Journal of Integrated Waste Management, Science and Technology* 27: 1465-1475 (2007).
- Chakraborti, R.K., K.H. Gardner, J. Kaur, J.F. Atkinson, "In-situ Analysis of Flocs," *Journal of Water Supply: Research and Technology – AQUA. Special issue: New Developments in Particle Separation*. 56(1): 1-11 (2007).
- Yatsalo B, Kiker GA, Kim J, Bridges TS, Seager TP, Gardner KH, Satterstrom FK, Linkov I., "Application of Multi-Criteria Decision Analysis Tools to Two Contaminated Sediment Case Studies." *Integrated Environmental Assessment and Management* 3(2): 223-233 (2007).
- Gardner, K.H., C.J. Tsiatsios, J. Melton, T.P. Seager, "Leaching Behavior of Estuarine Sediments and Cement-Stabilized Sediments in Upland Management Environments," *Waste Management* 27: 1648-1654 (2007).

- Seager, T.P., K.H. Gardner, J. Lambert, "Fostering innovation in contaminated sediments management through multi-criteria technology assessment and public participation," *Risk Analysis*. 27(4): 1043-1052 (2007).
- Pellegrini, F., C.D. Hills, P.J. Carey, K.H. Gardner, A. Maries, "Sorption and desorption of Cd, Co, Cu, Ni and Zn from carbonated Portland cement," *Advances in Applied Ceramics*, 105(4) p. 185-190, (2006).
- Seager TP, Rogers SH, Gardner KH. 2006. Multicriteria decision analysis as a framework for combining expert knowledge and public values: A case study in contaminated sediments management. In *Environmental Security and Environmental Management: Role of Risk Assessment* edited by Morel B, Linkov I. Springer, Amsterdam.
- Linkov, I., F.K. Satterstrom, G. Kiker, T.P. Seager, T. Bridges, K.H. Gardner, S.H. Rogers, D.A. Belluck, A. Meyer, "Multi-Criteria Decision Analysis: A Comprehensive Decision Approach for Management of Contaminated Sediments," *Risk Analysis* 26(1): 61-78 (2006).
- Watts, A., Ballesterio, T.P., Gardner, K.H. 2005. "Uptake of Polycyclic Aromatic Hydrocarbons (PAHs) in Salt Marsh Plants *Spartina Alterniflora* Grown in Contaminated Sediments" *Chemosphere* 62: 1253-1260 (2006).
- Apul, D.S., Gardner, K., Eighmy, T., Comans R., Fallman A-M. "Simultaneous application of dissolution/precipitation and surface complexation / precipitation modeling to contaminant leaching from weathered steel slag" *Environmental Science and Technology* 39(15); 5736-5741 (2005).
- Antemir, A., C.D. Hills, P.J. Carey, J. Spear, K.H. Gardner, D.I. Boardman, C.D.F. Rogers, "Performance assessment of stabilized/solidified waste-forms: initial results from site characterization, sampling, and testing," In *Stabilization/Solidification Treatment and Remediation: Advances in S/S for Waste and Contaminated Land*, A. Al-Tabaa and J.A. Stegemann. A.A. Balkema Publishers, New York: 133-137, (2005).
- Apul, D.S., K.H. Gardner, T.T. Eighmy, E. Linder, T. Frizzell, R. Roberson, "Probabilistic modeling of one dimensional water movement and leaching from highway embankments containing secondary materials," *Environmental Engineering Science* 22(2): 156-169 (2005).
- Apul, D.S., K.H. Gardner, T.T. Eighmy, "A review of roadway water movement for beneficial use of recycled materials," in The Handbook of Environmental Chemistry, Water Pollution Series (Volume 5): Environmental Impact Assessment of Recycled Hazardous Waste Materials on Surface and Ground Waters: Chemodynamics, Toxicology, Modeling and Information System, T. A.T. Aboul-Kassim and K.J. Williamson, Editors, Springer-Verlag (2005).
- Dalton, J.L., K.H. Gardner, M.L. Weimer, J.C. Spear, T.P. Seager, B.J. Magee, "Properties of Portland Cement Made From Contaminated Sediments," *Resources, Conservation and Recycling* 41, 227-241 (2004).
- Gardner, K.H. and Apul, D.S. "Influence of colloids and sediments on water quality" In Encyclopedia of Life Support Systems (EOLSS), Aleksander Sabljic Ed., developed under the auspices of the UNESCO, EOLSS Publishers, Oxford, UK (2004).
- Apul, D.S., K.H. Gardner, T.T. Eighmy, "A Probabilistic Source Assessment Framework for Leaching from Secondary Materials in Highway Applications," *Clean Technologies and Environmental Policy* 5, 120-127 (2003).

- Pedersen A.J., K.H. Gardner, "Characterization of municipal solid waste incineration fly ash before and after electro-dialytic treatment," *Journal De Physique IV* 107: 1029-1032 (2003).
- Chakraboorti, R., K.H. Gardner, J.F. Atkinson, J.E. Vanbenschoten, "Application of Fractal Approach for Evaluating In-situ Coagulation Dynamics," *Water Research* 37(4), 873-883 (2003).
- Dalton, J., M. Weimer, K.H. Gardner, B.J. Magee, "Engineering Aspects Governing the Beneficial Use of Dredged Materials in Cement Manufacturing," *In Beneficial Use of Recycled Materials in Transportation Applications*, T.T.Eighmy Eds., Air and Waste Management Association Press, 607-615 (2003).
- Gardner, K.H., R.K. Carter, T. Shimaoka, "Long-term Leaching Behavior Changes in Granular Waste Materials due to Chemical Weathering Processes: Implications for Beneficial Use," *In Beneficial Use of Recycled Materials in Transportation Applications*, T.T.Eighmy Eds., Air and Waste Management Association Press, 335-344 (2003).
- Apul, D.S., K.H. Gardner, T.T. Eighmy, L. Brannaka, J. Benoit, "A Review of Water Movement in the Highway Environment: Implications for the Recycled Materials Use," *In Beneficial Use of Recycled Materials in Transportation Applications*, T.T.Eighmy Eds., Air and Waste Management Association Press, 195-204 (2003).
- Pedersen, A.J., K.H. Gardner, "Electrochemical Remediation of Dredged material for Beneficial Use," *In Beneficial Use of Recycled Materials in Transportation Applications*, T.T.Eighmy Eds., Air and Waste Management Association Press, 389-399 (2003).
- Shimaoka, T., K. Miyawaki, M. Hanashima, T. Yoshida, I. Ito, T. Uchida, K.H. Gardner, T.T. Eighmy, "Insolubility of Heavy Metals in Wet Scrubber Residues of Municipal Solid Waste," *Waste Management and Research* 20(1), 90-98 (2002).
- Gardner, K.H., T.L. Theis, R. Iyer, "An Experimental and Analytical Approach to Understanding the Dynamic Leaching from Municipal Solid Waste Combustion Residue," *Environmental Engineering Science* 19(2), 89-100 (2002).
- Bower, K.C., K.H. Gardner, C.M. Miller, and L. Kong, "In-Situ Colloidal MnO₂ Deposition and Ozonation of 2,4-Dinitrotoluene," *Environmental Engineering Science* 18(4), 259-265 (2001).
- Miller, C.M., S.E. Duirk, K.H. Gardner, "Chromium Leaching from a Silicone Foam-Encapsulated Mixed Waste Surrogate," *Environmental Science and Technology* 34(3), 455-460 (2000).
- Gardner, K.H., M. S. Arias, "Clay Swelling and Formation Permeability Reductions Induced by a Nonionic Surfactant," *Environmental Science and Technology* 34(1), 160-166 (2000).
- Gardner, K.H. "Kinetic Models of Colloid Aggregation," Chapter 14 in *Interfacial Forces and Fields: Theory and Applications*, J.P. Hsu, Ed., Surfactant Science Series, Marcel Dekker (1999).
- Gardner, K.H., Theis, T.L., Young, T.C. "The Significance of Shear Stress in the Agglomeration Kinetics of Fractal Aggregates," *Water Research* 32(9): 2660-2668 (1998).
- Gardner, K.H., Theis, T.L., Young, T.C. "Colloid Aggregation: Numerical Solution and Measurements," *Colloids and Surfaces A: Physicochemical and Engineering Aspects* 141, 237-252 (1998).

Gardner, K.H., T.L. Theis, "A Unified Kinetic Model for Particle Aggregation," *Journal of Colloid and Interface Science*, **180**, 162-173 (1996).

Theis, T.L. and K.H. Gardner, "Environmental Assessment of Ash Disposal," *CRC Critical Reviews in Environmental Control*, **20** (1), 2142 (1990).

Conference Proceedings and Other Publications

Carpenter, A., K.H. Gardner, "Use of Industrial By-Products in Urban Transportation Infrastructure: argument for increased industrial symbiosis," IEEE 2008 IEEE International Symposium on Electronics and the Environment (ISEE), San Francisco, CA, May, 2008.

Melton, J.M., R. Prieto, K.H. Gardner, 2008. Clogging Potential of Geosynthetic Based Reactive Caps for Contaminated Sediment Remediation. EuroGeo4: 4th European Geosynthetics Conference, Edinburgh, UK, September, 2008.

Cheney, D., Brudner, M., Aulisio, D. and Gardner, K. 2007. Seaweed removal and remediation of organic pollutants from marine sediments: PCBs and PAHs. Fourth European Phycological Congress, Book of Abstracts pg 80

Yatsalo B, Tkachuk A, Kiker GA, Kim J, Bridges T, Seager TP, Gardner K, Satterstrom FK, Linkov I. 2007. Comparative assessment of several multi-criteria decision analysis tools for management of contaminated sediments. In *Environmental Security in Harbors and Coastal Areas* edited by Linkov I, Kiker G, Wenning R. Springer: Amsterdam, The Netherlands. In press.

Seager TP, Gardner KH. 2005. Barriers to adoption of novel environmental technologies: Contaminated sediments. In *Strategic Management of Marine Ecosystems : Proceedings of the NATO Advanced Study Institute, held in Nice, France, 1-11 October, 2003 (NATO Science Series: IV. Earth and Environmental Sciences)* edited by Levner E, Linkov I, Proth JM. Springer: New York NY. ISBN 1-402-03157-2, pp. 298-312.

Apul, D.S., Gardner K.H., Eighmy, T.T. 2004. Comparison of risks from use of traditional and recycled road construction materials: accounting for variability in contaminant release estimates. In *Comparative Risk Assessment and Environmental Decision-Making*, Linkov I. and A. Ramadan Eds., Kluwer Academic Publishers: Boston MA pp. 75-82.

Apul, D.S., Gardner, K.H., and Eighmy, T.T. (2005) "Two dimensional modeling of contaminant transport in roads", *International Workshop on Water in Pavements – WIP'05 Conference Proceedings*, October 2005, Madrid, Spain

Apul, D.S., Gardner, K.H., and Eighmy, T.T. (2005) "Computer modeling and CCPs", *Ash at Work*, Issue 2.

Seager TP, Rogers SH, Gardner KH, Linkov I, Howarth R. 2004. Coupling public participation and expert judgment for assessment of innovative contaminated sediments technologies. In *Environmental Security and Environmental Management: Role of Risk Assessment* edited by Morel B, Linkov I. Springer: Amsterdam, The Netherlands. ISBN 1-402-03891-7, pp.223-244.

Final Report, SERDP and ESTCP Expert Panel Workshop on Research and Development Needs for the In Situ Management of Contaminated Sediments, October 2004.

Rogers SH, Seager TP, Gardner KH. 2004. Combining expert judgment and stakeholder values with PROMETHEE: A case study in contaminated sediments management. In *Comparative Risk*

- Assessment and Environmental Decision Making (NATO Science Series: IV: Earth and Environmental Sciences) edited by I Linkov and AB Ramadan. Kluwer Academic Press: Boston MA. ISBN 1-4020-1895-9.
- Gardner, K.H., C.J. Tsiatsios, "Colloid- and Organic Carbon-Assisted Transport of Heavy Metals from Marine Sediments," Proceedings, 228th ACS National Meeting, Philadelphia, PA August 22-26, 2004.
- Carter, R.K., K.H. Gardner. O. Hjelmar, S. Lopez, D.S. Kosson "Mineralogical and Leaching Characteristics of Weathered Industrial Ash" Proceedings of the Fifth International Conference on the Environmental and Technical Implications of Construction with Alternative Materials, G. Ortiz de Urbina, J.J.J.M. Goumans Eds, San Sebastian, Spain, June 4-6, 2003.
- Apul, D.S., T.T. Eighmy, K.H. Gardner, T.J. Frizzell, E. Linder, R. Roberson, "Use of Bayesian Methods to Estimate Long Term Contaminant Leaching in Roadways," Proceedings of the Fifth International Conference on the Environmental and Technical Implications of Construction with Alternative Materials, G. Ortiz de Urbina, J.J.J.M. Goumans Eds, San Sebastian, Spain, June 4-6, 2003.
- Apul, D.S., Gardner K.H., Eighmy, T.T., "Comparison of risks from traditional and recycled road construction materials: accounting for variability in contaminant release estimates" Proceedings of NATO-ARW conference in Anzio/Italy, 2002.
- Seager, T.P., K.H. Gardner, "Development of a Multicriteria Assessment Framework for Management of Contaminated Sediments," 5th International Symposium on Sediment Quality Assessment, Chicago, Illinois, October 16-18, 2002.
- Gardner, K.H., R.K. Carter, "Impact of Chemical Weathering on Leaching from Coal Fly Ash," Eighteenth Annual International Pittsburgh Coal Conference, Newcastle, New South Wales, Australia, December 4-7, 2001.
- Gardner, K.H., T.T. Eighmy, B.J. Magee, D.L. Gress, K. Sobhan, M. Kashi, "CCB use in highway construction in the United States," Eighteenth Annual International Pittsburgh Coal Conference, Newcastle, New South Wales, Australia, December 4-7, 2001.
- Gardner, K.H., T.T. Eighmy, "Recycled Materials in Transportation Applications: Knowledge Gaps and Research Needs," *In Beneficial Use of Recycled Materials in Transportation Applications*, T.T.Eighmy Eds., Air and Waste Management Association Press, 1025-1033 (2003).
- Gardner, K.H., B.J. Magee, M. Weimer, J. Dalton, "Beneficial Use of Dredged Materials in Portland Cement Manufacture," International Conference on Remediation of Contaminated Sediments, Venice, Italy, October, 2001.
- Gardner, K.H., T.L. Theis, "A Dynamic Approach to the Assessment of Leaching Behavior" In: (J.J.J.M. Goumans, Th. G. Aalbers, and H.A. van der Sloot, eds.) *Environmental Aspects of Construction with Waste Materials*, Elsevier Science Publ., B.V., Amsterdam, 2000.
- Gardner, K.H. "A Dynamic Approach to the Evaluation of Leaching from Combustion Byproducts," Proc. Technical Conference on the Beneficial use of By-Product Materials in Construction Applications, Albany, NY Nov. 15-16, 1999.

- Gardner, K.H., Castelli, S., Jennings, A.A. "An Urban Lake Remediation Experiment," Proceedings of the 1998 National Environmental Engineering Conference: Water Resources in the Urban Environment, Chicago, IL June 7-10, 1998.
- Zielinski, J.A., Jennings, A.A., Gardner, K.H. "Evaluation of Management Strategies for the Doan Brook Urban Watershed," Proceedings of the 1998 National Environmental Engineering Conference: Water Resources in the Urban Environment, Chicago, IL June 7-10, 1998.
- Jennings, A.A., Gardner, K.H., Dietrich, J., Maehr, J., Zielinski, J. "The Evolution of Flood Risk and Erosion Damage in the Shaker Lakes/Doan Brook Urban Watershed," Proceedings of the 1998 National Environmental Engineering Conference: Water Resources in the Urban Environment, Chicago, IL June 7-10, 1998.
- Theis, T.L., R. Iyer, K.H. Gardner, "Dynamic Evaluation of Municipal Waste Combustion Ash Leachate," Proc. Fifth Int. Con. on Municipal Solid Waste Combustor Ash Utilization, Air and Waste Management Association, pp. 680-689, March, 1993.

Graduate Student Supervision

1. Defne Apul (Ph.D., 2004), "Contributions to Predicting Contaminant Leaching from Secondary Materials Used in Roads."
2. Miguel Arias (M.S. 1999), "Surfactant-Induced Permeability Changes in Clay-Sand Systems."
3. Deana Aulisio (M.S. 2003), "Dechlorination of Polychlorinated Biphenyls in Sediments Using Colloidal Zero-Valent Iron."
4. Deana Aulisio (Ph.D. expected 2010), "In-Situ Contaminated Sediment Management."
5. Christopher Berg (M.S. 2003), "Clay Mobilization and Permeability Alteration in Sand by Surfactant Addition."
6. Irina Calante (M.S. 2006), "Optimization of PCB Dechlorination with Palladized Magnesium in Marine and Freshwater Sediments."
7. Cynthia Carlson (Ph.D. in NRESS expected 2011), "Measuring Sustainability of the Built Environment in US and Developing Nations."
8. Alberta Carpenter (Ph.D. expected 2008), "Integrated Environmental Assessment Methods for Recycled Materials Use."
9. Robert Carter (M.S. expected 2007), "Impacts of Geochemical Weathering on Leaching of Heavy Metals from Granular By-Product Materials."
10. Jennifer Dalton (M.S. 2002), "Cement Production using Dredged Material as an Alternative Source for Aluminum and Iron."
11. Danielle M. Farrell (M.S. 1999), "The Impact of Chemically-Induced Transport and Deposition of Clay on the Hydraulic Conductivity of a Natural Sand."
12. Jason D. Fopiano (M.S. in Earth Science 2006), "Use of EPA's Industrial Waste Management Evaluation Model to Support Beneficial Use Determinations."
13. Carolina Gonzalez (M.S. 2006), "Permeable Reactive Barriers for Contaminant Control in Beneficial use Applications in Highways."

14. Emese Hadnagy (M.S., 2004; co-advised with Robin Collins), "Evaluation of Competitive Adsorption on Selected Arsenic Adsorbents."
15. Emese Hadnagy (Ph.D. expected 2008), "Mechanisms and Pathways of PCB Abiotic Dechlorination using Palladium-doped Magnesium"
16. Jonathon Higgins (Natural Resources Earth Systems Science Ph.D. expected 2009), "Formation of Bog Iron and its Role in Arsenic and Phosphorus Cycling."
17. Lingjun Kong (Ph.D., 2005), " Development of a Colloidal Deposition Technique for Installation of an In-Situ Reactive Treatment Wall for the Catalytic Oxidation of Organic Contaminants." [Note: Ms. Kong did not transfer to UNH from CWRU and thus did not complete her degree under my supervision.]
18. Steven J. Kuhlman (M.S. 1997), "Colloid Transport Through Porous Media: Effects of Flow Rate and Aggregation."
19. Jennifer Leipold (M.S. expected 2007), "Carbon Sequestration using Recycled Materials."
20. Linda Rauch (M.S. 2006), "Treatment of Dioxin/Furan and Polychloronaphthalene Contaminated Sediments with Palladized Magnesium."
21. Shannon Rogers (Ph.D. in NRESS expected 2011), "Measuring Social Indicators of Sustainable Development at the Nexus of Transportation and the Built Environment."
22. Bhawana Sharma (Ph.D. expected 2008), "Reactive Barriers for In-Situ Management of PCB- and PAH-Contaminated Sediment."
23. Christopher Tsiatsios (M.S. 2004), "Environmental Availability of Dredged Contaminated Sediments in Various Disposal and Beneficial Use Alternatives."
24. Mindy Weimer (M.S. 2003), "Evaluation of Metal Availability from Portland Cement Manufactured with Contaminated Dredged Material."
25. Don Wise (M.S. expected 2008), "In-situ Measurement Techniques for the Evaluation of Reactive Capping Efficacy."

Post-Doctoral Supervision

Dr. Maya Bhatt (2006-2007). Currently on the faculty of Katmandu University.

Additional Thesis and Dissertation Committee Service

Jamie Brandt (M.S. 2004)
Scott Castelli (M.S., 1998)
James Collins (M.S., 2005)
Craig Douglass (M.S. 2003)
Steve Farabaugh (M.S. 2004)
David Gaithuma (M.S. 2004)
Melanie Martin-Doole (M.S. 2003)
Fehmidakhatun A. Mesania (Ph.D. 1998)
Jeffrey Provost (M.S. 2005)
Jean Spear (M.S. 2000)
Alison Watts (Ph.D. 2006)
Sandy Weymouth (M.S. 2006)
Jennifer Zielinski (M.S. 1998)
Luke Ziembra (Ph.D., Earth Sciences, in progress)

Rafael Prieto (Ph.D., in progress)
Iulia Barbu (Ph.D., in progress)
Kelly Mellendez (M.S. in progress)
Jim McMahon (M.S. in progress)
Lisa Damiano (M.S. in progress)
Kara LaSalle (M.S. in progress)
Paul Pepler (M.S. in progress)
Andria Vachon (M.S., Resource Economics)

Funded Proposals (PI unless otherwise noted)

- "In Situ Wetland Restoration Demonstration,"* Environmental Security Technology Certification Program (PI for UNH, US Navy Project PI), 2008-2011: **\$941,000.**
- "Impacts of in situ Treatment of Contaminated Sediments on the Benthic Communities of the Cocheco River, New Hampshire,"* New Hampshire Sea Grant, 2008-20010: **\$130,000.**
- "Recycled Materials Resource Center,"* Federal Highway Administration, June 2007-May 2011: **\$4.26 million**
- "Reactive Capping Mat Development and Evaluation for Sequestering Contaminants in Sediments,"* Strategic Environmental Research and Development Program (PI for UNH, US Navy Project PI), April 2006-March 2009: **\$1.1 million**
- "Sediment Technology Test Site,"* Cooperative Institute for Coastal and Estuarine Environmental Technology (NOAA): Sept. 06-Aug. '11: **\$1,319,601.**
- "Developing a Critical Mass of Ph.D. Students In Sustainable Engineering"* UNH Research Office and Graduate School, 2007-2010: **\$300,000.**
- "Environmental and Economic Issues with Recycling Construction and Demolition Debris,"* President's Excellence in Research Awards, 2006-2007: **\$50,000** (Co-PI with Jambeck, Halstead).
- "The Recycled Materials Resource Center,"* Federal Highway Administration, October 2005-May 2007: **\$1.3 million.**
- "Evaluation of the Industrial Waste Management Evaluation Model for Highway Beneficial Use Applications: US EPA, March 2005-March 2006: \$35,000*
- "Permeable Reactive Barriers for Contaminant Control in Beneficial Use Applications in Highways,"* Federal Highway Administration: Sept. 2004-Sept. 2005: **\$93,440.**
- "Geochemistry and Availability of Cadmium, Zinc, Arsenic, and Chromium in PCS Phosphate Land Reclamation Materials,"* PCS Phosphate: September '04-December '06: **\$320,101.**(Co-PI)
- "Development of Updated Guidelines for the Beneficial Use of Foundry Sands, Coal Ash, and Construction and Demolition Debris,"* US EPA, October 2005-September 2007: **\$100,000.**
- "Sustainable Highways Through Use of Carbon Sequestering Construction Materials,"* Federal Highway Administration: Sept. 2004-Sept. 2005: **\$93,440.**
- "Use of Organically-Modified Clays as Reactive Barriers for Mitigation of PAH Contamination in Sediments."* Cooperative Institute for Coastal and Estuarine Environmental Technology (NOAA): June '04-June '05: **\$25,000.**
- "A System for Remediation of Polychlorinated Biphenyl in Sediments"* Cooperative Institute for Coastal and Estuarine Environmental Technology (NOAA): Sept. '03-Aug. '06 **\$373,610.**
- "Long-Term Effectiveness of Portland Cement-Based Solidification/Stabilization Treatment of Waste"* The Portland Cement Association: Jan '03-Dec. '05: **\$101,876.**

- “Development of Technology for the Management of Contaminated Sediments and a Risk Analysis Product to Guide Decision Making”* Cooperative Institute for Coastal and Estuarine Environmental Technology (NOAA): Sept. '02-Aug. '05: **\$1,112,101**.
- “Electrochemical Remediation and Stabilization of Contaminated Sediments”* Cooperative Institute for Coastal and Estuarine Environmental Technology (NOAA): Sept. '02-Aug. '04: **\$218,850**.
- “In-situ Treatment of PCBs in Marine and Freshwater Sediments using Colloidal Zero-Valent Iron”* Cooperative Institute for Coastal and Estuarine Environmental Technology (NOAA): Sept. '01-Aug. '03: **\$219,014**.
- “Electrochemical Remediation of Sediments Placed in Confined Aquatic Disposal Cells,”* Cooperative Institute for Coastal and Estuarine Environmental Technology (NOAA): April '01-Oct. '01: **\$14,868**.
- “Demonstration of the In-situ Reductive Dechlorination of PCBs using Colloidal Zero-Valent Iron and Colloidal Pd⁰/Fe⁰ Bimetallic Systems”* Cooperative Institute for Coastal and Estuarine Environmental Technology (NOAA): Jan. '00-Dec.'00: **\$8,943**.
- “Structural Fill Material using Schiller Coal Fly Ash,”* Public Service of New Hampshire: Dec. '00-Nov.'01: **\$7,200**.
- “Development of Reuse Alternatives for the Management of Dredged, Contaminated Sediments,”* Cooperative Institute for Coastal and Estuarine Environmental Technology (NOAA): Sept.'00-Aug.'02 **\$220,321**.
- “REU Supplement to Investigation of Mechanisms of Surfactant-Induced Hydraulic Conductivity Changes in Soil Flushing Operations,”* National Science Foundation: May '00-Dec. '00 for **\$5,000**.
- “Investigation of Mechanisms of Surfactant-Induced Hydraulic Conductivity Changes in Soil Flushing Operations,”* National Science Foundation: Sept. '99-Aug. '02: **\$383,703**.
- “Geochemical Weathering Reactions in Granular Byproduct Materials,”* The Federal Highway Administration: Jan. '00-Jan. '03 for **\$175,578**.
- “Development of Application-Specific Source Term /Fate/Transport Models and Approaches for Recycled Materials Use in the Highway Environment,”* The Federal Highway Administration: May '00-May '03 for **\$286,501** (Co-PI).
- “Mechanism-Based Analysis for Electrokinetically-Enhanced Aggregate Remediation”* National Science Foundation: Sept. '99-Aug. '02 for **\$280,758** (Co-PI).
- “A New, Multidisciplinary Course on Solving Complex Environmental Problems,”* Glennan Fellows Program (CWRU): July '99-June '00 for **\$6,500**.
- “Placement for Coulter SA3100⁺ Surface Area and Pore Size Analyzer,”* Coulter Corporation: June '97-June '99 for **\$74,305**.
- “Initiatives in Multidisciplinary Environmental Engineering Education,”* The Hewlett Fund: September '98 - June '99 for **\$10,000** (Co-PI).
- “Field Evaluation of the Lower Shaker Lake Draining Event: A Unique opportunity to gather essential information on Shaker Lake sediments.”* Northeast Ohio Regional Sewer District: June '97-January '98 for **\$24,982** (Co-PI).

“*Mechanistic Evaluation of Colloid Aggregation Kinetics*,” Ohio Board of Regents: June '97-June '98 for **\$5,000**.

“*Shared Resources Modules to Support Environmental Engineering Education*,” National Science Foundation: August '97-August '98 for **\$123,545** (Co-PI).

University Service

- 2007-2009: University Senate, Civil Engineering Representative
- 2006-present: UNH Energy Task Force
- 2006-present: CEPS Curriculum and Academic Planning Committee
- 2004-2006: Chair, UNH Green Building Working Group
- 2004- 2005: College of Engineering and Physical Sciences Dean Search Committee
- 2005,2006; Judge: New Hampshire Science and Engineering Exposition
- 2004-present: UNH Institutional Biosafety Committee
- 2002–2003: Provost search committee.
- 2002 – 2004: Committee investigating Environmental Sciences and Engineering at UNH, developing undergraduate degree program in Environmental Science
- 2002-2007: Department’s Library representative
- 2002-present: member, Office of Sustainability Program’s Climate Education Initiative
- 2000 –2004: Undergraduate Research Opportunities Program advisory board and proposal review committee.
- 2001 – 2003: Graduate School’s Faculty Fellowship Committee
- 2001-present: “The Environmental Science and Engineering Seminar Series,”
- 2000 – 2002: Department of Civil Engineering Web Site Committee
- 2001 – 2002: steering committee member, UNH Undergraduate Research Conference
- 2000-2001 –search committee member for the Office of Sponsored Research
- 1998 – 1999: Advisor, First Year Experience Program (CWRU)
- 1998 – 1999: Advisory Committee for the CWRU Center for Science and Math Education
- 1997 – 1999: Graduate Studies Committee (CWRU)
- 1997 – 1999: Share the Vision Committee (CWRU)
- 1996, 1997 Participant in “Connect with CWRU: Focus on Engineering and Physics.”
- High School Teachers Workshop, to educate high school science and math teachers about Civil and Environmental Engineering.

Synopsis of Teaching Activities

Semester	Course Number	Course Name	Number of Students	Course Eval. Score
Spring 08	ENE 751/ CiE 851	Introduction to Sustainable Engineering	6	5.0
Spring 08		Senior Design Project (3 Credits)	53	3.9
Fall 07	CiE 784	Senior Design Project (1 Credit)	57	3.7

Spring 07	CiE 788	Senior Design Project (3 Credits)	42	4.0
Fall 06	CiE 784	Senior Design Project (1 Credit)	42	2.5
Fall '06	ENE 730/ 830	Sustainability Engineering	27	3.75
Spring '06	ENE 788	Environmental Engineering Senior Project (Senior Capstone Design)	11	4.67
Fall '05	ENE 797	Special Topics: Senior Project (1 credit)	10	4.8
Spring '05	ENE 788	Environmental Engineering Senior Project (Senior Capstone Design)	7	1
Fall '04	ENE 797	Special Topics: Senior Project (1 credit)	7	5.0
Spring '04	ENE 797/ CiE 897	Contaminant Fate and Transport in the Environment	10	4.4
Spring '04	ENE 788	Environmental Engineering Senior Project (Senior Capstone Design)	6	5.0
Fall '03	ENE 797	Special Topics: Senior Project (1 credit)	6	4.4
Fall '03	ENE 749/ CiE 849	Water Chemistry (with Laboratory)	15	3.8
Spring '03	ENE 788	Environmental Engineering Senior Project	14	
Spring '02	ENE 788	Environmental Engineering Senior Project	6	
Fall '01	ENE 749/ CiE 849	Water Chemistry	20	
Spring '01	ENE 788	Environmental Engineering Senior Project	5	
Fall '00	ENE 749/ CiE 849	Water Chemistry	10	
Spring '99	ECIV368	Environmental Engineering (with Laboratory)	31	
Spring '99	ECIV 460	Environmental Remediation	13	
Spring '99	ECIV 398	Multidisciplinary Group Senior Design Project	9	
Fall '98	ECIV 450	Environmental Engineering Chemistry	2	
Fall '98	ECIV370	Unit Operations and Processes in Environmental Engineering	4	
Spring '98	ECIV368	Environmental Engineering (with Laboratory)	22	
Spring '98	ECIV550	Environmental Interfacial Phenomena	4	
Spring '98	ECIV 398	Senior Design Project	1	
Fall '97	ECIV450	Environmental Engineering Chemistry	2	
Fall '97	ECIV370	Unit Operations and Processes in Environmental Engineering	11	
Fall '97	ECIV 398	Group Senior Design Project	5	
Spring '97	ECIV368	Environmental Engineering (with Laboratory, one TA)	26	

Spring '97	ECIV 398	Group Senior Design Project	3	
Fall '96	ECIV660	Environmental Engineering Chemistry	13	

Significant Reports

Final Report: SERDP and ESTCP Expert Panel Workshop on Research and Development Needs for the In Situ Management of Contaminated Sediments, October 2004.

Apul, D., Gardner, K., Eighmy, T., Brannaka L., Benoit, J. "A review of water movement in the highway environment: Implications for recycled materials use" Report to the Federal Highway Administration, 2002.

Gardner, K.H. "Site Selection and Analysis of a Wastewater Treatment Plant Facility' Software Module Beta Test Report," Final Report, NSF Gateway Coalition grant CID-U-05-CW, August, 1997.

Gardner, K.H. "Software Module Beta Test Report on: 'Superpro Designer Software Instruction Module,' 'Clarifier/Thickener Instruction Module,' 'Granular Media Filter Instructional Module,' 'Aerobic Treatment Instructional Module,' 'Sludge Treatment Instructional Module,' and 'Wastewater Treatment Plant Design/Analysis Instructional Module,'" Final Report, NSF Gateway Coalition grant CID-U-05-CW, August, 1997.

Jennings, A.A., Gardner, K.H., Castelli, S. "Field Evaluation of the Lower Shaker Lake Draining Event," Final Report, October, 1997.

Presentations

Gardner, K.H., J. Byers, J. Lee, S. Greenwood, D. Aulisio, D. Wise, J. Melton, "Impacts of Reactive Mat Capping of Contaminated Sediments on the Benthic Communities of the Cocheco River, NH," SETAC NA Annual Conference, Tampa, FL November 17-20, 2008.

Gardner, K.H., "Contaminated Sediment Research at UNH," New Hampshire Dredge Task Force, September 10, 2008.

Gardner, K.H., FHWA's Recycled Materials Resource Center (RMRC): Helping to Create a Sustainable Roadway Infrastructure, American Public Works Congress, New Orleans, LA August 19, 2008.

Gardner, K.H., "Defining Green Roads: Metrics for Recycled Material Content," Transportation Research Board Summer Conference; Globalization of Transport Baltimore, MD June 15-18, 2008.

Gardner, K.H., J. Melton, C. Benson, "Putting Earth Day into Practice Every Day: The Recycled Materials Resource Center," Federal Highway Administration Earth Day Webinar, April 22, 2008.

Gardner, K.H., C. Benson, "Engineering with Industrial Byproducts and Recycled Materials: Keys to Acceptance by the Practicing Engineer, US EPA Industrial Byproducts Summit, Denver, CO March 31-April 1, 2008.

Gardner, K.H., "Recycled Materials Resource Center: Support for the Green Highways Partnership and related initiatives," US EPA Resource Conservation Challenge, Washington, DC March 5-6, 2008.

- Hadnagy, E., K.H. Gardner, Calante I., "Optimization of PCB Dechlorination with Palladized Magnesium in Marine and Freshwater Sediments," Society of Environmental Toxicology and Chemistry 28th Annual Meeting, Milwaukee, WI November, 2007.
- Sharma, B., K.H. Gardner, Interferences of Humic Acid in Adsorption of Contaminants on Two Types of Sorbents for Reactive Capping of Sediments," Society of Environmental Toxicology and Chemistry 28th Annual Meeting, Milwaukee, WI November, 2007.
- Gardner, K.H., C. Carlson, S. Rogers, A. Carpenter, "Sustainable and Resilient Communities: Measuring Interactions between Transportation, the Built Environment, and Social Infrastructure," Invited seminar delivered to the College of Engineering, Temple University, October, 2007 (Invited).
- Gardner, K.H., C.D. Hills, P.J. Carey, A. Antemir, M-C Magnie, M-A Aubry, "PASSiFy: Performance Assessment of Stabilised/Solidified Waste Forms, Science Forum on Solidification/Stabilization," Nova Scotia Environment and Labour, Halifax, NS August 2007 (Invited).
- Gardner, KH, A.C. Carpenter, "Valuing Use of Industrial By-Products in Urban Transportation Infrastructure: Incorporating Multiple Sustainability Criteria," TRB ADC60 Summer Workshop, Ft. Worth, TX July 2007.
- Gardner, K.H., D.A. Aulisio, J. Melton, T. T. Eighmy, C. Raimbault, "Use of Apatite as a Reactive Capping Media: Role of Dissolved Organic Carbon," Fourth International Conference on Remediation of Contaminated Sediments, Savannah, GA January 2007.
- Gardner, K.H., J. Dalton, M. Weimer, J. Melton "Contaminated Dredged Material as an Alternative Feedstock Material in the Manufacture of Portland Cement," Fourth International Conference on Remediation of Contaminated Sediments, Savannah, GA January 2007.
- Sharma, B., K.H. Gardner "Performance of Reactive Cap Sorbents for Multiple Contaminants in the Presence of Humic Acid," Fourth International Conference on Remediation of Contaminated Sediments, Savannah, GA January 2007.
- Hadnagy, E., K.H. Gardner, I. Calante, L. Rauch, "Dechlorination of PCBs, Dioxins using Palladized Magnesium," Fourth International Conference on Remediation of Contaminated Sediments, Savannah, GA January 2007.
- Carpenter, A.C., J. Jambeck, K.H. Gardner "Overview of life cycle assessment and its use in understanding benefits of the RCC" US EPA Resource Conservation Challenge (RCC) Workshop *Working Together for a Sustainable Future*, Arlington, VA Feb. 21-23, 2007 (Invited).
- Carpenter, A.C., K.H. Gardner, "Life Cycle Analysis of Road Construction using Alternative Materials " Transportation Research Board 86th Annual Meeting, Jan. 2007.
- Gardner, K.H. "Use of Industrial Waste Management Evaluation Model (IWEM) for Beneficial Use Decisions; Putting risk in perspective," 2006 Industrial Byproducts Summit, San Francisco, CA Nov. 28-30, 2006 (Invited).
- Gardner, K.H., A.C. Carpenter, T.T. Eighmy, "Sustainable Construction of Transportation Systems Through Recycling: Recycling Technologies in the United States and Sustainability Metrics,

- 3rd International Workshop: Sustainable Habitat Systems, 21st Century Center of Excellence Program, Tokyo, Japan Oct. 13, 2006. (Invited)
- Gardner, K.H., A.C. Carpenter, T.T. Eighmy, "Sustainable Construction of Transportation Systems Through Recycling: Recycling Technologies in the United States," The International Symposium: Sustainable Habitat Systems, 21st Century Center of Excellence Program, Fukuoka, Japan Oct. 16-17, 2006. (Invited)
- Gardner, K.H. "PCB, Dioxin and PCN Dechlorination with Palladized Magnesium and Reactive Capping Research," A Symposium on Alternative Remedial Technologies to Destroy PCBs, Housatonic River Initiative, Pittsfield, MA Nov.17, 2006. (Invited)
- Cheney, D., Y.C. Liu, D.A. Aulisio, K.H. Gardner, T. Cruz-Uribe, G. Rorrer, "Seaweed Uptake, Concentration and Detoxification of Organic Pollutants in Marine Waters: TNT and PAHs," UMASS Contaminated Soils, Sediments and Water Conference, Oct. 2006.
- Gardner, K.H. "Sediment treatment from lab to full scale: you can't get there from here," National Dredging Team / Regional Dredging Team National Meeting, Boston, MA May 3-5, 2006 (Invited)
- Gardner, K.H., C. Gonzalez, T.T. Eighmy, "Use of Apatite Reactive Barriers Under Roadways for Protection of Groundwater Resources," Transportation Research Board 85th Annual Meeting, Jan. 22-26, 2006 (Invited).
- Gardner, K.H., J. Fopiano, J. Melton, "Risk-Based Evaluation of Recycled Materials Use in Highway Construction," Transportation Research Board 85th Annual Meeting, Jan. 22-26, 2006.
- Melton, J., B. Crannell, K.H. Gardner and T.T. Eighmy, "Phosphate Based Reactive Barrier Technology for Capping Metal Contaminated Sediments in the Tidal Anacostia River," SERDP-ESTCP Symposium, Washington, DC, November 29th, 2005.
- Gardner, K.H., "Environmental Aspects of Recycled Materials in Highways," Industrial Byproducts Summit, Philadelphia, PA, November 28-29, 2005 (Invited).
- Gardner, K.H. C.J. Tsiatsios, J. Melton," Assessment of Leaching Potential of Metals from Contaminated Sediments Placed in Upland Environments," Society of Environmental Toxicology and Chemistry North America 26th Annual Meeting, November 13-17, 2005.
- Calante, I., E. Hadnagy, K.H. Gardner, "Optimization of PCB Dechlorination by Palladized Magnesium in Marine Sediments: The role of solvents in dechlorination," Society of Environmental Toxicology and Chemistry North America 26th Annual Meeting, November 13-17, 2005.
- Gardner, K.H. C J Tsiatsios, "Colloid- and DOC-facilitated Leaching of Metals from Contaminated Estuarine Sediments in Freshwater Upland Environments," Society of Environmental Toxicology and Chemistry North America 26th Annual Meeting, November 13-17, 2005.
- B Sharma, K.H. Gardner, "Comparison of Adsorbents that can be used in In-situ Capping of Contaminated Sediments for PAH and PCB Sequestration," Society of Environmental Toxicology and Chemistry North America 26th Annual Meeting, November 13-17, 2005.
- Watts, A.W., T.P. Ballesterro, K.H. Gardner, "PAH Homolog Uptake in Wetland Plants," Society of Environmental Toxicology and Chemistry North America 26th Annual Meeting, November 13-17, 2005.

- Rauch, L.M., J.C. Spear, K. H. Gardner. "Dechlorination of persistent organic pollutants with palladized magnesium: Dioxins and PCNs," Society of Environmental Toxicology and Chemistry North America 26th Annual Meeting, November 13-17, 2005.
- Gardner, K.H., "Recycled Materials Use in Highways: reducing life cycle impacts," Green Highways Forum, College Park, MD, November 7-9, 2005 (Invited).
- Hadnagy, E., J. Spear, K.H. Gardner, "PCB Dechlorination in Pure Solvents by Mg/Pd Bimetallic Particles," 21st Annual International Conference on Contaminated Soils, Sediments and Water, UMASS Amherst, October, 2005.
- Calante, I., K.H. Gardner, "Optimization of PCB Dechlorination with Palladized Magnesium in Marine Sediments," 21st Annual International Conference on Contaminated Soils, Sediments and Water, UMASS Amherst, October, 2005.
- Rauch, L., Gardner, K.H. "Dechlorination of persistent organic pollutants with palladized magnesium: Dioxins and PCNs," 21st Annual International Conference on Contaminated Soils, Sediments and Water, UMASS Amherst, October, 2005.
- Fopiano, J.D., K.H. Gardner, J. Melton, "Use of EPA's Industrial Waste Management Evaluation Model to Support Beneficial Use Determinations," Environmental Stewardship in Transportation Through Waste Management, Materials Reuse and EMS, Charlotte, NC, July 17 - 19, 2005.
- Carpenter, A.G., K.H. Gardner, A. Horvath, "Case Study of Life Cycle Costs and a Life Cycle Cost Assessment Tool for the Use of Recycled vs. Virgin Materials," Environmental Stewardship in Transportation Through Waste Management, Materials Reuse and EMS, Charlotte, NC, July 17 - 19, 2005.
- Leipold, J., K.H. Gardner, T.P. Seager, "Closing the Loop: Beneficial Reuse and Application of Waste Materials Environmental Stewardship in Transportation Through Waste Management, Materials Reuse and EMS, Charlotte, NC, July 17 - 19, 2005.
- Gonzalez, C., K.H. Gardner, T.T. Eighmy, "Permeable Reactive Barriers for Containment Control in Beneficial Use Applications in Highways," Environmental Stewardship in Transportation Through Waste Management, Materials Reuse and EMS, Charlotte, NC, July 17 - 19, 2005.
- Didenko, V., I.Okhrimenko, D.Okhrimenko, G.A. Kiker, T.S. Bridges, K.H. Gardner, I. Linkov, "QnD: A Scenario-based gaming system for modeling environmental processes and management decisions (FooRiver demonstration version)," Society for Risk Analysis Northeast Meeting, June 2005.
- Calante, I., E. Hadnagy, J.C. Spear, K.H. Gardner, "PCB Dechlorination by Palladized Magnesium: Role of Desorption Kinetics from Sediments in Overall Treatment Efficacy", Third International Conference on Remediation of Contaminated Sediments, New Orleans, Louisiana, Jan 24-27, 2005.
- Hadnagy, E., J.C. Spear, I. Calante, K.H. Gardner, "Pathways of Congener-Specific PCB Dechlorination by Palladized Magnesium", Third International Conference on Remediation of Contaminated Sediments, New Orleans, Louisiana, Jan 24-27, 2005.
- Melton, J., B. Crannell, K. Gardner, T. Eighmy and D. Reible, "Apatite-Based Reactive Barrier Technology in the Anacostia River Study" Third International Conference on Remediation of Contaminated Sediments, New Orleans, Louisiana, Jan 24-27, 2005.

- Melton, J. W. Nourse, K. Gardner and T. Seager, "A Rational Mix Design for Flowable Fill Containing Contaminated Sediment" Third International Conference on Remediation of Contaminated Sediments, New Orleans, Louisiana, Jan 24-27, 2005.
- Gardner, K.H., T.P. Seager, "Innovative contaminated sediments management strategies: Role of MCDA," Society for Risk Analysis Annual Meeting, Palm Springs, CA Dec. 5-8, 2004.
- Gardner, K.H., "Approaches to Quantifying Risk from Recycled Materials used in Highways," 2004 Byproducts Beneficial Use Summit, Kansas City, MO November 8-9, 2004 (Invited).
- Gardner, K.H., E.A. Stern, "Status of Ex-Situ and In-Situ Treatment Methods," Addressing Uncertainty and Managing Risk at Contaminated Sediment Sites," St. Louis, MO October 26 - 28, 2004 (Invited)
- Gardner, K.H., T.T. Eighmy, D.S. Apul, "Incorporation of Water Flow in Contaminant Flux/Groundwater Impact Estimation," EPRI Environment Area Sector Council meeting, Boston MA September 28, 2004. (Invited).
- Gardner, K.H., C.J. Tsiatsios, "Colloid- and Organic Carbon-Assisted Transport of Heavy Metals from Marine Sediments," Symposium Honoring Professor Charles O'Melia, 228th ACS National Meeting, Philadelphia, PA August 22-26, 2004.
- Gardner, K.H., C. Tsiatsios, J. Case, and T.P. Seager An Assessment of Contaminant Leachability from Sediments in Different Management Environments., Remediation of Chlorinated and Recalcitrant Compounds: The Fourth International Conference, Monterey, California, May 24-27, 2004.
- Gardner, K.H. J.M. Spear, D.A. Aulizio, "In Situ PCB Dechlorination in Sediments Using Zero-Valent Iron," Remediation of Chlorinated and Recalcitrant Compounds: The Fourth International Conference, Monterey, California, May 24-27, 2004.
- Gardner, K.H., D.A Aulizio, J.M. Spear, "Sequestration and Abiotic Remediation: In-situ Dechlorination of Polychlorinated Biphenyls in Sediments Using Zero-Valent Iron," Technology Benchmarking Workshop For Sediment and Floodplain Remediation University of Michigan - Michigan League Ann Arbor, Michigan March 25-26, 2004.
- Gardner, K.H., D. Aulizio, J. C. Spear, "In-situ Dechlorination of Polychlorinated Biphenyls in Sediments Using Zero-Valent Iron," Remediation Technologies Development Forum: Sediments Remediation Action Team Meeting, February 18-19, 2004 (Invited).
- Gardner, K.H. "Recycling in Transportation – The Challenge: A Researcher's View," Transportation Research Board 83rd Annual Meeting, Washington D.C., January 11-15, 2004 (Invited).
- Seager, T.P., K.H. Gardner, "Multicriteria Decision Analysis for Management of Contaminated Sediments.," Society for Risk Analysis Annual Meeting, Baltimore, Maryland, December 7-10, 2003.
- Seager, T P, K H Gardner, I Linkov, and S Rogers, "Comparing Decision Analysis Methods for Management of Contaminated Sediments," SETAC 24th Annual Meeting, Austin, Texas, November 9-13, 2003,
- Gardner, K.H., D. Aulizio, "Dechlorination of Polychlorinated Biphenyls in Sediments Using Nanoscale Zero-Valent Iron," Second International Conference on Remediation of Contaminated Sediments, Venice, Italy, September 30 - October 3, 2003.

- Gardner, K.H., J. Spear, R. Carter, "Long-Term Leaching and Chemical Weathering of Coal Fly Ash: Policy Implications," 2003 RCRA National Meeting, Washington, D.C., August 12-15, 2003.
- Apul, D.F., T.T. Eighmy, K. Gardner, T. Frizzell, E. Linder, "Predicting Long Term Contaminant Leaching from Secondary Road Construction Materials: Incorporation of Unsaturated Hydrology and Probability," 2003 RCRA National Meeting, Washington, D.C., August 12-15, 2003.
- Seager, T.P., K. Gardner, J. Dalton, M. Weimer, "Comparative Life Cycle Assessment of Portland Cement Manufacture from Contaminated Sediments vs. Conventional Materials" International Society for Industrial Ecology Conference, University of Michigan, Ann Arbor MI. June 30-July 3, 2003.
- Carter, R.K., K.H. Gardner, O. Hjelmar, S. Lopez, D.S. Kosson "Mineralogical and Leaching Characteristics of Weathered Industrial Ash" Fifth International Conference on the Environmental and Technical Implications of Construction with Alternative Materials, San Sebastian, Spain, June 4-6, 2003.
- Apul, D.S., T.T. Eighmy, K.H. Gardner, T.J. Frizzell, E. Linder, R. Roberson, "Use of Bayesian Methods to Estimate Long Term Contaminant Leaching in Roadways," Fifth International Conference on the Environmental and Technical Implications of Construction with Alternative Materials, San Sebastian, Spain, June 4-6, 2003.
- Eighmy, T.T., K.H. Gardner, D.S. Apul "Leaching Tests for Environmental Assessment of Beneficial Use of Recycled Materials in Highways" Invited presentation to the EPA Science Advisory Board, June 17, 2003.
- Gardner, K.H., D. Aulisio, J. Spear, "In-Situ PCB Dechlorination in Sediments Using Nanoscale and Microscale Zero-Valent Iron: Implications for Use in Reactive Capping," In-Situ Contaminated Sediment Capping Workshop, Cincinnati, OH, May 12-14, 2003.
- Gardner, K.H., M. Weimer, J. Dalton, J.C.M. Spear, "Beneficial Use of Dredged Material as an Ingredient in Cement Manufacturing," Emerging Technologies, Tools, and Techniques To Manage Our Coasts in the 21st Century, EPA Technology Transfer Conference, Cocoa Beach, FL, January 27-31, 2003.
- Gardner, K.H., D. Aulisio, J.C.M. Spear, "In-Situ Remediation of PCB-Contaminated Sediments Using Colloidal Zero-Valent Iron," Emerging Technologies, Tools, and Techniques To Manage Our Coasts in the 21st Century, EPA Technology Transfer Conference, Cocoa Beach, FL, January 27-31, 2003.
- Seager, T.P., K.H. Gardner, I. Linkov, J.C.M. Spear, T.P. Ballester, "Contaminated Sediments Management Assessment Framework: Integration of Ecological, Human Health, and Economic Concerns," Emerging Technologies, Tools, and Techniques To Manage Our Coasts in the 21st Century, EPA Technology Transfer Conference, Cocoa Beach, FL, January 27-31, 2003.
- Apul, D.S., K.H. Gardner, T.T. Eighmy, E. Linder, T. Frizzell, R. Roberson, "Beneficial Use of Recycled Materials in Roadways: Probabilistic Estimation of Contaminant Leaching," SETAC 23rd Annual North America Meeting, Salt Lake City, Utah, November 16 – 20, 2002.
- Gardner, K.H., M. Weimer, J. Dalton, "Beneficial Use of Contaminated Dredged Material in Conventional Portland Cement Manufacture," The Society of American Military Engineers

- Meeting: Sediment Decontamination and Its Role in an Overall Dredged Material/ Contaminated Sediment Management Strategy, Newark, NJ November 21, 2002.
- Gardner, K.H., D.A. Aulizio, J.C. Spear, "Remediation of PCB-contaminated Sediments Using Colloidal Zero-Valent Iron," The 18th Annual International Conference on Contaminated Soils, Sediments, and Water, UMASS Amherst, Amherst, Massachusetts, October 21-24, 2002.
- Apul, D.S., K.H. Gardner, T.T. Eighmy "A Stochastic Approach For Estimating Contaminant Release From Recycled Materials Used In Roadways," NATO Conference on Comparative Risk Assessment and Environmental Decision Making, Rome, Italy, October 13-16, 2002.
- Seager, T.P., K.H. Gardner, "Development of a Multicriteria Assessment Framework for Management of Contaminated Sediments," 5th International Symposium on Sediment Quality Assessment, Chicago, Illinois, October 16-18, 2002.
- Gardner, K.H., J. Spear, T.T. Eighmy, "Leaching of Metals in Cement Solidified/Stabilized Waste Forms," Cement and Concrete Science, University of Greenwich, Kent, UK, September 2-3, 2002
- Apul, D., M. Weimer, K. Gardner, T.T. Eighmy, A.M. Fällman, R. Comans, "Application of Surface Complexation/Precipitation Modeling to Contaminant Leaching from Weathered Steel Slag," 224th ACS National Meeting, Boston, MA August 18-22, 2002.
- Gardner, K.H., "Evaluating Long-Term Waste Leaching," The 18th Annual Waste Testing & Quality Assurance Symposium, Crystal City in Arlington, VA August 10 - 15, 2002.
- Gardner, K.H., R.K. Carter, T. Shimaoka, "Leaching & Mineralogical Characteristics of Artificially Weathered MSW Bottom Ash," Transportation Research Board Committees A1F07 & A3C01 2002 Mid-Year Workshop Helena, Montana, July 15 - 17, 2002.
- Gardner, K.H., D. Apul, T.T. Eighmy, "Use of Finite Element Models for Prediction of Contaminant Release from Recycled Materials in Highway Applications," Transportation Research Board Committees A1F07 & A3C01 2002 Mid-Year Workshop Helena, Montana, July 15 - 17, 2002.
- Berg, C., K.H. Gardner, and P. Gidley, "Clay Mobilization and Permeability Alteration in Sand Induced by Surfactant Addition," Remediation of Chlorinated and Recalcitrant Compounds: The Third International Conference, Monterey, California, May 20-23, 2002.
- Gardner, K.H. and D. Aulizio "Dechlorination of PCBs in Sediments Using Colloidal Zero-Valent Iron." Remediation of Chlorinated and Recalcitrant Compounds: The Third International Conference, Monterey, California, May 20-23, 2002.
- Bower, K.C., C.M. Miller, K.H. Gardner, and J. Spear "In Situ Chemical Oxidation with Colloidal-Metal Oxides." Remediation of Chlorinated and Recalcitrant Compounds: The Third International Conference, Monterey, California, May 20-23, 2002.
- Gardner, K.H. "Characterization for Upland Beneficial Use of Contaminated Sediments ," Northeast Waste Management Officials Association Conference on Characterization of Contaminated Sediments for Upland Reuse, Westford, MA, May 14, 2002.
- Weimer, M., J. Dalton, K.H. Gardner, "Beneficial Use of Contaminated Dredged Sediments in Portland Cement Manufacture," Dredging '02 – 3rd International Specialty Conference on Dredging and Dredged material Disposal, Orlando, FL, May 5-8, 2002.

- Gardner, K.H., D. Aulizio, J. Spear, "A Novel Remediation Method for PCB-Contaminated Sediments" Dartmouth College Earth Sciences Departmental Seminar, May 6, 2002 (Invited).
- Gardner, K.H., D. Aulizio, "In-Situ PCB Remediation using Iron," Hudson River Initiative Meeting, Pittsfield, MA, March 1, 2002 (Invited).
- Gardner, K.H., R.K. Carter, "Impact of Chemical Weathering on Leaching from Coal Fly Ash," Eighteenth Annual International Pittsburgh Coal Conference, Newcastle, New South Wales, Australia, December 4-7, 2001.
- Gardner, K.H., T.T. Eighmy, B.J. Magee, D.L. Gress, K. Sobhan, M. Kashi, "CCB use in highway construction in the United States," Eighteenth Annual International Pittsburgh Coal Conference, Newcastle, New South Wales, Australia, December 4-7, 2001.
- Gardner, K.H., R.K. Carter, T. Shimaoka, "Long-term Leaching Behavior Changes in Granular Waste Materials due to Chemical Weathering Processes: Implications for Beneficial Use," Beneficial Use of Recycled Materials in Transportation Applications, Washington, D.C. November 13-15, 2001.
- Apul, D.S., K.H. Gardner, T.T. Eighmy, L. Brannaka, J. Benoit, "A Review of Water Movement in the Highway Environment: Implications for the Recycled Materials Use," Beneficial Use of Recycled Materials in Transportation Applications, Washington, D.C. November 13-15, 2001.
- Gardner, K.H. "Beneficial Use of Dredged Materials in Portland Cement Manufacture," Northeast Waste Management Officials Association Summit Conference on the Management of Contaminated Sediments, Westford, MA, October 18, 2001.
- Magee, B.J., K.H. Gardner, "Beneficial Use of Dredged Materials in Portland Cement Manufacture," International Conference on Remediation of Contaminated Sediments, Venice, Italy, October 10-12, 2001.
- Apul, D.S., Y. Mercier, K.H. Gardner, T.T. Eighmy, "Modeling Solute Transport Within Pavement Systems Using HYDRUS2D," Unsaturated Soil Engineering: Applications in Pavements, Minnesota Department of Transportation, Maplewood, MN July 16, 2001.
- Apul, D.S., K.H. Gardner, T.E. Eighmy, "Development of a Risk Analysis Framework for Beneficial Use of Secondary Materials," Summer Symposium on Sustainability, Clarkson University, June, 2001
- Weimer, M., J. Dalton, K.H. Gardner, B.J. Magee, "Reuse of Dredged Sediments as a Partial Feedstock Material in Manufacture of Portland Cement for Sustainable Resource Management," Summer Symposium on Sustainability, Clarkson University, June, 2001
- Gardner, K.H. R. Carter, O. Uppal, R. Roman, "Chemical weathering of high-temperature waste products and mechanisms responsible for changes in leaching behavior," 75th ACS Colloid and Surface Science Symposium, Carnegie Mellon University, Pittsburgh, PA, June 2001.
- Gardner, K.H., C. Berg, P. Gidley, M. Arias, "Permeability changes induced by specific surfactant-clay interactions during surfactant flushing," 75th ACS Colloid and Surface Science Symposium, Carnegie Mellon University, Pittsburgh, PA, June 2001.
- Gardner, K.H., B. Magee, J. Dalton, L. Roberts "Beneficial Use of Dredged Sediments as a Partial Feedstock Material in Portland Cement Manufacture," Conference on Options for Dredged

Material Disposal Management, Massachusetts Institute of Technology, Cambridge, MA. December, 2000.

- Gardner, K.H., T.L. Theis, "A Dynamic Approach To The Evaluation of Leaching from Combustion Byproducts," WASCON 2000 : Science and Engineering of Recycling for Environmental Protection, North Yorkshire, UK, May 31-June 2, 2000.
- Gardner, K.H., C.M. Miller, L. Kong, "Placement of a Colloidal-Catalyst In Situ Reactive Treatment Wall," Second International Conference on Remediation of Chlorinated and Recalcitrant Compounds, Monterey, California May 22-25, 2000.
- Miller, C. M., K. Bower, S. Duirk, and K. H. Gardner, "Metal Oxide-Coated Sand-Catalyzed Ozonation of 2,4-Dinitrotoluene," Second International Conference on Remediation of Chlorinated and Recalcitrant Compounds, Monterey, California, May 22-25, 2000
- Gardner, K.H. "A Dynamic Approach to the Evaluation of Leaching from Combustion Byproducts," Technical Conference on the Beneficial use of By-Product Materials in Construction Applications, Albany, NY Nov. 15-16, 1999.
- Gardner, K.H. "Measurement and Modeling of the Diffusional Deposition Rate of Colloids in a Packed Bed Media," 72nd Colloid and Surface Science Symposium, University Park, PA (June, 1998).
- Gardner, K.H. "The Aggregation Kinetics of Brownian Particles with Fractal Aggregates," Annual Conference on Great Lakes Research, International Association of Great Lakes Research, Hamilton, Ont., Canada (May, 1998).
- Gardner, K.H., Castelli, S., Jennings, A.A. "An Urban Lake Remediation Experiment," Proceedings of the 1998 National Environmental Engineering Conference: Water Resources in the Urban Environment, Chicago, IL (June, 1998).
- Penn, M.R., Gardner, K.H., and Young, T.C. "Aggregation of Natural Sediment Colloids," 70th Colloid and Surface Science Symposium, Potsdam, NY. (June, 1996).
- Gardner, K.H. and Theis, T.L. "A Unified Kinetic Model for Colloid Aggregation," 70th Colloid and Surface Science Symposium, Potsdam, NY (June, 1996).
- Gardner K.H., T.L. Theis, T.C. Young, "Modeling the Effects of Surface Chemistry on the Behavior of Colloids in Aqueous Systems," Annual Conference on Great Lakes Research, International Association of Great Lakes Research and Estuarine Research Federation, Windsor, Ontario, Canada (June 1994).
- Gardner K.H., T.C. Young, T.L. Theis, A.G. Collins, "Relationships Between Dynamic Particle Size Distributions and Contaminant Partitioning," Sixth International Symposium on The Interactions Between Sediments and Water, Santa Barbara, CA (December 1993).
- Gardner K.H., T.C. Young, T.L. Theis, A.G. Collins, "Contaminant Partitioning to Sediments During Resuspension Events," Annual Conference on Great Lakes Research, International Association of Great Lakes Research, DePere, WI (June 1993).
- Gardner, K.H., T.L. Theis, "Leaching Behavior of MSW Fly Ash," Environmental Science and Engineering Research Conference, Ganonoque, Ontario, Canada (January 1993).
- Theis, T.L. and K.H. Gardner, "Dynamic Evaluation of MWC Ash Leachate," Industrial and Engineering Chemistry Division Symposium, American Chemical Society, Atlanta, GA (September, 1992)

Gardner, K.H., T.L. Theis, and E. Hopke, "Determination of Rates Controlling Elemental Release from MSW Ash Materials," Environmental Science and Engineering Research Conference, Ganonoque, Ontario, Canada (February 1992).

Theis, T.L., K.H. Gardner, and E. Hopke, "Dynamic Evaluation of MSW Ash Leachates," Wastewater Technology Centre, Burlington, Ontario, Canada (February 1992).

Gardner, K.H. and T.L. Theis, "Characterization of Municipal Solid Waste Incinerator Ash," 20th Northeast Regional Meeting, American Chemical Society, Potsdam, NY (June 1990).