

2022 NCR-SARE GRADUATE STUDENT GRANT PROJECTS RECOMMENDED FOR FUNDING

Project #	Title	Graduate Student	Major Professor	Primary Grantee	State	\$\$ Amt	Cumulative	Brief Description
GNC22-340	Exploring the Effects of Prairie Restoration Management on Soil Microbial Carbon Storage	Ellen Badger Hanson	Kathryn Docherty	Western Michigan University	MI	\$ 14,997	\$ 14,997	This project aims to inform best practices for managing prairie restorations in agricultural landscapes (ex. CRP plantings) for maximum soil carbon storage by considering how prairie size and seed mix richness influence soil microbial carbon cycling and what this means for total soil carbon stores.
GNC22-341	Finding common ground: Identifying barriers to sustainable agriculture transitions among Upper Midwest row crop farmers	Ashley Becker	Randall Jackson	University of Wisconsin-Madison	WI	\$ 14,740	\$ 29,737	More perennial pastures are needed to create a resilient, profitable agricultural system. However, we need to identify barriers to this transition among row crop farmers. We will engage with and learn from farmers in Iowa and Wisconsin, so we can more effectively transform our agricultural system.
GNC22-342	Identifying Factors that Influence Farmer and Rancher Decisions to Adopt and Manage Agroforestry Systems	Maxwell Benning	Dean Current	University of Minnesota	MN	\$ 14,768	\$ 44,505	This project will identify the economic, environmental, social, and political factors that constrain and facilitate agroforestry adoption among Midwest farmers and ranchers. This project aims to increase agroforestry adoption through outreach with producers and natural resource professionals.
GNC22-343	SustainN: A Decision Support System for Sustainable Nitrogen Management in Corn and Sorghum using Satellite Remote Sensing	Sourav Bhadra	Vasit Sagan	Saint Louis University	MO	\$ 14,966	\$ 59,471	SustainN is an effort to enable efficient nitrogen (N) management in corn and sorghum. It helps farmers to know how much in-season N is required to maximize yield and minimize N loss. Such practice in a larger region will ensure sustainable crop production practices and improved farmer profitability.
GNC22-344	Mapping the current extent and suitability of agroforestry in the US Midwest	Sarah Castle	Richard Brazee	University of Illinois Urbana-Champaign	IL	\$ 14,938	\$ 74,409	This project will develop a map of the current extent of agroforestry in the Midwest using machine-learning to classify NAIP imagery as well as estimate the potential to expand agroforestry in the region using biophysical and social-economic datasets to generate suitability maps and inform policy.
GNC22-345	Supporting Climate Dialogue in Agricultural Communities: Artistic Strategies for Engagement	Vivian Cook	Monica Haddad	Iowa State University	IA	\$ 14,991	\$ 89,400	This project explores the use of artistic strategies to facilitate climate dialogue in North Central region farming communities. Project outputs include a podcast series featuring interviews with Iowa farmers and artists who have experience with arts-based climate communication methods.

GNC22-346	Integrating Fall- and Spring-Planted Cover Crops for Weed Suppression in semiarid Central Great Plains	Sachin Dhanda	Vipan Kumar Augustine Obour	Kansas State University	KS	\$ 14,996	\$ 104,396	This project will generate quantitative data regarding the viability of integrating cover crops for weed suppression in the semiarid Central Great Plains. Improved knowledge on the effectiveness of fall- and spring-planted cover crops will help in managing herbicide-resistant weeds in the region.
GNC22-347	Transition of Wooded Paddocks to Woodland Silvopasture for Integration into Rotational Grazing System	Kendra Esparza-Harris	Ashley Conway	University of Missouri-Columbia	MO	\$ 14,983	\$ 119,379	Through development of a woodland silvopasture, the intentional and integrated management of livestock in wooded areas, the project aims to maximize forage production and increase livestock performance compared to an open grazing system, with advisement from livestock producers and landowners.
GNC22-348	Does Community Well-Being Matter in Landscape Management of U.S. Farming Systems?	Jean Ribert Francois	Katherine Nelson	Kansas State University	KS	\$ 14,510	\$ 133,889	This project will use interview and survey data to produce a deeper understanding of the way farmers integrate community well-being into their decision-making process and how this integration is perceived to influence community and farmer well-being.
GNC22-349	Gender, Sexuality, and Social Sustainability: Exploring Queer Farmers' Relationships, Ethics, and Practices in the Midwest	Taylor Hartson	Elizabeth McClintock	University of Notre Dame	IN	\$ 14,972	\$ 148,861	This project aims to answer how gendered and sexualized experiences within sustainable agriculture affect queer farmers' relationships, ethics, and practices. This work will be a qualitative study based on interviews and ethnographic fieldwork with LGBTQ farmers.
GNC22-351	Biological Soil Health and Water Quality in Sustainable Agroecosystems	Christopher McNabb	Ryan Winston	The Ohio State University	OH	\$ 14,912	\$ 163,773	This project explores the co-benefits of long-term soil health practices (SHPs) and their potential impacts on soil biology and water quality.
GNC22-352	Characterization and Description of Alternative Pig Farms in Minnesota	Miranda Medrano	Cesar Corzo	University of Minnesota	MN	\$ 14,934	\$ 178,707	Characterization and description of alternative pig farms (e.g. niche, organic, pasture-raised, regenerative, humane-certified, heritage/heirloom, purebred) including production, management, marketing practices, and pig health outcomes in Minnesota.
GNC22-353	Expanding the Technical Food Safety Capacity of Small and Very Small Meat Processors in Kansas through Food Safety Program Development Workshops	Ellen Mendez	Jessie Vipham	Kansas State University	KS	\$ 14,594	\$ 193,301	This project aims to improve the food safety technical capacity of small and very small meat processors in Kansas through lectures and workshops that will enhance their understanding of food safety programs and regulatory requirements.
GNC22-354	Early Prediction of Heat Stress in Dairy Cattle Using Artificial Intelligence for Sustainable Livestock	Omkar Chandrakant Prabhune	Younghyun Kim	University of Wisconsin-Madison	WI	\$ 14,993	\$ 208,294	The project aims to use Artificial Intelligence for the early prediction of heat stress in dairy cattle. We propose to develop a computer vision system that monitors the behavior of individual cattle in real-time using video input from the barn to detect heat stress early for sustainable livestock.

GNC22-355	Field-Scale Evaluation of Corn Response to Nitrogen Fertilizer Application Timing following a Rye Cover Crop	Riley Seavers	Daniel Quinn	Purdue University	IN	\$ 14,740	\$ 223,034	Large-scale field research trial evaluating corn growth, yield, nutrient uptake, and physiological responses to various in-season nitrogen fertilizer application strategies following a rye cover crop.
GNC22-356	Maintaining Kernza intermediate wheatgrass grain yields overtime in organic and conventional systems in WI	Erica Shoenberger	Valentin Picasso	University of Wisconsin-Madison	WI	\$ 15,000	\$ 238,034	This project seeks to address a major farmer concern, Kernza IWG grain yield decline overtime. To address this concern, established Kernza IWG stands on two farms in Wisconsin will be thinned using organic and conventional practices to reduce intraspecific competition to maintain grain yield.
GNC22-357	Cover Crop Biomass Removal Rates to Optimize Livestock Production and Soil Health in No-Tillage Dryland Cropping Systems	Logan Simon	Augustine Obour	Kansas State University	KS	\$ 14,845	\$ 252,879	This study will determine optimum rates of cover crop biomass removal with grazing to optimize farm profits and enhanced soil health in no-tillage dryland cropping systems by quantifying soil properties under a range of cover crop biomass removal rates (0 to 90% biomass removal) with grazing cattle.
GNC22-358	The Impact of Buckwheat Plantings on Releases of Parasitoid Wasps on a Dairy Farm	Elizabeth Taylor	Bethia King	Northern Illinois University	IL	\$ 14,229	\$ 267,108	This project aims to determine the impact of buckwheat plantings on rates of parasitism of house flies on a dairy facility in Northern Illinois and engage a local agriculture class in learning about integrated pest management strategies and in creating outreach materials.
GNC22-359	Investigating the Biology of False Blossom Phytoplasma and its Leafhopper Vector to Inform Integrated Pest Management Approaches for Cranberry Growers	Casey Trickle	Christelle Guédot	University of Wisconsin-Madison	WI	\$ 14,658	\$ 281,766	We will assess the spatiotemporal patterns of the CFBD phytoplasma, as well as the seasonal phenology of its insect vector, Limotettix vaccinii. Additionally, we will quantify the amount of feeding injury noted on cranberry plants by BNLH during different life stages and at abundances.
GNC22-360	Testing the potential of distilling as an alternative use for DON-contaminated wheat	Jiaying Wu	Matthew Stasiewicz	University of Illinois Urbana-Champaign	IL	\$ 14,764	\$ 296,530	The project aims to help farmers in North Central Region find a high-value use for deoxynivalenol-contaminated wheat, as input for distilling.
GNC22-361	Recovering the lost nutrients from subsurface drainage systems towards agricultural sustainability	Hongxu Zhou	Rabin Bhattarai	University of Illinois Urbana-Champaign	IL	\$ 14,844	\$ 311,374	This project is proposed to reduce nutrients loss from agricultural subsurface drainage systems in Illinois and recover the lost nutrients as slow-releasing fertilizers for crop growth. Novel end-of-tile nutrients removal-to-recovery (R2) systems will be applied to farms with tile drainage.