Kirk G. Scheckel

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United States Environmental Protection Agency
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Professional Objective

Develop and direct a career sustaining, internationally recognized research program at the United States Environmental Protection Agency to address and solve the pressing environmental needs of the United States and contribute knowledge and expertise to international environmental research initiatives. Serve and represent the USEPA intramurally and extramurally to the highest degree of scholarship and leadership.

Education & Credentials

Leadership for a Democratic Society. November 2020. Federal Executive Institute. LDS Class 465, Leadership Development Team 1.

Ph.D. May 2000. Environmental Soil Science. University of Delaware. *Kinetics and mechanisms of the formation and dissolution of Ni (II) surface precipitates on clay minerals and metal oxides using macroscopic, spectroscopic, microscopic, and thermogravimetric techniques*. Advisor: Donald L. Sparks, Ph.D.

B.S. December 1995. Agronomy (Science Option). Iowa State University. Advisor: J. W. Schaffer, Ph.D.

Research Mission

My research focus is solving fundamental issues regarding elemental speciation in soils, sediments, water, plants, and waste materials via advanced, molecular-level spectroscopic techniques coupled with macroscopic kinetic and thermodynamic laboratory studies and field research to elucidate reaction mechanisms that influence fate, transport, reactivity, mobility, bioavailability, and toxicity of elements in the natural environment leading to effective and economical remediation/use strategies.

Experience & Training

United States Environmental Protection Agency, Cincinnati, OH

Associate Director for Science, CESER (ST) February 2024 to Present
Division Director, LRTD (GS15) October 2019 to January 2024
Acting Division Director, LMMD (GS15) December 2018 to September 2019
Acting Branch Supervisor, WSD (GS15) July 2018 to December 2018
Senior Research Soil Scientist, WMB (GS15) November 2012 to September 2019
Research Soil Scientist, WMB (GS14) April 2006 to November 2012
Soil Scientist (GS13) October 2002 to April 2006
Federal Postdoctoral Fellow (GS12) June 2001 to October 2002
Supervisor: Greg Sayles

Duties: See Research Mission and Professional Objective above. Highly involved with national and international collaborative research utilizing synchrotron techniques, policy development and review, contract management, professional society activities, and USEPA workgroups.

The Ohio State University, Columbus, OH

Adjunct Professor of Environmental Soil Chemistry May 2004 to Present

Duties: Participation on MS and PhD committees, course lectures, enrichment seminars, and research collaboration with faculty.

Advanced Photon Source, Chicago, IL
National Synchrotron Light Source, Upton, NY

Guest X-ray Absorption Spectroscopy Research Associate January 1996 to Present

Duties: Conduct synchrotron research at DOE facilities, maintain training requirements, present research results at User Meetings and other seminars, and serve on committees.

Oak Ridge Institute for Science & Education

Postdoctoral Fellow June 2000 to June 2001
Supervisor: Dr. James A. Ryan, retired

Duties: Conduct research on the speciation and bioavailability of Pb in contaminated soils via in-situ amendments to reduce biological uptake. Collaborate with researchers on metals in biosolids and arsenic in mine soils.

Cincinnati State Technical College

Adjunct Professor of Geochemistry September 2000 to October 2002
Supervisor: Ann Fallon

University of Delaware

Graduate Research Assistant January 1996 to June 2000
Supervisor: Dr. Donald L. Sparks

Duties: Conducted research on nickel sorption mechanisms with clay minerals and assisted in the teaching of Environmental Soil Chemistry.

Peer-Reviewed Publications & Book Chapters

1. Soil Health as a Proxy for Long-Term Mine Tailings Reclamation Success. J.A. Ippolito, L. Li, T. Banet, J.E. Brummer, C. Buchanan, A.R. Betts, **K.G. Scheckel**, N. Basta and S. Brown. 2024. Soil Environ Health. 2(3): 100096.
2. Arsenic, cadmium, lead, antimony bioaccessibility and relative bioavailability in legacy gold mining waste. F. Kastury, J. Besedin, A.R. Betts, R. Asamoah, C. Herde, P. Netherway, J. Tully, **K.G. Scheckel** and A.L. Juhasz. 2024. J. Haz. Mater. 469: 133948.
3. Phosphorus speciation in manure and fertilizer impacted Mid-Atlantic coastal plain soils. L.R. Mosesso, M.S. Reiter, **K.G. Scheckel**, N.M. Fiorellino, G.S. Toor and A.L. Shober. 2024. J. Environ. Qual. 53(3): 352-364.
4. Remediation options to reduce bioaccessible and bioavailable lead and arsenic at a smelter impacted site-consideration of treatment efficacy. D. Alankarage, A. Betts, **K.G. Scheckel**, C. Herde, M. Cavallaro, and A.L. Juhasz. 2024. Environ. Pollut. 341, 122881.
5. Lead: The most extensively spread toxic environmental contaminant, Chapter 6. G.M. Hettiarachchi, A.R. Betts, W.G.C. Wekumbura, L. Lake, M.M. Mayer, **K.G. Scheckel**, and N.T. Basta. 2024. Inorganic Contaminants and Radionuclides, Ed: R. Nadu, Elsevier, pp 113-150.
6. Potassium jarosite seeding of soils decreases lead and arsenic bioaccessibility: A path toward concomitant remediation. T.D. Sowers, M.D. Blackmon, A.R. Betts, M.L. Jerden, **K.G. Scheckel**, and K.D. Bradham. 2023. PNAS 120 (50), e2311564120.
7. Influence of clay mineral weathering on green rust formation at iron-reducing conditions. A.R. Betts, M.G. Siebecker, E.J. Elzinga, T.P. Luxton, **K.G. Scheckel**, and D.L. Sparks. 2023. Geochem. Cosmochem. Acta. 350: 46-56.
8. Opportunities and Challenges Associated with Bioavailability-Based Remediation Strategies for Lead-Contaminated Soil with Arsenic as a Co-Contaminant—A Critical Review. F. Kastury, H. Li, R. Karna, A. Betts, **K.G. Scheckel**, L.Q. Ma, T.D. Sowers, K.D. Bradham, G.M. Hettiarachchi, and A.L. Juhasz. 2023. Current Pollut. Rep. 9: 213-225.
9. Correction to Vanadium Speciation in Ancient Shales Revealed through Synchrotron-Based X-ray Spectroscopy. W.W. Bennett, E. Lombi, **K.G. Scheckel**, R. Sekine, S.G. Johnston, E.D. Burton, D.L. Howard, P. Kappen, and D.E. Canfield. 2023. ACS Earth Space Chem. 7(3): 661-661.
10. Vanadium Speciation in Ancient Shales Revealed through Synchrotron-Based X-ray Spectroscopy. W.W. Bennett, E. Lombi, **K.G. Scheckel**, R. Sekine, S.G. Johnston, E.D. Burton, D.L. Howard, P. Kappen, and D.E. Canfield. 2023. ACS Earth Space Chem. 7(2): 416-426.
11. Ca Minerals and Oral Bioavailability of Pb, Cd, and As from Indoor Dust in Mice: Mechanisms and Health Implications. H.B. Li, R.Y. Xue, X.Q. Chen, X.Y. Lin, X.X. Shi, H.Y. Du, N.Yi.Yin, Y.S. Cui, L.N. Li, **K.G Scheckel**, A.L Juhasz, X.M. Xue, Y.G. Zhu, L.Q Ma. 2022. Environ. Health Perspec. 130(12): 127004.
12. Successful Conversion of Pb-Contaminated Soils to Low-Bioaccessibility Plumbojarosite Using Potassium-Jarosite at Ambient Temperature. T.D Sowers, M.D Blackmon, S.E Bone, A.M Kirby, M.L Jerden, M.R Noerpel, **K.G Scheckel**, and K.D Bradham. 2022. Environ. Sci. Technol. 56(22): 15718-15727.
13. X-ray absorption near edge structure spectroscopy reveals phosphate minerals at surface and agronomic sampling depths in agricultural Ultisols saturated with legacy phosphorus. E. Lucas, L. Mosesso, T. Roswall, Y.Y. Yang, **K.G. Scheckel**, A. Shober, and G.S. Toor.

2022. Chemosphere. 308: 136288.

14. Ingestion of remediated lead-contaminated soils affects the fecal microbiome of mice. S.E. George, J. James, R. Devereux, Y. Wan, G.L. Diamond, K.D. Bradham, **K.G. Scheckel** and D.J. Thomas. 2022. Sci. Total Environ. 837: 155797.
15. Interactive effects of biochar amendment and lead toxicity on soil microbial community. Y. Wan, R. Devereux, S.E. George, J. Chen, B. Gao, M. Noerpel, and **K.G. Scheckel**. 2022. J. Haz. Mater. 127921.
16. Plumbojarosite Remediation of Soil Affects Lead Speciation and Elemental Interactions in Soil and in Mice Tissues. T.D. Sowers, S.E. Bone, M.R. Noerpel, M.D. Blackmon, R.R. Karna, **K.G. Scheckel**, A.L. Juhasz, G.L. Diamond, D.J. Thomas, and K.D. Bradham. 2021. Environ. Sci. Technol. 55 (23): 15950-15960
17. The Safe Urban Harvests Study: A Community-Driven Cross-Sectional Assessment of Metals in Soil, Irrigation Water, and Produce from Urban Farms and Gardens in Baltimore, Maryland. S.N. Lupolt, R.E. Santo, B.F. Kim, C. Green, E. Codling, A.M. Rule, R. Chen, **K.G. Scheckel**, M. Strauss, A. Cocke, N.G. Little, V.C. Rupp, R. Viqueira, J. Illuminati, A. Epp Schmidt, and K.E. Nachman. 2021. Envion. Health Perspect. 129(11): 117004.
18. Plumbojarosite formation in contaminated soil to mitigate childhood exposure to lead, arsenic and antimony. F. Kastury, W. Tang, C. Herde, M.R. Noerpel, **K.G. Scheckel** and A.L. Juhasz. 2021. J. Haz. Mater. 126312.
19. Nutrient alterations following biochar application to a Cd-contaminated solution and soil. L. Cui, J.A. Ippolito, M. Noerpel, **K.G. Scheckel** and J. Yan. 2021. Biochar, 1-12
20. Bioaccessibility of potentially toxic elements in mine residue particles. J. Eulises, MDCA González-Chávez, R. Carrillo-González, J.L. García-Cué, D.S Fernández-Reynoso, M. Noerpel, and **K.G Scheckel**. 2021. Environ. Sci: Process & Imp, 23(2): 367-380.
21. Insights into the fate of antimony (Sb) in contaminated soils: ageing influence on Sb mobility, bioavailability, bioaccessibility and speciation. S. Diquattro, P. Castaldi, S. Ritch, A.L Juhasz, G. Brunetti, **K.G Scheckel**, G. Garau, and E. Lombi. 2021. Sci. Tot. Environ. 145354
22. Metal (loid) bioaccessibility of atmospheric particulate matter from mine tailings at Zimapan, Mexico. J. Eulises C. Sanchez, MDCA Gonzalez Chavez, R. Carrillo-Gonzalez, **K.G. Scheckel**, D. Tapia Maruri, and J.L Garcia Cue. 2021.Environ. Sci. Pollut. Res., 28(15): 19458-19472.
23. Bioavailable soil Pb minimized by in situ transformation to plumbojarosite. R.R. Karna, M.R. Noerpel, C. Nelson, B. Elek, K. Herbin-Davis, G. Diamond, K. Bradham, D.J. Thomas, and **K.G. Scheckel**. 2021. Proceedings of the National Academy of Sciences, 118 (3) e2020315117.
24. Remediation of Poly- and Perfluoroalkyl Substances (PFAS) Contaminated Soils – To Mobilize or Immobilize or Destroy? N. Bolan, B. Sarkar, Y. Yan, Q. Li, H. Wijesekara, K. Kannan, D. Tsang, M. Schauerte, J. Bosch, H. Noll, Y.S. Ok, **K.G. Scheckel**, J. Kumpiene, K. Gobindlal, M. Kah, J. Sperry, M.B. Kirkham, H. Wang, Y.F. Tsang and J. Rinklebe. 2021. J. Haz. Mater. 401: 123892.
25. High Lead Bioavailability of Indoor Dust Contaminated with Paint Lead Species. T.D. Sowers, C.M. Nelson, G.L. Diamond, M.D. Blackmon, M.L. Jerden, A.M. Kirby, M.R. Noerpel, **K.G. Scheckel**, D.J. Thomas, and K.D. Bradham. 2021. Environ. Sci. Technol. 55 (1), 402-411.
26. Graphene-modified Graphite Paper Cathode for the Efficient Bioelectrochemical Removal of Chromium. J. Yao, Y. Huang, Y. Hou, B. Yang, L. Lei, X. Tang, **K.G. Scheckel**, Z. Li, D.

Wu and D.D. Dionysiou. 2021. Chemical Engineering Journal, 405: 126545.

27. Atmospheric deposition of As, Cd, Cu, Pb, and Zn near an operating and an abandoned lead smelter. W. Xing, H. Yang, J.A. Ippolito, Q. Zhao, Y. Zhang, **K.G. Scheckel** and L. Li. 2020. J. Environ. Qual.

28. Lead Speciation, Bioaccessibility and Source Attribution in Missouri's Big River Watershed. M. Noerpel, M. Pribil, P. Law, G. Gunn, K. Bradham, C. Nelson and **K.G. Scheckel**. 2020. Appl. Geochem. 123: 104757.

29. Lead Source and Bioaccessibility in Windowsill Dusts within a Pb Smelting-affected Area. W. Xing, H. Yang, J.A. Ippolito, Y. Zhang, **K.G. Scheckel** and L. Li. 2020. Environ. Pollut., 266: 115110.

30. Novel franklinite-like synthetic zinc-ferrite redox nanomaterial: synthesis, and evaluation for degradation of diclofenac in water. A. Al-Anazi, W.H. Abdelraheem, **K. Scheckel**, M.N. Nadagouda, K. O'Shea, and D. Dionysiou. 2020. Applied Catalysis B: Environmental, (275) 119098.

31. Correlation between lead speciation and inhalation bioaccessibility using two different simulated lung fluids. F. Kastury, R.R. Karna, **K.G. Scheckel**, and A.L. Juhasz. 2020. Environmental Pollution, 114609.

32. Comparison of Zn accumulation and speciation in kernels of sweetcorn and maize differing in maturity. Z.X. Cheah, P.M Kopittke, **K.G Scheckel**, M.R Noerpel, and M.J Bell. 2020. Annal. Botany. 125(1): 185-193.

33. Response to Comment on" Thioarsenite Detection and Implications for Arsenic Transport in Groundwater". R. Wilkin, R. Ford, L. Costantino, R. Ross, D. Beak and **K.G. Scheckel**. 2020. Environ. Sci. Technol. 54(12): 7732-7733.

34. Soil Accumulation and Chemical Fractions of Cu in a Large and Long-term Coastal Apple Orchard, North China. C. Fu, C. Tu, H. Zhang, Y. Li, L. Li, Q. Zhou, **K.G. Scheckel** and Y. Luo. 2020. Journal of Soils and Sediments. 20: 3712-3721.

35. Thioarsenite Detection and Implications for Arsenic Transport in Groundwater. R. Wilkin, R. Ford, L. Costantino, R. Ross, D. Beak and **K.G. Scheckel**. 2019. Environ. Sci. Technol. 53(20): 11684-11693.

36. Dietary Lead and Phosphate Interactions Affect Oral Bioavailability of Soil Lead in the Mouse. K.D. Bradham, C.M. Nelson, G.L. Diamond, W.C. Thayer, **K.G. Scheckel**, M. Noerpel, K. Herbin-Davis, B. Elek and D.J. Thomas. 2019. Environ. Sci. Technol. 53 (21), 12556-12564.

37. Chemical Characterisation, Antibacterial Activity, and (nano)Silver Transformation of Commercial Personal Care Products Exposed to Household Greywater. M. Khaksar, S. Vasileiadis, R. Sekine, G. Brunetti, **K.G. Scheckel**, K. Vasilev, E. Lombi, and E. Donner. 2019. Environ. Sci. Nano. 6 (10), 3027-3038.

38. Dynamics of Lead Bioavailability and Speciation in Indoor Dust and X-ray Spectroscopic Investigation of the Link between Ingestion and Inhalation Pathways. F. Kastury, E. Smith, E. Lombi, M. Donnelley, P. Cmielewski, D. Parsons, M. Noerpel, **K.G. Scheckel**, A. Kingston, G. Myers, D. Paterson, M. de Jonge, and A.L. Juhasz. 2019. Environ. Sci. Technol. 53(19): 11486-11495.

39. In vitro, in vivo and Spectroscopic Assessment of Lead Exposure Reduction via Ingestion and Inhalation Pathways using Phosphate and Iron Amendments. F. Kastury, E. Smith, E. Doelsch, E. Lombi, M. Donnelley, P. Cmielewski, D. Parsons, **K.G Scheckel**, D.J Paterson, M.D de Jonge, C. Herde and A.L Juhasz. 2019. Environ. Sci. Technol. 53(17): 10329-10341.

40. Relationship between Pb Relative Bioavailability and Bioaccessibility in Phosphate Amended Soil: Uncertainty Associated with Predicting Pb Immobilization Efficacy using in vitro Assays. F. Kastury, S. Placitu, J. Boland, R.R. Karna, **K.G. Scheckel**, E. Smith, and A.L. Juhasz. 2019. Environ. Internat. 131(2019): 104967.

41. Evaluating effects of iron on manganese toxicity in soybean and sunflower using synchrotron-based X-ray fluorescence microscopy and X-ray absorption spectroscopy. F.P.C. Blamey, C. Li, D.L Howard, M. Cheng, C. Tang, **K.G Scheckel**, M.R Noerpel, P. Wang, N.W Menzies, and P.M Kopittke. 2019. Metallomics. 11(12): 2097-2110.

42. Inhalation bioaccessibility of Cd, Cu, Pb and Zn and speciation of Pb in particulate matter fractions from areas with different pollution characteristics in Henan Province, China. W. Xing, Q. Zhao, **K.G. Scheckel**, L. Zheng, and L. Li. 2019. Ecotox. Environ. Safety. 175:192-200.

43. Wheat Straw Biochar Reduces Environmental Cadmium Bioavailability. L. Cui, M.R. Noerpel, **K.G. Scheckel**, and J.A. Ippolito. 2019. Environ. Internat. 126: 69-75.

44. Spatial Distribution of Smelter Emission Heavy Metals on Farmland Soil. W. Xing, Y. Zheng, **K.G. Scheckel**, Y. Luo, and L. Li. 2019. Environ. Monit. Assess. 191: 115-127.

45. Phosphorus-Rich Biochars can Transform Lead in an Urban Contaminated Soil. P. Netherway, S.M. Reichman, M. Laidlaw, **K.G. Scheckel**, N. Pingitore, G. Gasco, A. Mendez, A. Surapaneni, and J. Paz-Ferreiro. 2019. J. Environ. Qual. 48: 1091-1099.

46. Long-term in situ Reduction in Soil Lead Bioavailability Measured in a Mouse Model. K.D. Bradham, G. Diamond, C. Nelson, M. Noerpel, **K.G. Scheckel**, B. Elek, R. Cheney, Q. Ma, and D. Thomas. 2018. Environ. Sci. Technol. 52(23): 13908-13913.

47. Influence of Phosphate Amendment and Zinc Foliar Application on Heavy Metal Accumulation in Wheat and on Soil Extractability Impacted by a Lead-smelter near Jiyuan, China. W. Xing, E. Cao, **K.G. Scheckel**, X. Bai, and L. Li. 2018. Environ. Sci. Pollut. Res. 25(31): 31396-31406.

48. Opportunities and challenges for dietary arsenic intervention. K. Nachman, T. Punshon, L. Rardin, A. Signes-Pastor, C. Murray, B. Jackson, M. Guerinot, T. Burke, C. Chen, H. Ahsan, M. Argos, K. Cottingham, F. Cubadda, G. Ginsberg, B. Goodale, M. Kurzius-Spencer, A. Meharg, M. Miller, A. Nigra, C. Pendergrast, A. Raab, **K.G. Scheckel**, T. Schwerdtle, V. Taylor, E. Tokar, T. Warczak, and M. Karagas. 2018. Environ. Health Perspec. 126(8) 084503.

49. Biogeochemistry of Nickel in Soils, Plants, and the Rhizosphere. J.W. Morris, **K.G. Scheckel**, and D.H. McNear. 2018. In "Nickel in Soils and Plants". Tsadilas, C.D., Rinklebe, J. and Selim, H.M. (eds). CRC Press/Taylor & Francis Group. 51-86.

50. Stabilizing Effects on a Cd Polluted Coastal Wetland Soil using Calcium Polysulphide. C. Tu, F. Guan, Y. Sun, P. Guo, Y. Li, L. Li, **K.G. Scheckel**, and Y. Luo. 2018. Geoderma. 332: 190-197.

51. Mechanisms of Phosphorus Removal by Phosphate Sorbing Materials. Z. Qin, A.L. Shober, **K.G. Scheckel**, C.J. Penn, and K.C. Turner. 2018. J. Environ. Qual. 20: 1232-1241.

52. Characterization and mechanism of copper biosorption by a highly copper-resistant fungal strain isolated from copper-polluted acidic orchard soil. C. Tu, Y. Liu, J. Wei, L. Li, **K.G. Scheckel**, and Y. Luo. 2018. Environ. Sci. Pollut. Res. 1-10.

53. Foliar Application of Zinc Sulfate and Zinc-EDTA to Wheat Leaves: Differences in mobility, distribution and speciation. C.L. Doolette, T.L. Read, C. Li., **K.G. Scheckel**, E. Donner, P.M. Kopittke, and E. Lombi. 2018. J. Exp. Botany. 69(18): 4469-4481.

54. Methodological Factors Influencing Inhalation Bioaccessibility of Metal(loid)s in PM2.5 using Simulated Lung Fluid. F. Kastury, E. Smith, R.R. Karna, **K.G. Scheckel**, and A.L. Juhasz. 2018. Environ. Pollut. 241: 930-937.

55. An inhalation-ingestion bioaccessibility assay (IIBA) for the assessment of exposure to metal(loid)s in PM10. F. Kastury, E. Smith, R.R. Karna, **K.G. Scheckel** and A.L. Juhasz. 2018. Sci. Total Environ. 631: 92-104.

56. Arsenic Speciation of Contaminated Soils / Solid Wastes and Relative Oral Bioavailability in Swine and Mice. B.N. Stevens, A.R. Betts, B.W. Miller, **K.G. Scheckel**, R.H. Anderson, K.D. Bradham, S.W. Casteel, D.J. Thomas and N.T. Basta. 2018. Soil Systems. 2(2): 27.

57. Point of Zero Charge: Role in Pyromorphite Formation and Bioaccessibility of Lead and Arsenic in Phosphate Amended Soils. R.R. Karna, M. Noerpel, T.P. Luxton, and **K.G. Scheckel**. 2018. Soil Systems. 2(2): 22.

58. Reactive Gaseous Mercury is Generated from Chloralkali Factories instead of Elemental Mercury Resulting in Extreme Concentrations of Mercury in Hair of Workers. A.A.S. Elgazali, Z. Gajdosechova, Z. Abbas, E. Lombi, **K.G. Scheckel**, E. Donner, J. Feldman, and E.M. Krupp. 2018. Scientific Reports. 8: 3675.

59. In vivo and in vitro methods for evaluating soil arsenic bioavailability: relevant to human health risk assessment. K.D. Bradham, G.L. Diamond, M. Burgess, A. Juhasz, J.M. Klotzbach, M. Maddaloni, C. Nelson, **K.G. Scheckel**, S.M. Serda, M. Stifelman, D.J. Thomas. 2018. J. Toxic. Environ. Health Part B. 21(2): 83-114.

60. Relating Soil Geochemical Properties to Arsenic Bioaccessibility Through Hierarchical Modeling. C.M. Nelson, K. Li, D.R. Obenour, J.C. Misenheimer, **K.G. Scheckel**, A. Betts, A. Juhasz, D.J. Thomas, K.D. Bradham. 2018. J. Toxicol Environ. Health, Pt A. 81(6): 160-172.

61. Sequestration of U (VI) from Acidic, Alkaline and High Ion-Strength Aqueous Media by Functionalized Magnetic Mesoporous Silica Nanoparticles: Capacity and Binding Mechanisms. D. Li, S. Egodawatte, D.I. Kaplan, S.C. Larsen, S.M. Serkiz, J.C. Seaman, **K.G. Scheckel**, J. Lin, and Y. Pan. 2017. Environ. Sci. Technol. 51: 14330-14341.

62. A comprehensive framework for evaluating the environmental health and safety implications of engineered nanomaterials. W.K. Boyes, B.L. Thornton, S.R. Al-Abed, C.P. Andersen, D.C. Bouchard, R.M. Burgess, E. Cohen–Hubal, K.T. Ho, M.F. Hughes, K.T. Kitchin, J.R. Reichman, K.R. Rogers, J.A. Ross, P.T. Rygiewicz, **K.G. Scheckel**, S-F. Thai, R.G. Zepp, and R.M. Zucker. 2017. Crit. Reviews Toxicol. 47(9): 767-810.

63. Modification of an Existing In-vitro Method to Predict Relative Bioavailable Arsenic in Soils. S.D. Whitacre, N.T. Basta, B.N. Stevens, V. Hanley, R.H. Anderson, **K.G. Scheckel** and A.L. Foster. 2017. Chemosphere. 180: 545-552.

64. Ageing of dissolved copper and copper-based nanoparticles in five different soils: Short term kinetics vs long term fate. R. Sekine, E. Marzouk, M. Khaksar, **K.G. Scheckel**, J. P. Stegemeier, G.V. Lowry, E. Donner and E. Lombi. 2017. J. Environ. Quality. 46: 1198-1205.

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66. Complete Transformation of ZnO and CuO Nanoparticles in Culture Medium and Lymphocyte Cells during Toxicity Testing. A. Ivask, **K.G. Scheckel**, P. Kapruwan, V. Stone, H. Yin, N.H. Voelcker, and E. Lombi. 2017. Nanotoxicology. 11: 150-156.

67. Nanosilver as a Disinfectant in Dental Unit Waterlines: Assessment of the Physiochemical

Transformations of the AgNPs. A. Gitipour, T. Tolaymat, **K.G. Scheckel**, and S.R. Al-Abed. 2017. Chemosphere. 173: 245-252.

68. State of the Science Review - Potential for Beneficial Use of Waste By-Products for In-situ Remediation of Metal-Contaminated Soil and Sediment. R. Karna, T.P. Luxton, and **K.G. Scheckel**. 2017. Crit. Revs. Environ. Sci. Technol. 47: 65-129.

69. Characterizing the Uptake, Accumulation and Toxicity of Silver Sulfide Nanoparticles in Plants. P. Wang, E. Lombi, S. Sun, **K.G. Scheckel**, A. Malysheva, B.A. McKenna, N.W. Menzies, F.J. Zhao, and P.M. Kopittke. 2017. Environ. Sci: Nano. 4: 448-460.

70. Understanding Arsenic Dynamics in Agronomic Systems to Predict and Prevent Uptake by Crop Plants. T. Punshon, B.P. Jackson, A.A. Meharg, M.L. Guerinot, T. Warcrack, and **K.G. Scheckel**. 2017. Sci. Total Environ. 581-582: 209-220.

71. Soil Solution Interactions May Limit Pb Remediation Using P Amendments in an Urban Soil. J.F. Obrycki, **K.G. Scheckel**, and N.T. Basta. 2017. Environ. Pollut. 220: 549-556.

72. Alterations of Lead Speciation by Sulfate from Addition of Flue Gas Desulfurization Gypsum (FGDG) in Two Contaminated Soils. N. Koralegedara, **K.G. Scheckel**, and S.R. Al-Abed. 2017. Sci. Total Environ. 575: 1522-1529.

73. Enhancement of Phosphate Immobilization of Pb in Contaminated Soils with Ca and Cl Amendment. L. Li, Q. Zhao, H. Zhang, **K.G. Scheckel**, L. Zheng, and W. Xing. 2017. Acta Sci. Cirum. 37(11): 4344-4351.

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211. Fate of Uranium During Transport Across the Groundwater-Surface Water Interface. Department of Energy, Washington DC. (DE-SC0006847).

212. The State and Future of U.S. Soils: Framework for a Federal Strategic Plan for Soil Science. Subcommittee on Ecological Systems, Committee on Environment, Natural Resources, and Sustainability of the National Science and Technology Council, Office of the President of the United States.

213. Validation Assessment of the In Vitro Arsenic Bioaccessibility Assay for Predicting Relative Bioavailability of Arsenic in Soil and Soil-like Materials at Superfund Sites. U.S. Environmental Protection Agency, Washington, DC. (OLEM 9355.4-29, 2017).

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238. Speciation of Pb in Pipe Corrosion Scales. M. Schock and K.G. Scheckel. 2004 Advanced Photon Source Annual Activity Report.

239. As, Pb, and Zn Speciation in Contaminated Sediments. R.G. Ford, R.G. Wilken, and K.G. Scheckel. 2004 Advanced Photon Source Annual Activity Report.

240. As Speciation in Mine Tailings. C.A. Impellitteri and K.G. Scheckel. 2004 Advanced Photon Source Annual Activity Report.

241. Lead Sorption on Ruthenium Oxide: A Macroscopic and XAS Study. K.G. Scheckel, C.A. Impellitteri and J.A. Ryan. 2003 Advanced Photon Source Annual Activity Report.

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243. Role of Iron and Manganese Oxides in Biosolids-amended Soils on Metal Binding. G.M. Hettiarachchi, K.G. Scheckel, J.A. Ryan, S.R. Sutton, M. Newville. 2003 Advanced Photon Source Annual Activity Report.

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245. Influence of Aging and pH on Dissolution Kinetics and Stability of Pyromorphite. Scheckel, K.G. and J.A. Ryan. 2002. “NSLS Science Highlights” NSLS 2002 Annual Activity Report.

246. X-ray Microscopy and Spectroscopy Studies on Metal Binding in Biosolids. G.M. Hettiarachchi, J.A. Ryan, K.G. Scheckel, S.R. Sutton, M. Newville. 2001. Advanced Photon Source Activity Report.

247. Kinetics of Pyromorphite Formation as Influenced by Aging. K.G. Scheckel, G.M. Hettiarachchi, and J.A. Ryan. 2001. NSLS Annual Activity Report.

248. Kinetics of Pyromorphite Dissolution as Influenced by Aging. K.G. Scheckel and J.A. Ryan. 2001. NSLS Annual Activity Report.

249. Effect of Phosphorus Treatments on Lead Mineralogy in Contaminated Soils. K.G. Scheckel and J.A. Ryan. 2001. NSLS Annual Activity Report.

250. In Situ Stabilization of Soil Lead Using Phosphorus and Manganese Oxide: An EXAFS Study. G.M. Hettiarachchi, K.G. Scheckel, J.A. Ryan, and G.M. Pierzynski. 2001. NSLS Annual Activity Report.

Presentations

(I): International (N): National

Invited Presentations

251. Managing Contaminant Risk in the Environment By Speciation - Not Total Concentration. K. Scheckel. Annual Meeting of the Soil Science Society of America, San Antonio, TX, 2019. (I)

252. Application of X-ray Absorption Spectroscopy for Monitoring Transformation of Nanomaterials. K. Scheckel. 2nd Quantifying Exposure to Engineered Nanomaterials (QEEN) from Manufactured Products Workshop, Washington, DC, 2018. (I)

253. Environmental Transformations of Silver and Zinc Oxide Nanoparticles Drive Risk Assessment Understanding. K. Scheckel, E. Donner, R. Sekine, G. Brunetti, and E. Lombi. 55th Annual Meeting of the Clay Minerals Society, Urbanna, IL, 2018. (I)

254. In-situ Soil Amendments Alter Contaminant Speciation and Reduce Bioavailability. K. Scheckel, R. Karna, M. Noerpel, K. Bradham, C. Nelson, B. Elek, R. Chaney, and D. Thomas. International Conference on Heavy Metals in the Environment, Athens, GA, 2018. (I)

255. Translating Synchrotron Data into Guidance and Policy for Risk Assessment. K.G. Scheckel. Synchrotron Environmental Science, Brookhaven National Lab, NY, 2017. (I)

256. Considerations in Remediating Urban Soil Pb. K.G. Scheckel. Annual Meeting of the Soil Science Society of America, Tampa, FL, 2017. (I)

257. Testing and Interpreting Soil Pb Concentration and Bioavailability. N.T. Basta, K.K. Theibert, J. Obrycki, and K.G. Scheckel. Annual Meeting of the Soil Science Society of America, Tampa, FL, 2017. (I)

258. Lead Absorption Following Deposition of Lead-Containing Particles in the Lungs: Linking Inhalation and Ingestion Pathways. A. L. Juhasz, F. Kastury, E. Smith, E. Lombi, M. W. Donnelley, P. L. Cmielewski, D. W. Parsons, K. G. Scheckel, A. Kingston, G. Myers, D. Patterson, M. de Jonge. 9th International Workshop on Chemical Bioavailability in the Terrestrial Environment, Warsaw, Poland, 2017. (I)

259. Source attribution of lead using geospatial and stable isotope analysis. M. Noerpel, M. Pribil, P. Law, R. Brown, T. Campbell, and K. Scheckel. 14th International Conference on the Biogeochemistry of Trace Elements, Zurich, Switzerland, 2017. (I)

260. In vitro bioaccessibility method for prediction of relative bioavailability of arsenic in contaminated soils. K. Bradham, C. Nelson, A. Juhasz, E, Smith, K. Scheckel, D. Obenour and D. Thomas. 14th International Conference on the Biogeochemistry of Trace Elements, Zurich, Switzerland, 2017. (I)

261. Dynamics of Pb absorption following deposition of Pb-containing particles in the lungs. A. Juhasz, M. W. Donnelley, P. L. Cmielewski, D. W. Parsons, K. G. Scheckel and E. Smith. 14th International Conference on the Biogeochemistry of Trace Elements, Zurich, Switzerland, 2017. (I)

262. Utilizing Pb Isotopes for Source Attribution at Impacted Sites. K.G. Scheckel. Region 7 Annual On-Scene Coordinator Workshop. Kansas City, MO. 2017. (N)

263. Soil Amendments. K.G. Scheckel. Annual TRW Committees Meeting, Washington, DC, 2016. (N)

264. ORD Mouse Model for Pb. K.D. Bradham, D.J. Thomas, K.G. Scheckel, and C. Nelson. Annual TRW Committees Meeting, Washington, DC, 2016. (N)

265. Particle Size and Bioaccessibility Application. K.G. Scheckel and R. Karna. Annual TRW Committees Meeting, Washington, DC, 2016. (N)

266. How to Use Bioavailability in Risk Assessment when Bioaccessibility is Very Low. C. Partridge and K.G. Scheckel. Annual TRW Committees Meeting, Washington, DC, 2016. (N)

267. Use of Bioavailability Data for Soil-Borne Arsenic to Refine Site-Specific Risk Assessments: USEPA Perspective. K.G. Scheckel and M. Maddaloni. Toxicology and Risk Assessment Conference, West Chester, OH, 2016. (N)

268. Practical Approaches to Nanotoxicology Risk Assessment. K.G. Scheckel. International Research Cluster for Nanosafety Workshop, Adelaide, Australia, 2015. (I)

269. Human Health Impacts of Metal Contaminated Soils. K.G. Scheckel. Australian Society of Soil Science, Adelaide, Australia, 2015. (I)

270. Fate of Environmentally Released Engineered Nanoparticles. K.G. Scheckel. Ohio State University, School of Environment and Natural Resources Seminar Series, Columbus, OH, 2015. (N)

271. Environmental Fate and Transformation of Engineered Nanoparticles from Consumer Products. K.G. Scheckel, E. Lombi, E. Donner, R. Sekine, B.W. Miller and K. Vasilev. American Chemical Society Spring Meeting, Denver, CO, 2015. (I)

272. Phosphate Amendments in Co-Contaminated Soils: Speciation, Bioaccessibility, and Bioavailability. K.G. Scheckel, A.R. Betts, K.D. Bradham, and D.J. Thomas. Annual Meeting of the Soil Science Society of America, Long Beach, CA, 2014. (I)

273. Nanoparticles Down the Drain – Then What? K.G. Scheckel. Synchrotron Environmental Studies VI, Chicago, IL, 2014. (N)

274. Chemical Speciation of Uranium in Savannah River Site Wetland Sediments. D. Li, D. Kaplan, J. Seaman, P. Jaffé, K. Scheckel, M. Newville, A. Lanzirotti, C. Segre, B. Misra, A. Dohnalkova, and R. Kukkadapu. Synchrotron Environmental Studies VI, Chicago, IL, 2014. (N)

275. Fundamentals of Soil Chemistry: Soil Chemistry of Hazardous Materials. K.G. Scheckel. 19th Annual Contaminated and Hazardous Waste Site Management Course, Toronto, Canada, 2014. (I)

276. Fate of Engineered Nanoparticles in Biosolids for Land Application. K.G. Scheckel. Soils in the City Conference, Chicago, IL, 2014. (N)

277. Silver Nanoparticles in Beneficial Reuse Waste Materials. K.G. Scheckel, C.A. Impellitteri, S. Harmon, G. Silva, B.W. Miller, T.P. Luxton, A. Gitipour, A. El Badawy, T. Tolaymat, D. Schupp, and S. Panguluri. Goldschmidt 2014, Sacramento, CA, 2014. (I)

278. Delineating Arsenic Landfill Leachate Discharge to a Freshwater Pond and Sediment Partitioning. K.G. Scheckel, R.G. Ford, S. Acree, B. Lien, T.P. Luxton, R. Ross, A. Williams, and P. Clark. Goldschmidt 2014, Sacramento, CA, 2014. (I)

279. Evaluating the Risks of Pb and As in Urban Soils. K.G. Scheckel, B.W. Miller, K. Bradham and D. Thomas. Annual Meeting of the Soil Science Society of America, Tampa, FL, 2013. (I)

280. Challenges of Pb immobilization and risk assessment. K.G Scheckel, B.W Miller, and L. Li. 246th ACS National Meeting, Indianapolis, IN, 2013. (N)

281. Lead stabilization and arsenic mobilization by phosphate and alternative amendments: Implications on urban soil remediation and urban agriculture. Z.Cheng, M. Maddaloni, and K.G. Scheckel. 246th ACS National Meeting, Indianapolis, IN, 2013. (N)

282. Are phosphorus in situ Pb stabilization treatments equal? N.T Basta, K.K Minca, K.G Scheckel, and M.E Moser. 246th ACS National Meeting, Indianapolis, IN, 2013. (N)

283. Understanding microbial communities, lead availability, and their potential Interactions at an abandoned firing range in Oak Ridge, TN. C.W Schadt, T.S Sullivan-Guest, K.G Scheckel, P.M Jardine, and N.T Basta. 246th ACS National Meeting, Indianapolis, IN, 2013. (N)

284. Bioavailable and bioaccessible pools of soil bound metal(loid)s: Results from in vitro extraction, X-ray absorption spectroscopy, and in-vivo feeding studies. B.W. Miller, K.G. Scheckel, K.D. Bradham, and D.J. Thomas. International Union on Pure and Applied Chemistry, Istanbul, Turkey, 2013. (I)

285. Role of Phosphate Amendments on Pb and As Bioavailability. K.G. Scheckel, B.W. Miller, K.D. Bradham and D.J. Thomas. 12th International Conference on the Biogeochemistry of Trace Elements, Athens, GA, 2013. (I)

286. Bioaccessibility Estimates for Soil Pb Should Correlate with Human Bioavailability of Treated Soils. R.L. Chaney, M.H. Zia, E.E. Codling and K.G. Scheckel. 12th International Conference on the Biogeochemistry of Trace Elements, Athens, GA, 2013. (I)

287. Arsenic Speciation, In Vitro Gastrointestinal Bioaccessibility, and Predicted Human Bioavailability from Ingestion of Contaminated Soil. N.T. Basta, K.G. Scheckel, K.D. Bradham, D. J. Thomas, S.W. Whitacre and B.W. Miller. 12th International Conference on the Biogeochemistry of Trace Elements, Athens, GA, 2013. (I)

288. A Substrate for in-situ Study of the Transformation of Manufactured Nanomaterials in the Environment. R. Sekine, M. Khaksar, G. Brunetti, E. Donner, K. G. Scheckel, E. Lombi and K. Vasilev. 12th International Conference on the Biogeochemistry of Trace Elements, Athens, GA, 2013. (I)

289. Fate and Lability of Silver in Soils: Effect of Aging. L. Settimio, M.J. McLaughlin, E. Lombi, K.A. Langdon, E. Donner, J.K. Kirby and K.G. Scheckel. 12th International Conference on the Biogeochemistry of Trace Elements, Athens, GA, 2013. (I)

290. Nanomaterial Fate in Biosolids. K.G. Scheckel. Annual W2170 Meeting, Denver, CO, 2013. (N)

291. USEPA Perspective on Manufactured Nanomaterials in the Environment. K.G. Scheckel. International Workshop on the Risk Assessment of Manufactured Nanomaterials, Adelaide, Australia, 2012. (I)

292. Assessing Oral Human Bioavailability of Arsenic in Soil with in Vitro Gastrointestinal Methods. N. Basta, S. D. Whitacre, K.G. Scheckel, B. Miller and S. Casteel. Annual Meeting of the Soil Science Society of America, Cincinnati, 2012. (N)

293. Bioavailability, Bioaccessibility, and Speciation of Arsenic Contaminated Soils. K.D. Bradham, K.G. Scheckel, B.W. Miller, D.J. Thomas. Annual Meeting of the Soil Science Society of America, Cincinnati, 2012. (N)

294. Bioaccessibility Estimates for Soil Pb Should Correlate with Human Bioavailability of Treated Soils. R.L. Chaney, M.H. Zia, K.G. Scheckel, and E. Codling. Annual Meeting of the Soil Science Society of America, Cincinnati, OH, 2012. (N)

295. Societal Impacts of Synchrotron Research: Environmental Perspectives. K.G. Scheckel. 4th International Conference EuroSoil, Bari, Italy, 2012. (I)

296. Human Health Impacts of Toxic Elements and Deficient Nutrients in Plants. K.G. Scheckel and E. Lombi. NSLS/CFN Joint Users' Meeting, Upton, NY, 2012. (N)

297. USEPA West Oakland Residential Lead Assessment Study. S.M. Serda, S.A. Calanog,

K.D. Bradham, K.G. Scheckel and B.W. Miller. Society of Toxicology Annual Meeting. San Francisco, CA, 2012. (I)

298. Assessing the Potential Consequences of Subsurface Bioremediation: Fe-oxide Bioreductive Processes and the Propensity for Secondary Mineral Precipitation, Media Structural Breakdown, and Contaminant–Colloid Co-Transport. P.M. Jardine, C.M. Hansel-Wankel, J.C. Parker, R.W. Gentry; K.G. Scheckel, U. Kim, Y. Tang, M. Stewart, and L. Le. Annual SERDP / ESTCP Workshop. Washington, DC, 2011. (N)

299. Relative Bioavailability and Bioaccessibility and Speciation of Arsenic in Contaminated Soils. K.D. Bradham, K.G. Scheckel, C.M. Nelson, P.E. Seales, G.E. Lee, M.F. Hughes, B.W. Miller, and D.J. Thomas. 11th International Conference on the Biogeochemistry of Trace Elements, Florence, Italy, 2011. (I)

300. Impact of Surface Charge on the Aggregation and Toxicity of Silver Nanoparticles. A.M. El Badawy, K.G. Scheckel and T.M. Tolaymat. 11th International Conference on the Biogeochemistry of Trace Elements, Florence, Italy, 2011. (I)

301. Synchrotron Speciation of Plant Nutrients in Soil. K.G. Scheckel. Australian Soil Science Society, Inc., Adelaide, Australia, 2011. (I)

302. Environmental Synchrotron Research and Impacts on Society. K.G. Scheckel. University of South Australia Public Lecture Series, Adelaide, Australia, 2011. (I)

303. Application and Impact of Synchrotron Research. K.G. Scheckel. Australian Synchrotron Colloquium, Melbourne, Australia, 2011. (I)

304. Arsenic Bioavailability, Bioaccessibility, and Speciation. K.G. Scheckel, K.D. Bradham, D.J. Thomas, B. Miller and L. Li. Annual Meeting of the Soil Science Society of America, Pittsburgh, PA, 2009. (N)

305. Assessing Arsenic Bioavailability in Soil When in Vitro Gastrointestinal Methods Are the Only Option. N.T. Basta, K.D. Bradham, K.G. Scheckel and D. J. Thomas. Annual Meeting of the Soil Science Society of America, Pittsburgh, PA, 2009. (N)

306. Using X-Ray Absorption Spectroscopy (XAS) for Speciated Characterization of Trace Metals in Coal Combustion Residues and Products. T.P Luxton, K.G. Scheckel, and N. Hutson. Air Quality VII Conference. Arlington, VA, 2009. (I)

307. The New MRCAT (Sector 10) Bending Magnet Beamline at the Advanced Photon Source. A.J. Kropf, J. Katsoudas, Soma Chattopadhyay, T. Shibata, E.A. Lang, V. Zyryanov, B. Ravel, K. Mcivor, K.M. Kemner, K.G. Scheckel, S.R. Bare, J. Terry, S. D. Kelly, B.A. Bunker and C.U. Segre. 10th International Conference on Synchrotron Radiation Instrumentation. Melbourne, Australia, 2009. (I)

308. Progress in Understanding Element Bioavailability and Bioaccessibility in Soils. R.L. Chaney, K.G. Scheckel, N.T. Basta and J.A. Ryan. 5th International Workshop on Chemical Bioavailability in the Environment. Adelaide, Australia, 2009. (I)

309. Environmental Factors and Surface Properties of Nanoparticles Governing their Fate, Reactivity, and Mobility. K.G. Scheckel, S.R. Al-Abed, T.P. Luxton, T.M. Tolaymat, H. Choi, A.M. El Badawy, S. Joo, K. Loftspring, and G. Silva. International Conference on the Biogeochemistry of Trace Elements, Chihuahua, Mexico, 2009. (I)

310. Toxic metals in drinking water pipes: New insights from synchrotron studies. T.L. Gerke and K.G. Scheckel. University of Cincinnati Geology Department Seminar. Cincinnati, OH, 2009. (N)

311. Corrosion By-Products Associated with Pb Pipes. K.G. Scheckel, T. Gerke, and M.R. Schock. Advanced Photon Source Users Science Seminar. Argonne, IL, 2008. (N)

312. Metal Immobilization Influence on Bioavailability and Remediation for Urban Environments. K.G. Scheckel. Annual Meeting of the Soil Science Society of America. Houston, TX, 2008. (I)

313. Assessing Arsenic Oral (Bio)Availability In Soil and Human Health Risk by Using In-Vitro Gastrointestinal Methods. N.T. Basta, K.D. Bradham and K.G. Scheckel. Annual Meeting of the Soil Science Society of America. Houston, TX, 2008. (I)

314. Benthic Community Response to Sediment Amendments. Y.M. Arias-Thode, G. Rosen, J. Kan, A. Obraztsova, J. Leather, Y.B. Wang, K.G. Scheckel and K.H. Nealson. Society of Environmental Toxicology and Chemistry. Tampa, FL, 2008. (N)

315. The Use of Soil Amendments for the Remediation of Heavy Metal-Contaminated Sites. G.M. Pierzynski, L.R. Baker, G.M. Hettiarachchi, and K.G. Scheckel. 14th International Conference on the Heavy Metals in the Environment. Taipei, Taiwan, 2008. (I)

316. Field Evaluation of Arsenic Transport: Speciation in Sediment Material. K.G Scheckel, R.G. Ford, A.G.B. Williams, T. Luxton, and P. Clark. Advanced Photon Source Science Special Interest Group. Chicago, IL. 2008. (I)

317. Application of Synchrotron Techniques to Investigate In-Situ Arsenic Speciation. K.G. Scheckel. 20th New Phytologist Symposium: Arsenic: Unraveling its metabolism and speciation in plants. Aberdeen, United Kingdom, 2008. (I)

318. Use of Adsorption Media for Arsenic Removal from Water. K.G. Scheckel, D. Lytle, and T. Sorg. ACS National Meeting. New Orleans, LA, 2008. (N)

319. Past, Present & Future of the US EPA: Protecting Human Health & the Natural Environment. K.G. Scheckel. Kansas State Graduate Student Enrichment Seminar. Manhattan, KS, 2008. (N)

320. Application of Synchrotron Techniques in Environmental Science. K.G. Scheckel. Kansas State Graduate Student Enrichment Seminar. Manhattan, KS, 2008. (N)

321. Introduction and Applicability of Synchrotron Techniques to Determine Inorganic Contaminant Speciation and Distribution. K.G. Scheckel, M.R. Schock, T.L. Gerke, and C.A. Impellitteri. Inorganic Contaminants Workshop American Water Works Association. Albuquerque, NM, 2008. (N)

322. Isotopic dilution, Microscopic and Spectroscopic Techniques for Understanding Different Reaction Pathways for Liquid- and Granular-Micronutrients in Calcareous Soils. G.M. Hettiarachchi, M.J. McLaughlin, K.G. Scheckel, D. Chittleborough, and M. Newville. Annual Meeting of the Soil Science Society of America. New Orleans, LA, 2007. (I)

323. Assessing Contaminant Bioavailability in Soil when In Vitro Gastrointestinal Methods are the Only Option. N.T. Basta, K.G. Scheckel, and K. D. Bradham. 17th Annual Conference of the International Society of Exposure Analysis. Durham, NC, 2007. (I)

324. Importance of Metal Speciation in Understanding Bioavailability. K.G. Scheckel. 17th Annual Conference of the International Society of Exposure Analysis. Durham, NC, 2007. (I)

325. Linking Metal Speciation to Bioavailability: One Part of the Complex Puzzle. K.G. Scheckel. Metals, Environment, and Human Health: Bridging the Gaps Workshop. Stony Brook, NY, 2007. (N)

326. Metal Interactions in Biosolids and Biosolids-Amended Soils: Sorption Mechanisms to Remediation Applications. K.G. Scheckel, M. Chappell, A.G.B. Williams, and J.A. Ryan. W-1170 Biosolids Workgroup. Savannah, GA, 2007. (N)

327. Spectroscopic Methods to Assess Bioavailability and Remediation. K.G. Scheckel. EPRI

Workshop on Arsenic Bioavailability. Tampa, FL, 2006. (N)

328. Linking Arsenic Speciation in Smelter Contaminated Soil to Oral Bioavailability. N.T. Basta, J.N. Foster, K.G. Scheckel, S.W. Casteel. Annual Meetings of the Society of Environmental Toxicology and Chemistry. Montreal, Canada, 2006. (I)

329. Use of High Fe Compost to Reduce Pb and As Availability. S. Brown, I. Clausen, K.G. Scheckel, M. Chappell, and G.M. Hettiarachchi. Annual Meeting of the Soil Science Society of America. Indianapolis, IN, 2006. (I)

330. Arsenic Transport across the Groundwater - Surface Water Interface at a Site in Central Massachusetts. W.C. Brandon, D.F. McTigue, C.L. Stein, R.G. Ford, K.G. Scheckel, and A.G.B. Williams. Geological Society of America Annual Meeting. Philadelphia, PA, 2006. (N)

331. Application of Metal Speciation to Risk, Remediation, and Bioavailability. K.G. Scheckel. University of Kentucky Soil Science Seminar. Lexington, KY, 2006. (N)

332. Innovative Technology for Recycling of Manure Phosphorus With Rapid Amorphous Phosphate Precipitation. A.A. Szogi, M.B. Vanotti, P.J. Bauer, K.G. Scheckel, and W.H. Hudnall. 12th RAMIRAN (Network on Recycling of Agricultural, Municipal and Industrial Residues in Agriculture) International Conference, Denmark, 2006. (I)

333. Metal Speciation, Bioavailability and Remediation at Superfund Sediment Sites. K. Scheckel, A. Williams, R. Ford, D. Neptune, J. Ryan, S. Acree, D. Gratson, G. McDermott, T. Tolaymat and R. Wilkin. 18th World Congress of Soil Science, Philadelphia, PA, 2006. (I)

334. Distinguishing Anthropogenic and Geogenic Impacts of Sediment Contamination. K.G. Scheckel. International Workshop on Criminal and Environmental Forensics. Perth, Australia, 2006. (I)

335. Synchrotron techniques in environmental and forensic sciences. K.G. Scheckel. CSIRO Land and Water Departmental Seminar. Adelaide, Australia, 2006. (I)

336. Principles of synchrotron techniques, potential and limitations. K.G. Scheckel. University of Adelaide, School of Earth and Environmental Sciences Seminar. Adelaide, Australia, 2006. (I)

337. Solid Phase Speciation of Metal and Metalloid Partitioning to Iron- and Sulfur-Rich Sediments. R.G. Ford, R.T. Wilkin, K.G. Scheckel, R. Kukkadapu, and J. Zachara. National American Chemical Society Meeting, Atlanta, GA, 2006. (N)

338. Innovative Risk Management Options For Characterizing And Remediating Contaminated Sediments. K.G. Scheckel, S.R. Al-Abed, A.G.B. Williams, R.G. Ford, and J.A. Ryan. Board of Scientific Counselors Program Review. Cincinnati, OH. 2005. (N)

339. Metal Speciation And Bioavailability- Are They Important In The Risk Assessment/Risk Management Paradigm. K.G. Scheckel and J.A. Ryan. Board of Scientific Counselors Program Review. Cincinnati, OH. 2005. (N)

340. Identification of Iron Phases in Biosolids via Mössbauer Spectroscopy. M. Chappell, A.G.B. Williams, K.G. Scheckel, and J.A. Ryan. Annual Meeting of the Soil Science Society of America, Salt Lake City, UT, 2005. (I)

341. Micro Scale Investigations to Understand Binding Mechanisms of Metals in Biosolids using Synchrotron Based X-ray Fluorescence and X-ray Absorption Spectroscopies. G.M Hettiarachchi, K.G. Scheckel, and J.A. Ryan. Soil Science Society of America Annual Meeting. Salt Lake City, UT. 2005. (I)

342. In-situ Strategies for the Sequestration of Zinc in Contaminated Sediments. A.G.B.

Williams, K.G. Scheckel, and J.A. Ryan. NSF Sponsored Workshop "Frontiers in Exploration of the Critical Zone", Newark, DE. 2005. (N)

343. Mode of Occurrence, Treatment, and Monitoring Significance of Tetravalent Lead. M.R. Schock, K.G. Scheckel, M. DeSantis, and T. Gerke. American Water Works Association Water Quality Technology Conference. Quebec, Canada. 2005 (I)

344. Metal Speciation in Soil, Sediment, and Water Systems via Synchrotron Radiation Research. K.G. Scheckel, R.G. Ford, C.A. Impellitteri, D. Lytle, J.A. Ryan, M. Schock, Thabet Tolaymat, R.T. Wilkin, A.G.B. Williams. US EPA Science Forum, Washington, DC, 2005. (N)

345. In vivo Synchrotron Analysis of Thallium in Iberis intermedia. K.G. Scheckel, E. Lombi, S. Rock, and M.J. McLaughlin. 2005. Pacific Northwest Consortium - Collaborative Access Team Research Highlight, Advanced Photon Source, Argonne National Laboratory, Chicago, IL, 2005 (N)

346. Speciation and Distribution of Thallium in Iberis Intermedia: An In-vivo Synchrotron Study. E. Lombi, K.G. Scheckel, R. Hamon, and M.J. McLaughlin. 8th International Conference on the Biogeochemistry of Trace Elements, Adelaide, Australia, 2005. (I)

347. X-ray Microprobe and Spectroscopic Approaches to Understand Mechanisms of Metal Binding in Biosolids. Hettiarachchi, G. M., K. G. Scheckel, and J. A. Ryan. 2005. 8th International Conference on the Biogeochemistry of Trace Elements, Adelaide, Australia, 2005. (I).

348. Spectroscopic Speciation of Metals in Contaminated Environments. K.G. Scheckel, R.G. Ford, R.T. Wilkin, and A.G.B. Williams. Association of Environmental Health & Sciences West Coast Annual International Conference on Soils, Sediments and Water, San Diego, CA, 2005. (I)

349. In vivo Synchrotron Investigation of Thallium Hyperaccumulation. K.G. Scheckel, E. Lombi, R. Hamon, and S. Rock. Third International Phytotechnologies Conference, Atlanta, GA, 2005 (I)

350. In vivo Synchrotron Analysis of Thallium in Iberis Intermedia. K.G. Scheckel, E. Lombi, S.A. Rock, and M.J. McLaughlin. Annual Meeting of the Soil Science Society of America, Seattle, WA, 2004. (I)

351. The Distribution, Solid-Phase Speciation, and Desorption/Dissolution of As in Iron-based Treatment Media. C.A. Impellitteri and K.G. Scheckel. 32nd Annual Water Quality Technology Conference and Exposition, San Antonio, TX, 2004. (N)

352. Reducing Risk from Soil Metals: Summary of a Field Experiment. K.G. Scheckel and J.A. Ryan. US EPA Science Forum, Washington, DC, 2004. (N)

353. Water, Salt and Climate Change. E. Lombi and K.G. Scheckel. Western Australian Users Workshop, Perth, Australia, 2004. (I)

354. Correlating Metal Speciation in Soils to Risk. K.G. Scheckel. Users Meeting for the Advanced Photon Source, Argonne, IL, 2004. (I)

355. Synchrotron Radiation Studies in Environmental Science. K.G. Scheckel. College of Agriculture, School of Natural Resources Semester Seminar Series. OSU, Columbus, OH, 2004. (N)

356. Restoration of Metal Contaminated Soils Using Biosolids. S. Brown, C. Henry, H. Compton, M. Sprenger, and K. Scheckel. Sustainable Land Application Conference. Lake Buena Vista, FL., 2004. (N)

357. Effect of Biosolids Application on Soil Metal Chemistry and Phytoavailability. J.A. Ryan,

G.M. Hettiarachchi, K.G. Scheckel, and R.L. Chaney. Sustainable Land Application Conference. Lake Buena Vista, FL., 2004. (N)

358. The Dirt on Soils. K.G. Scheckel. Cincinnati Public School Soils Workshop. Cincinnati, OH, 2003. (N)

359. Soil Metal Bioavailability and Treatment. J.A. Ryan, K.G. Scheckel, and C.A. Impellitteri. ORD Contaminated Sites Workshop. Cincinnati, OH. 2003. (N)

360. Evidence of Effective in situ Inactivation of Soil Pb Using Phosphate or Composted Biosolids in the IINERT Field Test at Joplin, Missouri. R.L. Chaney, J.A. Ryan, S.L. Brown, J.G. Hallfrisch, Q. Xue, K.G. Scheckel, S.W. Casteel, M. Maddaloni, and W.R. Berti. Second International Bioavailability Workshop, Ascono, Switzerland, 2003. (I)

361. Soil Lead Bioavailability. J.A. Ryan and K.G. Scheckel. USEPA Bioavailability Workshop, Safety Harbor, FL, 2003. (N)

362. Sorption of Lead on a Ruthenium Compound: A Macroscopic and Microscopic Study. K.G. Scheckel, C.A. Impellitteri, and J.A. Ryan. American Institute of Chemical Engineers Annual Meeting, Indianapolis, IN, 2002. (N)

363. Sorption of Arsenate and Arsenite on a Ruthenium Compound: A Macroscopic and Microscopic Study. C.A. Impellitteri, K.G. Scheckel, G.M. Hettiarachchi, J.A. Ryan, and P.M. Randall. American Institute of Chemical Engineers Annual Meeting, Indianapolis, IN, 2002. (N)

364. Spectroscopic Speciation and Quantification on Alterations of Pb in Phosphate Amended Soils. K.G. Scheckel and J.A. Ryan. Annual Meetings of the Society of Environmental Toxicology and Chemistry, Salt Lake City, UT, 2002. (I)

365. Alterations Of Soil Metal Chemistry And Phytoavailability Associated With Biosolids Application. J.A. Ryan, G.M. Hettiarachchi, and K.G. Scheckel. Annual Meetings of the Society of Environmental Toxicology and Chemistry, Salt Lake City, UT, 2002. (I)

366. Reducing Children's Risk to Soil Lead: Summary of a Field Experiment to Reduce Soil Lead Bioavailability. J.A. Ryan, W.R. Berti, S.L. Brown, S.W. Casteel, R.L. Chaney, P.Grevatt, J. Hallfrisch, M. Maddaloni, and K.G. Scheckel. Annual Meetings of the Society of Environmental Toxicology and Chemistry, Salt Lake City, UT, 2002. (I)

367. Extractability Of Metals From Smelter-Contaminated Soils Treated With Phosphorus Amendments. K.G. Scheckel and J.A. Ryan. National American Chemical Society Meeting, Orlando, FL, 2002. (N)

368. Reducing Children's Risk to Soil Lead: Relating Contaminant Speciation to Bioavailability. K.G. Scheckel, J.A. Ryan, and D. Allen. US EPA Science Forum, Washington, DC, 2002. (N)

369. Effect of Phosphorus Treatment on Lead Mineralogy. K.G. Scheckel and J. Yang. Annual Meeting of the Soil Science Society of America, Charlotte, NC 2001. (N)

370. Effects of Treatments on Soil-Lead Bioavailability: Implications of In Vitro Extraction Testing. M.V. Ruby, S. Brown, K.G. Scheckel, and D. Allen. Annual Meeting of the Soil Science Society of America, Charlotte, NC, 2001. (N)

371. Effect of Aging on the Formation and Dissolution of Pyromorphite. K.G. Scheckel and J.A. Ryan. National American Chemical Society Meeting, Chicago, IL, 2001. (N)

372. Effect of Residence Time on the Mechanisms of Metal Retention/Release on Soils. D.L. Sparks, A.M. Scheidegger, D.R. Roberts, K.G. Scheckel, R.G. Ford, and A.C. Scheinost. Annual Meeting of the Soil Science Society of America, Salt Lake City, UT, 1999. (N)

373. Advances in Understanding the Mechanisms and Rates of Sorption Phenomena for

Inorganic Solutes in Soils. R.G. Ford, D.R. Roberts, K.G. Scheckel, A.C. Scheinost, D.G. Strawn, and D.L. Sparks. Annual Meeting of the Soil Science Society of America, Baltimore, MD, 1998. (N)

374. The Dynamics of Metal Adsorption and Surface Precipitate Formation on Soil Materials as Monitored by Surface Molecular Techniques. D.R. Roberts, D.L. Sparks, A.M. Scheidegger, D.G. Strawn, and K.G. Scheckel. 16th World Congress of Soil Science. Montpellier, France. 1998. (I)

375. Use of In-situ Surface Spectroscopic and Microscopic Techniques to Ascertain the Fate and Mechanisms of Metal Contaminants in the Subsurface Environment. A.M. Scheidegger, D.G. Strawn, K.G. Scheckel, and D.L. Sparks. 36th IUPAC Conference. Geneva, Switzerland. 1997. (I)

376. Kinetics of Trace Element Sorption on Soils and Soil Components. D.G. Strawn, A.M. Scheidegger, K.G. Scheckel, D.R. Roberts, and D.L. Sparks. Fourth International Conference on the Biogeochemistry of Trace Elements. Berkeley, CA, 1997. (I)

377. Kinetics and Mechanisms of Metal Cation Sorption at the Mineral/Water Interface. D.L. Sparks, A.M. Scheidegger, D.G. Strawn, and K.G. Scheckel. ACS Geochemistry Division Symposium. ACS Spring Meetings. San Francisco, CA, 1997. (N)

378. Mechanisms of Slow Metal Sorption on Soils: An Overview. D.L. Sparks, A.M. Scheidegger, A.M. Brennan, D.G. Strawn, and K.G. Scheckel. Annual Meeting of the Soil Science Society of America, Indianapolis, IN, 1996. (N)

Volunteered Presentations

379. Understanding P Dynamics of Delmarva Peninsula Legacy P Soils By X-Ray Absorption Near Edge Structure Spectroscopy (XANES). L. Moscesso, A.L. Shober and K.G. Scheckel. Annual Meeting of the Soil Science Society of America, San Antonio, TX, 2019. (I)

380. Application of high energy resolution X-ray fluorescence detection spectroscopy on environmental samples. M. Noerpel, T. Luxton, B. Ravel, A.J. Kropf, R. Karna, D. Peloquin, and K. Scheckel. 254th American Chemical Society National Meeting, Washington, DC, 2017.

381. Application of high energy resolution X-ray fluorescence detection spectroscopy on environmental samples. M. Noerpel, T. Luxton, B. Ravel, A.J. Kropf, R. Karna, D. Peloquin, and K. Scheckel. 14th International Conference on the Biogeochemistry of Trace Elements, Zurich, Switzerland, 2017. (I)

382. Relating Soil Geochemical Properties to Arsenic Bioaccessibility Through Hierarchical Modeling. C. Nelson, K. Li, D. Obenour, J. Misenheimer, K. Scheckel, A. Betts, D. Thomas, K. Bradham and A. Juhasz. International Society of Exposure Science, RTP, NC, 2017. (I)

383. Soil Fractionation Study, Speciation, and IVBA Analysis in Lead and Arsenic Contaminated Soils. R.R. Karna, A.R. Betts, M. Noerpel, and K.G. Scheckel. Annual Meeting of the Soil Science Society of America, Phoenix, AZ, 2016. (I)

384. Apparent Relationship Between Soil Vanadium and Arsenic Bioaccessibility Across Many Soils: Are There Geochemical Reasons? A.R. Betts, C. Nelson, K. Bradham, and K.G. Scheckel. Annual Meeting of the Soil Science Society of America, Phoenix, AZ, 2016. (I)

385. Speciation of Phosphorus on Sorbing Materials for Stormwater Filtration Using K-Edge X-Ray Absorption Near Edge Structure. Z. Qin, A.L. Shober, K.G. Scheckel, C.J. Penn, K. Clark. Annual Meeting of the Soil Science Society of America, Phoenix, AZ, 2016. (I)

386. Point of Zero Charge: Role in Pyromorphite Formation and Stability in Lead Contaminated

Soils. R.R. Karna and K.G. Scheckel. Annual Meeting of the Soil Science Society of America, Phoenix, AZ, 2016. (I)

387. Remediation of Uranium-Contaminated Groundwater By Functionalized Magnetic Mesoporous Silica Nanoparticles. D. Li, S. Egodawatte, D. Kaplan, S. Serkiz, S. Larsen, J. Seaman and K. Scheckel. AIChE Annual Meeting, San Francisco, CA, 2016. (N)

388. Correlating Arsenic (As) and Iron (Fe) Speciation to As Bioavailability from a Collection of Contaminated Soils with Varying Contamination Sources and Soil Properties. A.R. Betts, B. Stevens, N.T. Basta, and K.G. Scheckel. Annual Meeting of the Soil Science Society of America, Minneapolis, MN, 2015. (I)

389. Point of Zero Charge: Role in Pyromorphite Formation and Stability in Lead Contaminated Soils. R.R. Karna and K.G. Scheckel. Scheckel. Annual Meeting of the Soil Science Society of America, Minneapolis, MN, 2015. (I)

390. Lead Stabilization and Arsenic Mobilization by Phosphate and Alternative Amendments: Implications on Urban Soil Remediation and Urban Agriculture. Z. Cheng, A. Paltseva, M. Maddaloni, and K.G. Scheckel. Geological Society of America, Baltimore, MD, 2015. (N)

391. Lead stabilization and arsenic mobilization by P-bearing amendments: laboratory and field observations. Z. Cheng, M. Maddaloni, K.G. Scheckel, Z. Garcia, and A. Paltseva. AEHS 31st Annual International Conference on Soils, Sediments, Water, and Energy, Amherst, MA, 2015. (N)

392. Assessment of Arsenic Speciation and Bioaccessibility in Mine-impacted Matrices. C. Ollson, E. Smith, N.T. Basta, K.G. Scheckel, and A.L. Juhasz. 13th International Conference on the Biogeochemistry of Trace Elements, Fukuoka, Japan, 2015. (I)

393. Assessing the efficacy of amendment strategies for Pb-contaminated soil using XAS, in vivo and in vitro assays. A.L. Juhasz, C. Herde, K.G. Scheckel and E. Smith. 13th International Conference on the Biogeochemistry of Trace Elements, Fukuoka, Japan, 2015. (I)

394. Transformation of silver nanoparticles in greywater and wastewater and the long-term fate of biosolids silver. E. Donner, G. Brunetti, R. Sekine, M. Khaksar, K. Scheckel, K. Vasilev, and E. Lombi. 13th International Conference on the Biogeochemistry of Trace Elements, Fukuoka, Japan, 2015. (I)

395. Speciation and lability of Ag-, AgCl- and Ag2S-nanoparticles in soil determined by X-ray absorption spectroscopy and Diffusive Gradients in Thin Films. R. Sekine, G. Brunetti, E. Donner, M. Khaksar, K. Vasilev, K. G. Scheckel, H. Zhang and E. Lombi. 13th International Conference on the Biogeochemistry of Trace Elements, Fukuoka, Japan, 2015. (I)

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493. Ni Sorption on Pyrophyllite: Evidence for the Transformation of Layered Ni-Al Double Hydroxide into a Phyllosilicate Precursor. A.C. Scheinost, R.G. Ford, K.G. Scheckel, and D.L. Sparks. ACS Geochemistry Division Symposium. ACS Spring Meetings. Anaheim, CA, 1999. (N)

494. Time-Resolved AFM and XAFS Investigations of Nickel Surface Precipitate Dissolution Mechanisms. K.G. Scheckel and D.L. Sparks. Annual Meeting of the Soil Science Society of America, Baltimore, MD, 1998. (N)

495. Use of Time-Resolved Diffuse Reflectance Spectroscopy to Monitor Ni Sorption on Phyllosilicates, Gibbsite and Amorphous Silica. A.C. Scheinost, R.G. Ford, K.G. Scheckel, and D.L. Sparks. Annual Meeting of the Soil Science Society of America, Baltimore, MD, 1998. (N)

496. Kinetics and Mechanisms of Nickel Sorption/Dissolution at Soil Mineral Surfaces Employing X-Ray Absorption Fine Structure Spectroscopy. K.G. Scheckel and D.L. Sparks.

Eighth Annual Goldschmidt Conference. Toulouse, France. 1998. (I)

497. Kinetics and Mechanisms of Nickel Sorption/Dissolution at Soil Mineral Surfaces Employing Scanning Force Microscopy. K.G. Scheckel and D.L. Sparks. 16th World Congress of Soil Science. Montpellier, France. 1998. (I)

498. Influence of pH on Surface Precipitate Formation of Ni(II) on Pyrophyllite. K.G. Scheckel, A.M. Scheidegger and D.L. Sparks. ACS Division of Colloid and Surface Chemistry. Newark, DE, 1997. (N)

499. Ni(II) Precipitation and Dissolution Kinetics on Pyrophyllite: An In-Situ AFM Study. K.G. Scheckel, A.M. Scheidegger and D.L. Sparks. ACS Geochemistry Division Symposium. ACS Spring Meetings. San Francisco, CA, 1997. (N)

500. Use of Atomic Force Microscopy (AFM) in Assessing Polynuclear Ni Surface Complexation on Clay Minerals. K.G. Scheckel, A.M. Scheidegger and D.L. Sparks. Annual Meeting of the Soil Science Society of America, Indianapolis, IN, 1996. (N)

Patents

501. Method for Removing Contaminants from Water using Ruthenium Based Contaminant Sorbents and Oxidizers. K.G. Scheckel, C.A. Impellitteri and J.A. Ryan. Feb 2008. United States Government Patent Office. 7,335,307.

502. Method for sequestering ions in an environmental matrix. K.G. Scheckel, R.R. Karna, C.R. Partridge, K.D. Bradham, D.J. Thomas, M.R. Noerpel, J.L. Goetz, and T.P. Luxton. Aug 2022. United States Government Patent Office. 17/450,445.

503. Method for sequestering ions in an environmental matrix. K.G. Scheckel, R.R. Karna, C.R. Partridge, K.D. Bradham, D.J. Thomas, M.R. Noerpel, J.L. Goetz, T.P. Luxton, and T.D. Sowers. Nov 2024. United States Government Patent Office. 17/814,172.

Professional & Leadership Activities

- 2021-2023, Past President, International Society of Trace Element Biogeochemistry
- 2019-2021, President, International Society of Trace Element Biogeochemistry
- 2017-2019, Vice President, International Society of Trace Element Biogeochemistry
- 2018-2022, Soil Science Interagency Working Group, continuation of NSTC effort with USDA lead
- 2016-2017, Soil Science Interagency Working Group, Subcommittee on Ecological Systems, Committee on Environment, Natural Resources, and Sustainability, National Science and Technology Council, Office of the President of the United States
- 2017-2018 Section Editor, Land Pollution of Current Pollution Reports (Springer Science Journal)
- 2015-2016, Editorial Board, Soil and Sediment Pollution Section of Current Pollution Reports (Springer Science Journal)
- 2015-2017, Member, Interstate Technology & Regulatory Council's (ITRC) Bioavailability in Contaminated Soil Team
- 2012-2016, Co-Chair, Technical Review Workgroup Bioavailability Committee, US EPA
- 2012-2014, Member, Imaging and Microprobes: Chemical and Materials Proposal Review Panel, National Synchrotron Light Source, Brookhaven National Lab, to review, discuss, grade, and determine beamtime allocations for general user proposals submitted for

synchrotron research

- 2012-2016, External Advisory Board, USDA Project: Bioenergy Feedstock Production Systems on Marginal Lands that Provide Ecosystem Services and Promote Regional Economic Activity
- 2011-2017, Secretary, International Society of Trace Element Biogeochemistry
- 2011-2013, National Committee, 12th International Conference of the Biogeochemistry of Trace Elements
- 2011-2013, Editorial Committee, 12th International Conference of the Biogeochemistry of Trace Elements
- 2011-2013, Advisory Council for Advanced Spectroscopy and LERIX (ALS), X-ray Science Division, Sector 20 Upgrade, Advanced Photon Source
- 2011-2013, Chair, Marion L. and Chrystie M. Jackson Soil Science Award Committee of the Soil Science Society of America
- 2011-Present, US EPA Technical Review Workgroup Lead Committee
- 2011-Present, Australian Remediation Industry Cluster (ARIC); A network of Australian and international expertise for environmental remediation efforts in Australia.
- 2010, Past Chair, Soils and Environmental Quality Division (S-11), SSSA
- 2010-2011, Associate Editor for Special Publications, Journal of Environmental Quality
- 2009, Chair, Soils and Environmental Quality Division (S-11), SSSA
- 2009-2011, International Committee Chair, International Society of Trace Element Biogeochemistry
- 2009-2011, Sponsorship Committee, International Conference on the Biogeochemistry of Trace Elements
- 2009-2011, Editorial Committee, International Conference on the Biogeochemistry of Trace Elements
- 2009-2011, Chair, Nominations Committee for Div. S-11 Officers
- 2009, Chair, Nominations for President-Elect Committee for Div. S-11
- 2009, Chair, Program Planning Committee for Div. S-11
- 2009-2012, Chair, Spectroscopy Proposal Review Panel, Advanced Photon Source, Argonne National Lab, to review, discuss, grade, and determine beamtime allocations for general user proposals submitted for synchrotron spectroscopy research
- 2008, Chair-Elect, Soils and Environmental Quality Division (S-11), SSSA
- 2006-2011, EnviroSync Steering Committee
- Scientific Proposal Reviewer
  - 2017 – National Sciences & Engineering Research Council of Canada
  - 2016 – National Science Center, Poland
  - 2015 – Natural Environment Research Council (NERC), UK
  - 2013 – National Institute of Environmental Health Sciences (NIEHS)
  - 2013 – Women's & Children's Hospital Foundation Research, Australia
  - 2012 – National Science Center, Poland
  - 2011 – USDA, Agriculture and Food Research Initiative
  - 2011 – Canadian Academic Research Program Grant Review
  - 2010 – Science & Industry Endowment Fund, CSIRO, Australia
  - 2009 – USDA, Board of Scientific Councilors Program Review
  - 2007 – Present, National Science Foundation (USA) Proposal Reviewer

  - 2007 – Present, Natural Sciences and Engineering Research Council of Canada
- 2005-2020, MRCAT/EnviroCAT Executive Council Member, Advanced Photon Source, Argonne National Lab
- 2005, Technical Evaluation Panel (TEP) Member for Scientific, Technical, Research, Engineering, and Modeling Support (STREAMS) (2005 RFP CI-05-10232)
- 2004-Present, Adjunct Assistant Professor, The Ohio State University
- 2004-2007, Auditing Committee of the International Society of Trace Element Biogeochemistry
- 2003-2006, Emil Truog Soil Science Award Committee of the Soil Science Society of America
- 2003-2006, Fund-Raising Subcommittee for the 18th World Congress of Soil Science
- 2003-Present, US EPA Technical Review Workgroup Bioavailability Committee
- 2002-2008, Associate Editor, Journal of Environmental Quality
- 2000-2002, Adjunct Professor, Cincinnati State Technical College
- Intermittent duty as Acting Branch Chief for Waste Management Branch when needed
- Symposia Organizer/Presiding Chair:
  - Biogeochemistry of trace elements in agricultural recycling, 15th International Conference on the Biogeochemistry of Trace Elements, 2019, Nanjing, China.
  - Metal Contaminant Dynamics in Soils, Annual Meeting of the Soil Science Society of America, 2019, San Diego, CA.
  - Biogeochemistry of Emerging Trace Elements in Aquatic and Terrestrial Systems, 14th International Conference on the Biogeochemistry of Trace Elements, 2017, Zurich, Switzerland.
  - Rethinking Waste for Nutrient and Energy Recovery: Challenges and Opportunities for Trace Element Biogeochemists, 14th International Conference on the Biogeochemistry of Trace Elements, 2017, Zurich, Switzerland.
  - Trace Element Bioavailability for Human and Ecological Risk Assessment: Concepts and Recent Advances (Bioavailability), 12th International Conference on the Biogeochemistry of Trace Elements, 2013, Athens, GA.
  - Studies on Bioaccessibility and Bioavailability of Soil Metals Impacting Human Health, Annual Meeting of the Soil Science Society of America, 2012, Cincinnati, OH.
  - Tribute to the Distinguished Career of James A. Ryan, Annual Meeting of the Soil Science Society of America, 2012, Cincinnati, OH.
  - Advanced Analytical Methods for Understanding the Chemistry of Elements in Soils, Annual Meeting of the Soil Science Society of America, 2011, San Antonio, TX.
  - Advances in Tools and Techniques for Soil Chemical Investigation, Annual Meeting of the Soil Science Society of America, 2010, Long Beach, CA.
  - Metals Bioavailability in Urban and Mining Communities, Annual Meeting of the Soil Science Society of America, 2009, Pittsburgh, PA.
  - Trace Elements in Plant Nutrition, International Conference on the Biogeochemistry of Trace Elements, 2009, Chihuahua, Mexico.
  - Geochemistry of Engineered Nanoparticles in the Environment, 237th American Chemical Society National Meeting, 2009, Salt Lake City, UT.
  - Synchrotron Applications in Trace Element Biogeochemistry, 9th Annual International Conference on the Biogeochemistry of Trace Elements, 2007, Beijing, China.
  - History of Soil Sciences: Past Accomplishments to Future Perspectives, 18th World Congress of Soil Science, 2006, Philadelphia, PA.
  - Synchrotron Applications in Trace Element Analysis, 8th Annual International Conference on the Biogeochemistry of Trace Elements, 2005, Adelaide, Australia.

- Redox, Division of Soil Chemistry, Soil Science Society of America Annual Meeting, 2004, Seattle, WA.
- Biogeochemical Processes in Soils, Division of Soil Chemistry, Soil Science Society of America Annual Meeting, 2004, Seattle, WA.
- Using Phosphorus for Remediation, Division of Environmental Quality, Soil Science Society of America Annual Meeting, 2003, Denver, CO.

Competitive Funding: $6.8 Million

- A Surface Functionality Based Approach for the Risk Assessment of Manufactured Nanomaterials in the Environment. Australian Research Council. DP120101115. $538K
- Fate of Uranium during Transport across the Groundwater-Surface Water Interface. DE-PS02-09ER09-07. $1056k
- Assessing the Potential Consequences of Subsurface Bioremediation: Fe-oxide Bioreductive Processes and the Propensity for Contaminant-Colloid Co-transport and Media Structural Breakdown. SERDP-11-ER03-006. $1,230K
- Mechanisms and Permanence of Sequestered Pb and As in Soils: Impact on Human Bioavailability. SERDP-10-ER03-007. $1,626K
- Bacterial and Benthic Community Response to Inorganic and Organic Sediment Amendments. SERDP-07-ER01-045. $911K
- USEPA Nanotechnology Competitive Initiative:
  - Environmental Fate and Transport of Inorganic Nanomaterials: Chemical Characterization, Bioavailability, Transport, and Toxicity in Water. 2007-01. $806k
  - Data on Material Properties and Interaction of Nanomaterials with Land and Solids Disposal. 2011-76. $670k

Postgraduate Students

Name	**Current Position**
Aaron Betts 2019-2021	Physical Scientist US EPA, Cincinnati, OH
Matt Noerpel 2015-2020	Environmental Engineer US EPA, Cincinnati, OH
Ranju Karna 2014-2018	Soil Scientist US Army Corp of Engineers, Vicksburg, MS
Aaron Betts 2013-2016	Ph.D. Candidate University of Delaware
Bradley W. Miller 2009-2013	Environmental Scientist US EPA, Denver, CO
Todd P. Luxton 2007-2010	Chemist US EPA, Cincinnati, OH
Mark A. Chappell 2005-2007	Soil Scientist, Team Leader US Army Corp of Engineers, Vicksburg, MS
Aaron G.B. Williams 2004-2006	Environmental Engineer Environmental Planning Specialists, Inc., Cincinnati, OH

Graduate Student Committees

Name	Degree	Year	Institute
Alexander Brockett	MS	Current	University of Maryland
Aaron Betts	Ph.D.	2019	University of Delaware
Qin Zhixuan	Ph.D.	2017	University of Delaware
Brooke Stevens	Ph.D.	2016	Ohio State University
Mengling Yi-Stuckman	Ph.D.	2013	Ohio State University
Jamie Richey	MS	2009	Ohio State University
Todd Luxton	Ph.D.	2007	Virginia Tech
Jill Foster	MS	2006	Ohio State University
Douglas Beak	Ph.D.	2006	Ohio State University

Visiting Scholars

Name	Home Institution
Kali Manning	Miami (OH) University
Sam Stacey	University of Adelaide, Australia
Liping Li	Henan University of Technology, China
Albert Juhasz	University of South Australia, Australia
Peng Wang	University of Queensland, Australia
Preston Law	USEPA, Region 7

Professional Affiliations

- American Society of Agronomy
- International Society of Soil Science
- Geological Society of America
- International Association of the Study of Clays
- ACS Geochemistry Division
- Soil Science Society of America
- Clay Minerals Society
- Geochemical Society
- American Chemical Society
- ACS Cincinnati Section
- International Society of Trace Element Biogeochemistry

Journal Reviewer

- Soil Science Society of America Journal
- Geochimica et Cosmochimica Acta
- Environmental Science & Technology
- The Science of the Total Environment
- Journal of Colloids and Interface Science
- Environmental Chemistry
- Environmental Toxicology & Chemistry
- Journal of Environmental Engineering
- Journal of Environmental Quality
- Environmental Pollution
- Environmental Research
- Geoderma
- Chemical Geology
- New Phytologist
- Soil Science
- Water Research

- Plant and Soil
- Toxicological & Environmental Chemistry
- Journal of Hazardous Materials
- Australian Journal of Soil Research
- Journal of Applied Geochemistry
- Water, Air, & Soil Pollution
- CLEAN
- Geosphere
- Chemosphere
- Atmospheric Environment
- Journal of Environmental Management
- Journal of Soils and Sediments

Honors and Awards

- 2022, EPA Science Achievement Award, ORD Jarosite Based Remediation Method Team - *for outstanding use of chemistry in developing mitigation methods for lead and arsenic that resulted in efficient, safe applications effectively reducing bioavailability.*
- 2021 Length of Service Award, 20 Years
- 2018, EPA Gold Metal for Exceptional Service, Lead & Arsenic Bioavailability Team - *for providing methods, models, and data to reduce the uncertainty of lead and arsenic bioavailability risk calculations used in Agency decision making.*
- 2016, Interstate Technology & Regulatory Council (ITRC) Team of the Year, Bioavailability of Contaminated Soils Committee
- 2014, American Water Works Association, Certificate of Appreciation for 'the most notable contribution to the science of public water supply development through the paper published by AWWA'.
- 2014, American Water Works Association, Distribution & Plant Operations Division Best Paper Award for "Importance of Pipe Deposits to Lead and Copper Rule Compliance".
- 2012, ORD Honor Award, Toxic Elements Team, *in recognition for successfully developing a method that has been applied at Superfund sites and included into the SW-846 Compendium of Agency approved methods.*
- 2011, EPA National Honor Award, Science Achievement Award – Earth Sciences (1st recipient), *for conducting transformative research to implement cost effective, real-world environmental solutions that directly support the EPA Goal 3: Cleaning Up Communities and Advancing Sustainable Development.*
- 2011, ORD Honor Award, Exceptional/Outstanding ORD Technical Assistance to the Regions or Program Offices, ORD West Oakland Research Support Team, *for providing integrated transdisciplinary scientific leadership to the sustainable remediation of residential yards to reduce the impact of lead in soils on children's health*
- 2011, Fellow – Soil Science Society of America
- 2011, Fellow – American Society of Agronomy
- 2011 Distinguished International Researcher Award from the University of South Australia International Research Collaboration Support Program *to support distinguished international researchers to visit UniSA to establish or strengthen research collaborations likely to lead to high profile research outcomes*
- 2011 NRMRL Honor Award for Communications, *in recognition of planning and organizing the National Biosolids Coordinators' Workshop to communicate research relevant to biosolids and to discuss federal regulations, state issues, and beneficial practices.*
- 2011, Most-Read Paper in Journal of Environmental Quality: Advanced in situ spectroscopic techniques and their applications in environmental biogeochemistry. E. Lombi, G.M. Hettiarachchi and K.G. Scheckel. 2011. J. Environ. Quality. 40(3): 659-666.

- 2011 Length of Service Award, 10 Years
- 2010 ORD Honor Award, Impact Award, ORD's Bioavailability Research Team, *for integrated transdisciplinary research efforts and communicating the science, its relevancy, impact and applicability at a level of superior influence to the scientific community; industry, academia, and foreign governments; and communities*
- 2010 Marion L. and Chrystie M. Jackson Soil Science Award, administered by the Soil Science Society of America, *To recognize and reward mid-career scientists who have made outstanding contribution in the areas of soil chemistry and mineralogy, based on criteria of significance and originality of basic and/or applied research, quality of teaching, and national and international impact on soil science and allied fields and on society at large*
- 2010, National Risk Management Research Laboratory Collaboration Award, Fort Devens Red Cove Team, *for demonstrating integrated transdisciplinary research efforts in the Fort Devens Red Cove research project*
- 2010, USEPA Quality Step Increase – Exceeding expectations of performance
- 2009 ORD Honor Award, Bronze Medal, Fort Devens Red Cove Team, *For establishing an innovative, prototypical model for assessing contamination impacts and properly managing restoration of ecological resources*
- 2009 OSWER National Notable Achievement Award for Regional Science, Fort Devens Red Cove Team
- 2008-2009 Cambridge Who's Who Among Executives, Professionals and Entrepreneurs
- 2008, USEPA Special Achievement Award, *For authorship of two technical framework documents on the monitored natural attenuation of inorganics*
- 2008, Patent for Ruthenium Based Inorganic and Organic Contaminant Sorbents/Oxidizers
- 2007-2010, Land Remediation and Pollution Control Division Kind Act Award (4 total)
- 2006, National Risk Management Research Laboratory Teamwork Award
- 2006, USEPA Quality Step Increase – Exceeding expectations of performance
- 2005-2016, USEPA Scientific and Technological Achievement Award (STAA) (16 total)
- 2004, National Risk Management Research Laboratory Research Highlights, Protecting Children's Health: An Alternative Technology for Reducing Risk from Lead in Soil
- 2003-2008, Team Leader, Metals Research Group, Soil & Sediments Management Branch, LRPCD
- 2002, National Synchrotron Light Source Research Highlight
- 2001-2012; 2014-2024, United States Environmental Protection Agency "S"uperior Award
- 2005, 2010, United States Environmental Protection Agency On-the-Spot Award
- 2001-2002, United States Environmental Protection Agency Postdoctoral Research Fellowship
- 2000-2001, Oak Ridge Institute for Science and Education (ORISE) Postdoctoral Research Fellowship
- 1999, Northeastern Branch of the American Society of Agronomy Graduate Student Award
- 1996-2000, Graduate Research Assistantship, University of Delaware
- Jackson County Leader in Agriculture Scholarship
- Myron B. Jones Memorial Scholarship
- David J. Henry All-University Leadership and Excellence Award
- Juergens 4-H Scholarship
- State FFA Degree – Iowa

Community Service

- Volunteer, Safe Pastures – A college home for young women that age out of the foster care system seeking undergraduate degrees at the University of Cincinnati and Cincinnati State. I provide general maintenance at the home and consult the board of directors in seeking educational assistance for the participants through tutoring and support.
- Volunteer, Chainsaw Ministry – A 503(c) organization that provides low cost tree removal and landscape services to those in need without significant financial burden
- Keynote workshop presentations at Cincinnati Public School Teacher Science Education Day
- "Back to Basics" volunteer tutor for underprivileged students
- Oak Hills School District Junior High and High School track and field equipment assistant and recorder
- Coached Little League baseball 6 summers
- Ladybugs (< 6 yr) girls soccer coach
- Commander, Royal Rangers Organization (similar to Boy Scouts)
- Big Brothers Big Sisters of Newark (DE)
- 4-H Exhibit Judge, Delaware State Fair
- Active Life Member of Iowa State University & University of Delaware Alumni Associations