



THE OHIO STATE
UNIVERSITY

CARBON MANAGEMENT AND SEQUESTRATION CENTER

C-MASC NEWSLETTER

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Caney Fork Farms

Carthage, Tennessee

Caney Fork Farms, located in the small town of Carthage, Tennessee, is just about an hour east of Nashville. Specializing in regenerative agricultural practices, Caney Fork Farms is on a mission to prove that carbon farming, or farming the land in such a way that removes excess carbon from the atmosphere, improves not only farms themselves, but the community and environment.

Prof. Lal visited Caney Fork Farms alongside former Vice President Al Gore (pictured above). Caney Fork Farms is headquartered on Mr. Gore's family farm.

New to C-MASC

Tess Phinney, Program Coordinator

Tess Phinney joined the C-MASC team in mid-October as the Center's new Program Coordinator. In this role, Tess will work with Dr. Lal to ensure the Center runs smoothly. She is also responsible for designing and disseminating communication materials on behalf of the Center and is interested in expanding the Center's presence on social media platforms in an effort to reach a wider audience. Tess has a background in Environmental Science; she holds a

Bachelors in Environmental and Natural Research Management from Clemson University and a Masters in Environmental Studies from Ohio University. For her graduate thesis research, Tess studied the role of behavior change in college and university sustainability programs. Outside of work, Tess loves to travel. Before starting her new position at OSU, Tess volunteered at an elephant sanctuary in Chiang Mai, Thailand.



Yingde Xu, Visiting Scholar



Yingde Xu is a soil science Ph.D. student from Shenyang, Liaoning province, China. He received a Bachelor of Science from Shenyang Agricultural University, China. Currently, he is studying at C-MASC as a visiting scholar for 2 years. To date, he has authored 5 journal articles (1 SCI and 4 Chinese core journals) and co-authored 5 journal articles. His research

field is soil organic carbon cycling and his research focus on the microbial transformation process of maize residue C in soil and soil aggregate. A clear understanding of these mechanisms is beneficial to clarify the mechanism of soil organic carbon sequestration and hold significant implications for improving soil fertility and ensuring food security in agro-ecosystem.

Gabriella Collier, Student Assistant



Originally from Cleveland, Ohio Gabriella Collier is a freshman at the Ohio State University and recently joined the C-MASC team as a Student Assistant. Though currently undecided, Gabi plans to declare a major in Communications next autumn. As a Student Assistant, Gabi will assist with C-MASC communications, both internal and exter-

nal, she will also help to prepare presentation materials and manuscripts. Gabi enjoys meeting new people and learning new things, which is why she is excited to join C-MASC. Outside of work and school, Gabi enjoys researching health and human nutrition.

Nadia Sabir, Visiting Scholar

Nadia Sabir is a Ph. D student in the department of Soil and Environmental Sciences at the University of Poonch, which is located in Rawalakot Azad Kashmir, Pakistan. She joined C-MASC as a visiting scholar in October and will stay until March, 2019. Her research is funded by the Higher Educa-

tion Commission (HEC) of Pakistan and focuses on “improving carbon storage of an inceptisols by soil and crop management.” Nadia is very excited to join C-MASC and to work with Prof. Lal and his team.



Ming Wang, Visiting Scholar



Ming Wang is a soil science Ph.D. student studying under Prof. Lal. Ming is from China, where he earned his masters of science in soil science from the Chinese Academy of Agricultural Sciences. His masters research focused on the influence of a drying/rewetting event on soil microbial biomass. At Ohio State, Ming is interested in studying

soil remediation, he plans to spend approximately five years here. The topic of soil remediation is particularly interesting to him because, during the process of China's economic development, large areas of soil were contaminated. After graduate school, Ming aspires to apply the knowledge he gains and give back to his country.

Honors and Awards



Prof. Lal Awarded with Honorary Degree

Gustavus Adolphus College, St. Peter, Minnesota



Each year since 1965, Gustavus Adolphus College, a small, private school just over an hour southwest of the Twin Cities, hosts the world's foremost natural and social science researchers and scholars at the prestigious Nobel Conference. This October, the 54th annual Nobel Conference theme was "Living Soil: A Universe Underfoot". Prof. Lal was awarded an Honorary Degree from the College for his contributions to the Nobel Peace prize-winning Intergovernmental Panel on Climate Change and for his life's work studying soil conservation (top, from left to right: Lisa Heldke, Prof. Lal, Jim Dontge, and Gustavus President Rebecca Bergman). Afterwards, Prof. Lal closed the first day of the conference with a presentation about his research, specifically the implications of no-till farming on global climate change. Lisa Heldke (left) is the director of the Nobel Conference.

GCHERA - World Agriculture Prize



Nanjing Agricultural University, Nanjing, China

The president of the Global Confederation of Higher Education Associations for Agricultural and Life Sciences (GCHERA), Dr. John Kennelly (top left), presented Prof. Lal with the 2018 World Agriculture Prize on October 28th. The award honors Prof. Lal's lifetime achievements in agricultural and life sciences.

In addition to a trophy presented by the Chancellor of the Nanjing Agricultural University, Mr. Chen Ligen (top right), Prof. Lal was presented with a check for \$100,000 by Mo Hongjian (right), Vice President of DBN Group. Prof. Lal plans to donate his cash prize to an endowment in support of the Carbon Management and Sequestration Center.

GCHERA is comprised of 15 higher education organizations from around the world and presents two World Agriculture prizes each year.





Mr. Jean de Barrau of the Danone Co.

Farm Science Review

London, Ohio

The Farm Science Review took place this year from September 18-20 at the Molly Caren Agricultural Center near London Ohio. This annual event, which can attract upwards of 140,000 visitors, showcases agricultural innovations and offers an opportunity for farmers and visitors to speak with experts from the College of Food, Agricultural, and Environmental Sciences (CFAES).

Roy Kottman, former dean of CFAES and the namesake of the building that houses C-MASC, is credited with launching the Farm Science Review, which just celebrated its 56th year. Visitors of this year's event could view demonstrations on a 67-acre demonstration and education area and visit over 600 exhibitors with information about farm safety, home safety and personal health.

Prof. Lal visited the Farm Science Review this year with representatives from the Danone Company (right).



Photographed above: visitors from Danone Company including: Mr. Ryan Bergman, Dan Paulus, Adam Hardies, Zack Bosslett, Tina Owens and Jean de Barrau. The FAES team seated with them are Dr. Gary Pierzynski, Dr. Jeff Sharp and Prof. Lal.



Above, left to right: Prof. Lal, Patagonia Vice President Rick Ridgeway, Patagonia CEO Rose Marcario

Patagonia

Ventura, California

On September 5th, 2018, Prof. Lal was invited to speak at the Patagonia headquarters in Ventura, California.

Prof. Lal spoke about carbon sequestration and soil health to roughly 600 employees of the notoriously environmentally-conscious company. His talk touched on the topic of carbon sequestration and soil health, a subject of particular importance to Patagonia's CEO, Rose Marcario (above, right).

Marcario has written several open letters available on Patagonia's website pertaining to the importance of environmental stewardship. Specifically, on October 6th, she wrote of the importance of soil in her letter titled "Organic Standards Stem from the Soil".



Once the largest supplier of rock climbing hardware in the US, Patagonia (then Chouinard Equipment) got its start in the 1960s. By the 1970s, the company expanded their offerings to a wide-range of colorful outdoor gear.

Today the company is known for their commitment to environmental stewardship, with a mission to "build the best product, cause no unnecessary harm, use business to inspire and implement solutions to the environmental crisis."



Planet A

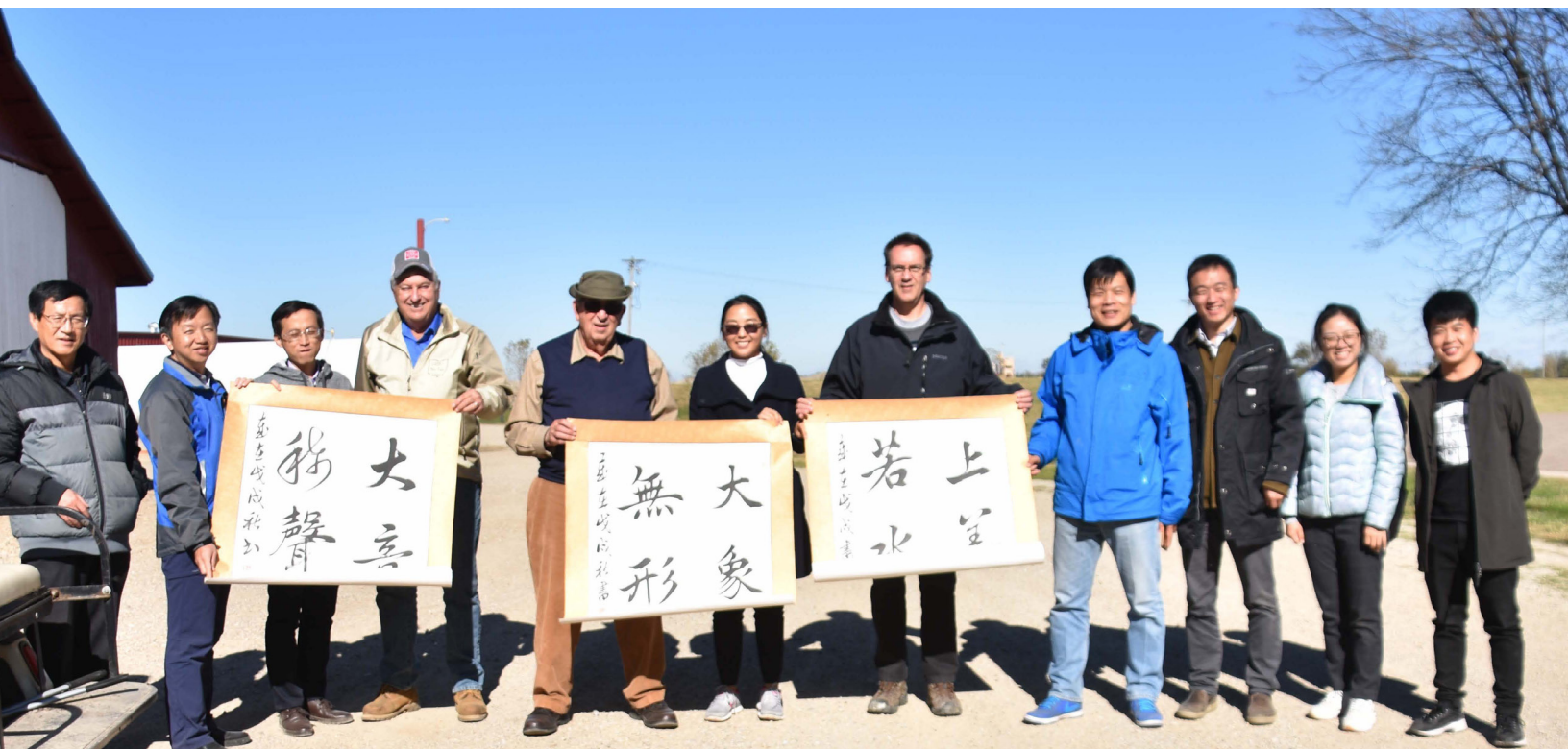
Chalons-en-Champagne, France

Planet A, an international agricultural forum, was held in Chalons-en-Champagne, France this year. Approximately 400 business leaders, researchers and academics from around the world attended the two-day event in late June. The theme of this years program was “Agriculture: a pivotal challenge for mankind”.

Prof. Lal presented on the issue of soil management and human wellbeing and participated in a round table discussion with for other high-profile leaders to discuss the topic of “challenges for a changing world “.

At the event, Prof. Lal met the mayor of Chalons-en-Champagne, France, Mr. Benoist Apparu (right, top). Prof. Lal also met the prime minister of France, Mr. Edouard Philippe (right, bottom).





The China delegation visited the farm of Mr. Bill Richard (fifth from left) in Circleville, Ohio.

C-MASC Visitors

Columbus, Ohio

C-MASC hosted a delegation of six from China on Monday, October 22. The group made the journey on the invitation of C-MASC Visiting Scholar Dr. Zhenwei Song in order to learn about best practices in agricultural conservation. The delegation was comprised of representatives from China's Ministry of Agriculture and Rural Affairs and the Chinese Academy of Agricultural Sciences.

The three-day visit consisted of presentations from SENR Director Dr. Jeff Sharp and C-MASC Director Prof. Lal. The delegation visited several farms in the central Ohio area and traveled to Wooster for an introduction to the OARDC.

The delegation presented C-MASC with a poster (pictured above, far right), the hand-drawn Chinese characters say translate to: "the highest goodness is like water, and water benefits all things and does not compete".

Upon return to Beijing, the delegation hopes to apply the information learned from their visit to C-MASC in their home country.



Dr. Song (above, right in red) spent one year as a visiting scholar at C-MASC. Dr. Song is an associate professor of Crop Sciences at the Institute of Crop Sciences, Chinese Academy of Agricultural Sciences. His research interests include sustainable agriculture, soil carbon sequestration and greenhouse gas emissions, and climate change and agricultural adaptation.



21WCSS

Rio de Janeiro, Brazil

Approximately 4,200 people from 102 countries attended this year's World Congress of Soil Science, which took place in Rio de Janeiro, Brazil in mid-August. The conference theme this year was "soils to feed and fuel the world". Prof. Lal is pictured above with Dr. Flavio Camargo, chair of the organizing committee. Prof. Lal and incoming president Dr. Takashi Kosaki, presented Dr. Camargo with an award (below, left). Dr. Johan Bouma (pictured right, far left) received the Dokucha award from Dr. Camargo and Prof. Lal presented the Von Liebig Award to Dr. John Ryan (second from right). The C-MASC alumni in attendance joined for a group photo (below, right; from left to right: Toru Nakajima, Ricardo Bordonal, Nicola Lorenz, Maria Arango, Umakant Mishra, Prof. Lal, Boris Boincean, Milson Sarafim, Uri Zinn (kneeling)).



Medal of Honor from UIMP

Universidad Internacional Menendez Pelayo, Santander, Spain

On July 24th, the Universidad Internacional Menendez Pelayo (UIMP) in Santander, Spain recognized Prof. Lal for his “outstanding academic merit, which comprises a long trajectory of defense of the environment and, more specifically, for the study of soil as a living body and a key element in terms of global change,” Emilio Lora-Tamayo D’Ocon, rector at UIMP (pictured right, opposite Prof. Lal).

Prof. Lal received the Medal of Honour during a ceremony held at the course III Environmental School Tatiana Perez de Guzman el Bueno Foundation at the Magdalena Palace in Santander, Spain.

The UIMP Medal of Honour is a means by which the University recognizes individuals, corporations or societies for excellence in the field of scientific research, teaching or service to the country’s cultural interests.



Quarterly Presentations

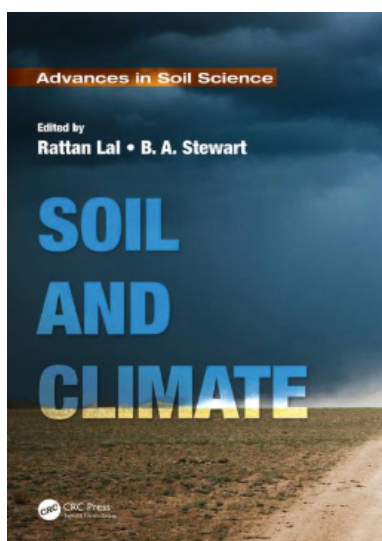
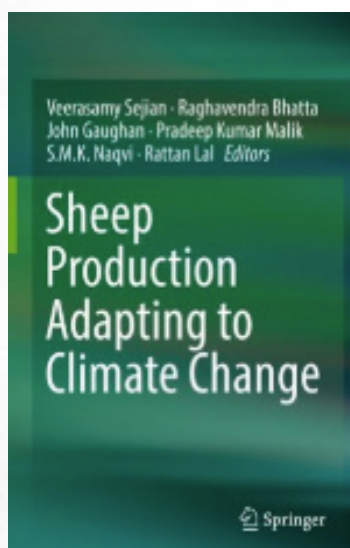
- Lal, R. (2018, June 27-28). Agroecological approach to soil health. Planet A Conference, Châlons-en-Champagne, France.
- Lal, R. (2018, July 24-25). Soil as a keystone for mitigation and adaptation of climate change. UIMP, Santander, Spain.
- Lal, R. (2018, August 12). Beyond food and fuel, keynote presentation. 21WCSS, Rio de Janeiro, Brazil.
- Lal, R. (2018, August 12-18). Bringing soil science to society. 21WCSS, Rio de Janeiro, Brazil.
- Lal, R. (2018, August 12-18). Soil-human-health nexus. 21WCSS, Rio de Janeiro, Brazil.
- Lal, R. (2018, September 24-27). Evolution of conservation agriculture. 21st ISTRO Conference, Paris, France.
- Lal, R. (2018, September 5). Managing soil health for eco-intensification of agro-ecosystems. Patagonia headquarters, Ventura, California.
- Lal, R. (2018, October 1-3). Power of soil and global issues. 54th annual Nobel Conference, Gustavus Adolphus College, Saint Peter, Minnesota.
- Lal, R. (2018, October 7). Managing soil health and functionality. Sixth Annual Great Lakes Regional Conference, Toledo, Ohio.
- Lal, R. (2018, October 9-14). Soil management for healthy food and environment. “Soil Food Week”, Ecommunity Park, Oosterwolde, Holland.
- Lal, R. (2018, October 16). Managing world soils for confronting the challenges of climate change. The Beckman Institute, University of Illinois, Champaign-Urbana, Illinois.
- Lal, R. (2018, October 16-18). No-till farming for sustainable intensification of agro-ecosystems. Capacity Building for Managing Climate Change in Malawi Conference, Lilongwe, Malawi.
- Lal, R. (2018, October 22). Conservation agriculture. Ministry of agriculture and rural affairs (MARA), Columbus, Ohio.
- Lal, R. (2018, October 27). Managing soils and advance world agriculture. 5th GUCHERA World Agriculture Prize, Nanjing, China.

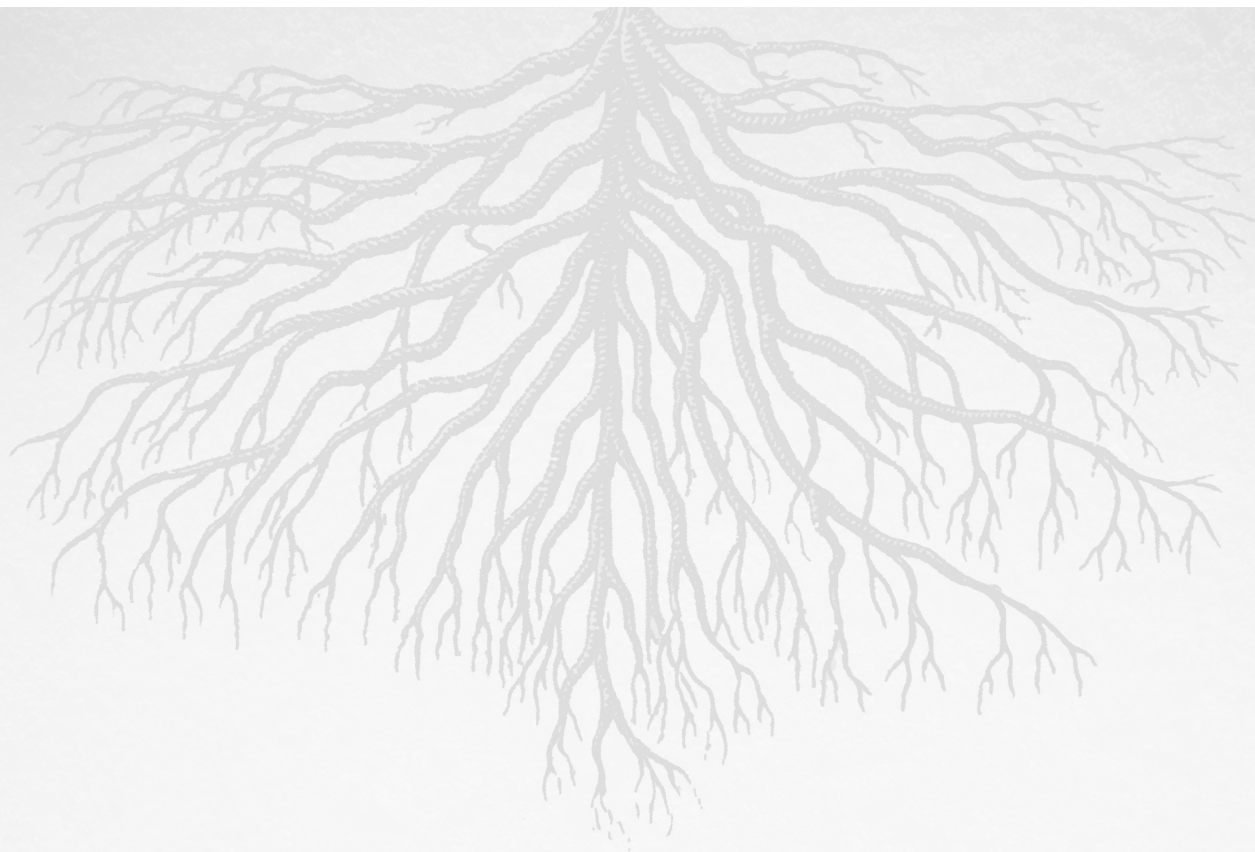
C-MASC Quarterly Publications

Referred Journal Articles:

- Álvarez, J. M., Pasian, C., Lal, R., López, R., Díaz, M. J., & Fernández, M. (2018). Morpho-physiological plant quality when biochar and vermicompost are used as growing media replacement in urban horticulture. *Urban Forestry & Urban Greening*, 34, 175-180.
- Das, A., Lyngdoh, D., Ghosh, P. K., Lal, R., Layek, J., & Idapuganti, R. G. (2018). Tillage and cropping sequence effect on physico-chemical and biological properties of soil in Eastern Himalayas, India. *Soil and Tillage Research*, 180, 182-193.
- de Oliveira Bordonal, R., Menandro, L. M. S., Barbosa, L. C., Lal, R., Milori, D. M. B. P., Kolln, O. T., ... & Carvalho, J. L. N. (2018). Sugarcane yield and soil carbon response to straw removal in south-central Brazil. *Geoderma*, 328, 79-90.
- Feng, X., Hao, Y., Latifmanesh, H., Lal, R., Cao, T., Guo, J., ... & Zhang, W. (2018). Effects of Subsoiling Tillage on Soil Properties, Maize Root Distribution, and Grain Yield on Mollisols of Northeastern China. *Agronomy Journal*.
- Fiksel, J., & Lal, R. (2018). Transforming Waste into Resources for the Indian Economy. *Environmental Development*.
- Lal, R. (2018). Digging deeper: A holistic perspective of factors affecting soil organic carbon sequestration in agroecosystems. *Global change biology*.
- Lal, R. (2018). Saving global land resources by enhancing eco-efficiency of agroecosystems. *Journal of Soil and Water Conservation*, 73(4), 100A-106A.
- Nath, A. J., Lal, R., Sileshi, G. W., & Das, A. K. (2018). Managing India's small landholder farms for food security and achieving the "4 per Thousand" target. *Science of the Total Environment*, 634, 1024-1033.
- Sun, T., Li, G., Ning, T. Y., Zhang, Z. M., Mi, Q. H., & Lal, R. (2018). Suitability of mulching with biodegradable film to moderate soil temperature and moisture and to increase photosynthesis and yield in peanut. *Agricultural Water Management*, 208, 214-223.
- Xue, J. F., Pu, C., Zhao, X., Wei, Y. H., Zhai, Y. L., Zhang, X. Q., ... & Zhang, H. L. (2018). Changes in soil organic carbon fractions in response to different tillage practices under a wheat-maize double cropping system. *Land Degradation & Development*, 29(6), 1555-1564.
- Yadav, G. S., Das, A., Lal, R., Babu, S., Meena, R. S., Saha, P., ... & Datta, M. (2018). Energy budget and carbon footprint in a no-till and mulch based rice-mustard cropping system. *Journal of Cleaner Production*, 191, 144-157.
- Zhang, H., Liu, R., Ning, T., & Lal, R. (2018). Higher CO₂ absorption using a new class of calcium hydroxide (Ca (OH)₂) nanoparticles. *Environmental Chemistry Letters*, 16(3), 1095-1100.

Published Books:





CONTACT INFORMATION

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

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