



# Action in Agroforestry

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## UMCA's Chung-Ho Lin Contributes to COVID-19 Research

For more than 20 years, the [Center for Agroforestry](#) at the University of Missouri, has served as one of the world's leading centers contributing to the science underlying agroforestry, which is the science and practice of intensive land-use management combining trees and shrubs with crops or livestock. Agroforestry practices help landowners to diversify products, markets and farm income; improve soil and water quality; sequester carbon; reduce erosion, non-point source pollution and damage due to flooding; and mitigate climate change.



The Center for Agroforestry's Chung-Ho Lin (left), an associate research professor, and his lab are currently looking at how to redirect their analytical capacity (reverse-transcription and real-time *q*PCR) for the detection and quantification of COVID-19 in food, water and air – and

develop mitigation techniques to reduce community exposure to COVID-19. *q*PCR, or quantitative polymerase chain reaction, is a technology used for measuring DNA using polymerase chain reaction (PCR). PCR is commonly used in molecular biology to quickly make millions of copies of a DNA sample, which gives scientists an opportunity to study the sample in great detail.

“This would be a great opportunity for the Center for Agroforestry to adapt our unique resources to address an urgent need,” said Sarah Lovell, director of the Center for Agroforestry.

The Center for Agroforestry is also exploring the potential of Missouri-grown, nutrient-dense fruits and

nuts to contribute to both human health and regional food security during a pandemic health crisis.

“Certain natural compounds found in nuts, berries and other crops have been shown to provide protection or improved recovery against various illnesses, and some of these same crops can be grown locally to contribute to regional food security during crisis situations,” Lovell said.

Lovell added that the Center for Agroforestry can contribute to research efforts by identifying novel phytochemicals in elderberry and black walnut that could be effective for preventing, treating or reducing complications of coronavirus; screening and selecting cultivars of these crops to maximize concentrations of these novel phytochemicals; coordinating the value-added processing of healthy foods to improve shelf-life and enable shipping for online sales; and providing an array of online educational resources that enable stakeholders to enhance their regional food system capacity-building, including an emphasis on perennial foods that offer antiviral and antioxidant health benefits.

The Center for Agroforestry is one of the [University of Missouri College of Agriculture, Food and Natural Resources' Programs of Distinction](#), a select collection of programs that exemplify the College of Agriculture, Food, and Natural Resource's drive to distinction. These programs define CAFNR's current impact on Missouri's agriculture and natural resource economies, providing understanding for how the college is addressing challenges facing Missouri agriculture and natural resources.

*Article by Logan Jackson, MU CAFNR News Strategist*

## Silvopasture Series Recordings are Now Live

In partnership with SARE-NCR, the Sustainable Farming Association hosted a four-part webinar series in April 2020 as part of the “Restoring Oak Savanna, Protecting Water and Increasing Income Through Regenerative Agriculture Practices in Minnesota Woods and Forests” project. This webinar series, focused on silvopasture, is now available for viewing anytime. The series is part of a decades-long Soil Health Program, one of the goals of which is to integrate livestock back into cropping systems. Learn more in this free online series featuring the Center for Agroforestry’s Dr. Ashley Conway, Missouri practitioner Greg Judy, and others at <https://www.sfa-mn.org/silvopasture-webinars/>.



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## USDA Conservation Stewardship Program Deadline: June 1, 2020

Farmers and landowners interested in applying for the US Department of Agriculture’s Natural Resources Conservation Service (NRCS) Conservation Stewardship Program (CSP) can now do so from home. Producers may submit a signed and dated application via the mail, fax, scan, email, or submit through the agency approved Client-Gateway at <https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/cgate/>.

You may also submit application requests to your local NRCS office through telephone, email or letter received by the sign-up cut-off date. NRCS will follow-up to obtain applicant signatures prior to application ranking. If an application is not signed and returned to the local NRCS office prior to ranking, the application will be considered invalid.

For more information, contact the NRCS office serving your county. NRCS offices can be found in the phone book under “U.S. Government, Department of Agriculture,” or online at <http://offices.sc.egov.usda.gov/locator/app>.

The Center for Rural Affairs’ Guide to Applying for CSP during the Time of Coronavirus provides additional support for safety considerations and CSP opportunities. <https://www.cfra.org/news/200414/guide-applying-csp-during-time-coronavirus>.

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## Updated COVID-19 Resources for Farmers and Entrepreneurs

There has been a tremendous response to ensure that farmers are informed and supported during the coronavirus pandemic. We are continuously updating this list to share resources from partners to farmers and technical service providers. The following guides and resources are central to this effort:

- [Michael Fields Agricultural Institute’s COVID-19 Resources for Farmers and Consumers](https://michaelfields.org/covid-19-resources-for-farmers-and-consumers/)
- [Farmers’ Legal Action Group COVID-19 Guide: Navigating Relief for Farmers](http://www.flaginc.org/covid-19-guide/)
- [USDA COVID-19 Federal Rural Resource Guide:](https://www.rd.usda.gov/sites/default/files/USDA_COVID-19_Fed_Rural_Resource_Guide.pdf)
- [ATTRA Sustainable Agriculture Program COVID-19 Response:](https://attra.ncat.org/covid/)
- [Midwest Organic and Sustainable Education Service COVID-19 Farmer Resources:](https://mosesorganic.org/covid-farmer-resources/)

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## Urban Agroforestry Request for Proposals Open through June 1, 2020

The U.S. Forest Service requests proposals to substantially expand and accelerate the availability of evidence-based information to support community decisions on the adoption and design of urban agriculture that includes agroforestry practices. These projects will support the new USDA Office of Urban Agriculture and Innovative Production. Proposals awarded under this announcement will create educational and outreach materials that support agroforestry practices in urban agriculture systems.

Awards are anticipated to be up to \$50,000, with a minimum of \$25,000 for any one project. Detailed information and instructions for this RFP are available for download here: FY 2020 Urban Agroforestry Request for Proposals & Instructions <https://www.fs.usda.gov/nac/resources/grants/urban-request-for-proposals.shtml>.

# KUDOS

## Recent Publications

Conway, A.C., Z. Carlson, F. Hilscher, J.C. MacDonald, T.J. Klopfenstein, M.E. Drewnoski. Effect of ammoniation and harvest method on waste and consumption of corn residue bales fed to cows in a round bale feeder. *Translational Animal Science*, txaa047, <https://doi.org/10.1093/tas/txaa047>.

Lovell, S.T., Taylor, J.R., in press. Urban agroforestry as a strategy for aligning agroecology with resilience planning initiatives. Chapter 4 in “Resourcing an agroecological urbanism. Political, transformational and territorial dimensions”, Editors: Tornaghi, C. and Dehaene, M.

## Congratulations to recent graduates at the University of Missouri Center for Agroforestry:

- ❖ **Olga Romanova.** M.S. Thesis title: “Factors Influencing Practitioner Adoption of Agroforestry: A USDA SARE Case Study”. Major professor, Dr. Michael Gold; Committee: Dr. Damon Hall, Dr. Mary Hendrickson.
- ❖ **Sophia Mendelson.** M.S. Thesis title: “Educating For Adoption: Understanding Long-Term Outcomes of the Agroforestry Academy”. Major professor, Dr. Michael Gold; Committee: Dr. Sarah Lovell, Dr. Mary Hendrickson.
- ❖ **Lindsay Allen.** Online M.S. Final Project title: “Farmer Transitions: Moving Toward Climate Resilient, Agroforestry Based Farming”. Major professor, Dr. Michael Gold; Committee: Dr. Zhen Cai, Dr. Ranjith Udawatta.
- ❖ **Stephen Quinn.** Online M.S. Final Project title: “Market Trends to Empower Agroforestry Producers”. Major professor, Dr. Michael Gold; Committee: Dr. Sarah Lovell, Dr. Zhen Cai.
- ❖ **Gregory Ormsby Mori.** Online M.S. Final Project title: “Research and Development of Specialty Crops for Agroforestry Systems in the Midwest: The Long Haul for Small Farm Sustainability”. Major professor, Dr. Shibu Jose; Committee: Dr. Leszek Vincent, Dr. Michael Gold

**Congratulations** to the interdisciplinary grant project team including the Center for Agroforestry’s Chung-Ho Lin, with Erma Drobnis (PI), Susan Nagel, and Peter Sutovsky, who were recently awarded \$420,000 for their 2-year project “*Paternal Residential Exposure to Unconventional Oil and Gas Drilling (UOG)*” funded by the Department of Health and Human Services, National Institutes of Health. The study will dramatically increase understanding of UOG chemical exposure and male reproductive health; and will inform both healthcare providers and the UOG industry about residential exposure and toxicity.

**Salah Alagele, with co-authors Stephen Anderson and Ranjith Udawatta were recognized this month for their *Soil & Water Management & Conservation* paper** “Agroforestry, grass, biofuel crop, and row-crop management effects on soil water dynamics for claypan landscapes” <https://doi.org/10.1002/saj2.20026>, which was *among the top 10% most downloaded papers* in the journal between January 2018 and December 2019.

## UPCOMING EVENTS

### Biochar from the Forest to the Farm

May 21, 2020 | 12:00pm CST | USDA Forest Service | online webinar

This webinar is the third presentation in an 11-part monthly webinar series on biochar production. In this seminar, Jim Archuleta, USDA FS-R6 Regional Wood Innovations Coordinator will discuss agricultural uses for biochar, including animal bedding, irrigated lands, high value crops, and improving forest soil; and will describe a case study of biochar produced at a northern California biomass powerplant that serves as a valuable input for creating compost. More information and registration for this event can be found at

[http://www.forestrywebinars.net/webinars/biochar\\_forest\\_farm](http://www.forestrywebinars.net/webinars/biochar_forest_farm).

## **Chestnut Lunch Webinar Series:**

*May 27, 2020 | 11:00-12:00pm CST | Michigan State University Extension | Free online webinar*

This webinar series will assist chestnut growers with real-time updates in-season. Join MSU faculty and veteran chestnut growers on the last Wednesday of each month April-August to learn about best agronomic practices, pest management, fertility and more. The May webinar will feature Matthew Grieshop of Michigan State University Extension, on radial airblast sprayer optimization for chestnuts. This series is free, but registration is required: [Chestnut Lunch Webinar Series](#). Recorded webinars will be closed captioned and available within seven days of the live event. <https://www.canr.msu.edu/news/chestnut-lunchtime-webinar-series>

## **Returning Livestock to Pasture: Regenerative Agriculture “Lunch and Learn”**

*May 28, 2020 | 12:30-1:00pm CST | Iowa Farmers Union | online workshop*

Join Seth Watkins in this final webinar of the Regenerative Agriculture Lunch and Learn series. Seth will outline how to successfully integrate livestock into regenerative agriculture practices on your farm. Watkins is a row crop and cow-calf livestock farmer in Clarinda, Iowa. Register here:

<https://www.organicconsumers.org/news/join-regenerative-agriculture-lunch-and-learn-webinar-series>.

## **Managing Your Woodlands with Prescribed Fire**

*May 28, 2020 | 12:00pm CST | North Carolina State Extension Forestry | free online webinar*

Prescribed fire is a forest management tool for wildfire risk reduction, wildlife management, and many other purposes. The presenters in this Woodland Owner Lunch and Learn will address considerations related to prescribed burning such as benefits and uses, liability and risk, and technical and financial assistance. This information will be most useful for landowners who are considering or are currently using prescribed fire on their land. Training resources available to landowners will also be discussed. More information and registration at <http://www.forestrywebinars.net/webinars/managing-your-woodlands-with-prescribed-fire>.

## **Glades, Quail, and Prescribed Fire Workshop**

*June 2-3, 2020 | Oak Woodlands & Forest Fire Consortium | Ash Flat, Arkansas*

Co-hosted by the Oak Woodlands & Fire Consortium, Arkansas Game and Fish Commission, and The Nature Conservancy, this 1.5-day workshop in Northern Arkansas will focus on prescribed fire management of glades, with emphasis on quail habitat. A half day of presentations at Ozarka College will be followed by a full day field tour to see these practices at Harold E. Alexander Spring River Wildlife Management Area. Registration is required and limited to the first 50 registrants. For details, visit <https://oakfirescience.com/events/glades-quail-and-prescribed-fire-workshop-in-arkansas/> or contact Joe Marschall ([marschallj@missouri.edu](mailto:marschallj@missouri.edu)) with questions.



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