



Carbon Management & Sequestration Center



C-MASC gathers for a recent weekly seminar. From left to right: Basant Rimal, Laura Hughes, Huiying Zhang, Clever Briedis, Richard Liu, João Carlos de Moraes Sá, Ahmad Nawaz, Jose Guzman, Surender Singh Yadav, David Ussiri, Klaus Lorenz, Nall Moonilall, Arun Joyti Nath, Rattan Lal, and Tangyuan Ning.

Issue 1:2015

C-MASC can now be found on Facebook under: **C-masc Osu**

Our old page has been discontinued, please follow the new one for the latest information on C-MASC!



Follow Dr.Lal on Twitter @lal_rattan



Ambassador Tony Hall

In April, Ambassador Tony Hall, was the invited keynote speaker at the Ohio Youth Institute-World Food Prize at OSU, where Prof. Lal served as a faculty expert for the event. This year the theme is "Confronting the Single Greatest



Challenge in Human History." Hall is one of the leading advocates for hunger relief programs and the improvement of human rights conditions in the world.

"We all have a direct stake in this," stated Ambassador Hall, "Not only is food insecurity and hunger an issue of morality, but has serious national security implications for us here at home."

What's Inside...

Visitors to C-MASC	2
New Visiting Scholars	3
Visiting Scholars	4
Graduate Students	7
Seminars and Meetings	7
Events	8
Awards and Recognitions of C-MASC and Alumni	9
2015 Publications	10



C-MASC Visitors

Dr. Alon Tal

Dr. Alon Tal, professor at Ben Gurion University, spoke at OSU Hillel Organization and gave an additional seminar for C-MASC and students in February.


Dr. Tal founded the Israel Union for Environmental Defense and the Arava Institute for Environmental studies, and he was voted as Israel’s Most Effective Environmental Leader. He presented a seminar on the issue of “Addressing Water Scarcity and Combatting Desertification.”



Ben-Gurion University of the Negev

Carbon Management and Sequestration Center Hosts the Seminar:

Addressing Water Scarcity and Combatting Desertification: Technology and Adaptive Management in Israel





ALON TAL

- Voted as Israel’s Most Effective Environmental Leader
- Founded the Israel Union for Envir. Defense, Israel’s leading green advocacy org.
- Founded the Arava Institute for Envir. Studies, a regional center for Arabs and Israelis.
- Ben Gurion University Researcher

TUESDAY, FEB. 10th - 2:20 @ Kottman Hall 333

Come hear Professor Alon Tal speak at C-MASC. He will review technological and policy options of combatting desertification, and greening the desert in a water scarce environment. He will also address the issue of water security and conflict. Don’t miss this rare opportunity to hear from Israel’s Most Effective Environmental Leader.



In cooperation with OSU Hillel Foundation 

Dr. Bill Stout



Dr. Bill Stout, from Michigan State University, visited C-MASC and presented on “Carbon Capture and Storage.” He has served as Chair of the Agricultural Engineering department at MSU, and was Speaker of the Faculty Senate at Texas A&M University.

For the past 50 years, he has been involved in the international application of agricultural engineering, and has visited 70 countries though out his career.

Pictured from left to right: João Carlos de Moraes Sá, Rattan Lal, Bill Stout and Klaus Lorenz



New Visiting Scholars



Ahmad Nawaz

PhD Scholar

University of Agriculture, Faisalabad, Punjab, Pakistan

My name is Ahmad Nawaz. I am a PhD Scholar in the Department of Agronomy, Faculty of Agriculture, University of Agriculture, Faisalabad, Punjab, Pakistan. I have been selected for six month International Research Support Initiative Program (IRSIP) funded by the higher education commission of Pakistan. I have joined the Carbon Management and Sequestration Center on 13 March and will be leaving on 04 September. I am working on the weed dynamics, soil health and system productivity of rice-wheat cropping system in my PhD studies in Pakistan. I am also getting the feedback of the farmers regarding their views about conventional and conservation rice-wheat cropping systems in the rice-wheat belt in Pakistan. My other research interest includes the use of allelopathy in alleviating the stress induces yield losses in cereals.

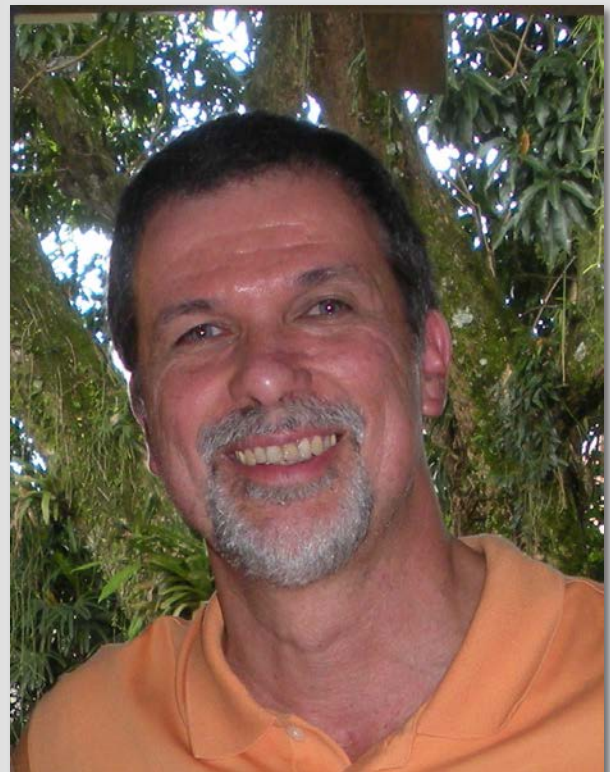
Dr. João Carlos de Moraes Sá

Associate Professor

State University of Ponta Grossa

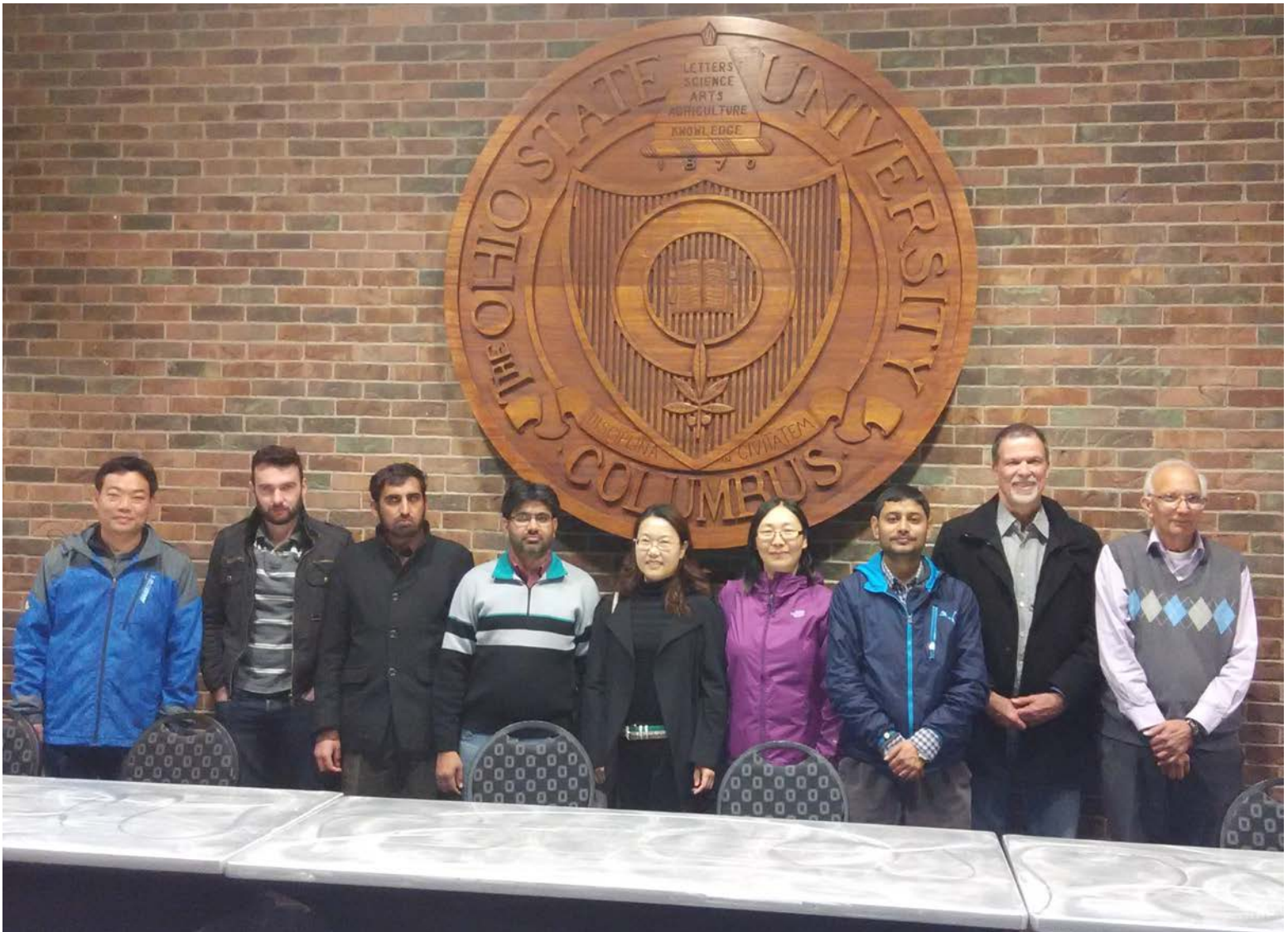
Ponta Grossa-Paraná, Brasil

I have been working on conservation agriculture with emphasis in no-till since 1981. Expertise on soil carbon dynamics, soil fertility management, cropping systems, focusing in soil organic carbon sequestration and greenhouse gases mitigation. I have been coordinating a research team and a laboratory of soil organic matter (LABMOS – www.labmos.com.br) with 16 people including Post-Doctoral, Ph.D, MS and undergraduate students of agronomy course. Our research program is based on five topics: (1) Mechanisms of C-protection in the aggregates and particle size fractions affected by soil management, (2) C sequestration potential in subtropical and tropical no-till soils; (3) C-saturation point in response to diverse biomass-C input by NT cropping systems; (4) Carbon footprint and C offset in no-till farming (inventory and mapping scaling up); (5) Industrial Organic Waste recycling use in conservation agriculture and C-offset.





Visiting Scholars - An Integral Component of C-MASC



Pictured from left to right: Tangyuan Ning, Clever Briedis, Ahmad Nawaz, Surender Singh Yadav, Huiying Zhang, Meiling Zhang, Arun Joyti Nath, Joao Carlos Sa, Rattan Lal.

Dr. Lal hosts an annual lunch for the Visiting Scholars in March (above). Since 2003, C-MASC has hosted over 237 Visiting Scholars, representing 25 countries.

Mid-Winters Gathering

Dr. Lal and the Visiting Scholars attended Annual Mid-Winter Gathering event, hosted by the Ohio Agricultural Research and Development Center at OSU.





Visiting Scholars - An Integral Component of C-MASC

Global Gateways at OSU

Dr. Lal and the Visiting Scholars met with the Vice Provost for Global Strategies and International Affairs, Dr. William Brustein, to discuss international connections with The Ohio State University.

In the interest of building international partnerships and collaborations, OSU has opened offices in China, India, and Brazil, and is currently considering future Gateway locations in Sub-Saharan Africa and Europe.

These Gateways provide OSU with valuable opportunities, including operation support for research/teaching, a portal for study abroad and location for international student recruitment, and center for academic and corporate training. More information can be found on their website: <http://oia.osu.edu/global-gateways.html>





Exiting Scholars

Surender Singh Yadav

Assistant Professor
Maharshi Dayaband University
Haryana, India

Dr. Surender Singh Yadav completes his visiting scholar fellowship at OSU, and returned to Maharshi Dayanand University, Rohtak (Haryana) India, where he is an assistant professor in the Department of Botany. While at C-MASC, he studied themes of carbon sequestration and soil dynamics in home garden ecosystems.

His area of interest includes medicinal plants, homegarden ecosystems, floristics, biodiversity conservation and natural resource management.



Xiangbin Kong

Professor
China Agricultural University
Beijing, China

Xiangbin Kong completed his visiting scholar fellowship at OSU, and is currently a Visiting Scholar at University of California DAVIS.

His work focuses on the sustainability of China's arable land and environment. He have made efforts to contribute to understanding on China food security, arable land use pattern, raising arable land potential productivity, and closing yield gap in major agricultural regions, the effects of intensification of arable land use on groundwater and soil carbon.

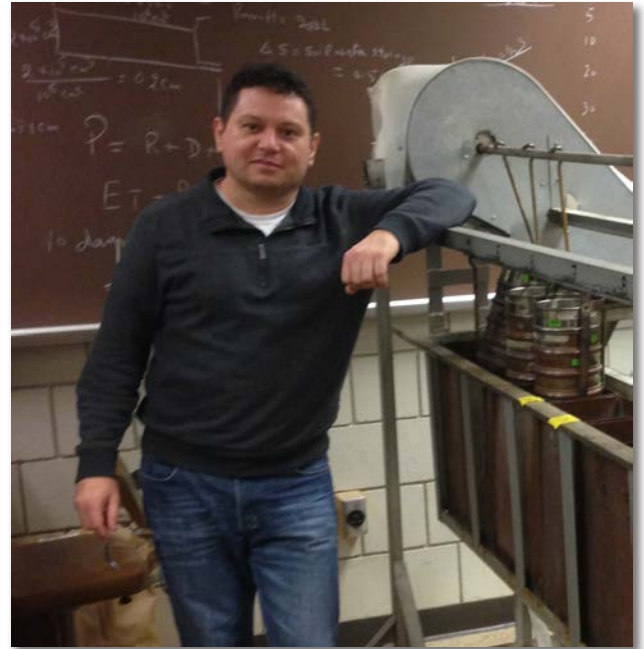


Exiting Scholars

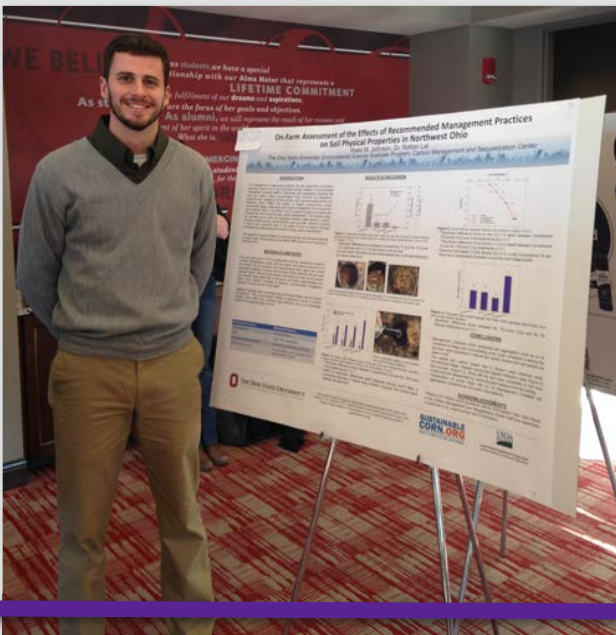
Antonio Pereira Filho

Assistant Professor
State University of Campinas
Brazil

Antonio Pereira Filho is an assistant professor at the agricultural engineering College - Federal University of São Francisco Valley (UNIVASF), Ph.D Student at UNICAMP- São Paulo, and was a Visiting Scholar at the C-MASC for a 6-month fellowship. He is developing research in the semiarid region of Brazil with the use of Plant cocktail, mixture of various species of legumes, grasses and oilseeds used as green manure in no-till system in the melon crop (*Cucumis melo L.*). With that study, he seeks to identify a soil management system that reduces the loss of nutrients, the better synchronization between decomposition and nutrient release and the promotion of the sustainability. During this period in the C-MASC, he accompanied researchers in field data collection and observed research and organizational techniques. He organized and discussed data that were collected in Brazil and prepared scientific paper. He participated of weekly seminars, where he had the opportunity to know numerous studies which are been developing on C-MASC, both national and international level, where he also presented his research on development in Brazil. These few months of living with the C-MASC researchers group were the beginning of a long journey to work together and a link between UNIVASF (Brazil) and C-MASC (OSU).



Graduate Students



Graduate student, Reed Johnson (left), presented a poster, "On-Farm Assessment of the Effects of Recommended Management Practices on Soil Physical Properties in Norwest Ohio" at a symposium for the Environmental Science Graduate Program.



Current Ph.D student, Nall Moonilall (above), has been chosen for the Garden Club of America Scholarship.

Congratulations Nall!



Soil News

DNC-2015 Conference

Dr. Lal attended the Dresden Nexus Conferences (DNC2015), which took place in Dresden, Germany on the 25-27 March. Over 350 Participants from 65 countries attended on the first Day of DNC2015. The discussion on the nexus approach of sustainable management of water/soil/waste was discussed in the context of topics of climate, urbanization, and demography.



Dr. Lal presented, “Beyond DNC 2015” on the final day of the conference. This keynote presentation is available at: http://cmasc.osu.edu/images/Dresden_2015_FINAL.pdf



VIII Costa Rican Soil Science Congress

The Costa Rican Association of Soil Science hosted the eighth National Soil Congress from 18-20 March 2015. Topics addressed during the conference included soil functions within the framework of a Global Alliance for Land and Public Awareness and Perception of soil.

Dr. Lal contributed as a keynote speaker, and his presentation can be found at :http://cmasc.osu.edu/images/Costa_Rica_03062015.pdf





C-MASC Awards and Alumni

V. Kann Rasmussen Foundation Award

In December 2014, the V. Kann Rasmussen Foundation of Denmark awarded Drs. Lal and Lorenz a two-year grant of \$125,000 per year in support of a study of carbon sequestration research and practices. Among objectives of the project 'Enhancing Agronomic Productivity by Accumulating Humus Carbon' are to identify important global research centers studying the sequestration of soil organic carbon and of practices enhancing soil organic carbon stocks in different global ecoregions. Main objective is to compare the long-term effects of organic farming practices on soil organic carbon stocks in soil profiles.



Alumni



Congratulations to Dr. Guðrún Gísladóttir, Professor from the University of Iceland, who has have been appointed as a Foreign Fellow of the general section of the Royal Swedish Academy of Agriculture and Forestry. She was a Visiting Scholar at C-MASC and co-advisor to many graduate students.





C-MASC Publications

Journal Articles

1. Gautam, S., E.G. Mbonimpa, S. Kumar, J.V. Bonta, R. Lal. 2015. Agricultural policy environmental eXtender model simulation of climate change impacts on runoff from a small no-till watershed. *Journal of Soil and Water Conservation* 70: 101-109.
2. Gelaw AM, Singh B R, Lal R. 2015. Soil quality indices for evaluation of smallholder Agricultural land uses in Northern Ethiopia. *Sustainability* 7:2322-2337.
3. Liao, Y., W.L. Wu, F.Q. Meng and R. Lal. 2015. Increase in soil organic carbon by agricultural intensification in northern China. *Biogeoscience* 12:1403-1413.
4. Liu, R. & Lal, R. 2015. Effects of low level aqueous H₂S and other sulfur species on lettuce (*Lactuca sativa*) seed germination. *Communications in Soil Science and Plant Analysis* DOI: 10.1080/00103624.2014.998341
5. Mukherjee, A., R. Lal. 2015. Tillage effects on quality of organic and mineral soils under on-farm conditions in Ohio. *Environmental Earth Sciences*, doi: 10.1007/s12665-015-4189-x
6. Zhang, H., X. Zhao, X. Yin, S. Liu, J. Xue, C. Pu, R. Lal, F. Chen. 2015. Challenges and adaptations of farming to climate change in the North China Plain. *Climatic Change* 129:213-224.
7. Lal, R. 2015. Climate change and agriculture. In T.M. Letcher (Ed) "Climate Change", 2nd Edition. Elsevier, New York, ISBN:978-0-444-63524-2.
8. Lal, R. 2015. Climate: The give and take of air and earth. In C. Chemnitz and J. Weigelt (Eds) "The Soil Atlas 2015". Heinrich Boll Foundation, Berlin, IASS, Postdam Germany, pp. 28-29
9. Lal, R. 2015. Preface. In T.J. Goreau, R.W. Larson, J. Campe (Eds.) "Geotherapy: Innovative Methods of Soil Fertility Restoration. Carbon Sequestration, and Reversing CO₂ Increase" pp. xv-xvi

Invited Keynote Presentations

1. Lal, R. 2015. Soil and Society. Alberta Soil Science Workshop, Edmonton, February 17-19, 2015.
2. Lal, R. 2015. Soil and Global Peace. 39th annual conference of the Soil Science Society of Nigeria, Omu-aran 9-13 March 2015.
3. Lal, R. 2015. Soil Carbon Sequestration and Climate Change. VIII Costa Rican Soil Science Congress, 18-20 March 2015.
4. Lal, R. 2015. Beyond DNC-2015. Dresden Nexus Conference, 25-27 March 2015.
5. Lal, R. 2015. Soil Security and Carbon Sequestration. Malaysian Society of Soil Science, Soil Security for Increasing Crop Production, 7-8 April 2015
6. Lal, R. 2015. Challenges of Measuring and Managing Soil C Sink for Mitigating Climate Change. Global Soil Week 2015, Berlin, 20-23 April 2015 .
7. Lal, R. 2015. Soil as a Sink of Atmospheric CO₂ and CH₄. Global Soil Week 2015, Berlin, 20-23 April 2015.

**Do you have contributions for our next newsletter?
Please contact us!**

Carbon Management and Sequestration Center (C-MASC)
210 Kottman Hall, 2021 Coffey Rd.
Columbus, OH 43210 email hughes.1255@osu.edu