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EDUCATION

- 2009** **Ph.D. (Soil Science):** The Ohio State University
Advisor: Prof. Rattan Lal, GPA: 3.98/4.0
- 2005** **M.S. (Soil Science):** The Ohio State University
Advisor: Prof. Rattan Lal, GPA: 4.0/4.0
- 1996** **M.Sc. (Soil Science and Agricultural Chemistry):** Kerala Agricultural
University, India; GPA: 9.2/10.0
- 1994** **B.Sc. (Agricultural Sciences):** Kerala Agricultural University, India;
GPA: 9.0/10.0

PROFESSIONAL POSITIONS HELD

- 2010 – Present** **Postdoctoral Researcher,** Oak Ridge National Laboratory
(Supervisor: Dr. Melanie Mayes)
- Carbon cycling in terrestrial ecosystems
 - Molecular-scale tools and instrumentations for carbon and nitrogen biogeochemistry
 - Neutron Scattering Science for probing nano-scale structure of mineral-organic carbon interface
- 2009 – 2010** **Postdoctoral Researcher,** The Ohio State University
(Supervisor: Dr. Warren Dick)
- Carbon budgeting in response of natural and anthropogenic disturbance of terrestrial ecosystems
- 2006' – 2009** **Graduate Research Associate,** The Ohio State University
- Mechanistic processes underlying carbon stabilization in soil
 - Chemical composition of soil organic matter by nuclear magnetic resonance spectroscopy
 - Turnover age of carbon measured by atomic mass spectrometry and isotope ratio mass spectrometry
- 2003 – 2005** **Fellow-Ford Foundation International Fellowships Program,**
Participated in a Masters Program at the Ohio State University,
- Effect of different rates of N fertilization and cropping systems on crop yield and soil carbon storage
 - Identification of the most responsive soil properties as predictors of crop productivity

- 2001 – 2002** **Senior Research Fellow**, Center for Application of System Simulation, Indian Agriculture Research Institute, New Delhi, India
- Evaluation of the impact of climate change on agriculture by compiling and analyzing published data
- 1998 – 2001** **Soil Survey Officer**, Kerala Department of Agriculture, India
- Soil judging at county level and preparing soil maps and reports

REFEREED PUBLICATIONS

- Mayes, M.A., **Jagadamma, S.**, Ambaye, H., Petridis, L., and Lauter, V. 2013. Neutron reflectometry reveals the internal structure of natural organic matter deposited onto an aluminum oxide. *Geoderma* 192: 182-189
- Jagadamma, S.**, Mayes, M.A., and Phillips, J.R. 2012. Selective sorption of dissolved organic carbon compounds by temperate soils. *PLoS ONE* 7(11): e50434
- Wang, G., Post, W.M., Mayes, M.A., Frerichs, J.T., and **Jagadamma, S.** 2012. Parameter estimation for models of ligninolytic and cellulolytic enzyme kinetics. *Soil Biol. Biochem.* 48: 28-38
- Jagadamma, S.**, and Lal, R. 2010. Integrating physical and chemical fractionation methods for isolating stable soil organic carbon. *Geoderma* 158: 322–330
- Jagadamma, S.**, and Lal, R. 2010. Distribution of organic carbon in physical fractions of soils as affected by agricultural management. *Biol. Fertil. Soils.* 46: 543–554
- Jagadamma, S.**, Lal, R., Ussiri, D., Trumbore, S.E., and Mestelan, S. 2010. Evaluation of structural chemistry and radiocarbon age of recalcitrant soil organic carbon isolated by wet oxidation methods. *Biogeochem.* 98: 29–44
- Jagadamma, S.**, Lal, R., and Rimal, B.K. 2009. Effects of topsoil depth and soil amendments on corn yield and properties of two alfisols in central Ohio. *J. Soil Water Conserv.* 64: 70-80
- Jagadamma, S.**, Lal, R., Hoefl, R.G., Nafziger, E.D., and Adey, E.A. 2008. Nitrogen fertilization and cropping system impacts on soil properties and their relationship to crop yield in the central Corn Belt, USA. *Soil Till. Res.* 98: 120-129
- Jagadamma, S.**, Lal, R., Hoefl, R.G., Nafziger, E.D., and Adey, E.A. 2007. Nitrogen fertilization and cropping systems effects on soil organic carbon and total nitrogen pools under chisel-plow tillage in Illinois. ***Soil Till. Res.*** 95: 348-356

MANUSCRIPTS IN REVIEW

Jagadamma, S., Steinweg, J.M., Mayes, M.A., Wang, G., and Post, W.M. Mineral control on decomposition of added and native organic carbon in soils from diverse eco-regions. Biogeochemistry

Jagadamma, S., Mayes, M.A., Zinn, Y.L., Gísladóttir, G., and Russell, A.E. Similar sorption of organic carbon compounds in mineral fractions of A and B horizons in global soils. Geoderma

Steinweg, J.M., **Jagadamma, S.**, Frerichs, J., and Mayes, M.A. Activation energy of extracellular enzymes in soils from different biomes. PLoS ONE

MANUSCRIPTS IN PREPARATION

Jagadamma, S., Mayes, M.A., and Steinweg, J.M. Substrate quality, carbon decomposition and microbial community composition dynamics in soils across a latitudinal gradient. Global Change Biol.

Jagadamma, S., Mayes, M.A., Ambaye, H., Petridis, L., and Lauter, V. Nano-scale characterization and structure of organic carbon-mineral interface.

CONFERENCE PRESENTATIONS

Graham, D.E., Phelps, T.J., Xu, X., Carroll, S., **Jagadamma, S.**, Shakya, M., Thornton, P.E., Elias, D.A. 2012. Characterization and modeling of microbial carbon metabolism in thawing permafrost. AGU Fall Meeting (poster). Dec 3-7. San Francisco, CA.

Wang, G., **Jagadamma, S.**, Steinweg, J.M., Mayes, M.A., Post, W.M. 2012. Microbial and mineral controls on soil organic carbon decomposition: Testing the MEND model with data from lab incubations. AGU Fall Meeting (poster). Dec 3-7. San Francisco, CA.

Mayes, M.A., Post, W.M., Wang, G., Jagadamma, S., Steinweg, J.M., Schadt, C.W. 2012. Developing an enzyme mediated soil organic carbon decomposition model. AGU Fall Meeting (poster). Dec 3-7. San Francisco, CA.

Jagadamma, S., Steinweg, J.M., and Mayes, M.A. 2012. Mineral control on organic carbon decomposition from soils of diverse eco-regions. ASA-CCSA-SSSA International Annual Meetings (oral). Oct 21-24. Cincinnati, OH

Mayes, M.A., **Jagadamma, S.**, Ambaye, H., Petridis, L., and Lauter, V. 2012. Probing the internal structure of layered natural organic compounds on mineral surfaces by neutron reflectivity. ASA-CCSA-SSSA International Annual Meetings (oral). Oct 21-24. Cincinnati, OH

- Jagadamma, S.**, Mayes, M.A., Steinweg, J.M., Post, W.M., and Wang, G. 2011. Biological and physico-chemical processes of soil organic matter cycling in diverse soils. AGU Fall Meeting (poster). Dec 5-9. San Francisco, CA
- Jagadamma, S.**, Mayes, M.A., Heal, K.R., Phillips, J., and Jardine, P.M. 2010. Compound-specific sorption of dissolved organic carbon on different soils. AGU Fall Meeting (oral). Dec 13-17. San Francisco, CA
- Jagadamma, S.**, Heal, K.R., Mayes, M.A., Phillips, J.R., Tschaplinski, T.J., and Amonette, J.E. 2010. Sorption selectivity of dissolved organic compounds to different Soils. ASA-CCSA-SSSA International Annual Meetings (poster). Oct 31- Nov 4. Long Beach, CA
- Jagadamma, S.**, Lal, R., Ussiri, D., Trumbore, S.E., and Mestelan. 2008. Efficiency of wet oxidation methods for isolating stable soil organic carbon. ASA-CCSA-SSSA International Annual Meetings (poster). Oct 5-9. Houston, TX
- Jagadamma, S.**, Lal, R., Hoefl, R.G., Nafziger, E.D., and Adee, E.A. 2006. Principal component analysis for soil quality rating in the Mollisols of Northwestern Illinois. 18th World Soil Science Congress (poster). July 9-15. Philadelphia, PA
- Hossler, K., **Jagadamma, S.**, and Shukla, M.K. 2005 Dissolved organic matter transport through soil columns. Soil Sci. Soc. Am. Annual meeting (poster). Nov 6-9. Salt Lake City, UT
- Jagadamma, S.**, Lal, R., Hoefl, R.G., Nafziger, E.D., and Adee, E.A. 2005. Nitrogen fertilization and cover cropping impacts on soil carbon sequestration on a silt loam soil in west central Illinois. Third USDA Symposium on Green House Gases and Carbon Sequestration, Baltimore (poster). March 21-24. Baltimore, MD

TEACHING AND MENTORING EXPERIENCE

- 2010-2012** **Research Mentor**, Oak Ridge National Laboratory
Mentored three undergraduate students under the Department of Energy's Higher Education Research Experiences (HERE) internship program
- 2005** **Graduate Teaching Associate**, The Ohio State University
Responsible for module development and co-teaching an undergraduate level course (ENR 101-Soils in Our Environment) for six months
- 2004** **Teaching Assistant (Volunteer)**, The Ohio State University
Instructor for a laboratory course (ENR 300.02-Soil Science Lab) for three months

FUNDED GRANTS

- 2010** Oak Ridge National Laboratory Directors Research and Development Program, “Incorporating molecular-scale mechanisms stabilizing soil organic carbon into terrestrial carbon cycle models”, Oct 2010 – Oct 2012, Co-PI, (\$699,900)
- 2007** Graduate Student Research Grant, Ohio Agricultural Research and Development Center, The Ohio State University (\$5000)
- 2006** Ray Travel Grant, Council of Graduate Students, The Ohio State University (\$650)
- 2003** Ford Foundation International Grant for the Masters program at The Ohio State University (\$143,000)

ACCEPTED BEAMLIN PROPOSALS

- 2012** Mayes, M.A., **Jagadamma, S.**, Ambaye, H. and Ivanov, I. Molecular-scale structural characterization of organic carbon stabilized on mineral surfaces. Center for Nanophase Material Science, ORNL. Approved access: January – December 2012
- 2011** Mayes, M.A., **Jagadamma, S.**, Ambaye, H. and Ivanov, I. Application of neutron reflectometry for structural characterization of organic carbon- mineral interface. Beamline 4A, Spallation Neutron Source, ORNL. Beam times: May 25 – 27; December 12 – 15, 2011
- 2011** Mayes, M.A., **Jagadamma, S.**, Ambaye, H. and Ivanov, I. Sample deposition for applying neutron reflectometry technique at organic carbon–soil mineral interface. Center for Nanophase Material Science, ORNL. Approved access: January – July 2011

AWARDS

- 2010** Postdoctoral Research Associate fellowship from Oak Ridge National Laboratory, TN
- 2008** Outstanding Graduate Student Award, Association of Agricultural Scientists of Indian Origin
- 1998** National Eligibility Test for Assistant Professorship, Agricultural Service Recruitment Board, India.
- 1997** Ranked first in the Public Service Commission Examination for the position of Soil Survey Officer, India.
- 1994** Research fellowship from Potash Research Institute of India for the Master of Science program at the Kerala Agricultural University, India
- 1989-1994** University Merit Scholarship from Kerala Agricultural University, India for the Bachelor’s degree program

HONORS AND MEMBERSHIPS

2012	Soil Ecology Society
2010 – Present	American Geophysical Union
2004 – Present	Soil Science Society of America
2007 – Present	Agronomy Society of America
2005	Sigma Xi Associate Member
2005	Gamma Sigma Delta Honor Society
1998	National Eligibility Test for Assistant Professorship, Agricultural Service Recruitment Board, India.
1997	Ranked first in the Public Service Commission Examination for the position of Soil Survey Officer, India.

PROFESSIONAL SERVICES

2006 – Present	Manuscript reviewer <ul style="list-style-type: none">• Soil Science Society of America Journal• Geoderma• Plant and Soil• Soil and Land Use Management• Internal reviewer for Oak Ridge National Laboratory
2006- Present	Proposal reviewer <ul style="list-style-type: none">• Graduate Students Research Proposals, Ohio State University• German Research Foundation• National Science Foundation

ACADEMIC/VOLUNTEER SERVICE

2012	Seminar coordinator for Climate Change Science Institute (ORNL) and Young Evolving Scientists Seminar Series (ORNL)
2012	Tennessee High School Science Bowl scorekeeper
2006 – 2009	Member, Graduate Women in Science and Engineering (GWISE)
2005 – 2009	Member, Gradroot Student Organization, School of Environment and Natural Resources, The Ohio State University
2007	Vice President of Soil Science Community, The Ohio State University
2006 – 2007	Member, Academic Affairs Committee, School of Environment and Natural Resources, The Ohio State University
2006	Gradroot Representative to Council of Graduate Students, The Ohio State University

ADDITIONAL SKILLS

Analytical ^{13}C Nuclear Magnetic Resonance Spectroscopy, ^{14}C labeling, Fourier Transformed Infrared Spectroscopy, High Performance Liquid Chromatography, CN Analyzer, Atomic Mass Spectrometry, Isotope Ratio Mass Spectrometry, Liquid Scintillation Counter, Atomic force microscopy, Contact angle goniometry

Software SAS, Unscrambler, Sigma Plot, ArcGIS, EPIC model

COLLABORATORS

Haile Ambaye (ORNL), Loukas Petridis (ORNL), Marie-Anne de Graaff (Boise State University), Kim Magrini (Natural Renewable Energy Laboratory), Jim Amonette (Pacific Northwest National Laboratory), Julie Jastrow (Argonne National Laboratory), Yuri Zinn (Federal University of Lavras, Brazil), Guðrún Gísladóttir (University of Iceland), Ann Russell (Iowa State University)