

Request for Applications

Sun Grant Program Northeast Region

2023

Competitive Grants Program U.S. Department of Agriculture

Deadlines:

Letter of Intent (required):

Friday November 17, 2023, 5 pm Eastern

Full Application:

Wednesday, December 6, 2023, 5 pm Eastern

Sun Grant Program – Northeast Region
2023 Request for Applications - - Executive Summary
U.S. Department of Agriculture (USDA NIFA funds)

The Sun Grant Program – Northeast Regional Center (NE Sun Grant Center) announces the availability of competitive funds and seeks proposals from qualified institutions and investigators that address the following regional strategic research areas:

- A. Net-zero or carbon negative biomass feedstock, bioenergy, and bioproduct systems and technologies. Climate benefits, including carbon sequestration and greenhouse gas emission reductions, should be estimated in the proposal. Climate impacts and other sustainability criteria should be further documented during the research project using quantitative tools such as technoeconomic analysis and life-cycle assessment.
- B. Regionally relevant biomass feedstocks for bioenergy, bioproducts, and biofuels including perennial crops, winter crops, and agricultural, forestry, industrial and urban residues. Strategies that allow distributed and decentralized production or aggregate multiple feedstocks to achieve economies of scale are particularly encouraged.
- C. Research to support development and deployment of regional carbon negative bioenergy and/or bioproduct manufacturing enterprises, including technology advances, resource assessments, social, economic, marketing, and/or policy research. Specific barriers to commercialization should be identified and the proposal should indicate how these will be addressed. Collaborations with commercial businesses, state agencies, and/or economic development organizations are strongly encouraged.

The NE Sun Grant Center has identified the above-named regional priorities from within USDA strategic areas, based upon prior regional priority setting workshops and consultation with regional experts. **All proposals should address at least 2 of these 3 strategic program areas.**

In addition to requesting Sun Grant funds, all proposals must meet the USDA AFRI criteria for a research project, and proposals that are not classified as fundamental research must include an additional auditable 25% of Total Federal Funds in project cost-share (20% of total project costs) (definitions are at <https://www.nifa.usda.gov/sites/default/files/resource/AFRI-Project-Types.pdf>). Given the NE Sun Grant priorities, most successful proposals can be expected to be classified as applied research and thus match will be required. Indirect costs are limited by USDA to 30% of Total Federal Funds (equivalent to 42.857% of total direct costs). Integration of education, extension and outreach, or a combination of these overarching activities may be incorporated in any proposal. Two types of applications are being sought:

Collaborative Proposals: Multi-institutional research proposals are sought that address Sun Grant goals and regional priorities. Collaborative proposals may request up to \$375,000 in federal funds. Separate budgets must be submitted for each institution.

Single Institution Proposals: Individual investigators, or small teams from a single institution, that address the Sun Grant mission and regional priorities may submit proposals requesting up to \$125,000.

All awards will be subject to appropriation of funds and USDA funding timelines. Each proposal must submit two budgets for each institution, with overlapping time periods. The first budget time period totaling 20% of the requested funds must be expended during the period January 1, 2024 to June 30, 2024, and the second budget with 80% of requested funds must be expended during the time period from February 1, 2024 to June 30, 2025. Required cost-share funding must also be allocated proportionately across the two budgets. All federal funds and cost-share on each budget must be expended by the stated end dates, with no extensions.

The mission of the Sun Grant Program is to focus the abilities of the nation's colleges and universities in partnership with the private sector and government agencies to enhance national energy security and independence through the development, distribution, and implementation of bio-based energy and product technologies, to promote bio-based diversification and environmental sustainability of the region's agriculture, and to promote opportunities for bio-based economic diversification in rural communities. The Sun Grant Program is led by five land grant universities in designated multi-state regions across the United States.

A letter of intent is required for this funding opportunity, and must be submitted by email to NE Sun Grant director Tom Richard at trichard@psu.edu by 5 pm ET on November 17, 2023. Full applications are due by 5 pm ET on December 6, 2023 and must be submitted through the InfoReady online proposal system, which can be found at the link below:
<https://psu.infoready4.com/CompetitionSpace/#applicationGrid/1891337>

The remainder of this document contains details on submission guidelines, timetables, and other application information.

For more information about the Northeast Regional Sun Grant Center please go to:
<http://agsci.psu.edu/research/sungrant>.

TABLE OF CONTENTS

2023 Request For Applications - Executive Summary	i
Table of Contents.....	iii
1. FUNDING OPPORTUNITY DESCRIPTION	1
The Sun Grant Program	
Sun Grant Program – Northeast Region	
Scope of the Solicitation	
Indirect Cost Limitation	
Required Cost Share	
Budgets, Awards, and Time Periods	
Program Preferences	
Program Priorities	
2. ELIGIBILITY INFORMATION	10
Eligible Applicants	
Eligible Institutions	
Cost-Share Requirements	
Reporting Requirements	
Travel Requirements	
Application of Prime Award Terms and Conditions	
3. PROPOSAL SUBMISSION INFORMATION	12
Submission Dates and Times	
Content and Format of Letter of Intent and Full Application	
o Mandatory Letter of Intent	
o Full Application Sections	
Method for Submitting Full Application	
4. PROPOSAL REVIEW INFORMATION	19
Review Process and Criteria	
Programmatic Review	
5. AWARD ADMINISTRATION	20
Program Management	
Award Notification	
Confidentiality/Proprietary Information	
Reporting Requirements	
Continuation of Funding	
6. FREQUENTLY ASKED QUESTIONS	21
CONTACT INFORMATION	22

1. FUNDING OPPORTUNITY DESCRIPTION

THE SUN GRANT PROGRAM

Originally authorized by Congress in 2004, the Sun Grant Program is a national network of land-grant universities partnering to build a biobased economy. Sun Grant institutions are charged with making significant advances in biobased industries for the benefit of America's independent farmers, rural communities, and the public at large.

The Sun Grant Program was initially conceived to leverage the national network of land-grant universities and federal laboratories to aid in building a biobased economy that would reduce reliance on fossil fuels and enhance economic diversification in rural areas of the United States. The Program has now been expanded to other colleges, universities, and research organizations to more broadly tap regional expertise on biomass production and biobased energy and materials industries. Potential biobased products include biofuels such as ethanol, biodiesel, and renewable natural gas; electrical power; and biochemicals and biomaterials including lubricants, plastics, solvents, adhesives, specialty chemicals, and building materials. Developing biobased businesses based on locally available feedstocks can enhance development of rural communities. And when biomass production and processing results in long-term sequestration of photosynthetically captured carbon in soil, geologic formation, or long-lived products, a biobased economy can also be a carbon negative economy, leveraging market forces to reverse climate change.

The mission of the Sun Grant Program is to (1) enhance national energy and climate security through development, distribution, and implementation of biobased technologies, (2) promote diversification in, and the environmental sustainability of, agricultural production in the United States by developing new markets for biomass feedstocks; (3) promote economic diversification in rural areas of the United States through biobased manufacturing; and (4) enhance the efficiency of biomass, bioenergy and bioproduct research and development programs through improved coordination and collaboration between the U.S. Department of Agriculture, other federal and state departments and agencies, colleges, universities, and other research organizations including the private sector.

The Sun Grant Program is organized as a network of five land-grant universities serving as regional Sun Grant Centers: South Dakota State University (North-Central), Oregon State University (Western), Oklahoma State University (South-Central), the University of Tennessee – Knoxville (Southeastern), and The Pennsylvania State University (Northeastern). Additional information about the Northeast Regional Sun Grant Center is at <https://agsci.psu.edu/research/sungrant>.

These centers each facilitate federally funded research, extension, and education programs in their respective regions. These programs embrace the multi-institution, multi-state, multi-disciplinary integrated approach that is at the heart of the land-grant method of addressing problems.

SUN GRANT PROGRAM - NORTHEAST REGION

The Northeast Regional Sun Grant Center (NE Sun Grant Center), located at the The Pennsylvania State University (also referenced as Penn State University or PSU), carries out administrative functions for the northeastern region of the United States, composed of Connecticut, Delaware, Maine, Maryland, Massachusetts, Michigan, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, Vermont, and West Virginia, as well as the District of Columbia.

SCOPE OF THE SOLICITATION

The NE Sun Grant Center has received funding from the U.S. Department of Agriculture (USDA), National Institute of Food and Agriculture for competitively selected projects that will further the Sun Grant and USDA missions. Projects will be expected to develop viable, alternative, biobased fuel and energy sources, biochemicals, and bioproducts, while enhancing economic opportunities in rural areas. Projects should be research focused but are encouraged to support education, extension, and engagement as appropriate. Northeast regional research priorities for the 2023 grant cycle address priority program areas identified by USDA and Northeast regional priorities (see <https://agsci.psu.edu/research/sungrant>), including regionally appropriate biomass feedstocks, bioenergy and bioproduct manufacturing technologies, and sustainability research.

To make biobased economic diversification a reality, the region also needs research, education and outreach about the benefits and impacts of biobased industries, identification of specific barriers and constraints to implementation, as well as regional socioeconomic and policy analysis and stakeholder engagement. The NE Sun Grant Center thus encourages proposals that include social, economic, marketing, and/or policy research; that provide support education and outreach activities; and/or that effectively engage with commercial ventures, economic development organizations and other stakeholders. Integration of a combination of these overarching activities are encouraged in all proposals.

Competitive funds will be released through an application process (described below). Funding of proposals is subject to availability/receipt of federal funds. Additionally, continuation of funding beyond August 15, 2024 (i.e., from August 16 2024 through June 30, 2025) depends upon receipt of funds by NE Sun Grant Center from the funding agency and any associated deadlines.

Two types of applications are being sought:

Collaborative Proposals: Multi-institutional and multi-functional (research, education, and outreach) proposals are sought that address Sun Grant goals and regional priorities. Collaborative proposals may request up to \$375,000 in federal funds for the 18-month period from January 1, 2024 to June 30, 2025. All awards will be subject to

appropriation of funds, and at least 20% of awarded funds must be expended by June 30, 2024. All funds must be expended by June 30, 2025.

Single Institution Proposals: Individual investigators, or small teams from a single institution, that address the Sun Grant mission and regional priorities may submit proposals requesting up to \$125,000 in federal funds for the 18-month period from January 1, 2023 to June 30, 2025. All awards will be subject to appropriation of funds, and at least 20% of awarded funds must be expended by June 30, 2024. All funds must be expended by June 30, 2025.

INDIRECT COST LIMITATION

Indirect costs are limited by USDA to the lesser of the applicant's official negotiated indirect cost rate or 30% of Total Federal Funds provided (TFF). 30% of TFF is equivalent to 42.857% of Total Direct Costs (TDC). Thus, if the project is requesting \$125,000 TFF, the indirect request is limited to \$37,500 and total direct costs would be \$87,500. The NE Sun Grant Center asks that the calculation using 30% TFF be used for consistency among proposals.

REQUIRED COST SHARE

USDA requires successful applicants to provide a minimum of 25% cost share on a TFF basis. 25% of TFF is equivalent to 20% of the total project cost. For example, if the NE Sun Grant Center awards \$125,000 as TFF then \$31,250 must be provided as cost share and the total project cost will be \$156,250. Grantees may provide auditable cost-share funds through in-kind contributions including salaries, facilities, and waived indirect, or from state, local, non-profit or private funds. No federal funds may be used as cost share.

The matching requirement does not apply to *fundamental research*. Fundamental research refers to systematic research that increases knowledge or understanding of the fundamental aspects of phenomena and of observable facts without specific applications towards processes or products in mind. Given the stated NE Sun Grant priorities, most successful proposals can be expected to be classified as applied research and thus match will be required. Any proposal that wishes to be exempted from this match requirement will have its request for classification as fundamental research reviewed by USDA prior to any award.

Up to 100% match is strongly recommended for demonstration or pilot projects. The amount of non-federal funding will be considered in the review process.

BUDGETS, AWARDS, AND TIME PERIODS

All awards will be subject to appropriation of funds and USDA funding timelines. Each proposal must submit two budgets with overlapping time periods, the first with 20% of requested funds to be expended during the period January 1, 2024 to June 30, 2024, and the second budget with 80% of requested funds for the period February 1, 2024 to June 30, 2025. Successful proposals will receive two awards, one for each of these two overlapping time periods, with

separate accounting required for award. Required cost-share funding must also be allocated proportionately across the two budgets, although additional voluntary match beyond the 25% of TFF requirement can be included in either budget. All federal funds and cost-share on each budget must be expended by the stated end dates, with no extensions.

PROGRAM PREFERENCES

Applications must meet the minimum requirements of eligibility and must either provide 25% of total federal funds (TFF) in non-federal cost-share or request classification as fundamental research to be considered for this solicitation. Applications with multi-state partnerships and a cost-share commitment greater than the required 25% of TFF are highly encouraged. The application ranking process will allocate points based on these factors. Scientific merit and regional relevance, however, will have a greater influence on ranking.

Full Proposals are required to include a Project Logic Model (a description of the logic model planning process and an example of a generic logic model are available here: <https://www.nifa.usda.gov/logic-model-planning-process>). This description of the project illustrates the sequence of actions that describe what the project is and will do – how investments link to results. There are 7 core components in this depiction of the project:

1. **SITUATION:** a description of the challenge or opportunity
2. **INPUTS:** resources, contributions, investments that go into the program
3. **ACTIVITIES:** things that are done
4. **OUTPUTS:** activities, services, events, and products that reach people who participate or who are targeted
5. **OUTCOMES:** results or changes (in knowledge, application, behavior) for individuals, groups, communities, organizations, communities, or systems
6. **Assumptions:** the beliefs we have about the program, the people involved, and the context and the way we think the program will work
7. **External Factors:** the environment in which the program exists includes a variety of external factors that interact with and influence the program action.

PROGRAM PRIORITIES

The Sun Grant Program is a regional multi-institutional research, extension, and education program to support the development of bioenergy, biomass, and bioproduct technologies across the United States. The program targets market-driven biomass production, products and processes that provide economic development in rural areas while also sequestering carbon in the soil, in ecosystems, in products, and through geologic sequestration. The potential for carbon negative bioeconomies puts this approach at the forefront of climate mitigation, developing scalable and cost-effective climate solutions for the decades to come. Every year plants take up ten times more carbon from the atmosphere than all fossil fuel emissions combined, and humans already manage roughly half of all that photosynthetic carbon capture. Currently almost all that photosynthetic carbon returns to the atmosphere through decomposition of crop and forest

residues, and as municipal and industrial organic wastes. Carbon negative bioeconomies create new markets to capture and sequester carbon while supporting robust economic growth.

Proposals should clearly state how the project objectives address the following priority program areas:

- A. Net-zero or carbon negative biomass feedstock, bioenergy, and bioproduct systems and technologies. Climate benefits, including carbon sequestration and greenhouse gas emission reductions, should be estimated in the proposal. Climate impacts and other sustainability criteria should be further documented during the research project using quantitative tools such as technoeconomic and life-cycle analysis.
- B. Regionally relevant biomass feedstocks for bioenergy, bioproducts, and biofuels including perennial crops, winter crops, and agricultural, forestry, industrial and urban residues. Strategies that allow distributed and decentralized production or aggregate multiple feedstocks to achieve economies of scale are particularly encouraged.
- C. Research to support development and deployment of regional carbon negative bioenergy and/or bioproduct manufacturing enterprises, including technology advances, resource assessments, social, economic, marketing, and/or policy research. Specific barriers to commercialization should be identified and the proposal should indicate how these will be addressed. Collaborations with commercial businesses, state agencies, and/or economic development organizations are strongly encouraged.

The NE Sun Grant Center has identified the above-named regional priorities from within USDA strategic areas, based upon prior regional priority setting workshops, and in consultation with regional experts. All proposals should address at least 2 of these 3 strategic program areas. In addition to the stated programmatic priorities, greater weight will be given to projects which also demonstrate effort to:

- a. enhance national energy, economic, and/or climate security through the development, distribution, and implementation of biobased technologies;
- b. promote diversification in, and the environmental sustainability of, agricultural production in the United States through biobased energy and product technologies;
- c. promote economic diversification in rural areas of the United States through developing new markets for biobased technologies; and enhance the efficiency of bioenergy and biomass research and development programs through improved coordination and collaboration among:
 - i. federal and state agencies and laboratories
 - ii. colleges, universities, and other research organizations, and
 - iii. the private sector

Please note that proposals need not meet all the objectives for any given program area to be considered for funding. If you have questions regarding acceptability of a project topic, contact

the NE Sun Grant Center Director or Associate Director to discuss prior to submitting the Preproposal.

Additional details on these program priorities including objectives, desired outcomes and metrics are provided below.

- 1. Net-zero or carbon negative biomass feedstock, bioenergy, and bioproduct systems and technologies.** Climate benefits, including carbon sequestration and greenhouse gas emission reductions, should be estimated in the proposal. Climate impacts and other sustainability criteria should be further documented during the research project using quantitative tools such as technoeconomic and life-cycle analysis.

An important priority of the NE Sun Grant research program is to develop and assess sustainable net-zero or carbon negative approaches to growing the bioeconomy. The public, ranging from local citizens to the international community, has expressed concern about the sustainability of several bioenergy and biomaterial systems. Climate impacts are of particular importance, but there are also concerns that production of biomass feedstocks will displace commodities that would otherwise be dedicated to food, induce land use change, or degrade important ecosystems. Farming systems that will preserve food production needs, enhance stewardship of natural resources, and improve local social and economic indicators are highly desirable, and need to be supported by field research that provides standardized measurements of feedstock production impacts on soil carbon, agricultural greenhouse gas emissions, water quality, and other environmental impacts. Expert and multidisciplinary teams are needed to develop and improve models based on such measurements, that will in turn benefit other teams involved in agroecosystem and technoeconomic modeling, life-cycle analysis, and related sustainability studies.

Goal

To develop and apply technoeconomic models, life cycle analysis, and other sustainability assessment and information systems to address carbon mitigation and sequestration, air, water, social, economic, and other sustainability indicators. These include measurement, modeling and analysis of carbon, climate, and other ecosystem service impacts and benefits that can be used to improve economics and feasibility of biomass, bioenergy, and biomaterial production systems.

Objectives

1. To improve standardized measurements, systems modeling frameworks, and other tools from the fields of forest ecology, agroecology, and industrial ecology.
2. To analyze systems such as biomass production, harvest, transport and delivery, biofuel and bioproduct manufacturing, and distribution infrastructure to improve their economics and feasibility, and to evaluate or manage the environmental footprint of such systems.
3. To assess and mitigate health and safety concerns in such systems throughout the value chain.

4. To devise strategies to mitigate negative environmental impacts and enhance positive benefits associated with production of biomass, bioenergy and bioproducts, such as soil and ecosystem carbon storage, greenhouse gas emissions, carbon storage and carbon offsets associated with bioenergy and bioproducts, water quality, air particulate and NOx emissions, among others.
5. To mitigate environmental and social impacts associated with decentralized or distributed biofuel production using sustainable practices.
6. To enhance existing agroecosystem, supply chain, techno-economic, and life-cycle assessment models.

Benchmarks/Desired Outcomes

Short-term

1. Resources and input characterization
2. Database and model improvements
3. Increased engagement of public and private stakeholders
4. Intellectual products and technology transfer

Long-term

1. Policies and practices that value and monetize ecosystem services
2. Enhanced positive impacts of bioeconomy systems on climate and other sustainability indicators of air, land, water, and ecosystem health

Evaluation/Metrics

- Strong scientific and technical merit
- Demonstrated expertise and facilities
- Strong project management and appropriate budget
- Potential for rural and/or economic development
- Enhances social and environmental benefits
- Integration of research, extension and education efforts
- Transferability of results

2. Regionally relevant feedstocks for bioenergy, bioproducts, and biofuels including perennial crops, winter crops, and agricultural, forestry, industrial and urban residues.

Strategies that allow distributed and decentralized production or aggregate multiple feedstocks to achieve economies of scale are particularly encouraged.

Biomass feedstock research is needed to provide reliable and affordable biomass from organic wastes, marginal lands, and agricultural and forest landscapes across the Northeast United States. Included in these feedstocks are new crops and new approaches to utilizing residues from existing agricultural and forestry practices, industrial and urban residues. Approaches are encouraged that can increase the availability of sustainable biomass feedstocks and create new opportunities for economic diversification for producers, enhance ecosystem services, and increase commercial opportunities for producers of bioenergy and bioproducts.

Goal:

To develop biomass feedstocks that can be produced under existing land use, cropping systems, or natural resource production, harvesting, processing and consumption systems without displacing existing food, fiber, and forage resources.

Objectives:

1. Develop and evaluate feedstocks that can serve as economically efficient and sustainable biomass sources under existing cropping and rotation systems or evaluate crops that can be produced on marginal lands with reduced inputs of nutrients and water.
2. Evaluate existing waste streams from agriculture, forestry, industry, and urban systems that can provide a sustainable and economically efficient source of biomass for bioproduct production. These proposals should include an evaluation of manufacturing or conversion processes that can utilize these feedstocks.
3. Restoration and improvement of marginal and degraded agricultural and forest lands may involve the removal of unwanted or invasive species, the establishment of perennial crops, and increased biodiversity in space and/or time. Develop processes and economic models for incorporating these biomass sources into an integrated process for producing revenue streams from restoration efforts by converting the biomass into bioenergy or bioproducts.

Benchmarks/Desired Outcomes:

Short-term

1. Assess and improve biomass feedstock production systems to complement existing land use and resource opportunities
2. Characterize biomass resources, management options, yield impacts, and costs
3. Create economic incentives for landscape improvement and restoration

Long-term

1. Widen the portfolio of potential biomass feedstocks for the region
2. Develop new opportunities for biomass production within the region that are economically and environmentally compatible
3. Enhance the sustainability of biomass feedstock production systems

Evaluation/Metrics

- Strong scientific and technical merit
- Demonstrated expertise and facilities
- Strong project management and appropriate budget
- Potential for rural and/or economic development
- Enhances social and environmental benefits
- Integration of research, extension, and education efforts
- Transferability of results

- 3. Research to support development and deployment of regional carbon negative bioenergy and/or bioproduct manufacturing enterprises, including technology barriers, resource assessments, social, economic, marketing, and/or policy research. Specific**

barriers to commercialization should be identified and the proposal should indicate how these will be addressed. Collaborations with commercial businesses, state agencies, and/or economic development organizations are strongly encouraged.

The potential for carbon negative economic development is a key factor differentiating biobased products and processes from non-biobased energy, chemicals, and materials. Biomanufacturing offers opportunities for sequestering carbon at many points along the value chain, including in soils and ecosystems, through improved management of carbon-rich gas, liquid, and solid byproducts and residuals, and in bioproducts. Examples include long lived wood products and other biomaterials, bioprocess waste streams such as carbon dioxide that can be sequestered in products or geologic reservoirs, as well as fermentation residues, biochar and other byproducts that can be converted into products or returned to soils. These innovative new products and processes take the concept of a circular economy as a starting point, but go far beyond circularity to create climate positive solutions. Carbon negative bioeconomies are not only environmental solutions: they also jobs solutions, offering rural economic development in concert with sustainable agricultural and forest management. Such regional enterprises need to be technically feasible, socially acceptable, and have access to profitable markets and incentives.

Goal:

To develop, adapt or improve carbon negative biomass feedstock production, supply chain, conversion or processing technologies, processes, markets and policies to grow a carbon negative bioeconomy for the Northeast Sun Grant region.

Objectives

1. To develop efficient, economical and environmentally sound value chains that produce carbon negative bioenergy and bioproducts for the Northeast region.
2. To identify and address barriers to innovation and commercialization.
3. To strengthen partnerships between universities, companies, government agencies and non-profit agencies to address bioeconomy technical, workforce, and commercialization challenges.
4. To mitigate environmental and social impacts associated with carbon negative bioeconomy value chains.

Benchmarks/Desired Outcomes:

Short term

1. Transdisciplinary engagement among public and private stakeholders to identify constraints and drive use-inspired research
2. Innovative technologies, policies, and market structures that advance carbon negative value chains
3. Intellectual products and technology transfer

Long Term

1. Make carbon-negative bioenergy and bioproduct production technically and economically feasible
2. Increase number of businesses established and workers employed in the bioeconomy

3. Expand markets for regional carbon negative bioenergy and bioproducts

Evaluation/Metrics

- Strong scientific and technical merit
- Demonstrated expertise and facilities
- Strong project management and appropriate budget
- Potential for rural and/or economic development
- Enhances social and environmental benefits
- Integration of research, extension, and education efforts
- Transferability of results

2. ELIGIBILITY INFORMATION

ELIGIBLE APPLICANTS

Principal investigators and key personnel must demonstrate competency to implement and complete a project, provide fiscal accountability, prepare project reports, and demonstrate a willingness to share information with researchers and other interested parties. Principal investigators may be employed by a variety of institutions and organizations (see below).

ELIGIBLE INSTITUTIONS

The lead institution may be state agricultural experiment stations; colleges and universities; university research foundations; other research institutions and organizations; Federal agencies; national laboratories; private organizations or corporations; individuals; or group consisting of 2 or more of the entities described in this paragraph from within the Northeast region. The Northeast region is composed of Connecticut, Delaware, Maine, Maryland, Massachusetts, Michigan, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, Vermont and West Virginia, as well as the District of Columbia. It is not required that all members of the project team be affiliated be located within the Northeast region, only the lead principal investigator and their organization. While a lead principal investigator and any eligible institution can submit multiple proposals, there may be a limit on the number of awards for any one lead organization in order to encourage broader participation across the region.

Partnerships among Northeast Region land grant institutions, public and private colleges and universities, small businesses, not-for-profit organizations, or other regional stakeholders are encouraged.

COST-SHARE REQUIREMENTS

USDA requires successful applicants to demonstrate 25% auditable cost-share based on Total Federal Funds requested (i.e., a minimum of 20% cost share of the total project cost) unless the proposal is classified as fundamental research (see definition below). For example, if the total project cost is \$156,250, then \$125,000 may be requested from federal funds and \$31,250 must be provided as non-federal cost share. Grantees may provide cost-share through in-kind contributions, including salaries, facilities or from state, local, non-profit or private matching funds. No federal funds may be used as cost-share or matching funds.

Unrecovered indirect charges: Unrecovered indirect charges (i.e., the difference between an organization’s negotiated federal indirect rate and the 30% Total Federal Funding rate) may be used as part of the cost-share.

The matching requirement does not apply to *fundamental research*. Fundamental research refers to systematic research that increases knowledge or understanding of the fundamental aspects of phenomena and of observable facts without specific applications towards processes or products in mind. Any proposal that requests a fundamental research exemption from the match requirement will have this classification determined by USDA prior to any award.

Up to 100% match is strongly recommended for demonstration or pilot projects. The amount of non-federal funding will be considered in the review process.

REPORTING REQUIREMENTS

Quarterly reports (~2-pages), a six-month interim report (2-5 pages), and a final report (5-10 pages) are required from all successful applicants and must be submitted in writing to the NE Sun Grant Center one month after each reporting period ends. All reports should include a summary of activities during the reporting period, progress on expenditures including cost-share for the two overlapping budgets, and any challenges or planned adjustments to the original proposed statement of work including timelines. Multi-institutional projects shall submit a single report with separate sections on each institution’s progress on its objectives and deliverables as well as budget expenditures. The following table indicates the reporting periods and report due dates.

Report	Reporting Period	Report Due Date
1 st Quarter	Jan. 1, 2024 – Mar. 31, 2024	April 30, 2024
Six Month	Jan. 1, 2024 – June 30, 2024	July 30, 2024
3 rd Quarter	July 1, 2024 – Sept. 31, 2024	October 31, 2024
4 th Quarter	Oct. 1, 2024 – Dec. 31, 2024	January 31, 2025
5 th Quarter	Jan. 1, 2025 – Mar. 31, 2025	April 30, 2025
Final Report	Jan. 1, 2024 – June 30, 2025	July 31, 2025

Timely submission of all reports is required for continuation of funds.

It is important to disseminate information from NE Sun Grant Center funded projects. At least one product of significance, for example a scientific journal article, patent, Experiment Station report, Extension bulletin or public white paper is required for all funded projects. Ideally, at least one peer-reviewed journal article would result for each \$125,000 of NE Sun Grant Center funded research. Investigators must acknowledge USDA NIFA and the NE Sun Grant Center in all publications and presentations.

TRAVEL REQUIREMENTS

Each proposal must include a budget item for PI travel to at least one regional or national bioeconomy-related conference for presentation of results. The participation of at least one PI in such an event is required and must be reported. We recommend budgeting between \$1,000 and \$3,000 per person attending.

APPLICATION OF PRIME AWARD TERMS AND CONDITIONS

The USDA-NIFA terms and conditions of PSU's prime agreement will be provided to applicants selected for funding.

3. PROPOSAL SUBMISSION INFORMATION

SUBMISSION DATES AND TIMES

A letter of intent is required for this funding opportunity, and must be submitted as a pdf file by email to the NE Sun Grant director Tom Richard at trichard@psu.edu by Friday November 17, 2023 at 5 pm Eastern. Full applications are due by Wednesday December 6, 2023 at 5 pm Eastern. All full application materials must be submitted as a single consolidated pdf document through the InfoReady online proposal system, which can be found at <https://psu.infoready4.com/CompetitionSpace/#applicationGrid/1891337>

CONTENT AND FORMAT OF LETTER OF INTENT AND FULL APPLICATION

It is recommended that PIs review the application elements and create a Submission Checklist to avoid delays in completion or submission of the application. The person submitting the application should register with InfoReady to create a login account and familiarize themselves with the InfoReady system well in advance of the submission deadline.

MANDATORY LETTER OF INTENT

Applicants must submit a mandatory Letter of Intent by the deadline at 5 pm EST Friday, November 17, 2023. The Letter of Intent narrative is limited to 2000 characters (approximately one page, double-spaced) and should provide adequate information to allow the NE Sun Grant Center to evaluate eligibility and alignment, and select reviewers to expedite the 2023 peer review and selection process.

The Letter of Intent information must be submitted as a pdf document by email to NE Sun Grant director Tom Richard at trichard@psu.edu .

The narrative of the Letter of Intent (no more than 2000 characters of at least 12 point font) must address the following questions:

- a. Descriptive Title for the proposed project
- b. Names and contact information of Principal Investigator and Co-Investigators
- c. What problem or opportunity is to be addressed?
- d. Why is this project important?
- e. List the proposed project objectives.
- f. Provide a brief and general description of the project approach.
- g. Identify potential collaborators and beneficiaries.
- h. List up to 3 suggested reviewers/affiliations with no potential conflict of interest.
- i. Please indicate which priority program areas are emphasized in your project.

FULL APPLICATION SECTIONS

The full proposal application is to be entered into InfoReady and submitted by 5 pm Eastern on Wednesday December 6. It is recommended to prepare your proposal sections using word processing software, assemble the individual components to create a single consolidated pdf file, and then follow the online directions to submit the proposal.

Upon entering InfoReady, click on the title of your proposal.

Full proposals need to include the following sections:

1. Title Page and Summary
2. Full Proposal Narrative
3. PI and any Co-PI Biosketches (2 pages each plus publications)
4. Proposal Sign-Off Sheet(s)
5. Budget Forms
6. Budget Justification(s)
7. Proposal Appendices (Logic Model, Current and Pending Research, Conflicts of Interest forms, etc.)

Full proposal applications should include the elements listed below. Submissions omitting any of these items will be considered non-responsive. The components are to be entered into the online

proposal system as directed. The proposal narrative should be completed in a word processing software and then uploaded into the system as a single pdf file.

1. TITLE PAGE AND SUMMARY

- a. List the title of the project, the names of all institutions requesting funding and their requested budgets, and the lead Principal Investigator (PI) at each institution. List other co-PIs and senior personnel for each institution, as well as collaborators. Senior personnel and collaborators are key individuals who will contribute to the research. If collaborators are at institutions contributing match but not requesting USDA funds for this proposal, please include a letter of commitment in Section 8 (application appendices) specifying their role and commitment.
- b. Also include a project summary of no more than 200 words. The proposal summary should be broken down into key words, objectives, methodology, rationale, and expected outcomes..

2. FULL PROPOSAL NARRATIVE

- a. The page limit is 15 pages, double spaced, including graphics and tables, but excluding references, using a 12-point font, with at least 1-inch margins.
- b. The narrative must include the following:
 - a) Statement of project goals and objectives
 - b) Statement of project's relevance to the Sun Grant mission
 - c) Significance of the work in its specific field and in the broader context of achieving the goals of the NE Sun Grant Center regional priorities and USDA. Please include descriptions of how the proposed work relates to other ongoing or completed work by the principal or other investigators and the implications of the work for technology development, deployment and implementation as well as related public policy issues.
 - d) Description of the project approach and activity (research, education, or extension). Describe the techniques and approaches to be taken to achieve the goals outlined above, including methods for analyzing and interpreting data.
 - e) List of specific tasks to be performed, as an itemized list, and a timetable for completing those tasks and producing deliverables and other outputs.
 - f) Describe the role of each member of the project team, including collaborators.
 - g) For multi-institutional proposals specify distinct objectives, tasks, and deliverables for each institution requesting funding.
- c. References should follow the proposal narrative but these pages are not included in the page limitation.

3. PI and Co-PI BIOSKETCHS

- a. The biosketch is essentially a short resume or curriculum vitae. The Biographical Sketch should be limited to 2 pages each in length, excluding publications listings. The vitae should include a presentation of academic and research credentials, as applicable (e.g., earned degrees, teaching experience, employment history, professional activities, honors and awards, and grants received). Include a chronological list of all publications in refereed journals during the past 4 years, including those in press. List only those non-refereed technical publications that

4. PROPOSAL SIGN-OFF SHEET FOR EACH INSTITUTION

- a. Sign-off sheets are required for all proposals, and for multi-institutional proposals for each funded institution. This form identifies basic proposal/investigator information as well as provides a summary of basic compliance issues relative to the project.
- b. The PI must make the application package available to approvers at his/her institution and all approvers must sign off on the proposal prior to the December 1 deadline. Prior to proposal submission, all PI's and co-PIs must certify agreement with the proposal package content. In addition, if appropriate for your institution – Department Heads, Deans/Directors, Department/College Accountants, and other Authorized Representatives must also certify agreement with the proposal package content. An Authorized Representative of your institution can sign and certify that other required approvers have also signed off.
- c. For multi-institutional proposals, certification must be provided for each institution along with separate budgets as indicated below.
 - i. **NOTE:** A copy of the **institutional negotiated rate agreements** for non-Penn State University institutions should be included in the full application pdf file submitted online.

5. BUDGET FORMS

- a. Each institution requesting funding in this proposal must submit two budgets with overlapping time periods, the first with 20% of requested funds to be expended during the period January 1, 2024 to June 30, 2024, and the second budget with 80% of requested funds for the period February 1, 2024 to June 30, 2025. Required cost-share funding must also be allocated proportionately across the two budgets. All federal funds and cost-share on each budget must be expended by the stated end dates, with no extensions.
- b. Budget categories include:
 - i. Personnel
 - a) Salaries for PIs, Co-PIs, other Senior Personnel, Post-docs and other research staff

- b) Graduate research assistantship stipends
 - c) Undergraduate and other hourly wages
 - d) Fringe benefits
 - ii. Equipment (items costing > \$5000)
 - iii. Materials and Supplies
 - iv. Travel
 - v. Other (subcontracts, consultants, computer time, publications, Graduate research assistantship tuition, etc.)
 - vi. Indirect or Facilities and Administration (F&A) charges
- c. Applicants must provide a 25% cost-share (listed according to these same categories), and limit indirect to 30% (these cost share and indirect percentages are both based on the Total Federal Funds requested). Cost-share must be fully auditable and are to be monitored by the applicant's institution, and confirmed to Penn State University. Cost Share and Indirect should be indicated on each budget form.

6. BUDGET JUSTIFICATION

- a. Include a detailed budget justification through the requested budget items. The justification is used to fully explain your expenses and is broken down into the primary budget categories: Personnel, Equipment (>\$5,000), Expendable supplies and minor equipment; Travel; Other (subcontracts, consultants, computer time, publications, Graduate Research Assistant tuition, etc.); Indirect or Facilities and Administration (F&A) charges.
- b. Contributing organizations (please use the format: "Organization: contribution type and amount"). It is recommended that contributors or collaborators provide a Letter of Support that describes the role of the collaborators and that they have agreed to render services or funds.

7. APPLICATION APPENDICES (appendices A to D REQUIRED for all proposals)

- A. **Logic Model (diagram or narrative)** (see <https://www.nifa.usda.gov/logic-model-planning-process>)
- B. **Current and Pending Research** (standard USDA form provided on the NE Sun Grant Center website) - Include the project title, agency or foundation sponsoring the research, period of support, time commitment, and amount of award.
- C. **Potential Conflicts of Interest** (form provided on the NE Sun Grant Center website)
- D. **Negotiated Institutional Rate Agreement for non-Penn State University institutions.**
- E. **Additional appendices (as needed).** Please also attach supporting documentation such as letters of commitment (required for unfunded collaborators and/or match contributors) or letters of support. Similar types of information should be compiled together – e.g. all letters of commitment, all support letters – and included as sections in the Full Proposal PDF file. Such formatting and consolidation facilitates the work of the reviewers.

Combine like items before converting into a pdf document for inclusion in the consolidated application.

For additional guidance on USDA NIFA proposal components, see <https://www.nifa.usda.gov/sites/default/files/resource/NIFAGrants-GovGuideWebsite.pdf>

METHOD FOR SUBMITTING FULL APPLICATION

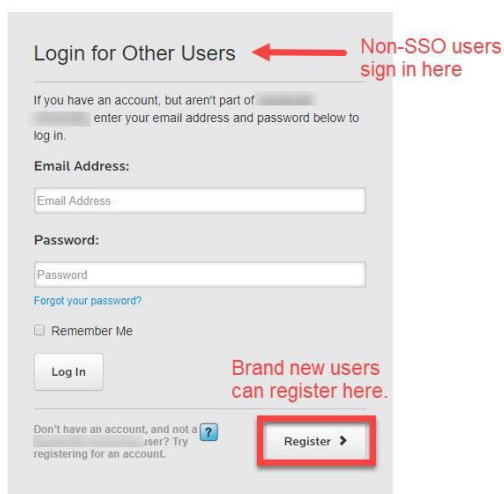
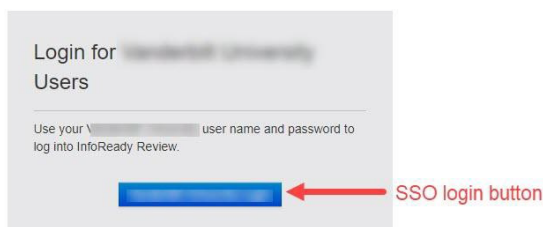
NE Sun Grant Center applicants and any proxies must register online for a user account to access the InfoReady proposal submission system. Register at the Penn State InfoReady website: <https://psu.infoready4.com/>

InfoReady Software Registration and Logging In

Internal Users - Do not need to register and are able to log in with their institutional credentials. Click Log In in the upper righthand corner and click the blue button with your institution's name. You will be taken to your institution's login page and redirected to InfoReady once authenticated.

Note: Single Sign-On (SSO) must be activated on the site to use this authentication method. Most clients have SSO enabled on their sites.

External Users and Non-SSO sites - External users and internal users for sites without SSO enabled need to register, activate the account via the confirmation email, and log in.



Viewing Opportunities

- Open opportunities are visible on the homepage (login not required to view).
- The Calendar contains all opportunities, both open and closed, and all dates/deadlines associated with the opportunities (login not required to view)

Click the opportunity title to view the details:

Not logged-in view

Apply button appears on the right side of the screen.

Clicking the button will take you to the login screen.

Logged-in – 2-5 buttons appear on the right (depending on settings and application status)

Details – Shows the details of the opportunity

Apply – Displays the application form

My Applications – Shows your applications/drafts for this opportunity

Apply as Proxy – Appears if someone has designated you as a proxy

Progress Reports – Post award reports assigned to you

Submitting Applications and Saving Drafts

- Click the Apply button to display the application form.
- Fields marked with an asterisk (*) are required, others are optional. If the admin has associated files with the opportunity, then the files will appear on the right in the Supporting Documents section
- A pop-up box may appear when clicking on a field. This occurs if the admin has added instructions associated with the field.
- Save as Draft and Submit buttons are located at the end of the application form.
- Proxy experience (If you are submitting on behalf of another person)
 - Click Apply as Proxy.
 - From the dropdown, choose the applicant for whom you are applying
 - Fill out the form and submit
 - Please note that the applicant will have had to designate you as a proxy

Application History

Your application history can be accessed by clicking the Applications tab from the Global Navigation Bar at the top of the screen.

- The list can be searched, filtered, and sorted.
- Click the application title (first column) to view your application/draft.
- Drafts can be deleted by clicking the trash can in the last column.

4. PROPOSAL REVIEW INFORMATION

PEER REVIEW PROCESS and CRITERIA

1. All applications will undergo a rigorous review process, which will include a technical peer review by scientists working in the appropriate fields. Decisions will be made based on the following factors:
 - **Scientific and Technical Merit (50%)**
 - Originality and innovativeness of the concept and approach
 - Conceptual adequacy of research, as applicable
 - Clarity of objectives and presentation of information
 - Adequacy of methodology proposed
 - Feasibility of methodology to achieve objectives
 - Likelihood of success as proposed
 - **Qualifications of the Investigator(s), Adequacy of Facilities, Project Management, and Costs (25%)**
 - Awareness of previous work or strategies
 - Appropriate expertise or collaborators included
 - Level to which stakeholders were involved in project planning and implementation
 - Planning and implementation strategies
 - Adequate outreach program and strategies
 - **Project Relevance (25%)**
 - Appropriateness of the proposal in addressing Sun Grant's mission and the current research priorities of the region
 - Relevance to USDA strategic areas of interest
 - Degree to which there is potential for project implementation, adoption and impact
2. A panel of experts will be assembled for the technical peer review. A lead panelist in each of the subfields is identified and tasked with leading the discussion on that set of proposals. A secondary reviewer is also identified to present additional information. The full panel will provide input on the technical merits of the proposal and prioritize project for funding.

PROGRAMMATIC REVIEW

The NE Sun Grant Center will seek to achieve a portfolio of research projects to address the bioeconomy development priorities of the region. Therefore, relevance to meeting the priority needs of the region may form the basis for selection among projects deemed of equivalent merit and quality.

5. AWARD ADMINISTRATION

PROGRAM MANAGEMENT

Program management will be handled by the NE Sun Grant Center. Contracts and payments for the awards will be written and distributed from Penn State University. Reports and reviews will be collected and maintained by Penn State University. Composite reports will be provided to USDA quarterly and annually. The latter will be submitted in narrative form and in the current USDA NIFA project reporting system.

The NE Sun Grant Center staff will be responsible for reviewing reports and providing feedback to investigators.

AWARD NOTIFICATION

NE Sun Grant Center plans to notify applicants in writing of grant decisions by December 20, 2023. As part of the grant decision, NE Sun Grant Center may negotiate specific grant terms with investigators. Masked reviews will be provided to the principal investigator.

CONFIDENTIALITY/PROPRIETARY INFORMATION

Confidentiality will be maintained in the proposal review process, and proposals will not be used for any purpose other than evaluation of merit for funding. Applicants are encouraged to draw attention to confidential or proprietary information contained in the proposal or submitted reports.

REPORTING REQUIREMENTS

Quarterly, six-month and final reports of progress must be submitted by each funded project to it to be considered for continuation of funding. A reporting template will be distributed along with a reporting schedule. Each project should include a budget item for PI travel to a regional or national bioeconomy symposium or conference to report project results. PI participation in these meetings is mandatory.

CONTINUATION OF FUNDING

Continuation of funding will be determined by previous performance, as well as continued funding from the funding agency.

6. FREQUENTLY ASKED QUESTIONS

Q. Why is the indirect cost rate limited to 30% Total Federal Funds (TFF)?

The indirect cost rate is limited to the institution's federally negotiated indirect cost rate OR 30% Total Federal Funds (TFF), whichever is less. The indirect cost rate was set by the original funding source. For use with your Office of Sponsored Programs or grant preparation office, the following funding opportunity citations are offered:

USDA negotiated rate or 30.00% of TDC, whichever is less. The indirect cost rate was set as identified in section 7526 of the Food, Conservation, and Energy Act of 2008 (FCEA) (Pub. L. 110-246) (7 U.S.C. 8114) as amended in 2014.

Q. Do the other institutions involved in our project need to be within the same Northeast Sun Grant region? We have several potential collaborators in mind - some are within region others are in other Sun Grant regions.

A. Each funded institution must be from within the Northeast region. Others outside the region can participate as unfunded collaborators on your proposal.

Q. We would like to use Sun Grant funds to purchase items such as equipment (greater than \$5000) or other items that we would like to re-sell during or after the project. Is this permitted?

A. Please keep in mind that using Federal dollars to purchase items that could subsequently be sold will create significant Federal reporting and permission requirements for the applicant's institution.

CONTACT INFORMATION:

Sun Grant Program - Northeast Center
Penn State University
101 Agricultural Engineering Building
University Park, PA 16802

Phone: (814) 865-3722
Email: trichard@psu.edu
Webpage: <https://agsci.psu.edu/research/sungrant>

FOR QUESTIONS regarding topics or content:

Tom Richard, Director
trichard@psu.edu

Phone: (814) 865-3722

Stephen Chmely, Associate Director
sc411@psu.edu

Phone: (814) 863-6815

FOR QUESTIONS regarding formats or forms:

Tom Richard, Director
trichard@psu.edu

Phone: (814) 865-3722

FOR QUESTIONS regarding budget elements or forms:

Nicole Wolfe, Contracts and Grants Manager
neh11@psu.edu

Phone: (814) 863-5975

