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Environmental Sciences Division
Oak Ridge National Laboratory
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CURRENT POSITION

Postdoctoral Researcher, Oak Ridge National Laboratory, TN
Major project: Formation and Stabilization of Soil Organic Matter
Supervisor: Dr. Melanie Mayes

EDUCATION

- 2009** **Ph.D. (Soil Science):** The Ohio State University
Dissertation Title: Stabilization Mechanisms of Organic Carbon in
Two Soils of Midwestern United States
Advisor: Prof. Rattan Lal; GPA: 3.98/4.0
- 2005** **M.S. (Soil Science):** The Ohio State University
Thesis Title: Nitrogen Fertilization Effects on Soil Carbon Pool in
an Argudolls in West Central Illinois.
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. (Agriculture):** Kerala Agricultural University, India,
GPA: 9.0/10.0

RESEARCH EXPERIENCE

- March '10-current** **Postdoctoral Researcher,** Oak Ridge National Laboratory
- Chemical processes governing soil organic matter stabilization
 - Molecular-level interactive processes at soil mineral-organic carbon interface
- June '09-Feb '10** **Postdoctoral Researcher,** The Ohio State University
- Greenhouse gas budget and methane dynamics in a no-tillage chronosequence

- June '06-May '09** **Graduate Research Associate**, The Ohio State University
- Dynamics of soil carbon fractions isolated by physical and chemical fractionation methods
 - Structural chemistry of carbon fractions by nuclear magnetic resonance spectroscopy in comparison with native forest and grasslands
 - Turnover age of carbon by atomic mass spectrometry and isotope ratio mass spectrometry
- Sept '03-May '05** **Fellow-Ford Foundation International Fellowships Program**, Participated Masters program at the Ohio State University
- Effect of different rates of N fertilization on crop yield and soil C storage
 - Identification of the most responsive soil properties as predictors of crop productivity
- Jan '01–July '03** **Senior Research Fellow**, Center for Application of System Simulation, Indian Agriculture Research Institute
- Evaluation of the impact of climate change on agriculture by compiling and analyzing published data
 - Hands on research experience with a crop simulation model (INFOCROP)

TEACHING EXPERIENCE

- 2005** **Graduate Teaching Associate**, The Ohio State University
Responsible for module development and teaching of 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

PUBLICATIONS

- 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 Adee, 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 Adee, 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.

GRANTS AND AWARDS

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| 2010 | Oak Ridge National Laboratory Directed 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) |
| 2010 | Postdoctoral Research Associate offer from Oak Ridge National Laboratory, TN |
| 2008 | Outstanding Graduate Student Award, Association of Agricultural Scientists of Indian Origin |
| 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) |
| 2003-2005 | Ford Foundation International Fellowship for the Masters program at the Ohio State University (\$143,000) |
| 1994-1996 | 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 Bachelors degree program |

PROFESSIONAL SERVICE

- 2006, 2008** Reviewer for Graduate Students Research Proposal Competition, Ohio Agricultural Research and Development Center, The Ohio State University
- 2006** Reviewed a manuscript for the Soil Science Society of America Journal
- 1998-2001** Soil Survey Officer, Kerala Department of Agriculture, India
Duties: Documentation of characteristics of different soil types in the area of jurisdiction and preparation of soil maps & reports
- 1996-1997** Field Extension Officer, Kerala Horticultural Development Program, India

HONORS AND MEMBERSHIPS

- 2004-Present** Soil Science Society of America
- 2007-Present** Crop 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.

ACADEMIC/VOLUNTEER SERVICE

- 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-Present** Member, GWISE, an association of graduate women students, The Ohio State University
- 2005-Present** Member, Gradroot Student Organization, School of Environment and Natural Resources, The Ohio State University
- 2006** Gradroot Representative to Council of Graduate Students, The Ohio State University

CONFERENCE PRESENTATIONS

- 2008** Efficiency of wet oxidation methods for isolating stable soil organic carbon. Poster presentation at the Soil Sci. Soc. Am. Annual meeting, Houston, TX (Oct 5 – 9)
- 2006** Principal component analysis for soil quality rating in the Mollisols of Northwestern Illinois. Poster Presentation in 18th World Soil Science Congress, Philadelphia, Pennsylvania (July 9-15)
- 2005** Dissolved organic matter transport through soil columns. Soil Sci. Soc. Am. Annual meeting, Salt Lake City, Utah (November 6-9)
- 2005** Nitrogen fertilization and cover cropping impacts on soil carbon sequestration on a silt loam soil in west central Illinois. Poster Presentation in third USDA Symposium on Green House Gases and Carbon Sequestration, Baltimore, Maryland (March 21-24)

ADDITIONAL SKILLS

- Field** Laying out field experiments using appropriate design of experiments, and soil, plant and greenhouse gas sampling
- Software** Microsoft Office programs and SAS. Hands-on experience on ArcGIS, ERDAS Imagine and STELLA, EPIC model
- Analytical Tools** CN Analyzer, Nuclear Magnetic Resonance Spectroscopy, Atomic Mass Spectrometry, Isotope Ratio Mass Spectrometry, Gas Chromatography, Fourier Transformed Infra-red Spectroscopy, High Performance Liquid Chromatography

REFERENCES

Dr. RATTAN LAL
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and Natural Resources, and
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