



THE OHIO STATE
UNIVERSITY

CARBON MANAGEMENT AND SEQUESTRATION CENTER

C-MASC NEWSLETTER

March | 2019



2019 Japan Prize

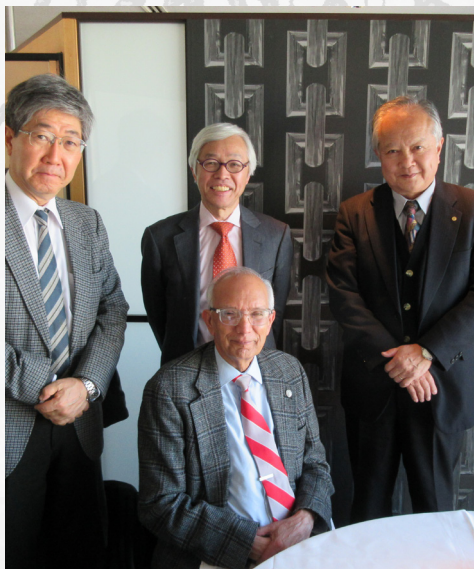
Tokyo, Japan

On January 16, 2019, the Japan Prize Foundation announced the laureates of the prestigious 2019 Japan Prize. Prof. Lal was selected for his work in the category of “Biological Production, Ecology.” The Japan Prize Foundation is committed to honoring the most innovative and meaningful advances in science and engineering worldwide. Prof. Lal will return to Japan in early April to officially receive the award and present a commemorative lecture.

The other 2019 laureate, Dr. Yoshio Okamoto (above) of Japan will also be honored at the April ceremony for his work with “precision synthesis of helical polymers and development of practical chiral materials for separating chiral drugs.” Prof. Lal can be seen with Dr. Kazuyuki Inubushi (left), Dr. Takashi Kosaki, the current president of the International Union of Soil Sciences and Mr. Toshi Nakahara (right), the Director of the Japan Prize Foundation’s communications initiative.

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Departing Visiting Scholars

Manman Fan

Manman Fan was a visiting scholar at C-MASC from September 2017-February 2018. During this time, she studied “carbon sequestration in eastern China” and “simulating the effects of management practices on soil organic carbon dynamics based on DNDC model.” While at C-MASC, Manman completed three manuscripts. Manman enjoyed visiting the South Charleston and Northwestern Farms for harvesting sample yields and Waterman Farm for covering crops with compost. Manman collaborated with other C-MASC colleagues to learn more about rainfall simulation to measure soil erosion and Roth-C models compared to those of DNDC models.

Manman says her C-MASC experience was unforgettable and she is eager to apply her new knowledge to future research. Once she returns to China, Manman plans to graduate in December of 2019 and then pursue a postdoctoral position after which she plans to teach and research.

Right: Manman assisting with field work



Changqi Zhao



Changqi Zhao was a visiting scholar at C-MASC for one year. Throughout her time, she conducted experiments involving soil detection, including how to detect soil carbon, nitrogen and phosphorous. She also learned experimental skills such as how to manage soil samples to detect different indicators and how to conduct field experiments. Changqi particularly enjoyed visiting Waterman Farm and South Charleston with Basant and other visiting scholars.

Once she returns to China, Changqi plans to finish her graduate thesis and will graduate in May, 2019. She says her experience at C-MASC was very helpful and she would like to extend her thanks to Dr. Lal and the entire C-MASC team, including all other visiting scholars, for their help.

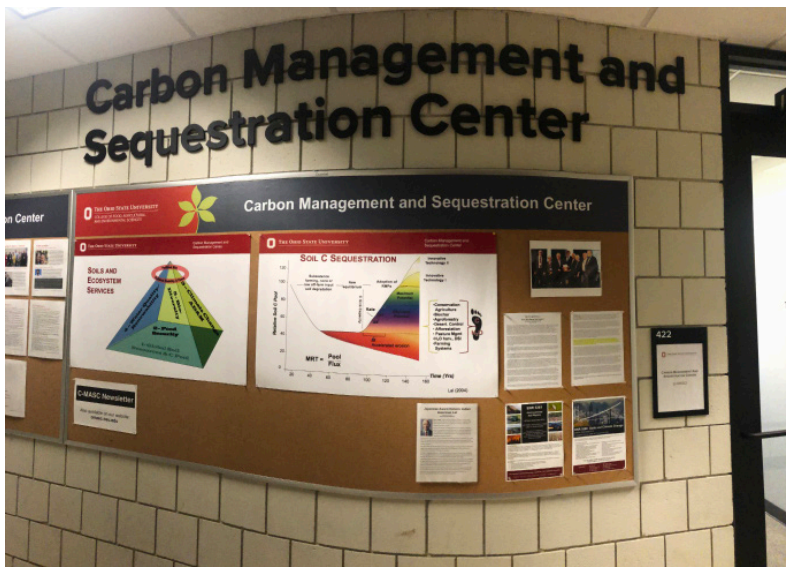
Left: Changqi at the Thompson Library

Prof. Lal Featured in ‘ETHOS’ Video



A new video produced by Ohio State’s Center for Ethics and Human Values, released in February, is first in a new series called “ETHOS” - Ethics Throughout Ohio State. According to the video’s description on YouTube, the series aims to highlight the “ethical motivations and challenges that underlie much of the cutting-edge research being done at Ohio State.” Click the photo above to watch the video on YouTube.

The C-MASC Office has a New Look



Stop by the C-MASC office at 422 Kottman Hall to see our new entryway. The new office door is now furnished with vinyl lettering (below) and the Carbon Management and Sequestration Center can now be identified by our new letter sign (left). Be sure to come check it out in person!



Where in the World is Prof. Lal?

Bonn, Germany



Prof. Lal (above, far left) visited Bonn, Germany in late February for a meeting of the Science Policy Interface of United Nations Convention to Combat Desertification.

Jodhpur, India



The 13th International Conference on Development of Drylands (IDDC) took place this year in Jodhpur, India from February 11-14. The theme was “Converting Dryland Areas from Grey into Green”. Prof. Lal presented an evening lecture on “Recarbonizing Soils of Global Drylands”.

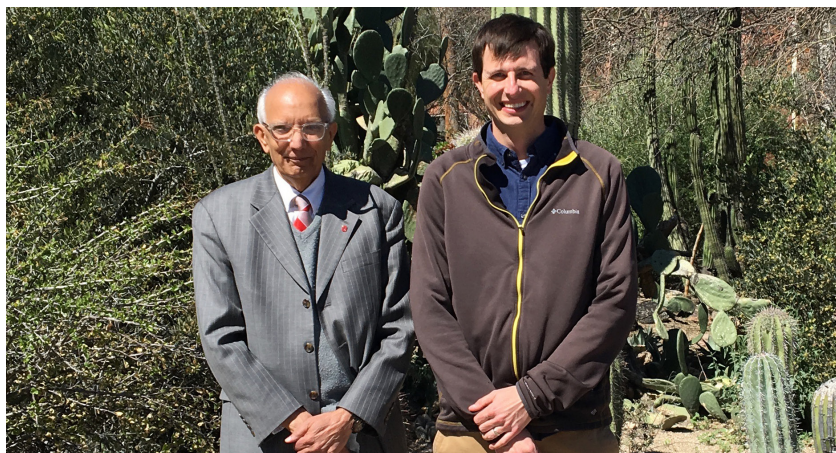
In the photo (above, from left) are Dr. Ismail Serageldin, Dr. Edel El Baltagi, Dr. O.D. Yadav, Dr. Gurbachan Singh and Prof. Lal. On the left, Dr. Yadav presents a soil sample of the CAZRI farm to Prof. Lal. Dr. Serageldin, Director of the Library of Alexandria, received an honorary degree from OSU. Dr. Edel El-Beltag is the former Minister of Agriculture of Egypt and Director General of ICARDA. Dr. O.P. Yadav is the Director of CAZRI, Jodhpur. Dr. Gurbachan Singh is former Chair of ASRB, New Delhi.

Where in the World is Prof. Lal?

Tucson, Arizona



Prof. Lal visited the University of Arizona this March to participate in the Soil, Water and Environmental Science Colloquium Series. He presented the topic of “Soil Carbon Sequestration in Arid and Semi-Arid Climates”. Prof. Lal (below) is with his faculty host, Dr. Joseph Blankinship. Prof. Lal observes a cactus tree (left) that begins to form branches when it is approximately 100 years old.



Columbus, Ohio

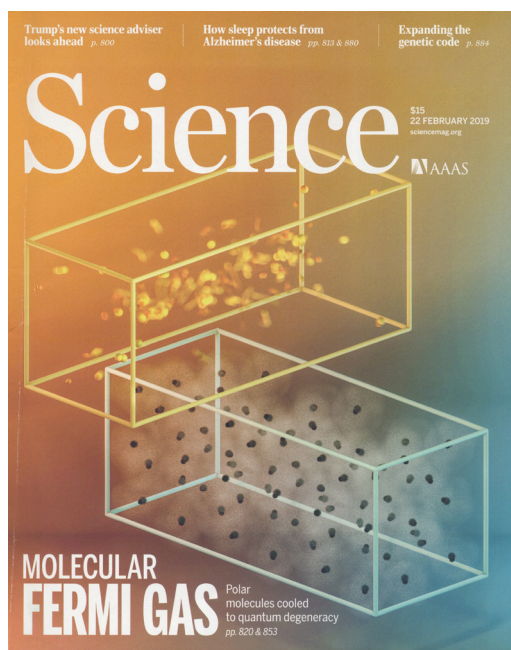


Ohio State’s Second Annual Community Engagement Conference took place from January 23-24 this year and featured keynote speaker Mary Robinson, former president of Ireland. Prof. Lal was one of only a few invited guests to have lunch with the former president during her visit.

Mary Robinson is one of the world’s most respected advocates for climate justice and she was Ireland’s first woman president. Ms. Robinson leads the Mary Robinson Foundation - a climate justice center that advocates for those who are disproportionately threatened by climate change.

Prof. Lal in Science Magazine

The February 22 issue of Science included a photo of Prof. Lal. The photo appeared on an advertisement for the call for nominations for the 2019 GCHERA World Agriculture Prize. Prof. Lal was laureate of the 2018 award presented in Nanjing, China on 28th October, 2018. In the full-page advertisement, Prof. Lal's photo is second from right along the bottom.



Rainer Horn Honored with Award



Rainer Horn, former president of the International Union of Soil Sciences (2014-2016) was awarded the International Soil Science Award by the Soil Science Society of America. The award ceremony took place January 6-9, 2019 in San Diego, California. Dr. Horn was nominated by Prof. Lal.

The International Soil Science Award recognizes the outstanding contributions of one soil scientist on the international scene. The award is based on the nominee's contributions within the past 10 years. Winners are presented with a certificate and a cash prize.

Formed in 1936, the Soil Science Society of America is the largest soil-specific society in the United States. Over 6,000 professionals are members of the organization. Prof. Lal was President of SSSA in 2007.

C-MASC Alumni News

Dr. Aishwath Awarded Gold Medal



Dr. O.P. Aishwath, a visiting scholar at C-MASC in 2010, was awarded the Gold Medal by the Soil Conservation Society of India. The award was presented at the 28th National Conference on “Farmers Friendly Soil and Water Conservation Technology for Mitigating Climate Change Impact” which was held from January 31st to February 2nd, 2019 in Udthagamandalam, Tamil Nadu, India. The award recognized Dr. Aishwath’s development of a translocation and retranslocation of nutrients model for economizing the use of nutrients by plants.

In February 2019, Dr. Aishwath was elected as Vice President of the Soil Conservation Society of India.

(Left: Dr. Aishwath (far left) is presented the Gold Medal from Shri Banbari Lal Purohit, Honorable Governor of Tamil Nadu, India)

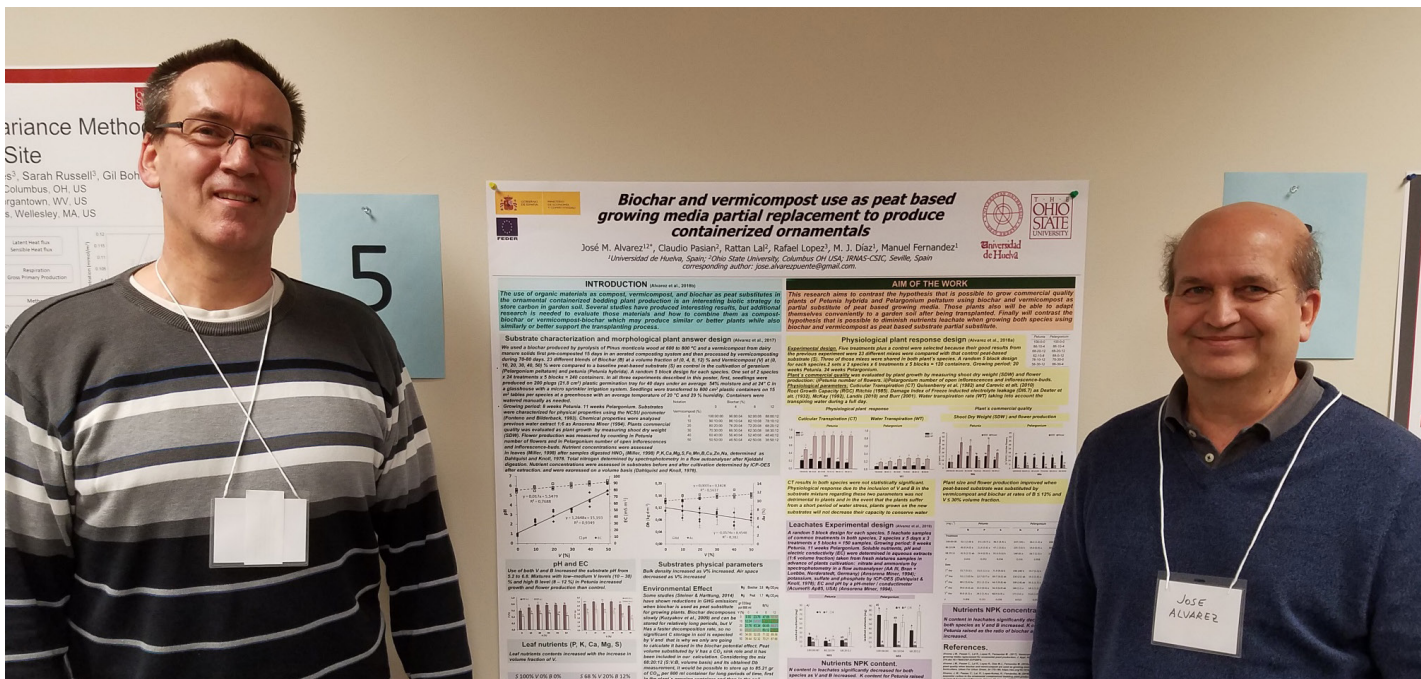
Dr. Mandal Receives Prestigious Fellowship

Dr. Debashis Mandal, Principal Scientist, and ICAR National Fellow has been awarded the prestigious 2018 IASWC (Indian Association of Soil and Water Conservationists) Fellowship award. The award is in recognition of Dr. Mandal’s contribution in research, extension, and development of soil erosion, conservation and watershed management.

Dr. Mandal was a visiting scholar at C-MASC from September to December, 2013 where he studied soil erosion and carbon dynamics. He can be seen in the photo (right) at the far left receiving the IASWC fellowship award from Shri Ramesh Chandra Majhi, honorable Cabinet Minister, Government of Odisha on February 6th, 2019 during the National Conference on Farmers First for Conserving Soil and Water Resources in Eastern Region of India (FFSCWR-2019).



C-MASC at Byrd Polar and Climate Research Center



Klaus Lorenz, Assistant Director of C-MASC (left) and Jose Alvarez, a PhD advisee of Prof. Lal, presented “Biochar and vermicompost use as peat based growing media partial replacement to produce containerized ornamentals” at the Byrd Center Symposium on Friday, March 22. The event was a gathering point for all Ohio State climate researchers in an effort to garner visibility and foster connections.

Winter in Columbus

According to NOAA, winter 2018-19 was the wettest on record for the United States. It also ranked in the top one-third of warmest winters on record, despite the near-record lows experienced in central Ohio at the end of January. The wind chill was so brutal that the University closed on Wednesday, January 30. Closings are extremely rare for Ohio State, the University has only closed or canceled classes 13 days since 1978. *Left: several inches of snow cover campus on February 1, 2019*



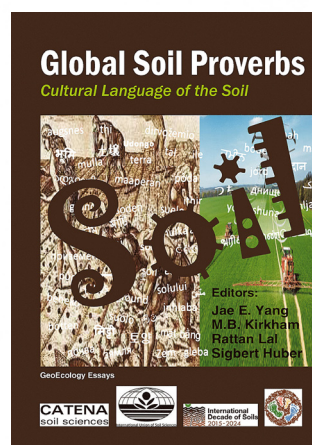
Quarterly Publications

Upcoming Important Meetings and Conferences

- Global Symposium on Soil Erosion, 15-17 May, FAO HQ, Rome, Italy
- Planet A Forum, 27-29 June, Chalons-En-Champagne, France
- Food Security and Climate Change: 4 per 1000 Initiative, 18-20 June, Poitiers, France

Books

- Yang, J.E., Kirkham, M.B., Lal, R., Sigbert, H. (Eds.). 2019. *Global Soil Proverbs: Cultural Language of the Soil*. Schweizerbart Science publishers, Germany, 275 pp.



Referred Journal Articles

- Anghinoni, G., Tormena, C.A., Lal, R., Zancanaro, L., and Kappes, C. 2019. Enhancing soil physical quality and cotton yields through diversification of agricultural practices in central Brazil. *Land Deg. & Dev.* DOI: 10.1002/ldr.3267.
- Feng, X., Gao, H., Lal, R., Zhu, P., Peng, C., Deng, A., Zheng, C., Song, Z., Zhang, W. 2019. Nitrous oxide emission, global warming potential, and denitrifier abundances as affected by long-term fertilization on Mollisols of Northeastern China. *Archives of Agronomy and Soil Science* DOI:10.1080/03650340.2019.1578959.
- Guzman, J.G., Ussiri, D.A.S., Lal, R. 2019. Soil physical properties following conversion of a reclaimed mine soil to bioenergy crop production. *CATENA* 176, 289-295.
- Lal, R. 2019. Accelerated soil erosion as a source of atmospheric CO₂. *Soil and Tillage Research* 188: 35-40.
- Lal, R. 2019. Conceptual basis of managing soil carbon: Inspired by nature and driven by science. *J. of Soil and Water Conservation* 74(2):30A-35A.
- Lal, R. 2019. Promoting “4 per thousand” and “adapting African agriculture” by south-south cooperation: conservation agriculture and sustainable intensification. *Soil and Tillage Research* 188: 27-34.
- Lorenz, K., Lal, R., Ehlers, K. 2019. Soil organic carbon stock as an indicator for monitoring land and soil degradation in relation to United Nations’ sustainable development goals. *Land Deg. & Dev.* DOI: 10.1002/ldr.3270.
- Meena, R.S., S. Kumar, J.S. Bohra, R. Lal, G.S. Yadav, A. Pandey. 2019. Response of alley cropping-grown sesame to lime and Sulphur on yield and available nutrient status in an acidic soil of Eastern India. *Energ. Ecol. Environ.* DOI:10.1007/s40974-019-00113-w.
- Soussana, J.F., Lutfalla, S., Ehrhardt, F., Rosenstock, T., Lamanna, C., Havlik, P., Richards, M., Wollenberg, E., Chotte, J.L., Torquebiau, E., Philippe, C., Smith, P., Lal, R. 2019. Matching policy and science: Rationale for the ‘4 per 1000 – soils for food security and climate’ initiative. *Soil and Tillage Research* 188: 3-15.
- Yadav, G.S., Lal, R., Meena, R.S. 2019. Long-term effects of vehicular passages on soil carbon sequestration and carbon dioxide emission in a no-till corn-soybean rotation on a Crosby silt loam in Central Ohio, USA. *J. Plant Nutr. Soil Sci.* DOI: 10.1002/jpln.201800480.

Quarterly Publications

Chapters in Multi-Authored Books

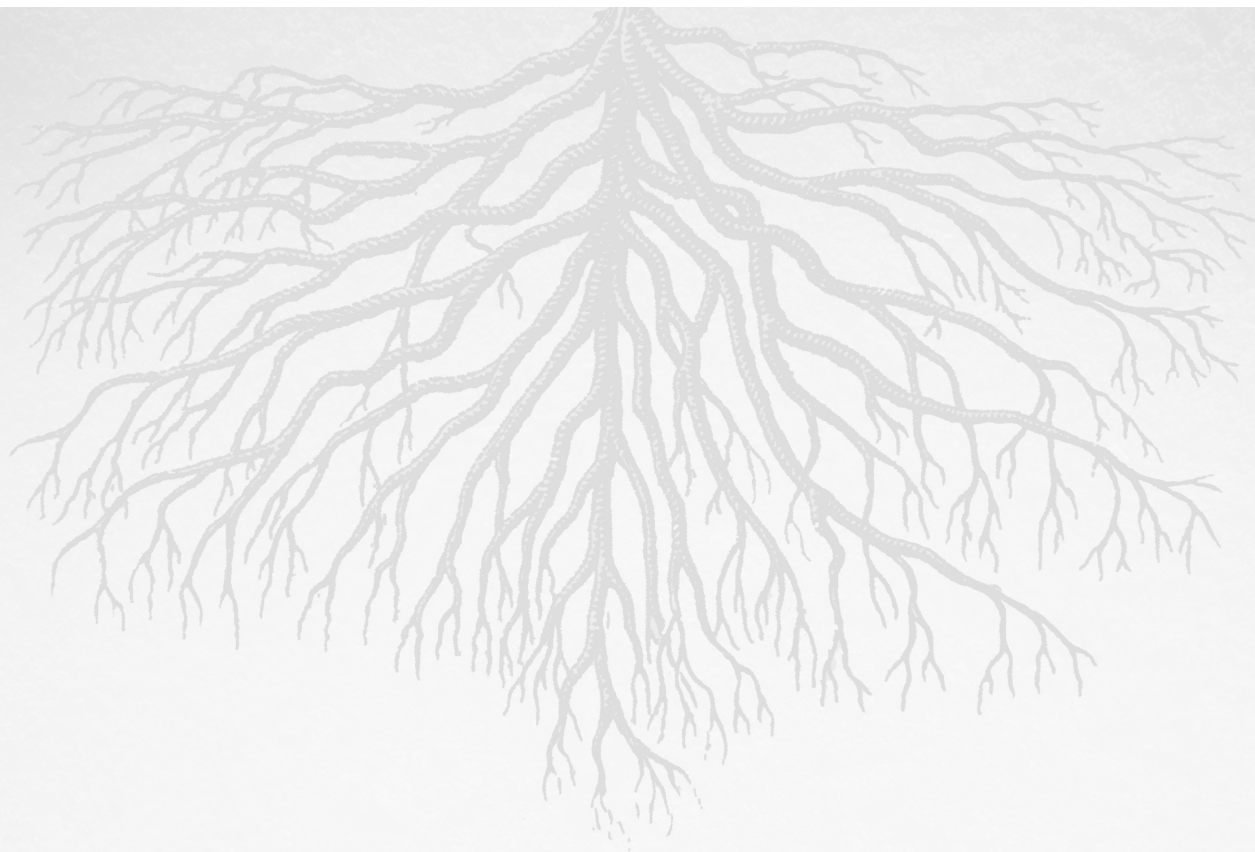
- Eynard, A., K.D. Wiebe and R. Lal. 2019. "Salt-Affected Soils: Plant Response". In Encyclopedia of Environmental Management. Second Edition 2019. Taylor and Francis, Boca Raton, FL.
- Jacinthe, P.A. and R. Lal. 2019. "Soil Erosion and Carbon Dioxide". In Encyclopedia of Environmental Management. Second Edition 2019. Taylor and Francis, Boca Raton, FL.
- Lal, R. 2019. "Global Climate Change: World Soils". In Encyclopedia of Environmental Management. Second Edition 2019. Taylor and Francis, Boca Raton, FL.
- Lal, R. 2019. Chapter 4. "Land Use Impacts on Soil Physical Properties of an Alfisol in Western Nigeria. In Rattan Lal (Ed) Soil Degradation and Restoration in Africa. Advances in Soil Science, Taylor and Francis, Boca Raton, FL.
- Lemus, R. and R. Lal. 2019. "Bioenergy Crops: Carbon Balance Assessment". In Encyclopedia of Environmental management. Second Edition 2019. Taylor and Francis, Boca Raton, FL.
- Mtakwa, P.W., N.N. Urio, F.M.W. Muniale, A.P. Mtakwa, R. Lal, and B.R. Singh. 2019. Chapter 10. "Conservation Agriculture in Tanzania." In Rattan Lal (Ed) Soil Degradation and Restoration in Africa. Advances in Soil Science, Taylor and Francis, Boca Raton, FL.
- Ussiri, D.A.N. and R. Lal. 2019. Chapter 1. "Soil Degradation in Sub-Saharan Africa: Challenges and Opportunities for Restoration." In Rattan Lal (Ed) Soil Degradation and Restoration in Africa. Advances in Soil Science, Taylor and Francis, Boca Raton, FL

Invited Keynote Presentations

- Lal, R. 2019. A System Approach to Soil Carbon Sequestration for Food, Climate and Environment. Soil System Science Symposium, 6-9th January 2019, San Diego, California, USA.
- Lal, R. 2019. Adapting African Agriculture: the power of soil. Adapting African Agriculture Initiative, Frist Board Meeting, 16th January 2019, Rabat, Morocco.
- Lal, R. 2019. Soil Surface Management for Carbon Sequestration. Combined Congress, 22-24th January 2019, South Africa.
- Lal, R. 2019. Biochar: Potential and Challenges. Presentation to The Andersons Inc., 11th, January 2019, Derby Hall, The Ohio State University, Columbus, Ohio, USA.
- Lal, R. 2019. Recarbonizing Soils of Global Drylands. 13th International Conference on Development of Drylands, 11-14th February 2019, Jodhpur, India.
- Lal, R. 2019. Soil Carbon Sequestration and Food Security. Conference: "Change Climate. Agro-ecology and Renewable Gas: Let's pave the way together", BIOGAS, Milan, Italy, 28th February, 2019.
- Lal, R. 2019. Soil Carbon Sequestration in Arid and Semi-Arid Climates. Soil Water and Environmental Science Colloquium Series. 11th March 2019, University of Arizona, Tuscon, Arizona, USA.
- Lal, R. 2019. Carbon Management and Sequestration Center Program Plans and Prospects. Byrd Polar and Climate Research Center, 22nd March 2019, Columbus, Ohio, USA.
- Lal, R. 2019. Importance of Soil Carbon Management to Agricultural Sustainability and Climate Change Mitigation. Sustainability Institute Faculty Research Networking Event. 28th March 2019, Columbus Ohio, USA.

Miscellaneous

- Lal, R. 2019. Reconciling India's food and nutritional security with environmental quality. Fortune India, January 13, 2019.



CONTACT INFORMATION

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

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