

Ganga M. Hettiarachchi

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Professional goals:

- Teach both undergraduate and graduate level courses
- Conduct interdisciplinary research to understand the biogeochemistry of both nutrient and contaminant elements in the natural environment and apply knowledge of soil and environmental chemistry to develop solutions to agricultural and environmental problems

Education:

Ph.D. 2000 Soil & Environmental Chemistry, Department of Agronomy, Kansas State University
M.S. 1995 Soil Chemistry, Department of Agronomy, Kansas State University
B.Sc. 1991 Faculty of Agriculture, University of Peradeniya, Sri Lanka (Major: Soil Science)

Professional Experience:

Current

2016 June- present
Professor of Soil and Environmental Chemistry, Department of Agronomy, Kansas State University, Manhattan, KS, USA
2007 March- present
Adjunct Professor, Discipline of Soil and Land Systems, School of Earth and Environmental Sciences, The University of Adelaide, Australia
2012-present
Visiting Scientist, Argonne Photon Source, Argonne National Laboratory, Argonne, IL and National Synchrotron Light Source, Brookhaven National Laboratory, Upton, NY
2001 June-present
Visiting Scientist, Argonne Photon Source, Argonne National Laboratory, Argonne, IL and National Synchrotron Light Source, Brookhaven National Laboratory, Upton, NY

Past

2018 May-2018 August
Visiting Scientist, Agriculture and Food, Commonwealth Scientific and Industrial Research Organization (CSIRO) Land and Water, Adelaide, Australia
2012 June- 2016 June
Associate Professor of Soil and Environmental Chemistry, Department of Agronomy, Kansas State University, Manhattan, KS, USA
2008 January- 2012 June
Assistant Professor of Soil and Environmental Chemistry, Department of Agronomy, Kansas State University, Manhattan, KS, USA

Professional Experience (continued):

- 2008 January- 2011 January
Visiting Scientist, CSIRO Land and Water, Environmental Biogeochemistry Directorate,
Centre for Environmental Contaminant Research, Australia
- 2007 March- 2008 January
Research Scientist, CSIRO Land and Water, Environmental Biogeochemistry
Directorate, Centre for Environmental Contaminant Research, Glen Osmond, South
Australia, Australia.
- 2004 December- 2007 March
Senior Research Associate, Department of Soil and Water, School of Earth and
Environmental Sciences, The University of Adelaide, Australia
- 2002 December- 2004 December
Senior Lecturer, Soil and Environmental Chemistry, Department of Soil Science, Faculty
of Agriculture, University of Peradeniya, Sri Lanka
- 2000 September-2002 November
Postdoctoral Research Fellow, National Risk Management Research Laboratory, USEPA
- 2000 May-2000 September
Postdoctoral Research Associate, Department of Agronomy, Kansas State University
- 1996-2000 May
Graduate Research Assistant, Department of Agronomy, Kansas State University
- 1998 Fall/ 1997 Spring/ 1996 Fall
Graduate Teaching Assistant, Department of Agronomy, Kansas State University
- 1993-1994
Visiting Lecturer in Chemistry, Affiliated University College, Uwa Province, Sri Lanka
- 1993- 2002 December
Lecturer in Soil Science, Department of Soil Science, Faculty of Agriculture, University
of Peradeniya, Sri Lanka (from 1994 to 2002-on study leave)
- 1992- 1993
Assistant Lecturer in Soil Science, Department of Soil Science, Faculty of Agriculture,
University of Peradeniya, Sri Lanka

Research Experience:

- Urban soils: Minimizing direct and indirect transfer of common soil contaminants to humans
- Understanding mechanisms of soil carbon preservation using macro- to nano-scale approaches including X-ray spectromicroscopy techniques
- Redox transformations of trace elements and redox-based soil/mine wastes/wastewater remedial options
- Availability, mobility and reaction products of different macro- and micro-nutrient fertilizer sources in soils using wet chemicals, microscopic and various spectroscopic approaches
- Synchrotron X-ray based spectroscopy and diffraction studies to understand mechanisms of metal sorption in wastewater and residue applied soils
- Synchrotron X-ray based spectroscopy and diffraction for speciation and identification of trace elements in non-treated and *in situ*-treated contaminated soils, water, and sediments

Research Experience (continued):

- Investigations on effectiveness of various treatments for *in situ* stabilization of inorganic and organic contaminants in soils
- *In vivo* and *in vitro* studies for risk assessment of contaminants in soil-water-plant systems
- Solubility equilibrium studies and computer modeling to understand trace element chemistry in contaminated soil/water systems

Teaching Experience:

1. Advanced Soil Chemistry (AGRON 905)-Kansas State University. This included lecture development and delivery, preparation of exams, homework assignments and quizzes with grading, student advising.
2. Soil and Environmental Chemistry (AGRON 605)- Kansas State University. (Same duties as in 1)
3. Environmental Quality (AGRON 335)- Kansas State University. (Same duties as in 1)
4. Environmental Toxicology and Remediation (3005WT); Soil Ecology and Nutrient Cycling (3016WT). These included lecture development and delivery and/or preparation of exam question for the sections taught, The University of Adelaide, Australia
5. Environmental impact of inorganic pollutants and radionuclide; Organic pollutants and environment; Remediation of contaminated soil and water; Advanced Instrumentation in Environmental Research; Environmental soil chemistry; Environmental Pollution and Control; Graduate Seminar; Degradation and Conservation of Tropical Soils- Postgraduate Institute of Agriculture, University of Peradeniya, Sri Lanka. These included lecture development and delivery, preparation of exams, homework assignments and quizzes with grading, student advising.
6. Soil Chemistry; Soil Degradation and Conservation-Department of Soil Science, Faculty of Agriculture, University of Peradeniya, Sri Lanka. (Same duties as in 1 and Lab Experiment development)
7. Soil Fertility Lab- Kansas State University. This included lecture development and delivery, homework assignments and quizzes with grading, lab experiment development and student advising and tutoring.
8. Soil Microbiology Lab- Kansas State University. This included lab teaching, grading and tutoring.
9. Guest Lecturer for Soil Physical Chemistry, Environmental Quality, Soil and Plant Analysis, Soil Microbiology, and Soil Fertility-Kansas State University
10. Supervisor-Undergraduate and new graduate research assistants in Soil Chemistry Laboratory- Kansas State University. This involved training and supervising of undergraduate and graduate research assistants, supervising high school student research projects

Teaching Experience (continued):

11. ICP-AES/ Flame AA/ GTA/ Spectrophotometers- supervisor, Instrument Lab- Kansas State University. This involved training and supervising of users and maintaining instruments

Soil Chemistry Lab; Soil Fertility Lab; Soil Physics Lab- University of Peradeniya, Sri Lanka. (Same duties as in 6)

12. Basic Chemistry- Affiliated University College, Uwa Province, Sri Lanka.

(Same duties as in 6)

13. Math and Science private tutor- This involved individual tutoring of middle school students

Honors and Awards:

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| 2021 | The Jackson Soil Chemistry and Mineralogy Award, Soil Science Society of America |
| 2021 | Fellow, Soil Science Society of America |
| 2020 | Researcher of the Year 2019, Fluid Fertilizer Foundation |
| 2019 | American Society of Agronomy Fellow |
| 2018 | CSIRO Agriculture and Food, Visiting Fellowship (May-August 2018) |
| 2013-2014 | College of Agriculture Teaching Excellence Honoree |
| 2013 | North American Colleges and Teachers of Agriculture Teacher Fellow Award |
| 2013 | Kansas State University Gamma Sigma Delta Outstanding Faculty Research Award |
| 2012-2008 | NSF ADVANCE Speaker Awards (3), Hosted Drs. Dean Hesterberg at North Carolina State University, Rufus Chaney at USDA-ARS, and Scott Fendorf at Stanford University |
| 2009 | NSF ADVANCE Travel Award to travel to 10 th International Conference on Biogeochemistry of Trace Elements, Chihuahua, Mexico, July 2009 |
| 2004- 2007 | Australian Research Council (ARC) Research Fellowship, The University of Adelaide, Adelaide, Australia |
| 2000-2003 | Oak Ridge Institute of Science and Education (ORISE) Postdoctoral Fellowship, US-Environmental Protection Agency's National Risk Management Research Laboratory, Cincinnati, OH |
| 2000 | ORISE Postdoctoral Fellowship, Oak Ridge National Laboratory, Oak Ridge, TN (Declined) |
| 1996-2000 | Graduate Research/Teaching Assistantship in Soil Chemistry for Ph.D., Funded by Dep. of Agronomy and US-EPA EPSCoR |
| 1997 | The Roscoe Ellis, Jr. Soil Science Scholarship, KSU |
| 1996 | Neal and Florence E. Morehouse Graduate Scholarship, KSU |
| 1995 | Irvin D. and Dora Mae Atkins Family Scholarship, KSU |
| 1994-1996 | Fulbright Scholarship, U.S.A. for M.S. |
| 1994 | Presidential Award, Sri Lanka, UK for M.S. (Declined to study in UK and combined later with Fulbright scholarship) |
| 1987-1992 | University Grants Commission Open Scholarship for B.Sc. |

Professional and College Activities:*International*

- 2019- present Postgraduate Institute of Agriculture, University of Peradeniya, Sri Lanka,
Journal - Editorial Advisory Committee Member
- 2017-present Chair, International Committee, International Society of Trace Element
Biogeochemistry
- 2015- present Auditing Committee, International Society of Trace Element Biogeochemistry
- 2014- present Section Editor, Land Pollution Section, Current Pollution Reports Journal,
Springer
- 2015-2020 Technical Editor, Journal of Environmental Quality
- 2014-2018 Chair of Commission 4.2 Soils, Food Security and Human Health of the
International Union of Soil Sciences
- 2009- 2015 International Committee, International Conference on Biogeochemistry of Trace
Elements
- 2003-2005 Associate Editor, Journal of Environmental Quality

National

- 2019-2022 Chair-elect, chair and past chair, Soil Chemistry Division, Soil Science Society of
America (current chair)
- 2016- present Chair, Multistate Research Project, The Chemical and Physical Nature of
Particulate Matter Affecting Air, Water and Soil Quality (NC1187)
- 2016-2020 Chair, Multistate Research Project, Soil-Based Use of Residuals, Wastewater and
Reclaimed Water (W3170)
- 2010-2016 Secretary/vice-chair, Multistate Research Projects W2170 and NC1187
- 2007-2008 President, Australian Soil Science Society- South Australia Branch
- 2015-2021 Faculty Senate, Kansas State University
- 2011, 2013 Faculty Search Committee Member, Civil Engineering Department, KSU
- 2010 Guest Associate Editor, Journal of Environmental Quality
- 2005-present Manuscript reviewer for various professional journals in soil, water, food and
environmental science area (example, Environmental Science & Technol.)
- 2001-present Grant proposal reviewer for various funding agencies (example: National Science
Foundation, USA)

University

- 2018-present Chair,
- 2010- present Member, Graduate Committee- Department of Agronomy
- 2009- present Chair, Graduate scholarship committee- Department of Agronomy
- 2008- present Safety Committee- Department of Agronomy
- 2008- present The Roscoe Ellis Lectureship Committee- Department of Agronomy
- 2005-2006 Convener, Discipline of Soil and Land System Seminar series
- 2004 Faculty Representative, Research and Development Committee, University of
Peradeniya, Sri Lanka
- 2004 Member, Faculty of Agriculture Research & Development and Ethical Review
Committee, University of Peradeniya, Sri Lanka
- 2003-2004 Co-coordinator, Degree Program in Environmental Soil Science, Postgraduate
Institute of Agriculture, University of Peradeniya, Sri Lanka

Professional and College Activities (continued):

- 2003 Member, Faculty of Agriculture Student Welfare Committee, University of Peradeniya, Sri Lanka
- 2003 Executive committee member in Peradeniya University Agriculture Teacher's Association
- 2003 Chairperson, Sessions and Registration Committee, 15th Annual Congress, Postgraduate Institute of Agriculture, University of Peradeniya, Sri Lanka
- 1997, 1998 Department of Agronomy Course and Curriculum Committee, KSU
- 1996-1999 Department of Agronomy International Committee, KSU
- 1993 Secretary of Postgraduate Student Association, Post Graduate Institute of Agriculture, University of Peradeniya, Sri Lanka
- 1985-1991 Girl's Batch Representative, University of Peradeniya, Sri Lanka

Professional Affiliations

Soil Science Society of America
American Society of Agronomy
American Chemical Society
North American Colleges and Teachers of Agriculture
American Association for the Advancement of Science
Soil Science Society of Sri Lanka
Sri Lankan Association for the Advancement of Science
Gamma Sigma Delta Honor Society of Agriculture
Sigma Xi Honor Society

Students/Postdoctoral Researchers/Visiting Scientists Supervised

Undergraduate Honors Projects

Honors

D. Menefee (2013). Kansas State University. Project Title: *Mechanisms of Soil Carbon Protection in a Tropical Agroecosystem under Differing Management Practices.*

N. Wiseman (2007). The University of Adelaide, Australia. Project Title: *Molybdenum: Phytotoxicity and the role of phosphate competition in plant uptake*

J. Erskine (2007). The University of Adelaide, Australia. Project Title: *Using isotopic exchange to evaluate and compare the soil and plant availability of zinc fertilizers in alkaline soils*

R.M.P.S. Rathnayake (2005). University of Peradeniya, Sri Lanka. Thesis Title: *Heavy Metal Accumulation by Some Selected Leafy Vegetables Grown in Wellampitiya Area*

M.S.

Dorothy Menefee (2016, KSU), Major supervisor, M.S., Thesis Title: *Anthropogenic influences on soil microbial properties* (Ph.D., Texas A&M, Current position: Postdoctoral Fellow, Grassland Soil and Water Research Laboratory: Temple, TX, USDA-ARS)

Vindhya Gudichuttu (2014) Kansas State University (Major supervisor), M.S., Thesis Title: *Phytostabilization of multi-metal contaminated mine waste materials: Long-term monitoring of influence of soil amendments on soil properties, plants, and biota and the avoidance response of earthworms* (Unemployed by choice).

Students/Postdoctoral Researchers/Visiting Scientists Supervised (continued):

Raju Khatiwada (2011) Kansas State University (Major supervisor), M.S., Thesis Title: *Speciation of phosphorus in reduced tillage systems: placement and source effect* (Ph.D., Arizona State University, Current position: Sr. Scientist (Agriculture) at Specialty Granules LLC)

H. M. P. L. Premarathna (2005) University of Peradeniya, Sri Lanka (Major supervisor), M.S. Thesis Title: *Soil and Crop Contamination by Toxic and Trace Elements* (Ph.D. University of Adelaide)

M.S. (Current)

Manjot Kaur Rekhi (Current, KSU), M.S., Major supervisor, Began in August 2019.

Sevendeeep Kaur (Current, KSU), M.S., Major supervisor, Began in August 2019.

Ph.D. (completed)

Zafer Alasmay (2020) Ph.D., Kansas State University. Major supervisor, Thesis Title: *Laboratory-to field-scale investigations to evaluate phosphate amendments and Miscanthus for phytostabilization of lead-contaminated military sites* (Current position: Assistant Professor, King Saudi University, Saudi Arabia)

Joseph Weeks (2019). Ph.D., Kansas State University. Major supervisor. Thesis Title: *Improving environmental health: Investigations into soil lead and phosphorus fate and transport* (Current position: Soil Scientist/ Data Manager, Indigo Ag)

Mohammad Almutari (2019) Ph.D., Kansas State University. Major supervisor. Thesis Title: *Improving crop quality: Investigations on soil selenium and zinc transfer and bioavailability* (Deputy director of plant resources and Director of Management of Plant Production, Ministry of Environment, Water and Agriculture, Saudi Arabia).

Joy Pierzynski (2016). Ph.D., Kansas State University. Major supervisor. Thesis Title: *The effects of P fertilizer addition on P transformations on high-P fixing and grassland soils* (Current position: Program Director, Plant and Pest Diagnostic Clinic, The Ohio State University).

Pavithra Pitumpe Arachchige (2016). Ph.D., Kansas State University. Major supervisor. Thesis Title: *Understanding of coupled physicochemical and mineralogical mechanisms controlling soil carbon storage and preservation* (Current position: Assistant Laboratory Manager-Water Chemistry Lab, University of Maryland Center for Environmental Science).

Buddhika Galkaduwa (2015). Ph.D., Kansas State University. Major supervisor. Thesis Title: *Mechanistic understanding of fate and transport of selenium, arsenic, and sulfur in a pilot-scale constructed wetland treatment system designed for flue-gas desulfurization wastewater* (Chemistry Supervisor at Kansas Department of Agriculture)

Ranju Karna (2014), Ph.D., Kansas State University. Major supervisor. Thesis Title: *Mechanistic understanding of biogeochemical transformations of trace elements in contaminated minewaste materials under reduced conditions* (Research Scientist, Bennett Aerospace Inc., US Army Corp of Engineers)

Chammi Attanayake (2014). Ph.D., Kansas State University. Major supervisor. Thesis Title: *Bioavailability of contaminants in urban soils* (Senior Lecturer, University of Peradeniya, Sri Lanka).

Phillip Defoe (2014). Ph.D., Kansas State University. Major supervisor. Thesis Title: *Urban brownfields to gardens: minimizing human exposure to lead and arsenic* (Current position: Environmental Science Professor, Broward College)

Narges Milani (2012). The University of Adelaide, Australia. Co-supervisor. Thesis Title: *Fate of nanoparticulate micronutrient fertilizers in soil* (Current position: Environmental Chemist, The University of Melbourne)

Jennifer De Livera (2011). The University of Adelaide, Australia. Co-supervisor. Thesis Title: *Fate and behavior of cadmium in paddy soils* (Current position: Senior environmental specialist, Renewal, South Australia)

H. M. P. Lakmalie Premarathna (2011). The University of Adelaide, Australia. Co-supervisor. Thesis Title: *Chemistry and fertilizer efficiency of selenium in paddy soils* (Unemployed by choice)

Laurence Jassogne. (2008) The University of Adelaide, Australia. Co-supervisor. Thesis Title: *Understanding growth and distribution of roots and root pore chemistry in soils with strong texture contrast* (Current position: Consultant in Food Systems/Sustainable supply chains/Climate Smart Agriculture).

Ph.D. (current)

Kasuni Gamage (Current, KSU), Ph.D., Major supervisor, Began in January 2017

Chandima Wekumbura (Current, KSU), Ph.D., Major supervisor, Began in May 2019.

Postdoctoral Research Fellows supervised

Buddhika Galkaduwa, Kansas State University. Project: *Understanding reaction products of P and Zn in P-Zn fertilizers applied soils* (2016-2021) (Current position: Chemistry Supervisor, Kansas Department of Agriculture)

Monica Palomo, Kansas State University (2008) (Current position: Professor, California State Polytechnic State University)

Kylie Dodd, University of Adelaide, Australia. Project: *Understanding reaction products of granular and fluid P fertilizers in Australian soils: a way to enhance fertilizer efficiency*

Visiting Research Fellows supervised

Olfa Said Ben (Advisor, Ad), Senior Fulbright Fellow, Kansas State University. Project: *Minimizing Ecosystem Damage and Human Impacts of Persistent Pollutants* (2019 Nov.-2020 Dec.).

Ahana Dey (Ad.), Visiting Ph.D. Research Fellow. Project: *Zinc availability in soils and its nutrition of crops grown under Conservation Agricultural practices* (March-Sep. 2020)

Dayong Xu (Ad.) Kansas State University. Project: Monitoring Cu contaminated soil with Microbial Fuel (electrolysis) Cell (Aug. 2018- May 2019)

Fabio Cesar (Ad.) Kansas State University. Project: *Diffusion, fate and reaction products of phosphate fertilizers with varying solubility applied to tropical soil* (Sep. 2015-March 2016)

Parichat Chayapan (Ad.) Kansas State University. Project: *Long-Term Effects of Compost Additions to Metal Contaminated Soils: Soil Chemical Parameters and Function of Microbes* (March- October 2014)

Rodrigo Coqui da Silva (Ad.) Kansas State University. Project: *Diffusion, fate and reaction products of phosphate fertilizers with varying solubility applied to tropical soil* (Sep. 2011-March 2012)

Cui Xiumin (Ad.) Kansas State University. Project: *Combined effects of apatite and brassinosteroid on lettuce and carrot grown in Cd-contaminated soils* (July-Dec. 2011)

Selim Eker (Ad.) Kansas State University. Project: *Techniques use for understanding reaction products of phosphorus fertilizers in soils* (May-August 2011)

Weeradej Meeinkuri (Ad.) Kansas State University. Project: *Speciation and Distribution of Cadmium and Zinc in Zinc-Mineralized Soils from Mae Sot District, Tak Province: Effect of Sulfur application and Oxygenation by Rice (*Oryza sativa*) Roots* (Aug. 2010-May 2011)

Xiaobin Gu (Co-ad.) Kansas State University. Project: *Investigations on manganese chemistry in rhizosphere soils of glyphosate resistant soybeans* (July 2008- June 2009)

Sarvana Pandian (Co-ad.) Kansas State University. Project: *Investigations on soil solutions collected from nano particles applied to soils* (2008)

P. Udayasoorian (Co-ad.) Kansas State University. Project: *Investigations on nano particles applied to soils on metal uptake* (2008)

James Pitchai (Co-ad.) Kansas State University. Project: *Investigations on nano particles applied to soils on metal uptake* (2008)

Claudia Costa (Co-ad.) Kansas State University. Project: *Chemical approaches to understand mechanisms controlling capacity and stability of soil C* (2008)

Undergraduate Advisees:

Brooke Livenhood	2020 -current, Department of Agronomy, KSU
Treven Hegwood	2020 -current, Department of Agronomy, KSU
Adelaide Katzer	2020-current, Department of Agronomy, KSU
Bryce Hermann	2019-current, Department of Agronomy, KSU
Joel Johnson	2017- 2020, Department of Agronomy, KSU (Graduated)
Markus Pfeiffer	2016- 2017, Department of Agronomy, KSU (Terminated)
Lyndsay Brown Sci.)	2016- current, Department of Agronomy, KSU (Transferred to Animal
Parker Maloney	2015- 2016, Department of Agronomy, KSU (Transferred to Ag. Econ.)
Logan Weiche	2015- 2018, Department of Agronomy, KSU (Graduated)
Reiny Ostrander	2014- 2018, Department of Agronomy, KSU (Graduated)
Garrett Reiss	2012- 2015, Department of Agronomy, KSU (Graduated)
Rebecca Eshelman	2012, Department of Agronomy, KSU
Justin Cecchini	2012- 2013, Department of Agronomy, KSU (Transferred to HFRR)
Abigail Bartel	2012- 2015, Department of Agronomy, KSU (Graduated)
Chisholm Miller	2011- 2015, Department of Agronomy, KSU (Graduated)

Carolyn Fox	2011- 2015, Department of Agronomy, KSU (Graduated)
David Janzen	2011- 2015, Department of Agronomy, KSU (Graduated)
Dorothy Menefee	2009- 2013, Department of Agronomy, KSU (Graduated)
Thomas Weninger	2009- 2010, Department of Agronomy, KSU (transferred to HFRR)
Amy Vu	2009- 2011, Department of Agronomy, KSU (Graduated)
Jonathan Meals	2009-2010, Department of Agronomy, KSU (transferred)
Mary Stevens	2010, Department of Agronomy, KSU

Publications:

Refereed (75 peer-reviewed publications, 3350 citations, h-Index= 28, i-10 index=54)

1. Alasmary, Z., G.M. Hettiarachchi, K. L. Roozeboom, L.C. Davis, L.E. Erickson, T. Todd, V. Pidlisnyuk, T. Stefanovska, and J. Trogl. 2021. Phytostabilization of a Contaminated Military Site Using Miscanthus and Soil Amendments. *J. Environ. Qual.* (Accepted 07/10/21).
2. Pitumpe Arachchige, P.S., G.M. Hettiarachchi, C.W. Rice, L. Maurmann, J.J. Dynes, and T. Reiger. 2021. Chemistry and Associations of Carbon in Water-Stable Soil Aggregates from a Long-Term Temperate Agroecosystem and Implications on Soil Carbon Stabilization. *ACS Agricultural Science & Technology Article ASAP*. <https://pubs.acs.org/doi/abs/10.1021/acsagscitech.0c00074>.
3. Heronemus, E., K.H.H. Gamage, G.M. Hettiarachchi, P. Parameswaran. 2021. Efficient recovery of phosphorus and sulfur from Anaerobic Membrane Bioreactor (AnMBR) permeate using chemical addition of iron and evaluation of its nutrient availability for plant uptake, *Science of The Total Environment*, 146850, <https://doi.org/10.1016/j.scitotenv.2021.146850>.
4. Attanayake, C.P., G.M. Hettiarachchi, M. Palomo, G.M. Pierzynski, B. Calderon. 2021. Phytoavailability of lead for vegetables in urban garden soils. *ACS Agricultural Science & Technology*. 1: 173–181.
5. Judy, J.D., W. Harris, G. M. Hettiarachchi, A. C. Buchanan, K. R. Reddy. 2021. Mineralogy of particulate inputs and P-speciation and mineralogy of recently accreted soils within Everglades stormwater treatment wetlands, *Science of The Total Environment*, 781, 146740, <https://doi.org/10.1016/j.scitotenv.2021.146740>.
6. Weeks, J.J., Jr., G.M. Hettiarachchi, E. Santos, and J. Tatarko. 2021. Potential Human Inhalation Exposure to Soil Contaminants in Urban Gardens on Brownfields Sites- A Breath of Fresh Air? *J. Environ. Qual.* 02/22/21, <https://doi.org/10.1002/jeq2.20208>.
7. Cheng, Z., G. M. Hettiarachchi, and K-H Kim. 2020. Urban soils research: SUITMA 10. *J. Environ. Qual.* Published online 12/20/2020. <https://doi.org/10.1002/jeq2.2019>.
8. Alasmary, Z., T. Todd, G.M. Hettiarachchi, T. Stefanovska, V. Pidlisnyuk, K. Roozeboom, L. Erickson, L. Davis, and O. Zhukov. 2020. Effect of Soil Treatments and Amendments on the Nematode Community under Miscanthus Growing in a Lead Contaminated Military Site. *Agronomy* 10, 1727.

9. Hobson, Chad, Harshad Kulkarni, Karen Johannesson, Anthony Bednar, Ryan Tappero, T. Jade Mohajerin, Paul Sheppard, Mark Witten, Ganga Hettiarachchi, Saugata Datta. 2020. Origin of tungsten and geochemical controls on its occurrence and mobilization in shallow sediments from Fallon, Nevada, USA, *Chemosphere*, 260: 127577.
10. Pidlisnyuk, V., L. Erickson, T. Stefanovska, G. Hettiarachchi, L. Davis, J. Trögl, and P. Shapoval. 2020. Response to Grygar (2020) comments on “Potential phytomanagement of military polluted sites and biomass production using biofuel crop miscanthus x giganteus”- Pidlisnyuk et al. (2019). *Environmental pollution*, 261: 113038.
11. Alghamdi, A., D.R. Presley, M.B. Kirkham, and G. Hettiarachchi. 2020. Efficacy of amendments to improve soil physical properties at an abandoned lead and zinc mine. *Agroecosystems, Geosciences & Environment*. 3: e20032.
12. Weeks, J.J., Jr. and G.M. Hettiarachchi. 2020. Source and Formulation Matter: New Insights into Phosphorus Fertilizer Fate and Transport in Mildly Calcareous Soils. *Soil Sci. J. Am.* 84:731-746.
13. Divine N. Tarla, Larry E. Erickson, Ganga M. Hettiarachchi, Sixtus I. Amadi, Madhubhashini Galkaduwa, Lawrence C. Davis, Asil Nurzhanova and Valentina Pidlisnyuk. 2020. Review- Phytoremediation and Bioremediation of Pesticide-Contaminated Soil. *Appl. Sci.*10(4),1217.
14. Hsiao, C-J; G.F. Sassenrath; L.H. Zeglin; G.M. Hettiarachchi; C.W. Rice. 2019. Temporal variation of soil microbial properties in a corn-wheat-soybean system. *Soil Sci. J. Am.* 83: 1696-1711.
15. Weeks, J.J., Jr. and G.M. Hettiarachchi. 2019. A Review of the Latest in Phosphorus Fertilizer Technology: Possibilities and Pragmatism. *J. Environ. Qual.* 48:1300–1313.
16. Pidlisnyuk V., L. Erickson, T. Stefanovska, J. Popelka, G. Hettiarachchi, L. Davis, J. Trögl. 2019. Potential phytomanagement of military polluted sites and biomass production using biofuel crop miscanthus x giganteus. *Environ Pollut.* 249:330-337.
17. Coelho, M. J. A., D. R. Diaz, G. M. Hettiarachchi, F. D. Hansel, P. S. Pavinato. 2019. Soil phosphorus fractions and legacy in a corn-soybean rotation on Mollisols in Kansas, USA, *Geoderma Regional*, 18: e00228
18. Pitumpe Arachchige, P.S., G.M. Hettiarachchi, C.W. Rice, J.J. Dynes, L. Maurmann, J. Wang, C. Karunakaran, A.L.D. Kilcoyne, C.P. Attanayake, T.J. C. Amado & J.E. Fiorin. 2018. Sub-micron level investigation reveals the inaccessibility of stabilized carbon in soil microaggregates. *Scientific Reports*. 8: 16810.
19. Karna, R.R., G.M. Hettiarachchi, J. Van Nostrand, T. Yuan, C.W. Rice, Y. Assefa, and J. Zhou. 2018. Microbial Population Dynamics and the Role of Sulfate Reducing Bacteria Genes in Stabilizing Pb, Zn, and Cd in the Terrestrial Subsurface. *Soil Syst.* 2: 60.
20. Ohno, T. and G.M. Hettiarachchi. 2018. Soil chemistry and the one health initiative: introduction to the special section. *J. Environ. Qual.* 47(6):1305-1309.
21. Galkaduwa, M.B., G.M. Hettiarachchi, G.J. Kluitenberg, and S.L. Hutchinson. 2018. Iron oxides minimize arsenic mobility in soil material saturated with saline wastewater. *J.*

- Environ. Qual.* 47:873-883.
22. Pierzynski, J. and G.M. Hettiarachchi. 2018. Reactions of Phosphorus Fertilizers with and without a Fertilizer Enhancer in Three Acidic Soils with High Phosphorus Fixing Capacity. *Soil Sci. Soc. Am. J.* 82: 1124-1139.
 23. Hsiao, Che-Jen, G. Sassenrath, L. Zeglin, G.M. Hettiarachchi, and C.W. Rice. 2018. Vertical changes of soil microbial properties in claypan soils. *Soil Biology and Biochemistry*, 121: 154-164.
 24. Pidlisnyuk, V., L.E Erickson, J. Trögl, P. Y Shapoval, J. Popelka, L.C. Davis, T.R. Stefanovska, G.M. Hettiarachchi. 2018. Metals uptake behaviour in *Miscanthus x giganteus* plant during growth at the contaminated soil from the military site in Sliach, Slovakia. *Polish Journal of Chemical Technology*, 20: 1-7.
 25. Karna, R.R. and G.M. Hettiarachchi. 2018. Subsurface Submergence of Mine Waste Materials as a Remediation Strategy to Reduce Metal Mobility: An Overview. *Current Pollution Rep.* 4:35-48.
 26. Hettiarachchi, G.M., E. Donner, and E. Doelsch. 2017. Introduction to Special Section: Application of Synchrotron Radiation-Based Methods for Environmental Biogeochemistry *J. Environ. Qual.* 46:1-7
 27. Attanayake, C.P., G.M. Hettiarachchi, Q. Ma, G.M. Pierzynski, M.D. Ransom. 2017. Lead speciation and *in vitro* bioaccessibility of compost-amended urban garden soils. *J. Environ. Qual.* 46:1215-1224.
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Paper Presented and Published Abstracts

- Galkaduwa, B. and G.M. Hettiarachchi. 2020. Does Inclusion of Copolymers Alter Phosphorus-Fertilizer Reaction Pathways in Soils? ASA-CSSA-SSSA International Annual Meeting, Virtual. Nov. 9-13.
- Gamage, K.H.H., G. M. Hettiarachchi, P. Parameswaran, and S. Hutchinson. 2020. “Green” Fertilizers from Wastewaters: Transformation and Reaction Pathways of Phosphorus in Recovered Nutrient Products in Soils. ASA-CSSA-SSSA International Annual Meeting, Virtual. Nov. 9-13.
- Hettiarachchi, G.M. 2020. Improving Human Nutrition Through Manipulating Nutrient Reaction Pathways in Soils. ASA-CSSA-SSSA International Annual Meeting, Virtual. Nov. 9-13.
- Hettiarachchi, G.M., Alasmay, Z., K. L. Roozeboom, L.C. Davis, L.E. Erickson. 2020. From Field- to Micro-Scale Investigations to Evaluate Phytostabilization of Lead-Contaminated Military Sites. ASA-CSSA-SSSA International Annual Meeting, Virtual. Nov. 9-13.
- Kaur, S., G.M. Hettiarachchi, and D. Adhikari. 2020. How Do Shuttle and Slow-Release Effects of Zn Fertilizers Alter Zn Diffusion in Soil and Its Uptake By Wheat Plants? ASA-CSSA-SSSA International Annual Meeting, Virtual. Nov. 9-13.
- Rekhi, M.K., R. Kumarasighe, G.M. Hettiarachchi, and P. Parameswaran. 2020. Can a Soil-Based Microbial Fuel Cell Track Nutrient Dynamics? ASA-CSSA-SSSA International Annual Meeting, Virtual. Nov. 9-13.
- Wekumbura, C. G.M. Hettiarachchi, W.L. Hargrove, and C. Sobin. 2020. Source and Rate of Inorganic and Organic P on Bioaccessible Pb over Time in Alkaline Soils from El-Paso, Texas. ASA-CSSA-SSSA International Annual Meeting, Virtual. Nov. 9-13.
- Hettiarachchi, G.M., S. Martin, and A. Carroll. 2020. Growing Crops on Urban Brownfields: How safe is it? Urban Food Systems Symposium, Virtual, Oct. 7-28.
- Alasmay, Z., G.M. Hettiarachchi, K. L. Roozeboom, L.C. Davis, L.E. Erickson. 2019. Phytostabilization of a Contaminated Shooting Range Soil Using Biofuel Crop and Soil Amendments. ASA-CSSA-SSSA International Annual Meeting, Nov. 10-13, San Antonio, TX.
- Galkaduwa, M.B. and G.M. Hettiarachchi. 2019. Diffusion, Extractability, and Reaction Products of Zinc Fertilizers in a Mildly Calcareous Soil. ASA-CSSA-SSSA International Annual Meeting, Nov. 10-13, San Antonio, TX.
- Gamage, K.H.H., G.M. Hettiarachchi, P. Parameswaran, and S. Hutchinson. 2019. Characterization, Transformations and Reaction Pathways of Phosphorus Based Recovered Nutrient Products from Wastewaters in Soils. ASA-CSSA-SSSA International Annual Meeting, Nov. 10-13, San Antonio, TX.
- Hettiarachchi, G.M. 2019. Sensors in Soil Chemistry: Opportunities and Challenges. ASA-CSSA-SSSA International Annual Meeting, Nov. 10-13, San Antonio, TX.
- Weeks, J.J. and G.M. Hettiarachchi. 2019. Should Greater Emphasis be Placed on Phosphorus Fertilizer Source Selection to Build Better P Management Systems? ASA-CSSA-SSSA International Annual Meeting, Nov. 10-13, San Antonio, TX.

- Welch, S., G.M. Hettiarachchi, N. Bello, and P.D. Alderman. 2019. Current Needs and Transitional Concepts Related to Soil Sensors. ASA-CSSA-SSSA International Annual Meeting, Nov. 10-13, San Antonio, TX.
- Del Rio, M., J. Placenci, C. Tamez, M. Galkaduwa, E.A. Navarro, C. Chavarria, C. Costa, A. Obeng, C. Rodriguez, G. Hettiarachchi, W. L. Hargrove, C. Campbell, and C. Sobin. 2019. Soil Lead (Pb) Concentration in Historically Contaminated Latino Neighborhoods. American Public Health Association Annual Meeting and Expo. Nov. 2-6, Philadelphia, PA.
- Costa, C., M. Del Rio, E.A. Navarro, , A. Obeng, C. Rodriguez, , C. Chavarria, G. Hettiarachchi, C. Campbell, W.L. Hargrove, and C. Sobin. 2019. Child lead exposure in high-risk Latino neighborhoods on the U.S.-Mexico border. American Public Health Association Annual Meeting and Expo. Nov. 2-6, Philadelphia, PA.
- Pidlisnyuk V., Hettiarachchi G., Stefanovska T., Shapoval P. *Miscanthus x giganteus* phytotechnology application at the military sites. RemTech Europe 2019, Sep.18-20, Ferrara, Italy.
- Stefanovska T., Pidlisnyuk V. Hettiarachchi G., Todd T., Alasmay Z., Impact of phytotechnologies with cultivation of *Miscanthus x giganteus* to nematode community in metals' contaminated sites. 2019. 2nd International meeting on New Strategies in Bioremediation process, October 24-25, Porto, Portugal.
- Alasmay, Z., G.M. Hettiarachchi, K. L. Roozeboom, L.C. Davis, L.E. Erickson, T. Todd, V. Pidlisnyuk, T. Stefanovska, and J. Trogl. 2019. Field-based investigations on phytostabilization of a contaminated military site using biofuel crop and soil amendments. International Conference of Biogeochemistry Trace Elements. May 5-9, Nanjing, China.
- Hettiarachchi, G.M., C. P. Attanayake, P. P. Defoe, J. Weeks, S. Martin, W.L. Hargrove, and C. Sobin. 2019. Manipulation of bioavailability of contaminants in urban garden and yard soils. International Conference of Biogeochemistry Trace Elements. May 5-9, Nanjing, China.
- Almutari, M., G.M. Hettiarachchi, Mary B Kirkham, A. Fritz, D.M. Daiz, S.L. Hutchinson, and L. Erickson. 2019. Agronomic Biofortification of Wheat with Zn through Co-Addition of Organic C with Zn Fertilizers. SSSA International Annual Soils Meeting. Jan 6-9, San Diego, CA.
- Coelho, M.J.A., D.A. Ruiz Diaz, G.M. Hettiarachchi and P.S. Pavinato. 2019. Changes in Soil Phosphorus Lability Promoted by Fertilizer Placement after a 10-Year Corn-Soybean Rotation. SSSA International Annual Soils Meeting. Jan 6-9, San Diego, CA.
- Hettiarachchi, G.M. and J.J. Weeks. 2019. Manipulating Reaction Pathways to Optimize Fertilizer P Availability. SSSA International Annual Soils Meeting. Jan 6-9, San Diego, CA.
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- Hettiarachchi, G.M. et al. 2018. Minimizing Human Exposure to Contaminants in Urban Soils. Oct. 4-5. Three Rivers Urban Soil Symposium, Pittsburg, Philadelphia.
- Hettiarachchi, G.M., J. Pierzynski, and J.J. Weeks. 2018. Using current knowledge of phosphorus fertilizer reaction pathways to improve P use efficiency. 2018. 21st World Congress of Soil Science, Aug. 12-17, Rio de Janeiro, Brazil.
- Weeks, J.J. and G. M. Hettiarachchi. 2018. Do Content, Concentration and Co-Applicants Spatially Impact Liquid Phosphorus Fertilizer Fixation in a Brazilian Oxisol? 21st World Congress of Soil Science, Aug. 12-17, Rio de Janeiro, Brazil.
- Alasmary, Z., G.M. Hettiarachchi, K. L. Roozeboom, L.C. Davis, L.E. Erickson. 2018. Stabilization of lead in a contaminated military site using a second-generation biofuel crop and phosphate-based soil amendments Oct 1-5, 2018, Novi Sad, Serbia.
- Alasmary, Z., G.M. Hettiarachchi, K. L. Roozeboom, L.C. Davis, L.E. Erickson, V. Pidlisnyuk, T. Stefanovska, A. Nurzanova, and J. Trogl. 2017. Field-based investigations on stabilization of a contaminated military site via combined use of soil amendments and biofuel crop growth. ASA/SSSA/CSA Annual Meetings, Oct. 2017, Tampa, FL.
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- Weeks, J.J. and G. M. Hettiarachchi. 2017. Fixing phosphorus: Considering cation complexing co-applicants to maintain phosphorus lability in an acid soil. ASA/SSSA/CSA Annual Meetings, Oct. 2017, Tampa, FL.
- Weeks, J.J. and G. M. Hettiarachchi. 2017. In Search of a solution to pollution: Improving phosphorus fertilizer use efficiency through simple formulation alterations. ASA/SSSA/CSA Annual Meetings, Oct. 2017, Tampa, FL.
- Galinskaya, K., S. Williams, J. Wang, G.M. Hettiarachchi, P. Kempton, S. Vero, S. Datta. 2017. Geospatial Analysis of Risk Components for Elevated Blood Lead Levels: Geologic and Anthropogenic Factors. Geological Society of America Meeting, Seattle, WA, Oct. 2017.
- Hettiarachchi, G.M. Z. Alasmary, K. L. Roozeboom, L.C. Davis, L.E. Erickson, V. Pidlisnyuk, T. Stefanovska, A. Nurzanova, and J. Trogl. 2017. Field-based investigations on phytostabilization of a contaminated military site using biofuel crop growth assisted with soil amendments. International Phytotechnology Conference, Sep. 2017, Montreal, Canada.
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- Pidlisnyuk V., Trogl J., Stefanovska T., Shapoval P., Nurzhanova A., Erickson L., Davis L., Hettiarachchi G. Phytotechnology with *Miscanthus x giganteus* biomass production for

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- Erickson L., Pidlisnyuk V., Trögl J., Shapoval P., Popelka J., Davis L., Stefanovska T., Hettiarachchi G. Perennial phytotechnology with biomass production for abandoned military site in Sliach, Slovakia. International conference on Chemical technology and engineering, Lviv, Ukraine, June 26-30, 2017.
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- Weeks, J.J. and G. M. Hettiarachchi. 2016. Fixing Phosphorus: Considering Cation Complexing Co-Applicants to Maintain Phosphorus Lability in Calcareous Soils. ASA/SSSA/CSA Annual Meetings, Nov. 2016, Phoenix, AZ.
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- Hettiarachchi, G.M. and J. Pierzynski. 2016. Does liquid P fertilizer excel in the U.S. calcareous soils? Great Plains Soil Fertility Conference, March 2016, Denver, CO.
- Vega, M., H. Kulkarni, S. Barua. N, Kumar, K. Johannesson, G.M. Hettiarachchi, P. Bhattacharya, P. Kempton, and S. Datta. 2016. Linking geochemistry and dissolved organic matter quality to Mn and As release in groundwater, Murshidabad, West Bengal, India. GSA Annual Meeting in Denver, CO.
- Menefee, D., P. Pitumpe Arachchige, G.M. Hettiarachchi, and C.W. Rice. 2015. The effects of temperature, moisture, and management on soil microbial properties in two different soils. ASA/SSSA/CSA Annual Meetings, Nov. 2015, Minneapolis, MN.
- Weeks, J. and G.M. Hettiarachchi. 2015. Taking the next step: Exploration of naturally produced, organic compounds to alter the mobility and lability of soil elements. ASA/SSSA/CSA Annual Meetings, Nov. 2015, Minneapolis, MN.
- Hsiao, C-J., G. F. Sassenrath, C. W. Rice, L. H. Zeglin, G. M. Hettiarachchi, D. R. Presley. 2015. Soil microbial activity with depth in claypan soils of Southeast Kansas. ASA/SSSA/CSA Annual Meetings, Nov. 2015, Minneapolis, MN.
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- Hettiarachchi, G.M. 2015. Embedding soils in the general education undergraduate curriculum. ASA/SSSA/CSA Annual Meetings, Nov. 2015, Minneapolis, MN.
- Hettiarachchi, G.M. and S. Martin. 2015. Growing safely to produce healthy crops- community gardens on previously used sites. American Community Gardening Association, August 15, Denver, CO.
- Hettiarachchi, G.M., C. P. Attanayake, P. Defoe, and S. Martin. 2015. Managing urban garden soils: Minimize potential for soil contaminant transfer. The 100th Annual Meeting of Ecological Society of America, Aug. 2015. Baltimore, MD.
- Hettiarachchi, G.M., C. Attanayake, P. Defoe, and S. martin. 2015. Gardening on contaminated urban soils: Mechanisms to reduce risk potential. The 12th International Phytotechnologies Conference, Sep. 2015, Manhattan, KS.
- Pitumpe Arachchige, P., G.M. Hettiarachchi, C. W. Rice, and L. Maurmann. 2015. Effect of long term agricultural management practices on soil carbon sequestration: Bulk-NEXAFS and 13C NMR studies. The 12th International Phytotechnologies Conference, Sep. 2015, Manhattan, KS.
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- Weeks, J., G.M. Hettiarachchi, E. Santos, and J. Tatarko. 2015. An assessment of the trace element exposure risk to urban brownfields gardeners via inhalation. The 12th International Phytotechnologies Conference, Sep. 2015, Manhattan, KS.
- Galkaduwa, M. B., G. M. Hettiarachchi, A.T. Marshall, and G. J. Kluitenberg. 2015. Understanding of trace elements retention by sulfate reduction in a pilot-scale constructed wetland treatment system designed for FGD wastewater. The 12th International Phytotechnologies Conference, Sep. 2015, Manhattan, KS.
- Mengarelli, J., M. B. Gulkaduwa, L. C. Davis, G. Hettiarachchi. 2015. Boron uptake is regulated in sunflowers. The 12th International Phytotechnologies Conference, Sep. 2015, Manhattan, KS.

- Chayapan, P., V. Gudichuttu, G.M. Pierzynski, G.M. Hettiarachchi, and L.R. Baker. 2015. Long-term effects of compost additions to chemical and biological properties of metal-contaminated soils. The 13th International Conference on Biogeochemistry of Trace Elements. July 2015, Fukushima, Japan.
- Hettiarachchi, G.M. 2015. Promising opportunities to use biosolids in revitalizing urban brownfields. International Water Association/Water Environment Federation/ Residuals and Biosolids Conference. June 2015. Washington, DC.
- Hettiarachchi, G.M., J. Pierzynski, and R. Khatiwada. 2014. Mobility, availability and reaction products of different phosphorus fertilizer sources in high P-fixing soil types. March 2014, Great Plains Soil Fertility Conference, Denver, CO.
- Hettiarachchi, G.M., C. Attanayake, P. Defoe, S. Martin, and G. M. Pierzynski. 2014. Minimizing human exposure to contaminants in urban soils. ASA/SSSA/CSA Annual Meetings, Nov. 2014, Long Beach, CA.
- Hettiarachchi, G.M., C. Attanayake, P. Defoe, and S. Martin. 2014. Growing food crops on urban soils. ASA/SSSA/CSA Annual Meetings, Nov. 2014, Long Beach, CA.
- Weeks, J., G.M. Hettiarachchi, E. Santos, and J. Tatarko. 2014. Assessment of potential human inhalation exposure to soil trace elements resulting from agricultural activity on urban brownfield sites. ASA/SSSA/CSA Annual Meetings, Nov. 2013, Long Beach, CA.
- Martin, S. and G. M. Hettiarachchi. 2014. Risky Business? Growing crops on brownfields. The Ohio Brownfields Conference, 24 April 2014, Columbus, OH.
- Galkaduwa, M. B., G.M. Hettiarachchi, G. Kluitenberg, and S. Hutchinson. 2014. Minimizing arsenic mobility using ferrihydrite in a small-scale constructed wetland treatment system designed for removal of selenium in FGD wastewater. ASA/SSSA/CSA Annual Meetings, Nov. 2014, Long Beach, CA.
- Pitumpe Arachchige, P., G.M. Hettiarachchi, L. Maurmann, C.W. Rice, J. Dynes and T. Regier. 2014. Characterization of organic carbon in soil aggregates from temperate continuous corn system with contrasting management practices using NEXAFS and ¹³C-NMR spectroscopy. ASA/SSSA/CSA Annual Meetings, Nov. 2014, Long Beach, CA.
- Pierzynski, J., G.M. Hettiarachchi, and J. Blair. 2014. Soil phosphorus cycling in a non-agricultural grassland ecosystem: Influence of fertilization. ASA/SSSA/CSA Annual Meetings, Nov. 2014, Long Beach, CA.
- Datta, S., A.W. Krehel, A. Bednar, G. Hettiarachchi, M.M. Rahman, S. Sankar, C. Attanayake, and L. Johannesson, 2014. Sorption mechanisms of arsenic within aquifer sediments, and bioaccumulation of As in rice from West Bengal, India. Goldschmidt Conference. Sacramento, CA.
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- Galkaduwa, M.B., J. Peredez, N. Mladenov, G. M. Hettiarachchi., G. Klutenberg, and S. Hutchinson. Arsenic mobilization in the treatment of flue gas desulfurization using constructed wetland treatment systems. Sept. 2014, Electrical Power Affiliate Program Meeting, Manhattan, KS.
- Karna, R., G. M. Hettiarachchi. 2014. Mechanistic understanding of biogeochemical transformations of trace elements in contaminated minewaste materials under reduced conditions. U.S. EPA National Conference on Mining-Influenced Waters. Aug. 2014, Albuquerque, NM.
- Weeks, J. and G.M. Hettiarachchi. 2014. Increased urban agriculture in the United States – A breath of fresh air? The Soils in the City Mini-Conference. June 30-July 2, Chicago, IL.
- Hettiarachchi, G.M. 2014. Managing urban pollutants to minimize human exposure. The Soils in the City Mini-Conference. June 30-July 2, Chicago, IL.
- Martin, S. and G.M. Hettiarachchi. 2013. Community gardens on brownfields –Should you be scared? Society of Environmental Chemistry and Toxicology North America 34th Annual Meeting. November 2013, Nashville, TN.
- Hettiarachchi, G.M. 2013. Growing crops on Brownfields Sites- How safe is it? National Brownfields Conference. May 15-17, Athens, GA.
- Hettiarachchi, G.M., C. Attanayake, P. Defoe, S. Martin, and G. M. Pierzynski. 2013. Contaminant transfer from urban garden soils to plants-Do we need to worry? ASA/SSSA/CSA Annual Meetings, Oct. 2013, Tampa, FL.
- Galkaduwa, B., G.M. Hettiarachchi, G. Kluitenberg, and S. Hutchinson. 2013. Sequestration of selenium in flue gas desulfurization wastewater using constructed wetlands: A synchrotron based investigation. ASA/SSSA/CSA Annual Meetings, Oct. 2013, Tampa, FL.
- Attanayake, C., G.M. Hettiarachchi, D. Van der Merwe, and G.M. Pierzynski. 2013. Transfer of polycyclic aromatic hydrocarbons from urban soils to humans via dermal absorption. ASA/SSSA/CSA Annual Meetings, Oct. 2013, Tampa, FL.
- Defoe, P., G. M. Hettiarachchi and C. Benedict. 2013. Reducing Bioaccessibility of Lead and Arsenic in a Contaminated Urban Garden Soil. ASA/SSSA/CSA Annual Meetings, Oct. 2013, Tampa, FL.
- Pitumpe Arachchige, P., G.M. Hettiarachchi, L. Maurmann, D. Menefee, C.W. Rice and T. Amado. 2013. Effects of Agricultural Management Practices on carbon sequestration in soils from two different agroecosystems: Understanding the contribution of soil organic carbon protection mechanisms. ASA/SSSA/CSA Annual Meetings, Oct. 2013, Tampa, FL.
- Pitumpe Arachchige, P., G.M. Hettiarachchi, C. Attanayake, and C.W. Rice. 2013. STXM-NEXAFS Spectromicroscopy Studies of Intact Soil Microaggregates from a Tropical Agroecosystem. ASA/SSSA/CSA Annual Meetings, Oct. 2013, Tampa, FL.
- Pierzynski, J., and G.M. Hettiarachchi. 2013. Effects of Phosphorus Source on Fate and Transformation of Phosphorus in High P-Fixing soils. ASA/SSSA/CSA Annual Meetings, Oct. 2013, Tampa, FL.

- Weeks, J. and G.M. Hettiarachchi. 2013. Assessing Soil Preparation Techniques to Improve Portable XRF Precision and Recovery Efficiency of Lead in Urban Soils As Compared to the EPA 3051 Total Soil Digestion Method. ASA/SSSA/CSA Annual Meetings, Oct. 2013, Tampa, FL.
- Menefee, D., P. Pitumpe Arachchige, G.M. Hettiarachchi, C.W. Rice, and T.J.C. Amado. 2013. Mechanisms of soil carbon protection in a Tropical Agroecosystem under Differing Management Practices. ASA/SSSA/CSA Annual Meetings, Oct. 2013, Tampa, FL.
- Enriquez, H.J., N. Mladenov, G. Hettiarachchi., M. Kirk, S. Damaraju, K. Biver, M. Galkaduwa, M. Murray-Hudson, M. Gondwe, and P. Wolski. Evaporative concentration, dissolved organic matter degradation and sulfate reduction as controls on arsenic mobility in groundwater of a pristine wetland. 2013 GSA Annual Meeting & Exposition, October 27-30, Denver, CO.
- Hettiarachchi, G.M., C. Attanayake, P. Defoe, S. Martin, and G. M. Pierzynski. 2013. Potential for transfer of lead, arsenic and polycyclic aromatic hydrocarbons from amended urban soils to vegetables and humans. American Chemical Society Fall 2013 National Meeting. September 8-12, Indianapolis, IN.
- Davis, L., K. Roozeboom, V. Pidlisnyuk, M. Bel, I. Nagyova, Z. Melichova, L. Erikson, and G.M. Hettiarachchi. 2013. Perennial grass miscanthus for biomass production and phytoremediation of slightly contaminated land. America's Grasslands Conference, Aug 12-14, 2013, Manhattan, KS.
- Hettiarachchi G.M. C. Attanayake, P. Defoe, S. Martin, and G. M. Pierzynski. 2013. Field based evaluations of trace element transfer from contaminated urban garden soils to vegetables. Am. Soc. of Horticultural Science Annual Conference, July 22-25, Palm Desert, CA.
- Attanayake, C., G.M. Hettiarachchi, S. Martin, P. Defoe, and G.M. Pierzynski. Potential for Transfer of Lead, Arsenic and Polycyclic Aromatic Hydrocarbons from Compost Added Urban Soils to Vegetables and Humans. ASA/SSSA/CSA Annual Meetings, Oct. 2012, Cincinnati, OH.
- Brown, S. and G.M. Hettiarachchi. Use of Urban Residuals to Reduce Pb and As Bioaccessibility. ASA/SSSA/CSA Annual Meetings, Oct. 2012, Cincinnati, OH.
- Defoe, P. and G. M. Hettiarachchi. 2012. Reducing Bioaccessibility of Lead and Arsenic in a Contaminated Urban Garden Soil. ASA/SSSA/CSA Annual Meetings, Oct. 2012, Cincinnati, OH.
- Enriquez, H.J., N. Mladenov, P. Wolski, G. Hettiarachchi., D. McKnight, J. Ebert, P. Huntsman-Mapila, M. Murray-Hudson, and M. Wellington. Influence of Abiotic and Biotic Processes on the Mobilization of Arsenic in Groundwater of the Okavango Delta, Botswana. 2012 GSA Annual Meeting & Exposition, Nov. 2012, Charlotte, NC.
- Galkaduwa, B., G.M. Hettiarachchi, G. Kluitenberg, and S. Hutchinson. Understanding Transport and Transformations of Selenium in Flue-Gas Desulfurization Waste Water Using Continuous Flow Column Systems. ASA/SSSA/CSA Annual Meetings, Oct. 2012, Cincinnati, OH.

- Hettiarachchi, G.M. Contaminants In Urban Gardens- Lessons Learned In the Past. ASA/SSSA/CSA Annual Meetings, Oct. 2012, Cincinnati, OH.
- Karna, R. and G.M. Hettiarachchi. Understanding Subsurface Transformations and Dynamics of Trace Elements in Multi-Metal Contaminated Mine Waste Materials in Southeast Kansas. ASA/SSSA/CSA Annual Meetings, Oct. 2012, Cincinnati, OH.
- Pierzynski, J., G.M. Hettiarachchi, and R. Khatiwada. Mobility, Availability and Reaction Products of MAP, DAP and APP Fertilizers. ASA/SSSA/CSA Annual Meetings, Oct. 2012, Cincinnati, OH.
- Pitumpe Arachchige, P., D. Menefee, G.M. Hettiarachchi, L. Maurmann, C.W. Rice, and A. Edgerley. Chemistry and Mineralogy of Soil Aggregates in Soils from Temperate Continuous Corn System- Effects of Different Management Practices. ASA/SSSA/CSA Annual Meetings, Oct. 2012, Cincinnati, OH.
- Price, J. and G.M. Hettiarachchi. Trace Metal Concentration and Partitioning Among Vegetable Varieties. ASA/SSSA/CSA Annual Meetings, Oct. 2012, Cincinnati, OH.
- Silva, R.C., G.M. Hettiarachchi, T. Muraoka, and S.H. Chien. Diffusion, Fate and Reaction Products of Phosphate Fertilizers with Varying Solubility Applied to a Tropical Soil. ASA/SSSA/CSA Annual Meetings, Oct. 2012, Cincinnati, OH.
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Synchrotron Proposals

1. *In situ stabilization of soil lead using phosphorus and manganese oxide.* G. M. Hettiarachchi, K.G. Scheckel, J.A. Ryan, and G. M. Pierzynski. Conducted Research at NSLS, Brookhaven National Laboratory, January 2002.
2. *Role of inorganic fractions in biosolids and biosolids amended soils on metal binding mechanisms.* G.M. Hettiarachchi (Principal Investigator), J.A. Ryan, K.G. Scheckel, and C.A. Impellitteri (Co-investigators). Conducted research at APS, Argonne National Laboratory, December 2001.
3. *Role of iron and manganese oxides in biosolids-amended soils on metal binding.* G.M. Hettiarachchi (Principal Investigator), K.G. Scheckel, and J.A. Ryan (Co-investigators). Conducted research at APS, Argonne National Laboratory, July 2003.
4. *Cd speciation associated with iron oxides and biosolids.* K.G. Scheckel, G.M. Hettiarachchi, and J.A. Ryan (Co-investigators). Conducted research at APS, Argonne National Laboratory, December 2003.
5. *Natural attenuation of copper toxicity in soils.* E. Lombi (Principal Investigator), R. Hamon (Co-investigator), G.M. Hettiarachchi (Co-investigator, Conducted Research at NSSRC), K.G. Scheckel (Co-investigator). Applied through Australian Synchrotron Research Program (research conducted at NSSRC, Taiwan in August 2005).
6. *Reaction products of zinc- and manganese-granular and fluid fertilizers in soil as a function of distance of application.* G. M. Hettiarachchi (Principal Investigator). E. Lombi, M. McLaughlin, D. Chittleborough, K. Scheckel, and M. Newville (Co-investigators). Applied as a General user through APS for Sector 13-ID. Advanced Photon Source, Argonne National Laboratory (research conducted in March 2006)
7. *Bulk speciation of zinc and manganese in zinc- and manganese-granular and -fluid fertilizer enriched soil.* G. M. Hettiarachchi (Principal Investigator). E. Lombi, M. McLaughlin, and D. Chittleborough (Co-investigators). Applied through Australian Synchrotron Research Program (research conducted at ANBF, Photon Factory, Japan in May 2006).
8. *Speciation of fluid- and granular-fertilizer derived Cu and Zn in a calcareous soil using micro- X-ray -fluorescence, -diffraction, and -absorption.* G. M. Hettiarachchi (Principal Investigator). M. McLaughlin, D. Chittleborough, K. Scheckel, and M. Newville (Co-investigators). Applied as a General user through APS for Sector 13-ID. Advanced Photon Source, Argonne National Laboratory (research conducted in August 2006).
9. *Revealing the chemistry of soil pores.* L. Jassogne (Principal Investigator/Ph.D. student). G. M. Hettiarachchi, and D. Chittleborough (Co-investigatros/Co-supervisors). Applied as a General user through APS for Sector 13-BM. Advanced Photon Source, Argonne National Laboratory (research conducted in August 2006 and April 2007).
10. *High iron compost for remediation of lead and arsenic contaminated soils.* Sally Brown (Principal Investigator). G. M. Hettiarachchi, and K. Scheckel (Co-investigators). Advanced Photon Source, Argonne National Laboratory (research conducted in August 2006).

Synchrotron Proposals (continued)

11. *Synchrotron based x-ray diffraction and absorption for manganese speciation in fertilized alkaline calcareous soil.* G. M. Hettiarachchi (Principal Investigator). M. McLaughlin, and D. Chittleborough (Co-investigators). Applied through Australian Synchrotron Research Program (research conducted at ANBF, Photon Factory, Japan in October 2006).
12. *Speciation of cobalt in soil and the effects of ageing.* G. M. Hettiarachchi (Principal Investigator), L. Wendling, J. Kirby, and M. McLaughlin (Co-investigators). Applied through Australian Synchrotron Research Program (research conducted at ANBF, Photon Factory, Japan in October 2006 and February 2007).
13. *Speciation and distribution of Zn in canola roots following root exposure to novel chelated fertilizers.* G.M. Hettiarachchi (Principal Investigator), S. Stacey, K. G. Scheckel, and M. J. McLaughlin. Advanced Photon Source, Argonne National Laboratory (research conducted in April 2007).
14. *Chemical changes induced by root growth.* L. Jassogne (Principal Investigator/Ph.D. student). G. M. Hettiarachchi, and D. Chittleborough (Co-investigatros/Co-supervisors). Applied through Australian Synchrotron Research Program to APS Sector 20-ID. Advanced Photon Source, Argonne National Laboratory (research conducted in April 2007).
15. *Speciation of Pb and Zn in a smelter contaminated soil treated with various P amendments using micro- X-ray –fluorescence, –diffraction, and -absorption.* G. M. Pierzynski (Principal Investigator), L. Baker, K. G. Scheckel, G. M. Hettiarachchi, and M. Newville. Advanced Photon Source, Argonne National Laboratory (research conducted in April 2007).
16. *Zinc speciation in soils as a function of distance of application from nanoparticulate zinc fertilizer products.* G.M. Hettiarachchi (PI), N. Milani, M. J. McLaughlin, and J. Kirby. Advanced Photon Source (APS), Argonne National Laboratory (ANL) (Research was conducted in April 2008).
17. *Understanding the effect of seasonal wetting-drying on the speciation of Pb, Cd and Zn of a mine waste material from the Tri-State (Kansas-Missouri-Oklahoma) mining area.* G.M. Hettiarachchi (PI), M. Palomo, M. Newville, G. Pierzynski, and K. Scheckel. APS, ANL (Research was conducted in June 2008).
18. *Cobalt distribution and speciation in soils exposed to altered redox conditions through submergence.* G.M. Hettiarachchi (PI), J. Kirby, M. J. McLaughlin, and D. Beak. 2008. APS, ANL (Research was conducted in December 2008).
19. *Understanding subsurface transformations of trace elements in reduced multi metal-rich geomaterials using noninvasive x-ray spectroscopy techniques.* G.M. Hettiarachchi (PI), R. Pannu, M. Newville, G.M. Pierzynski, K. Scheckel, and C.W. Rice. 2008. APS, ANL (Research was conducted in April 2009).
20. *Copper distribution and speciation at the soil-root interface following submergence.* D. Beak (PI), J. Kirby, M. McLaughlin, and G.M. Hettiarachchi. 2009. APS, ANL (Research was conducted in April 2009).

Synchrotron Proposals (continued)

21. *Deconstructing Soil C and N sequestration: Importance of Mineral Surface Reaction of Amino Acids and Peptides at environmentally relevant conditions.* K. Xia (PI) and G.M. Hettiarachchi. National Light Source, Brookhaven National Laboratory (Research was conducted in July 2009).
22. *Understanding subsurface transformations of trace elements in reduced multi metal-rich geo-materials using noninvasive x-ray spectroscopy techniques-II.* G.M. Hettiarachchi (PI), R. Pannu, M. Newville, G.M. Pierzynski, K. Scheckel, and C.W. Rice. 2009. APS, ANL (Research was conducted in December 2009).
23. *Laboratory Investigations on Mobility, Availability and Reaction Products of P from Granular and Fluid P Fertilizers in Soils: Influenced by P Management Practices.* G.M. Hettiarachchi (PI), R. Khatiwada. APS, ANL (Awarded 3 days of beamtime, Research was conducted in December 2009).
24. *Laboratory Investigations on Mobility, Availability and Reaction Products of P from Granular and Fluid P Fertilizers in Soils: Influenced by P Management Practices.* G.M. Hettiarachchi (PI), R. Khatiwada. APS, ANL (Awarded 6 days of beamtime, Research was conducted in April 2010).
25. *Selenium speciation in organic-rich sediments and wetland systems: Assessing bioavailability and mobilization.* G.M. Hettiarachchi, S. Datta, and M. Crawford. 2010. (Awarded 6 days of beamtime, 3 days of research was conducted in July 2010, 3 days was conducted in December 2010)
26. *Laboratory Investigations on Mobility, Availability and Reaction Products of P from Granular and Fluid P Fertilizers in Soils: Influenced by P Management Practices.* G.M. Hettiarachchi (PI), R. Khatiwada. APS, ANL (Awarded 3 days of beamtime, Research was conducted in October 2010).
27. *Investigations on Mobility, Availability and Reaction Products of P from Granular and Fluid P Fertilizers in Soils, Influenced by P Management Practices-I.* G.M. Hettiarachchi (PI), R. Khatiwada. APS, ANL. (Awarded 3 days of beamtime, Research was conducted in April 2011)
28. *Investigations on Mobility, Availability and Reaction Products of P from Granular and Fluid P Fertilizers in Soils, Influenced by P Management Practices-II.* G.M. Hettiarachchi (PI), R. Khatiwada. APS, ANL (Awarded 3 days of beamtime, Research was conducted in August 2011)
29. *Lead speciation and bioavailability in urban soils.* G.M. Hettiarachchi (PI), C. Attanayake. 2011. APS, ANL. (Awarded 3 days of beamtime, Research will be conducted in Fall 2011)
30. *Lead and Arsenic speciation and bioavailability in urban soils.* G.M. Hettiarachchi (PI), C. Attanayake. 2012. Sector 5 BM. APS, ANL. 5 days (06/14/2012-06/19/2012)
31. *Chemistry and Distribution of Organic Carbon within Aggregates in Soil from Different Agroecosystems.* G.M. Hettiarachchi (PI), P. Pitumpe Arachchige, and C.W. Rice. 2012. Sector BLS 5.3.2, ALS, LBNL. 3 days (10/20/2012- 10-23/2012)

Synchrotron Proposals (continued)

32. *Diffusion, fate and reaction products of phosphate fertilizers with varying solubility applied to tropical soils.* G.M. Hettiarachchi (PI) and Rodrigo C. da Silva. 2012. Sector 9 BM, APS, ANL. 5 days (10/25/2012- 10/30/2012)
33. *Understanding transport and transformations of selenium in flue-gas desulfurization waste water using continuous flow column systems and x-ray spectroscopic techniques.* G.M. Hettiarachchi and Buddhika Galkaduwa. 2012. Sector 10-ID, APS, ANL. 4 days (12/7/2012- 12/11/2012)
34. *Understanding subsurface transformations and dynamics of trace elements in natural and biostimulated multi-metal rich soil/geo microcosms using noninvasive x-ray spectroscopy techniques.* G.M. Hettiarachchi and Ranju Karna. 2012. Sector 20-ID, APS, ANL. 4 days (12/13/2012 – 12/17/2012)
35. *Lead and Arsenic speciation and bioavailability in urban soils.* G.M. Hettiarachchi and C, Attanayake. 2013. Sector 5 BM. APS, ANL. 4 days (03/29/2013-04/02/2013)
36. *Mobility, availability and reaction products of MAP, DAP, and APP fertilizers.* G.M. Hettiarachchi (PI) and J. Pierzynski. 2013. Sector 9 BM, APS, ANL. 4 days (04/17/2013- 04/21/2013)
37. *Chemistry and Distribution of Organic Carbon within Aggregates in Soil from Different Agroecosystems.* G.M. Hettiarachchi, P. Pitumpe Arachchige, and C.W. Rice. 2013. Sector BLS 5.3.2, ALS, LBNL. 3 days (05/16/2013- 05/16/2013)
38. *Examining lead and arsenic speciation in a contaminated urban soil amended with biosolids and an iron oxyhydroxide using x-ray absorption spectroscopic techniques.* G.M. Hettiarachchi (PI), P. Defoe. 2013. Sector 5 BM. APS, ANL. 4 days (07/11/2013- 07/15/2013)
39. *Transport and transformations of selenium in flue-gas desulfurization wastewater using continuous flow column systems and x-ray spectroscopic techniques.* G.M. Hettiarachchi and M.B. Galkaduwa. 2013. Sector 13-IDE, APS, ANL. 3 days (07/12/2013- 07/16/2013)
40. *Chemistry and Distribution of Organic Carbon within Aggregates in Soil from Different Agroecosystems.* G.M. Hettiarachchi (PI), P. Pitumpe Arachchige, and C.W. Rice. 2013. Sector BLS 5.3.2, ALS, LBNL. 3 days (08/15/2013- 08/18/2013)
41. *Understanding subsurface transformations and dynamics of trace elements in natural and bio-stimulated multi-metal rich soil microcosms using noninvasive x-ray spectroscopy techniques.* G.M. Hettiarachchi and Ranju Karna. 2013. Sector 13-IDE, APS, ANL. 3 days (10/4/2013 – 10/7/2013)

Synchrotron Proposals (continued)

42. *Chemistry of Organic Carbon (C) in Soil Aggregates from Temperate and Tropical Agroecosystems using Bulk C K-NEXAFS Spectroscopy.* G.M. Hettiarachchi (PI), P. Pitumpe Arachchige, and C.W. Rice. 2013. Beamline 11-ID-1 (SGM), CLS. 3 days (12/15/2013- 12/18/2013)
43. *Chemistry and Distribution of Organic Carbon within Aggregates in Soil from Different Agroecosystems.* G.M. Hettiarachchi (PI), P. Pitumpe Arachchige, and C.W. Rice. 2013. Sector BLS 5.3.2, ALS, LBNL. 3 days (02/12/2014- 02/15/2014)
44. *Effect of P Fertilizer Source on Mobility and Transformations of P in High P-Fixing Soils.* G.M. Hettiarachchi (PI) and J. Pierzynski. 2014. Sector 9 BM, APS, ANL. 4 days (04/02/2014- 04/06/2014)
45. *Understanding subsurface transformations of trace elements in natural and bio-stimulated multi-metal rich soil microcosms using bulk x-ray absorption spectroscopy.* G.M. Hettiarachchi and Ranju Karna. 2014. Sector 5-BM-D, APS, ANL, 4 days (04/04/2014- 04/08/2014)
46. *Understanding subsurface transformations and dynamics of trace elements in natural and bio-stimulated multi-metal rich soil microcosms using noninvasive x-ray spectroscopy techniques.* G.M. Hettiarachchi and Ranju Karna. 2014. Sector 13-IDE, APS, ANL. 2 days (07/10/2014 – 07/12/2014)
47. *Coupling of arsenic, iron and sulfur cycling of a freshwater wetland using X-ray spectroscopic techniques.* G.M. Hettiarachchi and M.B. Galkaduwa. 2014. Sector 13-IDE, APS, ANL. 2 days (07/14/2014- 07/16/2014)
48. *Is the speciation and stability of silver sulfide nanoparticles in soil affected by agricultural practices?* C. Doolette, G.M. Hettiarachchi, J. Kirby, M. McLaughlin, and H. Harris. 2014. Sector. Sector 5-BM-D, APS, ANL, 4 days (08/15/2014- 08/18/2014)
49. *Mobility, availability and reaction products of MAP, DAP, and APP fertilizers.* G.M. Hettiarachchi and J. Pierzynski. 2015. Sector 9 BM, APS, ANL. 4 days (8/17/2015- 8/22/2015)
50. *Chemistry and distribution of organic carbon within soil aggregates in soils from different agroecosystems using SXTM-NEXAFS spectroscopy.* 2015. G.M. Hettiarachchi, P. Pitumpe Arachchige, and C.W. Rice. 2013. Beamline SM, CLS. 4 days (07/09/2015- 07/13/2015)
51. *Soil phosphorus cycling in a non-agriculture grassland ecosystem: Influence of fertilization.* G.M. Hettiarachchi and J. Pierzynski. 2015. Beamline SXRMB, CLS. 4 days (07/08/2015- 07/13/2015)

Synchrotron Proposals (continued)

52. *Fixing Phosphorus: Spatially Resolved Investigation of Carbon-Based Chemical Mechanisms Capable of Improving Phosphorus Fertilizer Use Efficiency in Acid and Calcareous soils.* G.M. Hettiarachchi and J. Weeks. 2015. Beamline SXRMB, CLS. 3 days (02/12/2016-02/16/2016)
53. *Fate and reaction products of phosphate fertilizers with elemental sulfur in the composition applied to tropical soils.* G. M. Hettiarachchi, Fabio Coutinho Cesar, and J. Pierzynski. 2016. Sector 9 BM, APS, ANL. 4 days (4/6/2016- 4/10/2016)
54. *Synchrotron based micro scale speciation of Arsenic in smelter contaminated soil.* G. M. Hettiarachchi, S. Rathnayake, P. Schwab, and D. Deng. 2016. Sector 13 ID-E, APS, ANL. 4 days (11/04/2016-11/07/2016)
55. *Set P Free: Synchrotron-Based, Real-Time Observation of a Unique Protein Derivative Liberating Phosphorus Fixed to Iron in Soil.* G.M. Hettiarachchi and J. Weeks. 2016. Sector 9 BM, APS, ANL. 5 days (4/11/2017-4/16/2017)
56. *In Search of a Solution to Pollution: Improving Phosphorus Fertilizer Use Efficiency through Simple Formulation Alterations.* G.M. Hettiarachchi and J. Weeks. 2017. Sector 9 BM, APS, ANL. 3 days (4/6/2018-4/9/2018)
57. *Use of Different Zinc Formulations in Macronutrient Fertilizers to Alter Zinc-Fertilizer Reaction Pathways in Soil: Bulk XAS study.* G.M. Hettiarachchi and M.B. Galkaduwa, 2017. Sector 9 BM APS, ANL. 3 days (4/13/2018-4/16/2018)
58. *Liquid phosphorus, organic compounds, and a calcareous soil: Have the effects always been there, we just didn't know to look for them?* G.M. Hettiarachchi and J. Weeks. 2018. Sector 9 BM, APS, ANL. 2 days (3/26/2019-3/27/2019 and 4/7/2019-4/8/2019)
59. *Use of Different Zinc Formulations in Macronutrient Fertilizers to Alter Zinc-Fertilizer Reaction Pathways in Soil: Micro X-ray spectroscopy study.* G.M. Hettiarachchi and M.B. Galkaduwa, 2018. Sector 13 ID-E APS, ANL. 3 days (3/15/2019-3/18/2019)
60. *The role of organo-mineral interactions in carbon stabilization of biosolids.* Badzmierowski, Mike, G.M. Hettiarachchi, G. Evanylo. SM Beamline, Canadian Light Source, 3 days (9/27/2019-9/30/2019)
61. *The Role of Organo-Mineral Interactions in Carbon Stabilization of Biosolids.* M. Badzmierowski, G.M. Hettiarachchi and Greg Evanylo. 2019. STXM-NEXAFS 5.3.2.2 beamline, Advanced Light Source, Lawrence Berkeley National Laboratory, 3 days (10/3/2019-10/6/2019).
62. *Effect of phosphorus amendments and Miscanthus growth on speciation and bioaccessibility of lead in a contaminated military soil.* G.M. Hettiarachchi and Zafer Alasmay. 2020. Sector 5 BM-D beamline, Advanced Light Source, Lawrence Berkeley National Laboratory, 4 days (3/11/2020-3/15/2020).
63. *Understanding fundamental transformation processes of phosphorus in recovered nutrient products from wastewaters in soils.* G.M. Hettiarachchi and K.H. Gamage, 2020 Sector 9 BM-B, APS, ANL. 6 days. Remote access (8/4/2020-8/10/2020)

64. *Use of Different Organic Polymers in Macronutrient Fertilizers to Alter Phosphorus-Fertilizer Reaction Pathways in Soil: Bulk XAS study.* M.B. Galkaduwa and G.M. Hettiarachchi. 2020. Sector 9 BM-B, APS, ANL. 6 days (10/6/2020-10/12/2020)
65. *Explaining interactions and availability of zinc-coated macronutrient fertilizers in soil using micro X-ray spectroscopy study.* M.B. Galkaduwa and G.M. Hettiarachchi. 2020. Sector 13 ID-E APS, ANL. 4 days, Remote operation (11/5/2020-11/9/2020)

Competitive and Industry Research Grants

Funded

Parameswaran, P. and G. Hettiarachchi. *Leveraging the circular bioeconomy: Sustainable recovery and optimization of slow-release biofertilizers from livestock wastewater.* Kansas State University-Global Food Systems Seed grant. 7/1/2021- 6/31/2022. Total \$70,192.

Nelson et al. *Sustainable phosphorus management with enhanced soil health.* Kansas Department of Agriculture. Support grant. 7/01/2020 - 6/30/2025. Total \$150,000.

Nelson et al. *Sustainable phosphorus management with enhanced soil health.* Kansas Soybean Commission. Support grant. 7/01/2020 - 6/30/2025. Total \$150,000.

Aakeroy, C. and G.M. Hettiarachchi. Exploring co-crystal technologies for efficient and sustainable nutrient management. Global Food Systems Seed Grant 04/2020 to 08/2021. Total \$ 55,348.

Nelson et al. *Sustainable phosphorus management with enhanced soil health.* Foundation for Food and Agriculture Research. 7/01/2020 - 6/30/2025. Total \$490,541.

Hettiarachchi, G. *The Borlaug International Agricultural Science and Technology Fellowship Program Research on Soil Cd contamination in Ecuadorian Cacao Production Systems.* USDA Foreign Agricultural Affairs-Foreign Agricultural Services. 9/2/2019-8/20/2021. Total \$49,825.

Parameswaran, P. and G. Hettiarachchi. *Closing the loop: Sustainable food production through integrated recovery of biofertilizers and water for reuse from animal waste operations.* Kansas State University-Global Food Systems Seed grant. 10/1/2019- 9/30/2020. Total \$67,462.

Hettiarachchi, G. *Explaining the Interactions and Potential Availability of Different Micronutrient Fertilizers in Soils Using Wet Chemical, Visual and Spectroscopic Techniques.* Compass Minerals USA, Inc. 1/1/2019 – 12/31/2021. Total \$253,080.

Welch et al. 2018. *RII Track-2 FEC: Building Field-Based Ecophysiological Genome-to-Phenome Prediction.* National Science Foundation. 09/01/2018 – 08/31/2022. Total \$3,982,202

Welch, S., G.M. Hettiarachchi, S. Kuleza, P. Parameswaran, and R. Hansen. 2018. *EAGER Sits: Sustainable biosensor integration for precision management of agricultural soils.* National Science Foundation. 01/01/2019 – 12/31/2021. Total \$300,000.

Hettiarachchi, G.M. 2018. *Reducing children's blood lead levels by mitigating household lead paint in central El Paso, TX.* Sub award University of Texas, El Paso. \$236,409. 1/1/2019-12/31/2022.

Hettiarachchi, G.M. 2018. *Explaining the Interactions and Potential Availability of Different Micronutrient Fertilizers in Soils Using Wet Chemical, Visual and Spectroscopic Techniques*. Compass Minerals USA Inc., \$253,080 (Dec. 2018-Dec. 2021).

Parameswaran, P., G.M. Hettiarachchi and S. Hutchinson. 2018. *Novel Platform For Channelized Nutrient Product Sequestration From Agricultural Wastewaters Through Optimized Anaerobic Bioprocess*. USDA-NIFA. \$99,985 (May 2018- May 2020).

Hettiarachchi, G. 2018. *Altering Phosphorus Fertilizer Reaction Pathways in P-Fixing Soils*. Bio Huma Netics. \$15,750 (April 2018-April 2019).

Pidlisnyuk, V., L. Erickson, T. Stefanovska, P. Shapoval, L. Davis, A. Nurzhanova, G.M. Hettiarachchi. 2016. *Phytotechnology with Biomass Production for Cleaning up Former Military Sites*. NATO. \$329,664. (October 2016- September 2019).

Dille, A., A. Asebedo, G. Kluitenberg, G.M. Hettiarachchi, J. Du. 2016. *Precision Crop Protection: Soil Management Zones for Optimizing Weed Control Efficacy*. USDA-NIFA. \$100,000 (April 2016-March 2018).

Hettiarachchi, G.M. 2015. Nutrient Technologies, L.L.C. *Understanding Role of P fertilizer Enhancement Products and Their Effects on Phosphorus Fertilizer Reaction Products in Soils.* \$89,699 (December 2015-November 2018).

Hettiarachchi, G.M. 2014. National Science Foundation. *“Understanding Process-level Physico and Biogeochemical Mechanisms Controlling Soil Carbon.”* \$79,250 (October 2014-September 2015).

Hettiarachchi, G.M., S. Martin, B. Leven, T. Carey, D. Presley, L. Erickson, and G.M. Pierzynski. *Sustainable gardening initiatives at Brownfields sites*. USEPA Brownfields Training, Research and Technical Assistance Grants. Awarded on 2008. Total Award \$900,000. 2008-2015.

Ruiz-Diaz, D, Hettiarachchi, G.M., and D. Mengel. *Iogen Energy Corporation, Evaluation of Fertilizer Equivalent Value of Cellulosic Ethanol Waste Stream at Field Conditions.* \$59,804 (April 2012-December 2012)

Hettiarachchi, Ganga M., Mengel, David B., and Ruiz Diaz Suarez, Dorivar A., Iogen Energy Corporation, *Greenhouse and Laboratory Evaluations on use of Iogen Celulosic Ethanol-Waste Stream as a Fertilizer Substitute and/or Soil Amendment*. (November 2011-June 2011). \$46,725.

Hutchinson, S. (PI), Hettiarachchi, G.M. (PI), L. Erickson (PI), and L. Davis (PI). *Westar Wetland Project*. Awarded in Jan. 2011. Two year total \$347,552. 2011-2013

Hettiarachchi, G.M., and N.O. Nelson. *Phytoremediation information through a cooperative effort with Kansas State University-Department of Agronomy and the USDA NRCS National Plant Data Center (NPDC)*. USDA-NRCS. \$25,000. 2009-2011.

Hettiarachchi, Ganga M. (PI), Blasé Leven, and Sabine E. Martin. U.S. Environmental Protection Agency, *“Sustainable Local Gardening Redevelopment at Brownfields Sites.”* 2008-2014, 2015 No cost extension. Total \$900,000.

Hettiarachchi, Ariyaratne, H. Wijewardena, and K.G. Scheckel. *Soil and crop contamination by toxic trace elements and risk for human health due to their transfer through food chain-* Two year research project (2003 December-2005 December) worth

Sri Lankan Rs. 1.47 Million funded by Sri Lanka- Council for Agricultural Research Policy (SL-CARP)

McLaughlin, M.J., D. J. Chittleborough, G. M. Hettiarachchi, and J. K. Kirby. *Explaining the interactions between drought and fertilizer use efficiency using tracing and imaging techniques*. Australian Research Council Linkage Grant. Submitted in April 2007. Total Grant Amount Aus \$ 256,000

McLaughlin, M.J., D. J. Chittleborough, J.K. Kirby, and G. M. Hettiarachchi. *The fate and toxicity of nanoparticles in the terrestrial environment*. Australian Research Council Discovery Grant. Submitted in March 2007. M.J. McLaughlin (Chief Investigator), D. J. Chittleborough (Chief Investigator), J. K. Kirby (Principal Investigator), and G. M. Hettiarachchi (Principal Investigator). Total Grant Amount Aus \$ 410,000

Pending

Amachawadi, R., P. Parameswaran, G.M. Hettiarachchi, J. DeRouchey, T. Lee, T. Nagaraja, C. Kang, A. Tarpoff. *The circular economy paradigm towards sustainability of livestock waste: Bridging environmental synergies and precision animal management*. US Department of Agriculture, \$1,000,000. 9/7/2021 - 8/31/2024.

Hettiarachchi, G.M., K.G. Scheckel, E. Friedman, A. Roberts, and A. Bracker. *Reducing Bioavailability of Lead in Urban Residential Neighborhood Soils in Kansas City, Missouri*. Department of Housing and Urban Development (preproposal), \$700,000. 01/2022-12/2025.

Hutchinson, S., K. Bigham, M. Derby, W. Dodds, G.M. Hettiarachchi, J. M. S. Hutchinson, T. Moore. EWN: Great plains/Inland Demonstrations and Solutions (GRIDS). Army Corps of Engineer Research and Development Center (ERDC). \$2,249,708. 8/16/2021- 8/15/2024.

Culbertson, C., X. Lin, M.B. Kirkham, G. Kluitenberg, D. Grieger, U. Yucel, A. Mathews, G.M. Hettiarachchi. *Acquisition of an imaging FTIR microscope to enhance understanding of microplastic sources and transport through agricultural systems*. USDA - Research Education and Economics - National Institute of Food and Agriculture. \$150,41. 10/1/2021 - 9/30/2023.

Not Funded

Xia, K., G.M. Hettiarachchi, G. Biswas, T. Drape, L. Githinji, and Z. Wang. *Assessing the Occurrence, Fate, and Transport of Persistent and Bioaccumulative Chemicals of Emerging Concerns in Land-Applied Biosolids through Integration of Machine Learning & Experimental Data*. US Environmental Protection Agency, \$ 1,497,998, Cost share: \$374,451. 8/1/2021-7/31/2024.

Parameswaran, P., G.M. Hettiarachchi, V. Khanna, D. Jassby. NSF ECO-CBET Preliminary Proposal: *Sustainable wastewater resource recovery and beneficial reuse using electro-assisted anti-fouling Anaerobic Membrane Bioreactors*. National Science Foundation, \$1,500,000. 01/2022-12/2025.

- Prabhakar, P., M. Derby, G.M. Hettiarachchi, et. al. RII Track-1 *Integrated data sciences to build resilient rural agricultural systems*. National Science Foundation, \$5,000,638. 08/2022-07/2027.
- Bhatt, A., G.M. Hettiarachchi, M. Melanie Sattler, V. Chen. 2020. *A Feasibility Study of Transforming Abandoned Mine Sites into Bioenergy Crop Sites via Phyto-restoration*. US Department of Agriculture-NIFA. \$ \$173,926 (KSU) 02/2021- 02/2024.
- Shoemaker, C. et al. 2020. *Interdisciplinary Graduate Training in Urban Food Systems*. National Science Foundation, \$499,782. 04/2021-04/2024.
- Parameswaran, P., G.M. Hettiarachchi, and L. Zeglin. 2019. *Pilot scale Anaerobic Membrane Bioreactor treating non-point wastes for onsite nutrient recovery and targeted residual nutrient transformations to mitigate Harmful Algal Blooms*. Environmental Protection Agency, \$999,452. 9/1/2020-8/31/2023.
- Parameswaran, P., G.M. Hettiarachchi, and K. Xia. 2019. *Sustainable agroecosystem nutrient management of wastewater derived Recovered Nutrient Products (RNP) by soil - RNP microbiome interactions*. US Department of Agriculture NIFA AFRI, \$500,000. 7/1/2020-6/30/2025.
- Aakeroy, Christer and G. Hettiarachchi. 2019. *Exploring co-crystal technologies for responsible and efficient nutrient management*. Kansas State University-Global Food Systems Seed grant. 10/1/2019- 9/30/2020. Total \$70,648.
- Hettiarachchi, G.M. KU lead 2018. *INFEWS/T3: Recovery of Energy and Nutrient Resources from Wastewater and Food Waste to Improve Water Quality*. NSF, \$285,854 (KSU sub award), 7/1/2019- 6/30/2024.
- Hettiarachchi, G. 2018. *A Neighborhood Level Strategy for Reducing Child Lead Exposure*. NIH/NIEHS, Sub award University of Texas, El Paso. \$45,448. 9/1/2018- 8/31/2020.
- Hutchinson, S., Derby, M., Hettiarachchi, G., Hohn, K. Sun, X. S., and Wang, Donghai. *Biofuels and Biobased Products from Salicornia Grown with Marginal Waters*. DOE/USDA. \$1,549,720, 1/1/18-12/31/20
- Hettiarachchi, G., Alvarez Santos, E., Bergtold, J., Hutchinson, S., Parameswaran, P., Presley, D. and Yeager, E. *Recovered Resources from Wastewater for Sustainable Agriculture: Exploiting Opportunities, Protecting the Environment and Overcoming Barriers*. USDA. \$5,199,665. 3/1/2018-2/28/2023.
- Hettiarachchi, G.M., K.G. Scheckel (EPA-ORD), S. Martin, and J. Kirby (CSIRO, Australia). *Minimizing Soil Contaminant Exposure to Communities Gardening on Brownfields Sites*. NIH/NIEHS. \$ 1,115,530. 05/2017- 04/2021.
- Hettiarachchi, G.M., S. Hutchinson, J. Bergtold, D. Bremer, J. Fry, S. Keeley, P. Parameswaran, E. Santos and E. Yeager. *Resource Recovery from Wastewater: Exploiting Opportunities, Overcoming Barriers, and Protecting the Environment*. US Department of Agriculture. \$4,999,588 (03/01/2017 –02/28/2022).
- Hettiarachchi, G.M. KU led INEWS/T3: food, Energy, and Water. Recovery of Resources from Wastewater. NSF. \$274,591 (K-State) (01/01/17 – 12/1/20)

- Hettiarachchi, G.M. and P. Parameswaran. 2016. RII Track-2 FEC: Rethinking Waste: Renewable Nutrients and Energy for Sustainable Food Production. NSF. \$985,065 (K-State) (01/01/17 – 12/1/20)
- NSF EPSCoR. RII Track I: System responses to variable water and nutrient availability: from microbial to societal scales. NSF. \$ 20,000,000. 08/01/2016 – 07/31/2021.
- Hettiarachchi, G.M., K.G. Scheckel (EPA-ORD), S. Martin, and J. Kirby (CSIRO, Australia). Minimizing Soil Contaminant Exposure to Communities Gardening on Brownfields Sites. NIH/NIEHS. \$972,152. 04/2016- 04/2020.
- Hettiarachchi, G.M., L. Erickson, L. Davis, G.M. Pierzynski, K. Roozeboom, G. Sassenrath, and D. Min. Assisted-phytostabilization of lead-zinc chat tailings near Galena, Kansas. \$359,733. EPA R7/KDHE. 2015-2017.
- Hettiarachchi, G.M., N. Basta (OSU), K.G. Scheckel (EPA-ORD), D. Van Der Merwe, G.M. Pierzynski, L. Davis, S. Martin. In-situ Remediation of Lead for Protection of Human Health and Risk Assessment: Evaluating Soil Biogeochemical Processes Influencing Lead Bioavailability by In-Vivo and In-Vitro Models, and Spectroscopy. NIEHS. \$993,431. 2014- 2018.
- Mladenov, N., G.M. Hettiarachchi, and M. Kirk. Effects of Global Change on the Cycling of Carbon in Seasonal Tropical Wetlands. NASA. \$330,054. 2014-2017.
- Mladenov, N., G.M. Hettiarachchi, and M. Kirk. Collaborative Research: Coupling of Carbon and Sulfur Cycling along Groundwater Flowpaths in a Freshwater Wetland. NSF. \$ 116,000. 2014-2017.
- Hettiarachchi, G.M., C.W. Rice, A. Swamy, and T. Amado. Understanding of Coupled Biophysicochemical Mechanisms Controlling Soil Carbon Storage and Long-term Stabilization. NASA. \$ 400,000. 2014-2017.
- Hettiarachchi, G.M., C.W. Rice, and T. Amado. Interdependency of Phosphorus on Biogeochemical Processes of Soil Aggregation and Carbon Sequestration. NIFA. \$491,157. 2013-2017.
- Hettiarachchi, G.M., S. Datta, C.W. Rice, and G.M. Pierzynski. Biogeochemical dynamics of lead and selenium in fluctuating redox and organic carbon environments. NSF Geobiology and Low Temperature Geochemistry Research Program. \$694,365. 2011-2014.
- Rice, C.W., G.M. Hettiarachchi, G. Wilson, and T. Amado. Biological and Physico-chemical Approaches to Understand Mechanisms of Soil Carbon Stability and Storage. United State Department of Agriculture. \$ 3,426,277. 2011-2015.
- Nelson, N., G.M. Hettiarachchi, H. Blanco, W. Yuan, and S. Staggenborg. Enhancing the Value of Biochar for Sustainable Bioenergy Production Systems United State Department of Agriculture. \$ 1,000,000. 2011-2015.
- Hettiarachchi, G.M., C.W. Rice, and G.M. Pierzynski. Fluctuating redox conditions and trace metal biogeochemistry in low-carbon environment. NSF Geobiology and Low Temperature Geochemistry Research Program. \$404,825. 2010-2013.
- McNeill, A., D. Chittleborough, S.J. Mooney, and G.M. Hettiarachchi. Non-Invasive Measurements of Plant Root Plasticity and Resource Exploitation in the Undisturbed Soil Environment. Australian Research Council. Aus. \$489,338. 2010-2013.

Xia, K., G. Hettiarachchi, M. Williams, and Svein Saebo. Investigation of Soluble Organic Nitrogen (SON)-Mineral Surface Interactions Using Phage Display Technology Coupled with Synchrotron-Based Spectroscopy. USDA- USDA-AFRI Program. \$16,666 (KSU Portion). 2009-2012.

Hettiarachchi, G.M., C.W. Rice, and G.M. Pierzynski. Fluctuating redox conditions and trace metal biogeochemistry in low-carbon environments. NSF Low Temperature Geochemistry Research Program. \$387,700. 2009-2012.

Rice C. W., Hettiarachchi, G.M., and T. Amado. Integrated bio-physico-chemical approaches to understand the primary and secondary mechanisms controlling storage capacity and stability of soil C. USDA- USDA-AFRI Program. \$350,358. 2009-2012.

Rice C. W., Hettiarachchi, G.M., and T. Amado. Integrated bio-physico-chemical approaches to understand the primary and secondary mechanisms controlling storage capacity and stability of soil C. USDA- USDA-AFRI Program. \$387,700. 2008-2012.

Other Awards

Hettiarachchi, G.M. (PI). \$58,140 in 2022-2023 from Ostara to support mechanistic understanding of struvite phosphorus reaction pathways in two contrasting soils.

Hettiarachchi, G.M. (PI). \$30,000 Awarded in 2020 from Verdesian for 2020-2021 in support of Zn fertilizer reaction studies.

Hettiarachchi, G.M. (PI) Can Humic Substances be Used as 'Enhancers' to Alter Fertilizer Reaction Pathways in Soils? Fluid Fertilizer Foundation. \$30,000. 2018-2020.

Hettiarachchi, G.M. (PI) \$120,000 Awarded in 2011 from JR Simplot and SFP for 2011-2015- additional support for a graduate student doing soil chemistry work on the interaction of P fertilizers and soils *(\$120,000)

Hettiarachchi, G.M. Mobility, Availability and Reaction Products of Different Phosphorus Fertilizer Sources in Various Soils Types. Fluid Fertilizer Foundation. \$30,000. 2010-2012.

\$50,000 Awarded in 2008 from the P Fellowship Consortium of Mossaic, Agrium, Potash Corp and JR Simplot for 2008/9 and 2009/10 academic years to support a graduate student doing soil chemistry work on the interaction of P fertilizers and soils.

\$98,000 Awarded in 2010 from the P Fellowship Consortium of Mossaic, Agrium, Potash Corp and JR Simplot for 2010-2014, 2015 to support a graduate student doing soil chemistry work on the interaction of P fertilizers and soils.

Travel Grants

06/07-AB32 - Dr. G. Hettiarachchi, value Aus \$ 4,280 (Fully Funded by Australian Synchrotron Research Program)

05/06-AB02 & AB03 - Dr. G. Hettiarachchi, value Aus \$ 6,610 (Fully Funded by Australian Synchrotron Research Program)

05/06-AB 51 - Dr. G. Hettiarachchi, value Aus \$ 4,280 (Fully Funded by Australian Synchrotron Research Program)

05/06-S-36 - Dr. G. Hettiarachchi, value Aus \$ 6,470 (Fully Funded by Access to Major Research Facilities Program)

06/07-GSE-01- Dr. G. Hettiarachchi, value Aus \$ 10,845 (Fully Funded by Australian Synchrotron Research Program)

06/07-AB-02- Dr. G. Hettiarachchi, value Aus \$ 2,230 (Fully Funded by Australian Synchrotron Research Program)

06/07-AB-02- Dr. G. Hettiarachchi, value Aus \$ 4,380 (Fully Funded by Australian Synchrotron Research Program)

06/07-GSE-02- Dr. G. Hettiarachchi, value Aus \$ 3,045 (Fully Funded by Australian Synchrotron Research Program)

06/07-SRI-136- Dr. G. Hettiarachchi, value Aus \$ 9,540 (Fully Funded by Australian Synchrotron Research Program)

09- Dr. G. Hettiarachchi, value \$ 1,500 (Funded travel to 10th ICOBTE held in Mexico by ADVANCE Program, KSU)

Contract Research Grants

1. Examination of elemental S oxidation within MES15/MESZ granules as a function of ionic strength and microbial activity

2. Examination of granulated Zn-polyethylenimine (PEI), structural conditions that optimize complex formation, the absorption of PEI and rhamnolipid by plants and their biodegradation in soil

3. Chemical composition and P lability from 10-50-0 fertilizer granules and elemental analysis of MEM0.5, MEMZ, MESZ and Aussie Gold fertilizers

4. Chemical composition and elemental analysis of fertilizer granules

6 months to 2 year research projects worth more than Aus \$ 300, 000 funded by Mosaic Fertilizer Company, USA. 2006/2008

Investigators: M. J. McLaughlin, S. Stacey, G. M. Hettiarachchi

Scientific reviewer for Journals

Journal of Synchrotron radiation
Environmental Science & Technology
Journal of Environmental Quality
Soil Science Society of America Journal
Australian Journal of Soil Science
Soil Science
Environmental Pollution
Environmental Health Perspectives
PLOS ONE
Applied Geochemistry
The Science of the Total Environment
Geoderma
Environmental Geochemistry & Health
Plant and Soil
Water, Air, and Soil Pollution
Journal of Hazardous Substance Research
Soil and Sediment Contamination
Mineral Magazine
Journal of the National Science Foundation of Sri Lanka
Agriculture, Ecosystems and Environment

Grant proposals reviewed

National Science Foundation, U.S.A.
Phosphate and Potash Institute, U.S.A.
US Environmental Protection Agency
Australian Antarctic Science Program, Australia
National Science Foundation, Sri Lanka
Louisiana Board of Regents

Synchrotron Proposal Reviewer

Canadian Light Source
Australian Synchrotron Program
Stanford Light Source

Invited Presentations (Scientific International/scientific local/non-scientific): since Jan. 2005

- Hettiarachchi, G.M. 2020. Improving Human Nutrition Through Manipulating Nutrient Reaction Pathways in Soils. ASA-CSSA-SSSA International Annual Meeting, Virtual. Nov. 9-13.
- Hettiarachchi, G.M. 2020. Soil-based wastewater remediation. North Central Region Water Network Current Seminar series, Virtual. May 13.
- Hettiarachchi, G.M. 2019. Sensors in Soil Chemistry: Opportunities and Challenges. Soil Chemistry Symposium, ASA-CSSA-SSSA International Annual Meeting, Nov. 10-13, San Antonio, TX.
- Hettiarachchi, G.M. et al. 2019. Manipulation of bioavailability of contaminants in urban garden and yard soils. International Conference of Biogeochemistry Trace Elements. May 5-9, Nanjing, China.
- Hettiarachchi, G.M. et al. 2018. Minimizing Human Exposure to Contaminants in Urban Soils. Oct. 4-5. Three Rivers Urban Soil Symposium, Pittsburg, PA
- Hettiarachchi, G.M. 2018. Manipulating Reaction Pathways to Optimize Soil Nutrient Availability. Aug. 2, The University of Adelaide. Adelaide, Australia.
- Hettiarachchi, G.M. 2017. Kansas Environmental Conference, Kansas Department of Health and Environment, Topeka, KS, Aug 8-10, 2017.
- Hettiarachchi, G.M. 2016. Reclaiming Brownfields for Community Gardens. The Center for Engagement and Community Development Announces Fall Engagement Brown Bags. Sep. 2016, Manhattan, KS.
- Hettiarachchi, G.M. 2015. Embedding soils in the general education undergraduate curriculum. ASA/SSSA/CSA Annual Meetings, Nov. 2015, Minneapolis, MN.
- Hettiarachchi, G.M. and S. Martin. 2015. Growing safely to produce healthy crops- community gardens on previously used sites. American Community Gardening Association, August 15, Denver, CO.
- Hettiarachchi, G.M., C. P. Attanayake, P. Defoe, and S. Martin. 2015. Managing urban garden soils: Minimize potential for soil contaminant transfer. The 100th Annual Meeting of Ecological Society of America, Aug. 2015. Baltimore, MD.
- Hettiarachchi, G.M., C. Attanayake, P. Defoe, and S. martin. 2015. Gardening on contaminated urban soils: Mechanisms to reduce risk potential. The 12th International Phytotechnologies Conference, Sep. 2015, Manhattan, KS
- Hettiarachchi, G.M. 2015. Promising opportunities to use biosolids in revitalizing urban brownfields. International Water Association/Water Environment Federation/ Residuals and Biosolids Conference. June 2015. Washington, DC.
- Hettiarachchi, G.M., C. Attanayake, P. Defoe, S. Martin, and G. M. Pierzynski. 2014. Minimizing human exposure to contaminants in urban soils. ASA/SSSA/CSA Annual Meetings, Nov. 2014, Long Beach, CA.
- Hettiarachchi, G.M., C. Attanayake, P. Defoe, and S. Martin. 2014. Growing food crops on urban soils. ASA/SSSA/CSA Annual Meetings, Nov. 2014, Long Beach, CA.

Invited Presentations (Scientific International/scientific local/non-scientific): since Jan. 2005 (continued)

- Hettiarachchi, G.M., J. Pierzynski, and R. Khatiwada. 2014. Mobility, availability and reaction products of different phosphorus fertilizer sources in high P-fixing soil types. March 2014, Great Plains Soil Fertility Conference, Denver, CO.
- Hettiarachchi, G.M. 2014. Trace element contamination in rice growing soils and impact on human health. July 2014, University of Peradeniya, Peradeniya, Sri Lanka.
- Hettiarachchi, G.M., C. Attanayake, P. Defoe, S. Martin, and G. M. Pierzynski. 2013. Potential for Transfer of Lead, Arsenic and Polycyclic Aromatic Hydrocarbons from Amended Urban Soils to Vegetables and Humans. American Chemical Society Fall 2013 National Meeting. September 8-12, Indianapolis, IN.
- Hettiarachchi G.M. 2013. Reducing human exposure to soil contaminants from urban agriculture. Press Conference. 246th American Chemical Society National Meeting and Exposition. September 8, Indianapolis, IN.
- Hettiarachchi, G.M. Soil Contaminants in Urban Environments: Availability and Plant Uptake. February 2, 2013. In collaboration with Purdue Extension, Indianapolis, IN.
- Hettiarachchi, G.M. Soil Contaminants in Urban Environments. March 4, 2013. In cooperation with Kristen McIvor, the Community Garden Program Manager for Pierce County, Tacoma, WA.
- Hettiarachchi, G.M. Soil Contaminants: Bioavailability and Transfer. October 26, 2013. In cooperation with Colorado State University Extension, Burlington, CO.
- Hettiarachchi, G.M. Contaminants: Bioavailability and Transfer. November 16, 2013. In cooperation with Denver Urban Gardens (DUG), CO.
- Hettiarachchi, G.M. Soil Contaminants in Urban Environments: Their bioavailability and Transfer. February 14, 2012. Guest Lecture via GoTo Meetings for research seminar on Phytotechnologies for Landscape Architects, Harvard University, Graduate School of Design
- Hettiarachchi, G.M. Gardening on Brownfields. September 22, 2011 via Skype for the Association of State and Territorial Solid Waste Management Officials (ASTSWMO) Brownfields Focus Group Meeting, the Hall of States Building, Washington, D.C.
- Martin, S. and G.M. Hettiarachchi. Challenges of Urban Agriculture. February 16, 2011. Guest Lecture for the Planning for Urban Agriculture course at the University of Missouri, Kansas City (UMKC) Department of Architecture, Urban Planning and Design.
- Hettiarachchi, G.M. 2011. Growing garden crops on brownfields: Potential health impacts, soil testing and best management practices. June 20, 2011. Public Library, Kansas City, KS.
- Carroll, A. and G.M. Hettiarachchi. Strengthening Urban Agriculture and Food Access in CARE (Community Action for a Renewed Environment) Communities. July 7, 2010.
- Martin, S. and G.M. Hettiarachchi. Participated in a webinar and provided project information during the Vita Nuova webinar on March 26, 2010
- Martin, S. and G.M. Hettiarachchi. Gardening on Brownfields Sites-Is it Safe?: NALGEP (National Association of Local Government Environmental Professionals) webcast, March 3, 2010

Invited Presentations (Scientific International/scientific local/non-scientific): since Jan. 2005 (continued)

- Hettiarachchi, G.M. 2010. Soil Quality Issues in Urban Agriculture. Department of Horticulture, Forestry and Rec. Resources Seminar Series. March 2nd 2010.
- Hettiarachchi, G.M. and S. Martin. 2009. Gardening on Brownfields Sites: Washington Wheatley, KC site. EPA Region 7 Site Visit and Implementing Neighborhood Sustainability Meeting: Washington Wheatley Neighborhood. Wednesday September 2, 2009. Seton Center, 23rd and Benton, Kansas City, MO.
- Hettiarachchi, G.M. Growing vegetables in urban environments: Problems and Remedies. Washington Wheatley monthly neighborhood meeting. March 16, 2009.
- Hettiarachchi, G.M. Growing vegetables in urban environments: Problems and Remedies. At a Special Community Gardening Meeting. Northern Arizona University, Flagstaff, AZ. April 30, 2009.
- Hettiarachchi, G.M. Soil test results, their meaning and site recommendations. The Washington Wheatley Community Garden site, Kansas City, MO. May 5, 2009.
- Hettiarachchi, G.M. Growing vegetables in urban environments: Problems and Remedies. City Hall Meeting in Gary, IN. March 16, 2009.
- Hettiarachchi, G. M. 2007. Science at CSIRO Land & Water Adelaide Laboratory- snap shot presentation. CSIRO Land & Water Science Retreat. March 19-22, 2007, Sydney.
- Hettiarachchi, G.M., M.J. McLaughlin, E. Lombi, and D. Chittleborough. 2006. ARC Project Update: Understanding differential behaviour of fluid and granular micronutrient fertilizers in soils. CSBP, Ltd. June 22, 2006, Perth.
- Hettiarachchi, G.M. 2005. Synchrotron Based Spectroscopic Investigations of Inorganic Pollutants in Waste Materials. December 3, 2005. Special Seminar series organized by South Australian Synchrotron Users Network. Plant Genetics Resource Center, The University of Adelaide.
- Hettiarachchi, G.M., E. Lombi, M.J. McLaughlin, and D. Chittleborough. 2005. Lability and mobility of zinc and manganese fertilizers in soil as a function of distance of application. November 24, 2005. University of Adelaide. Soil Chemistry Research Group.
- Hettiarachchi, G. M., K. G. Scheckel., and J. A. Ryan. 2005. Micro scale investigations to understand binding mechanisms of metals in biosolids using synchrotron based x-ray fluorescence and x-ray absorption. Soil Metal Behavior, Soil Chemistry Division Special Symposium. ASA/SSSA/CSA Annual Meetings, Nov. 2005, Salt Lake City, UT.
- Hettiarachchi, G.M., E. Lombi, M.J. McLaughlin, D. Chittleborough, and T. McBeath. 2005. Granular and Fluid Phosphorus. SAGIT Project Management Committee (PMC) meeting, October 13, 2005.
- Hettiarachchi, G.M., E. Lombi, M.J. McLaughlin, and D. Chittleborough. 2005. Investigations on fertilizer products. CSBP, Ltd. August 12, 2005, Perth.
- Hettiarachchi, G.M., E. Lombi, M.J. McLaughlin, and D. Chittleborough. 2005. Project Update-Investigations on Mosaic fertilizer products. July 26, 2005. Adelaide.

- Hettiarachchi, G.M., E. Lombi, M.J. McLaughlin, and D. Chittleborough. 2005. Use of spectroscopy, microscopy and other X-ray techniques for understanding reaction products of granular and fluid P fertilizers in Australian soils. June 2, 2005. The University of Adelaide. Soil Chemistry Research Group.
- Hettiarachchi., G.M. 2005. Spectroscopic Investigations of Inorganic Pollutants in Waste Materials. Emerging Science Initiative for Synchrotron Science Workshop, CSIRO, Clayton 13th April 2005.
- Hettiarachchi, G.M. 2005. Macroscopic and Spectroscopic Approaches toward Understanding the Metal Binding in biosolids and biosolids amended soils. March 15, 2005. Soil & Land Systems Seminar. The University of Adelaide.
- Hettiarachchi, G.M. 2005. Macroscopic and Spectroscopic Approaches toward Understanding the Metal Binding in biosolids and biosolids amended soils. February 16, 2005. CSIRO Land & Water. Science Presentation. Adelaide.

Extension and Other Publications: (since 2012)

- Weeks, J. and G.M. Hettiarachchi. 2018. Can humic substances alter fertilizer reaction pathways in acid soils? *The Fluid Journal*. Summer 2018, Vol. 26, No. 3, Issue # 101. pp. 5-7.
- Weeks, J. and G.M. Hettiarachchi. 2016. Blending MAP, APP Reduces Fluid Fertilizer Input Costs-While mitigating environmental impact in high pH soils. *The Fluid Journal*. Winter 2017, Vol. 25, No. 1, Issue # 95. pp. 12-16.
- Pierzynski, J. and G.M. Hettiarachchi. 2015. What About Fluid P Fertilizers In Moderately Calcareous Soils? *The Fluid Journal*. Winter 2016, Vol. 24, No. 1, Issue # 91. pp. 4-9.
- Martin, S. and G.M. Hettiarachchi. 2014. Gardening on Brownfields: Testing Your Soil for Contaminants. MF3192. <http://www.ksre.ksu.edu/bookstore/pubs/MF3192.pdf>
- Defoe, P.P. D. Presley, and G.M. Hettiarachchi. 2014. Gardening on Lead-contaminated Soils. MF3166. <http://www.ksre.ksu.edu/bookstore/pubs/MF3166.pdf>
- Pierzynski, J., G.M. Hettiarachchi, and R. Khatiwada. 2013. Can Soil Chemical Changes Influence Plant Growth? What about mobility and lability of various P fertilizers on high P-Fixing soils? *The Fluid Journal*. Winter 2014, Vol. 22, No. 1, Issue # 83. pp. 11-13.
- Martin, S. and G.M. Hettiarachchi. 2013. Historical Property Usage and Implications. Kansas State University, MF3078. <http://www.ksre.ksu.edu/bookstore/pubs/MF3078.pdf>
- Martin, S. and G.M. Hettiarachchi. 2013. Obtaining Property Information and Site History. Kansas State University, MF3096. <https://www.bookstore.ksre.ksu.edu/pubs/MF3096.pdf>
- Martin, S. and G.M. Hettiarachchi. 2013. Testing your Soil for Nutrients, pH, and Organic Matter. Kansas State University, MF3095. <http://www.bookstore.ksre.ksu.edu/pubs/MF3095.pdf>
- Hettiarachchi, G.M., and R. Khatiwada, and D. Mengel. 2012. Understanding influence of P placement under field conditions. *The Fluid Journal*, Winter 2012, Vol. 20, No. 1, Issue # 75. pp. 11-13.
- Hettiarachchi, G.M., N.O. Nelson, S. C. Agudelo-Arbelaez, Y.A. Mulisa. and J. Lemunyon. Phytoremediation: Protecting the environment with plants. Kansas State University, August 2012. MF 3067. <http://www.ksre.ksu.edu/bookstore/pubs/mf3067.pdf>