



THE OHIO STATE
UNIVERSITY

CARBON MANAGEMENT AND SEQUESTRATION CENTER

C-MASC NEWSLETTER

June | 2019

Follow the Food



A rapidly growing world population. Climate change. Environmental degradation.

These are urgent and unprecedented challenges. How will we produce enough food without further damaging the environment as the global population rises?

Follow the Food – a multimedia series by BBC Future and BBC World News – investigates how farmers, researchers and innovators are working to secure a sustainable long-term future for the global food supply chain.

BBC at C-MASC

Columbus, Ohio

On March 7, a team from the British Broadcasting Corporation, or BBC, visited C-MASC to interview Dr. Lal for an upcoming multimedia series called Follow the Food. According the series' website, the show "investigates how farmers, researchers and innovators are working to secure a sustainable long-term future for the global food supply chain".

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Above: Screenshot from the [Follow the Food website](#)

Left: Dr. Lal is interviewed by one of the show's hosts, JJ Ramberg

You can read more about JJ's interview with Dr. Lal by following this [link](#).

C-MASC Departures

Basant Rimal

The entire C-MASC team would like to wish Basant Rimal a happy farewell. Basant worked at C-MASC as a Research Associate for 12 years. Not only did he manage operations in both the labs, but he also did extensive work in the field to maintain short and long-term research studies. Although retiring from Ohio State, he will be starting a new job at Tata Consultancy Services as a business analyst and he will be based in Indianapolis.

Upon his farewell, Basant said he enjoyed every moment at C-MASC, from hilarious conversations to heated arguments in the lab. Basant said “I will miss working with such a diverse, competent team of individuals led by our Director, Nobel Laureate, Japan Prize winner Prof. Rattan Lal.”

Right: Basant and Dr. Lal at Basant's farewell reception



Tess Phinney

Tess joined C-MASC just under a year ago and will be departing in mid-June. She is taking her office management experience to the family business: a small, private construction company in the Columbus area.

Tess would like to thank the C-MASC team for welcoming her with open arms. She learned many things over the past year, including just how important soil is to every species on our planet. After Tess' departure, Ms. Abigail Henson will work as an interim Program Coordinator for



Abigail Henson



Tess Phinney

Nadia Sabir



For six months, Nadia joined C-MASC as a visiting scholar from the University of Poonch Rawalakot, Pakistan. During her time at Ohio State, Nadia enjoyed attending both of Dr. Lal's classes and the lab, which is taught by PhD student Nall Moonilall.

Nadia conducted a lab experiment on “residues type and placement effect on carbon dioxide emission under laboratory conditions” with the help of Dr. Lal and Basant Rimal. She also brought several samples of soil from her home country, which she analyzed using the equipment in the lab and the guidance of Basant.

Upon return home, Nadia looks forward to completing her PhD, which she is expecting to submit in December 2019. She says her six months at Ohio State were very helpful, but she wishes she could have stayed longer. As a post-doc, Nadia hopes to return to C-MASC.

C-MASC Arrivals

Kyle Sklenka

Kyle grew up in northeast Ohio and earned a BS in environmental science with an ecosystem restoration specialization from The Ohio State University in 2015. Since then, he has gained experience as an environmental health and safety consultant and worked at The Wilds, where he lived on-site as a restoration ecology apprentice. Kyle's interest in soil was piqued after seeing the consequences of the extreme soil degradation created by strip mining. His work at The Wilds involved monitoring soil carbon pools of damaged mine soils following the implementation of experimental prairie ecosystems and various land management strategies. After collaborating with OSU researchers Dr. Richard Dick and Dr. Nicola Lorenz, Kyle was invited by Dr. Rattan Lal to return to his alma mater to work on a project for C-MASC involving soil health and carbon sequestration in agricultural soils across the continental US. Following the completion of the project, Kyle was asked by Dr. Lal to assume the role of Lab Manager for the C-MASC Soil Physics and Chemistry Labs. Kyle is excited to be back and involved in an area that he finds interesting and fulfilling. He looks forward to continuing his journey into the world of soil as a member of C-MASC and of Ohio State University.



Dr. Biswajit Das



Dr. Biswajit Das is a Principal Scientist at the Indian Council of Agricultural Research. Currently, he is posted in ICAR Research Complex for North Eastern Region, Tripura Centre, State Tripura and working on horticultural crops. Dr. Das joined C-MASC on the 12th of April, 2019 as Visiting Scholar. His associateship is sponsored by Department of Biotechnology, Ministry of Science and Technology, Government of India. Dr. Das is excited to be working with the team at C-MASC, especially Dr. Lal. He sees this as an important opportunity to gain research experience on advanced soil analysis technologies.

Specifically, Dr. Das plans to focus his research on the effect of mulching on soil organic carbon dynamics and mitigation of greenhouse gases emissions. He will conduct research on soil physical properties namely soil texture, soil bulk density, soil water characteristics and soil hydraulic conductivity. Soil carbon, nitrogen and CO₂ will be also analysed.

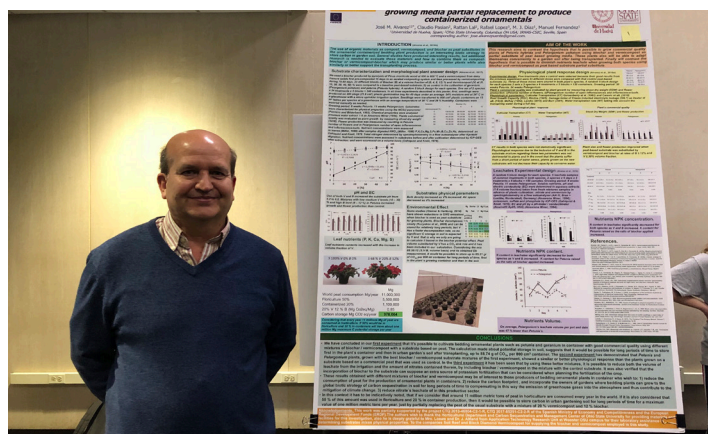
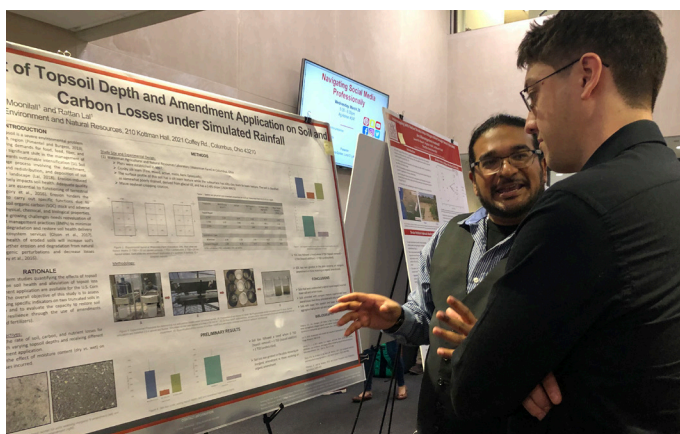
After his time at C-MASC, Dr. Das looks forward to returning to India, where he will apply his knowledge to help formulate a research project in India on the efficient of soil carbon management technologies with a specific focus on the development of sustainable and resilient agricultural production technologies.

Soil Science Research Day

Columbus, Ohio



SENR Soil Science Research Day took place on March 28 in the Kottman Hall lobby. The schedule of events included a keynote address from Associate Dean for Research and Graduate Education, Dr. Gary Pierzynski, and was followed by a poster symposium. According to the SENR website, the goal of the Soil Science Research Day is to “promote soil science across all disciplines and to increase awareness of its importance to the environment, society, and economy.”



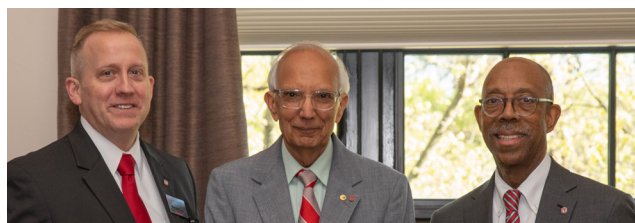
Above, left: PhD student Nall Moonilall discusses his poster with a Soil Science Research Day participant

Above, right: José Mª Álvarez de la Puente, one of Dr. Lal's PhD advisees, presents his poster entitled: “Biochar and vermicompost use as peat based growing media partial replacement to produce containerized ornamentals”

Prof. Lal Honored at Spring Commencement & Faculty Recognition

Prof. Lal was introduced by President Drake during spring commencement held on 5th May 2019 (below, left). During the commencement brunch, Prof. Lal also met with the commencement speaker, Mr. Freed Zakaria (pictured below, top; from left to right: Dr. M. Stone, Dr. B. McPherson, Mr. Zakaria, Dr. Lal).

During a Faculty Award and Recognition event held on 22nd April, Prof. Lal was recognized for receiving the 2019 Japan Prize. The faculty recognition event was attended by about 150 participants. Dr. Lal is pictured at the event (right, bottom. From left to right: Dr. M. Stone, Dr. Lal, and President Michael Drake).



C-MASC Visitors



Prof. Lal welcomed representatives of the Jain Irrigation to C-MASC. Visitors included Prof. Dilip N. Kulkarni (center), President, Sustainable Agriculture and strategy; and Mr. Narinder Gupta (left).

According to their website, Jain Irrigation Systems Ltd has a global presence with 33 manufacturing bases spread over four continents; they have reached over 8.5 million farmers worldwide.

Where in the World in Prof. Lal?

Methodist Theological School of Ohio



Prof. Lal was invited by former Vice President of the United States, Mr. Al Gore, to speak at an event in Delaware, Ohio on 31st May 2019. The event, a conference 'On Food and Faith' was held at the Methodist Theological School in Ohio. Prof. Lal's lecture was entitled "Soil Will Save Our Souls" and was presented to faith leaders from across the state.

Mr. Gore (*above, left*) is founder and chairman of The Climate Reality Project, a non-profit organization involved in education and advocacy related to climate change. Mr. Gore's daughter, Karenna Gore, co-led the conference.



Rome, Italy

Prof. Lal participated in the Global Soil Erosion Symposium (15-17 May 2019) as a representative of the Science policy Interface (SPI) of the United Nations Convention to Combat Desertification (NCCD). A special side event was organized by UNCCD on 17th May. The main organizers of the event on behalf of UNCCD were Jia Xiaxia (3rd from right) and Marcelo Inacio de Cunha (photographer). The UNCCD was represented by Dr. Pradeep Monga (4th from left) and FAO by Dr. Eduardo Mansur (2nd from left). Prof. Lal is in the center, to the immediate right of Mr. Monga.

Prof. Lal was a member of the concluding panel. He addressed two questions: 1) what are the main negative impacts of soil erosion locally and globally and 2) what are your recommendations to governments, scientists, and U.N. organizations to stop erosion and save our future? Approximately 500 participants from 104 countries attended the symposium



Where in the World is Prof. Lal?

Tokyo, Japan

On April 8, 2019, Prof. Lal returned to Tokyo, Japan to officially receive the Japan Prize, an award widely considered to be one of the most prestigious honors in science and technology. Prof. Lal traveled to Japan in January, when attended a conference announcing the Japan Prize laureates. The 35th Japan Prize celebrations spanned a week in early April and included a commemorative lecture (right, top), a visit with the US Ambassador to Japan, Mr. William F. Hagerty (right, middle), and a banquet attended by Emperor Akihito and Empress Michiko (right, bottom).

Prof. Lal was accompanied by a delegation from Ohio State including President Michael Drake, Vice Provost Gil Latz, Senior Vice President Morley Stone, and Director David Benfield. While in Japan, President Drake commented via Twitter that he was “honored to be in Tokyo to help celebrate [...] soil scientist Rattan Lal as he receives the 2019 Japan Prize Award for his work in sustainable soil management.”

Since its inception in 1985, the Japan Prize has been awarded annually to typically two scientists and/or engineers from around the world who make significant contributions to their field. The award carries with it a cash



Photos from the [Japan Prize Foundation](#) and [Wikipedia](#)

Where in the World is Prof. Lal?

Dresden, Germany



UNU-FLORES, or the United Nations University Institute for Integrated Management of Material Fluxes and of Resources, is based in Dresden, Germany and has been since 2012. UNU-FLORES specializes in the study of integrated and sustainable management of environmental resources. Prof. Lal is Chair of the Advisory Committee and was in Dresden for the annual planning meeting from 9-13 June.

In the photo above, Prof. Lal can be seen in front of the Dresden Frauenkirch (Church of Our Lady), an iconic cathedral in the heart of Dresden, with (from left to right): Dr. David Malone, Rector, UNU, Tokyo, Prof. Adelaide Nardocci, University of Sao Paulo, Brazil, and Dr. Edel Guenther, Director, UNU-FLORES, Dresden, Germany.

Spring in Columbus, Ohio

Columbus, Ohio welcomed warmer weather and early summer blooms this month. Pictured here: peonies in full bloom in the Chadwick Arboretum, directly outside the building that houses C-MASC.



What's New at C-MASC?

Spring Potluck



On April 19, C-MASC colleagues gathered for an end-of-the-semester get-together. Over a shared meal, we discussed the upcoming Easter holiday and each of the visiting scholars shared stories about upcoming festivals in their home countries.

(from far right, clockwise: Prof. Lal, Fengkqi, Fengkqi's son, Junjie Li, Yingde Xu, Xiaodan Gao, Frank Clarke, Nall Moonilall, Basant Rimal, Tess Phinney, Nicola Lorenz, Klaus Lorenz, Franka Lorenz, Biswajit Das, Jose Alvarez)

Prof. Lal's Awards on Display



Stop by the visiting scholar office (Kottman Hall 422D) to see the newly assembled bookshelves. Visiting Scholars and other C-MASC guests can now see many of Prof. Lal's awards on display as well as a comprehensive collection of each edition of *Advances in Soil Science*. A big "thank you" to Basant and Nall for their help assembling the bookshelves.

What's New at C-MASC?

Ellen Maas

Ellen Maas, a PhD advisee of Prof. Lal, is working at Argonne National Laboratory this summer. ANL is a science and engineering research lab operated by the United States Department of Energy and is located in Lemont, Illinois, just over 20 miles south west of Chicago.

Ellen is working on a project that involves three agroecosystem models (RothC, DayCent, and DNDC) at three irrigated sites in the West and Southwest Sorghum to produce an array of projects of characteristics at those sites – yield, greenhouse gas emissions and soil carbon sequestration – to characterize the uncertainties involved. Ellen, and the team she is working with, are using an ensemble approach, similar to the IPCC's climate projections with an ensemble of general circulation models.

This is a great opportunity for Ellen to get hands-on experience as she aims to complete her PhD within the next six months. In the future, Ellen plans to have a career that focuses on the mitigation of the effects



of climate change. Ellen says, “modeling the environmental effects of agricultural systems is an important tool for informing farmers, other land owners, and policy makers what are recommended crops and land management that can best meet the needs both of people and the planet.”

Jose Guzman



C-MASC recently received news that Jose Guzman, former Research Scientist at C-MASC, welcomed a baby girl into the world. Azuliana Dakota Guzman-Vazquez was born at 4:21am on Saturday, June 8 weighting 8lbs 8oz and measuring 20.5 inches long. Congratulations, Jose and family!

Quarterly Publications

Upcoming Important Meetings and Conferences

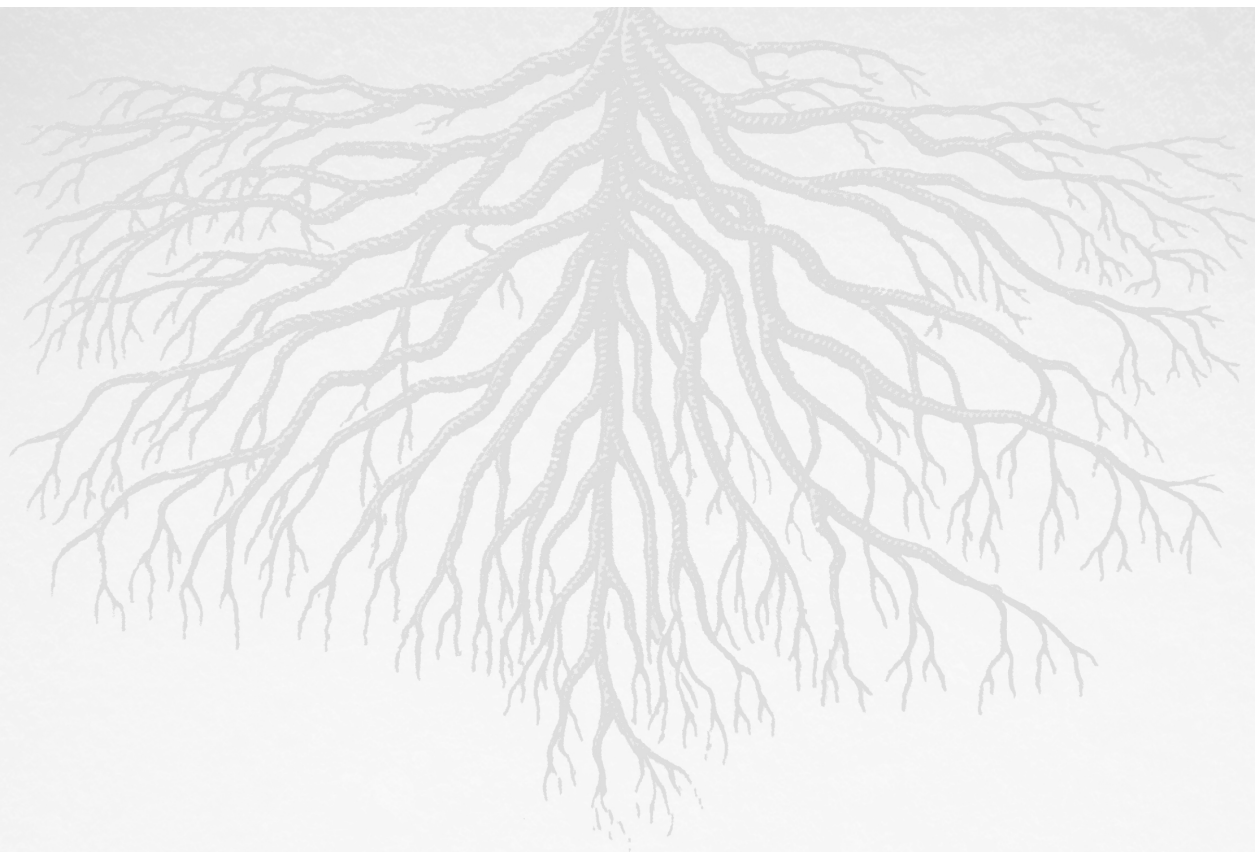
1. International conference on “4 per Thousand”, 18-20 June, Pottier, France.
2. 2019 Planet A International Forum, 27-28 June, Châlons-en-Champagne, France. Theme is “Soil Quality for the Health of Living Things”
3. Natural Resources, agriculture and Society in a Changing Climate, 17-19 August 2019, Kathmandu, Nepal
4. Conference of the Parties, 14th Session of UNCCD (COP-14), 2-13 September, New Delhi, India
5. Annual Meeting of the Japanese Society of Soil Science and Plant Nutrition 2-4 September, 2019

Referred Journal Articles

- Alvarez, J.M., Pasian, C., Lal, R., Fernandex, M. 2019. Vermicompost and biochar substrates can reduce nutrients leachates on containerized ornamental plant production. *Hortic. Bras.* 37(1):047-053. DOI:10.1590/S0102-053620190107
- Lal, R. 2019. Eco-intensification through soil carbon sequestration: Harnessing ecosystem services and advancing sustainable development goals. *J. Soil and Water Conserv.* 74(3):55A-60A.
- Ussiri, D.A.N., J.G. Guzman, R. Lal, U. Somireddy. 2019. Bioenergy crop production on reclaimed mine land in the North Appalachian region, USA. *Biomass and Bioenergy* 125:188-195.
- Nawaz, A., M. Farooq, F. Nadeem, K.H.M. Siddique, and R. Lal. 2019. Rice-wheat cropping systems in South Asia: issues, options and opportunities. *Crop & Pasture Science*. 70: 395-427.
- Yadav, G.S., R. Lal, R., R.S. Meena, B. Rimal. 2019. Long-term effects of different passages of vehicular traffic on soil properties and carbon storage of a Crosby silt loam in USA. *Pedosphere* 29(2):150-160.

Invited Keynote Presentations

- Lal, R. 2019. Sustainable Soil Management for Global Food Security and Mitigation of Climate Change. Japan Prize Commemorative Lecture, 10th April 2019, Tokyo, Japan.
- Lal, R. 2019. Strengthening Cooperation Between IUSS & USUNSS. Presentation at the US-NCSS, NAS, 29th May 2019, Washington, D.C., USA.
- Lal, R. 2019. The Soil Will Save Our Soul. On Food and Faith: Ministry in the Time of Climate Change, 31st May 2019, Methodist Theological School of Ohio, Delaware, Ohio, USA.
- Lal, R. 2019. The “4 Per Thousand” Initiative: Potential and Challenges. International Conference on 4 Per Thousand, 18-20 June 2019, Pottier, France.



CONTACT INFORMATION

**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: lal.1@osu.edu



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