



2021 Soil Science Collaborative Research

**Fiscal Year (FY) 2021
Soil Science Collaborative Research
Proposals
National Funding Opportunity (NFO)**

**No. USDA-NRCS-NHQ-SOILS-21-
NOFO0001107**



Notice of Funding Opportunity (NFO)

SUMMARY INFORMATION

Federal Awarding Agency Name: U.S. Department of Agriculture – Natural Resources Conservation Service

Notice of Funding Opportunity Title: 2021 Soil Science Collaborative Research Proposals

Notice of Funding Opportunity Number: USDA-NRCS-NHQ-SOILS-21-NOFO0001107

Catalog of Federal Domestic Assistance (CFDA): This program is listed in the Assistance Listings under the Catalog of Federal Domestic Assistance number 10.903

Notice of Funding Opportunity Summary

The Natural Resources Conservation Service (NRCS), an agency under the United States Department of Agriculture (USDA), is announcing the potential availability of funding for agreements for the purposes of:

- Promoting research collaboration between the NRCS Soil and Plant Science Division (SPSD) and university cooperators on significant national issues;
- Providing technology transfer and training for NRCS staff;
- Assisting in training of students in soil science and related fields.

Proposals must be for projects based in the United States and its territories and possessions and focus on the priorities described in Section A of this notice. Research proposals are sought. NRCS anticipates that the amount available for support of this program in FY 2021 will be up to \$1,000,000.00. Eligibility is limited to institutions of higher education in the Cooperative Ecosystem Studies Unit (CESU) network (<http://www.cesu.psu.edu/>). Proposals are requested for competitive consideration of awards for projects 2-3 years in duration.

This notice identifies the objectives, eligibility criteria, and application instructions for projects. Proposals will be screened for completeness and compliance with the provisions of this notice. Incomplete and/or noncompliant proposals will be eliminated from competition, and notification of elimination will be sent to the applicant.

For new users of Grants.gov, see Section D.1. for information about steps required before submitting an application via Grants.gov.

Key Dates

Applicants must submit their applications via Grants.gov by 11:59 pm Eastern Time on June 15, 2021. For technical issues with Grants.gov, contact Grants.gov Applicant Support at 1-800-518-

4726 or support@grants.gov. Awarding agency staff cannot support applicants regarding Grants.gov accounts. Questions regarding this notice of funding opportunity (NFO) may be submitted until May 15, 2021. Responses to questions posed will be posted on Grants.gov approximately two weeks before the application due date.

The agency anticipates making selections by July 15, 2021 and expects to execute awards by September 30, 2021.

Federal Funding Floor and Ceiling Amounts

The estimated funding floor for this opportunity is \$50,000 and the funding ceiling is \$250,000. The funding floor means the minimum agreement funding amount for the Federal share per agreement awarded. The ceiling is the maximum agreement funding amount for the Federal share per agreement awarded. These numbers refer to the total agreement amount, not any specific budget period.

Federal Financial Assistance Training

The funding available through this NFO is Federal financial assistance. Grants 101 Training is highly recommended for those seeking knowledge about Federal financial assistance. The training is free and available to the public via <https://www.cfo.gov/grants-training/>. It consists of five modules covering each of the following topics: 1) laws, regulations, and guidance; 2) financial assistance mechanisms; 3) uniform guidance administrative requirements; 4) cost principles; and 5) risk management and single audit. FPAC agencies also apply Federal financial assistance regulations to certain non-assistance awards (e.g., non-assistance cooperative agreements).

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A. PROGRAM DESCRIPTION

The authorizing statutes and regulations for this opportunity are 16 U.S.C. 590a-f and 590q and 42 U.S.C. 3271-3274. (CFDA 10-903).

This competitive cooperative research program focuses on soil science and soil survey research topics and needs that have been identified through:

- Soil and Plant Science Division (SPSD) priorities
- National-level National Cooperative Soil Survey (NCSS) conference committees

The objectives of the research are to:

- Promote research collaboration between the NRCS Soil and Plant Science Division (SPSD) and university cooperators on significant national issues.

Proposals exhibiting substantial collaboration between the applicant, multiple NCSS cooperators (i.e., a multi-state project), and NRCS soil scientists (National Soil Survey Center (NSSC) Research Soil Scientists, Soil Survey Regional and Major Land Resource Area (MLRA) Soil Survey Office (SSO) soil scientists, State Soil Scientists, and/or Resource Soil Scientists) are encouraged to apply.

- Provide technology transfer and training for NRCS staff.

Each proposal should include a technology transfer component that documents how research results can be incorporated into Soil Survey field or office functions (databases, interpretations, etc.). In addition, the plan should document how research findings will be shared with the NCSS (e.g., publications, onsite training, and/or other mechanisms). At a minimum, the presentation of results as a webinar will be required for all agreements.

- Assist in training of students in soil science and related fields.

Proposals that include a strong education component (undergraduate and graduate student involvement) are encouraged, as are proposals from early career scientists and faculty.

The purpose of the 2021 Soil Science Collaborative Research Proposals is to promote research that informs and improves soil survey. As such, each proposal must include significant collaboration with soil survey personnel (such as MLRA soil survey offices, Regional Offices or State Soil Scientists). Proposal deliverables and their connection to soil survey must be clearly explained.

For information on NCSS personnel, please see

<https://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/survey/partnership/ncss/#contacts>.

For 2021, research needs were informed by regional NCSS research committees. The applicant and project must be located in the associated region. Deliverables should have regional application and fill gaps in soil survey databases. NRCS expects to fund a total

of \$250,000 per region, depending on funding availability. For a map of the NCSS regions, see the NCSS website:

https://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/survey/partnership/ncss/?cid=nrcs142p2_053475).

Any properties studied, outputs delivered, or models developed should use or be linked to soil survey specific terms. For instance, USDA-NRCS defines Dynamic Soil Properties (DSPs) as properties that change with natural and anthropogenic disturbances (including land use and management) on the human time scale. DSPs measured by soil survey include bulk density, soil organic carbon, aggregate stability, and infiltration rate.

Further information can be found in NRCS eDirective NB 430-20-7 SOI

<https://directives.sc.egov.usda.gov/viewerFS.aspx?hid=44936>.

Proposals submitted under this request must be aligned with one or more components of the regional Soil and Plant Science Division priorities, which are:

Regional Focus Areas

North Central:

Biogeochemical process models seek to simulate the cycling and elements within ecosystems. These models, such as DAYCENT, have been used to simulate changes in soil carbon and nitrogen pools in response to external drivers (e.g. climate or land use change). These models have the potential to enhance the development of dynamic soil survey by informing the ways in which DSPs respond to external drivers.

Potential research topics could include:

- Use of biogeochemical process models to quantify and predict changes in DSPs across soil taxonomic classes or pedological gradients that can be tied to soil mapping units
- Predictions of the speed of changes to DSPs as relevant to soil survey
- Models that quantify DSPs in state and transition models for ecological site descriptions (i.e. “quantitative ecological sites”)

West:

Wild land fires are known to affect not only vegetation but soil properties which, in turn, influence hydrologic responses. There is a need to tie the effects of fires to dynamic soil survey including the temporal influence on soil and vegetation.

Ecological site concepts (including state and transition models) can be used to organize information regarding fires and deliver it to soil interpretations and decision support tools.

Potential research topics could include:

- Rule sets for updating soil interpretations and hydrologic predictions based on known fire activity
- Predictions of hydrophobicity and DSPs after fire
- Framework for improving temporal response variables in state and transition models including fire dynamics

South:

With increased intensity and duration of storm events, runoff and infiltration values are not adequately reflected in areas of rapid development. Research is needed on best practices for utilizing updated information (such as remote sensing) to account for rapid changes in development and land use in urban and suburban areas in modifying soil properties and interpretations.

Potential research topics could include:

- Improved interpretations and rulesets that can be updated with commonly available GIS layers to improve water budgets
- Improved hydrologic modeling that incorporates both soil survey information and updated input information on impervious and altered surfaces
- Quantification of relationships between DSPs and hydrologic soil properties

Northeast:

Hydrology and soil health are not adequately understood in urban and suburban land uses. Research is needed to improve indicators and pedotransfer functions to predict and assess soil health and water movement (including Ksat) in urban land uses (including agriculture and forestry). Deliverables could include improved soil health assessment, improved soil survey interpretations and/or improved water quality and quantity predictions.

Potential research topics could include:

- Development of Ksat predictions for urban and suburban areas
- Baseline values of DSPs and indicators that can be used for soil health assessment in urban land uses
- Improved water quality and quantity predictions with updated soil survey information in urban and suburban environments

B. FEDERAL AWARD INFORMATION

1. Available Funding

a. Estimated Funding

The total amount of Federal funding the agency expects to award through this opportunity is 1,000,000.

b. Start Dates and Performance Periods

Projects may be between 2 and 3 years in duration. Applicants should plan their projects based on an estimated project start date of September 30, 2021.

c. Number of Awards

The agency expects to make 4 award(s).

2. Type of Award

a. Type of Federal Award

The agency plans to award a cooperative agreement pursuant to this opportunity. The agency will be substantially involved in the work performed under the agreement and will undertake activities such as the following:

- a. Agency and recipient collaboration or joint participation
- b. Direct agency operational involvement or participation during the activity

b. Procurement Contracts

The agency does not expect to award procurement contracts associated with this NFO.

c. Eligibility of Renewal or Supplemental Project Applications

Applications for renewal or supplementation of existing projects are not eligible to compete with applications for new Federal awards. An application for renewal means an application submitted to continue an existing agreement that meets the objectives and requirements of this NFO. An application for supplementation of an existing project means an application to add components to an existing agreement so that it would meet the objectives and requirements in this NFO.

C. ELIGIBILITY INFORMATION

1. Eligible Applicants

Applicants and applications must meet eligibility criteria by the application deadline to be considered for award. Eligible applicant type is determined by the implementing program statute. Applicant entities identified in the SAM.gov exclusions database as ineligible, prohibited/restricted, or excluded from receiving Federal contracts and certain Federal assistance and benefits will not be considered for Federal funding, as applicable to the funding being requested under this Federal program (2 CFR 200.206(d)).

Eligibility for this opportunity is limited to the following entity types:

- a. Private institutions of higher education that are part of a CESU network.
- b. Public and State-controlled institutions of higher education that are part of a CESU network.

For more information on the Cooperative Ecosystem Studies Unit (CESU) network please see: <http://www.cesu.psu.edu/>

Refer to section D of this opportunity announcement for required documentation supporting eligibility status.

2. Other

Any award made pursuant to this NFO will be made to a single entity. Applicants that apply as “partnerships” or other similar groupings must clearly describe the relationship

between the applicant and the “partner” parties. In all but exceptional cases, it must be reflected in the award as an awardee/subawardee relationship.

An applicant organization may submit more than one application.

Awards made pursuant to this NFO are not Farm Bill incentive contracts; therefore, the awards in and of themselves are not limited by the payment limitation in Chapter 58 of 16 U.S.C. However, any agricultural producers receiving a payment through participation in a project awarded under this NFO must meet the eligibility requirements of 7 CFR Part 12 and 7 CFR Part 1400 and have control of the land involved for the term of the proposed award period.

3. Cost Sharing or Matching

There is no cost sharing or matching requirement for this opportunity. There is no competitive advantage to applicants who voluntarily provide a match.

D. APPLICATION AND SUBMISSION INFORMATION

1. Information for New Users of Grants.gov

a. Overview

While a Grants.gov account is not required to download an NFO and related documents, it is required to submit an application. If your organization has never submitted an application via Grants.gov, please be aware that there are several steps you must take to register your organization before you can submit an application. **Completing those steps takes a significant amount of time.**

For information about the Grants.gov pre-award phase of the grant lifecycle see <https://www.grants.gov/web/grants/learn-grants/grants-101/pre-award-phase.html>.

b. Register to Apply through Grants.gov

Carefully review the registration steps and gather information requested prior to beginning the registration process to avoid last-minute searches for required information. For assistance with the registration process, contact Grants.gov Applicant Support at 1-800-518-4726 or support@grants.gov.

Organizations must complete all steps to register (steps i. through v. below). Complete organization instructions are included on Grants.gov here: <https://www.grants.gov/web/grants/applicants/organization-registration.html>.

Although creating a Grants.gov account online can take only minutes, DUNS and SAM registrations may take several weeks. Therefore, organizations should begin the process early to ensure they have sufficient time to complete registration and meet required application submission deadlines.

Individuals are not subject to the DUNS or SAM requirement and may begin with step iii., Create a Grants.gov Account, listed below. (Note: Individuals are not eligible for all opportunities.)

c. Steps to Register:

- i. *Obtain a DUNS Number:* All entities applying for funding must have a Data Universal Numbering System (DUNS) Number from Dun & Bradstreet (D&B). Applicants must enter the DUNS Number in the data entry field labeled "Organizational DUNS" on the SF-424 form. For more detailed instructions for obtaining a DUNS Number, refer to:
<https://www.grants.gov/web/grants/applicants/organization-registration/step-1-obtain-duns-number.html>
- ii. *Register with SAM:* All organizations must register with System for Award Management (SAM) in order to apply online through Grants.gov. SAM registration must be renewed annually. Part of the SAM registration process includes designating an Electronic Business Point of Contact (EBiz POC). **The EBiz POC plays an integral part in the organization's Grants.gov registration and application process.** The individual in that role must authorize all other roles in Grants.gov. For more detailed instructions for registering with SAM, refer to:
<https://www.grants.gov/web/grants/applicants/organization-registration/step-2-register-with-sam.html>
- iii. *Create a Grants.gov Account:* From the Grants.gov webpage (<https://www.grants.gov/>), click "Register" in the top right-hand corner and follow the on-screen instructions or refer to the detailed instructions here:
<https://www.grants.gov/web/grants/applicants/registration.html>
- iv. *Add an Organization Applicant Profile to a Grants.gov Account:* A profile in Grants.gov corresponds to a single applicant organization the user represents (i.e., an applicant) or an individual applicant. If you work for or consult with multiple organizations and have a profile for each, you may log in to one Grants.gov account to access all of your grant applications. To add an organizational profile to your Grants.gov account, enter the DUNS Number for the organization in the UEI (Unique Entity Identifier) field while adding a profile. For more detailed instructions about creating a profile on Grants.gov, refer to:
<https://www.grants.gov/web/grants/applicants/registration/add-profile.html>
- v. *EBiz POC Authorized Profile Roles:* After you register with Grants.gov and create an Organization Applicant Profile, you must establish roles for individuals in the organization. The Authorized Organizational Representative (AOR) role is critical; it gives an individual permission to complete and submit applications on behalf of the organization. Without this role, the organization cannot submit any applications. The request for role assignment will be routed to the organization's EBiz POC for approval. Once approved, the AOR can submit an application online. For more

detailed instructions about creating a EBiz POC authorized profile on Grants.gov, refer to:

<https://www.grants.gov/web/grants/applicants/registration/authorize-roles.html>

Track Role Status: To track your role request, refer to:

<https://www.grants.gov/web/grants/applicants/registration/track-role-status.html>

- d. *Electronic Signature*. When applications are submitted through Grants.gov, the name of the organization applicant with the AOR role that submitted the application is inserted into the signature line of the application, serving as the electronic signature. The EBiz POC **must** authorize people who are able to make legally binding commitments on behalf of the organization as a user with the AOR role. **This step (step c.v. above) is often missed and it is crucial for valid and timely submissions.**
- e. *Workspace*. Workspace is a shared, online environment where members of a grant team may simultaneously access and edit different webforms within an application. For each NFO, you can create individual instances of a workspace. An applicant can start an application in Workspace and return to work on it later within Workspace.
- f. *Apply for an Opportunity*. Below is an overview of applying on Grants.gov. For complete instructions on how to apply for opportunities, refer to:
<https://www.grants.gov/web/grants/applicants/workspace-overview.html>
 - i. *Create a Workspace*: Creating a workspace allows you to complete an application online and route it through your organization for review before submitting.
 - ii. *Complete a Workspace*: Add participants to the workspace to work on the application together, complete all the required forms online or by downloading PDF versions, and check for errors before submission. The Workspace progress bar will display the status of your application process as you apply. As you apply using Workspace, you may click the blue question mark icon near the upper-right corner of each page to access context-sensitive help.
 - *Adobe Reader*: If you decide not to apply by filling out webforms you can download individual PDF forms in Workspace. The individual PDF forms can be downloaded and saved to your local device storage, network drive(s), or external drives, then accessed through Adobe Reader.

NOTE: Visit the Adobe Software Compatibility page on Grants.gov to download the appropriate version of the software at:

<https://www.grants.gov/web/grants/applicants/adobe-software-compatibility.html>

- **Mandatory Fields in Forms:** In the forms, you will note fields marked with an asterisk and a different background color. These fields are mandatory fields that must be completed to successfully submit your application.
 - **Complete SF-424 Fields First:** The forms are designed to fill in common required fields across other forms, such as the applicant name, address, and DUNS Number. Once it is completed, the information will transfer (i.e., prepopulate) to the other forms.
- iii. **Submit a Workspace:** An application may be submitted through workspace by clicking the Sign and Submit button on the Manage Workspace page, under the Forms tab. Grants.gov recommends submitting your application package at least 24-48 hours prior to the close date to provide you with time to correct any potential technical issues that may disrupt the application submission.
 - iv. **Track a Workspace Submission:** After successfully submitting a workspace application, a Grants.gov Tracking Number (GRANTXXXXXXXX) is automatically assigned to the application. The number will be listed on the Confirmation page that is generated after submission. Using the tracking number, access the Track My Application page under the Applicants tab or the Details tab in the submitted workspace.

For additional training resources, including video tutorials, refer to:
<https://www.grants.gov/web/grants/applicants/applicant-training.html>

2. Electronic Application Package

Applicants interested in submitting an application in response to this NFO must submit it via Grants.gov; the agency will not accept applications submitted via email or any other method. Applicants are urged to submit early to the Grants.gov system.

For technical issues with Grants.gov, contact Grants.gov Applicant Support at 1-800-518-4726 or support@grants.gov. Awarding agency staff cannot support applicants regarding Grants.gov accounts.

Address to Request Application Package

All information necessary to apply for this opportunity is included in the [Grants.gov](#) opportunity announcement.

3. Content and Form of Application Submission

The agency may choose not to consider applications that fail to comply with the required content, format, and page limits, or those that are incomplete.

To be considered for funding under this opportunity, an application must contain the documents as described in a-f below.

a. **Proposal**

Each page must be numbered and have one-inch margins. The text of the proposal must be single spaced and typed in a standard typeface (e.g., Times New Roman, Arial, Courier) with no smaller than 12-point font. The project narrative must not exceed 10 pages. The page limitation applies to the project narrative only.

1) Project Narrative, including:

- (a) Identification of which research priority the proposal is being written to address.
- (b) Problem statement/Need and justification for project: Identify priority area to be addressed.
- (c) Expected project deliverables that will contribute to achieving the Soil Survey mission
- (d) A brief review of current related literature
- (e) Research objective(s)
- (f) Hypothesis to be tested
- (g) Research methods and procedures: Provide enough detail to allow evaluation of the adequacy of the approach and methods for meeting project objectives. As applicable, the methods should include:
 - Description of project area, including soils, topography, land use/vegetation, and climate
 - Field sampling and measurement design, techniques, and methods
 - Laboratory analyses (include specific methods)
 - Data analysis, including statistical procedures if applicable
 - Description of the involvement of NRCS soil scientists (including required/requested field or laboratory support from Kellogg Soil Survey Laboratory (KSSL)) and NRCS SSD (including KSSL, NSSC, MLRA Soil Survey Office, SSR, and State staffs). Letters of support from NRCS personnel are not sought, however as part of the merit review process the relevant NRCS personnel will be consulted to verify collaboration described/documented in the proposal.
- (h) Project timetable, including:
 - Sample collection and field measurements (if needed)
 - Laboratory analyses (if needed)

- Data analyses
 - Data interpretation
 - Deliverables: including report/manuscript writing
- (i) Information transfer plan: Describe means for disseminating information of the research results and promoting its application, including project reports, webinars, peer-reviewed publications, guidebooks, new technique methods, software, workshops, etc.
 - (j) Documentation of the involvement of, and training provided to, graduate and/or undergraduate students and to NRCS field scientists.
 - (k) References
- 2) Executive Summary and Title page with Title, PIs, priority area and brief description of the proposal (not to exceed one page).
 - 3) Investigator's qualifications. Include resumes of the principle investigator(s) (limited to 2 pages each, with no more than 15 pertinent publications listed).
 - 4) Brief description of existing facilities.
 - 5) Existing collaborative agreements/relationships with NRCS.
 - 6) Letters of support from non-NRCS collaborators demonstrating capacity and willingness to participate in the project.
 - 7) Results from prior NRCS support.
 - 8) Data management plan. All data from USDA funded agreements must be properly documented with data made available through public repositories such as the National Agriculture Library.

Proposals that fail to comply with the required content and format will not be considered for funding. **Material exceeding stated page limits and/or formatting structure will not be considered.** Incomplete and/or noncompliant proposals will not be considered.

The following documents do not count toward the above stated page limit.

- b. **Application Form:** (Standard Form 424 Application for Federal Assistance)
See Instructions for Completing SF 424 located in the Related Documents tab of this opportunity on Grants.gov.
- c. **Standard Form (SF) 424A, Budget Information - Non-Construction**

Programs. Fill in all spaces as appropriate. Section B, Item 6, Column 1 should reflect the agency funds, and Column 2 should reflect the applicant's matching funds. This form is the summary budget for the project and should include the full project totals on pages one and two. See Instructions for Completing SF 424A located in the Related Documents tab of this opportunity on Grants.gov. Refer to Section D of this opportunity for information regarding indirect costs.

d. Budget Narrative.

- i. In a separate document titled "Budget Narrative," explain and justify all requested budget items/costs. Detail how the totals on the SF-424A were determined and demonstrate a clear connection between costs and the proposed project activities. For personnel salary costs, include the base-line salary figures and the estimates of time (as percentages) to be directly charged to the project. Describe any item that under the applicable Federal cost principles requires the agency's approval and estimate its cost. The pages included as the budget narrative to not count toward the 10 page limit.
- ii. Please refer to "Budget Narrative Guidance" document in "Related Documents" tab in grants.gov Opportunity listing. Budget should be broken down by year and for total project. Additional context includes:
 - a. Equipment – All equipment and/or software purchased through the cooperative agreement is the property of NRCS and must be transferred to NRCS upon completion of the agreement (see 2 CFR 200.313).
 - b. Supplies (includes field sampling and laboratory analyses materials)
 - c. Salaries, by participant (distinguish among graduate or undergraduate students, technicians, faculty, and post-docs or other individuals for whom full or partial salary will be covered)
 - d. Benefits/Fringe identified as a separate category
- iii. As required in Title 2 of the Code of Federal Regulations Part 200, Subpart F Audit Requirements, all U.S. states, local governments, federally-recognized Indian tribal governments, and non-profit organizations expending \$750,000 USD or more in Federal award funds in a fiscal year must submit a Single Audit report for that year through the Federal Audit Clearinghouse's Internet Data Entry System.
- iv. All applicants are hereby notified of the following:
 - Recipients without an approved indirect cost rate are prohibited from charging indirect costs to a Federal award. (Accepting the 10 percent *de minimis* rate as a condition of award constitutes establishing an approved rate.)
 - Failure to establish an approved rate during the award period renders all costs otherwise allocable as indirect costs unallowable under the award.

- Recipients are prohibited from shifting unallowable indirect costs to another Federal award unless specifically authorized to do so by legislation.
- e. **Grants.gov Lobbying Form, Certification and Disclosure of Lobbying Activities.** Under Title 31 of the United States Code, Section 1352, an applicant or recipient must not use any federally appropriated funds (both annually appropriated and continuing appropriations) or matching funds under a grant or cooperative agreement award to pay any person for lobbying in connection with the award. Lobbying is defined as influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress connection with the award. Submission of an application also represents the applicant's certification of the statements in 2 CFR Part 418, Appendix A- Certification Regarding Lobbying. If you/your organization have/has made or agrees to make any payment using non-appropriated funds for lobbying, you must also complete and submit the SF LLL, Disclosure of Lobbying Activities located at 2 CFR 418, Appendix B. See 2 CFR, Subpart 418.110 for more information on when additional submission of this form is required.
- f. **Negotiated Indirect Cost Rate Agreement** (if applicable). If charging indirect costs, upload the agreement under Other Attachments in the Grants.gov Opportunity Application Package. This requirement applies even when charging indirect costs using the 10 percent limitation. See Section D for information regarding indirect costs.
- g. **Unique entity identifier/DUNS and System for Award Management (SAM).** Each applicant (unless the applicant is an individual excepted from those requirements under 2 CFR §25.110(b) or (c), or has an exception approved by the Federal awarding agency under 2 CFR §25.110(d)) is required to: (i) Be registered in SAM before submitting its application; (ii) provide a valid unique entity identifier (DUNS number) in its application; and (iii) continue to maintain an active SAM registration with current information at all times during which it has an active Federal award or an application or plan under consideration by a Federal awarding agency. The agency may not make a Federal award to an applicant until the applicant has complied with all applicable unique entity identifier and SAM requirements and, if an applicant has not fully complied with the requirements by the time the agency is ready to make an award, it may determine that the applicant is not qualified to receive a Federal award and use that determination as a basis for making a Federal award to another applicant.

Entities must obtain a DUNS and register in SAM prior to registering with Grants.gov. A description of each is below. Entities are strongly encouraged to apply early for their DUNS number and SAM registration.

DUNS Number: A Dun and Bradstreet DUNS number is a unique, nine-digit sequence recognized as the universal standard for identifying and keeping track of over 70 million businesses worldwide. Applicants must obtain a DUNS number. Information on how to obtain a DUNS number can be found at <http://fedgov.dnb.com/webform> or by calling 1-866-705-5711.

System for Award Management (SAM) Registration: SAM is the official Federal system that consolidated the capabilities of Central Contractor Registry, Federal Agency Registration, Online Representations and Certifications Application, and Excluded Parties List System. To register, go to: <https://www.sam.gov>. The Federal Service Desk is available for registration assistance and can be contacted via the Help tab at the website listed above.

Awarding agency staff cannot support applicants regarding DUNS or SAM issues.

The Government intends to replace the D-U-N-S® number with a “new, non-proprietary identifier” requested in, and assigned by SAM.gov. This new identifier is being called the Unique Entity Identifier (UEI), or the Entity ID. See [Planned UEI Updates in Grant Application Forms](#) for UEI updates.

4. Submission Dates and Times and Correspondence

Applicants must submit applications via Grants.gov. Applications must be received by 11:59 pm Eastern Time (ET) on June 15, 2021. An application submitted or resubmitted after the deadline is late (an application is considered on time at 11:59.59 pm ET, but it is late at 12:00 am ET). Late submissions will not be reviewed or considered.

Grants.gov will provide either an error or a successfully received transmission in the form of an email sent to the applicant with the Authorized Organizational Representative (AOR) role attempting to submit the application. The Grants.gov Support Center reports that some applicants end the transmission because they think that nothing is occurring during the transmission process; be patient and give the system time to process the application.

If you have trouble submitting an application to Grants.gov, you should FIRST contact the Grants.gov Help Desk to resolve any issues. Keep a record of any such correspondence. See Part G. for Grants.gov contact information.

For applications successfully transmitted to Grants.gov before the deadline: The applicant with the AOR role who submitted the application will receive:

- an acknowledgement of receipt and a tracking number (GRANTXXXXXXXX) from Grants.gov;

- an email with the official date/time stamp (this stamp is used to determine if the application was received prior to the deadline) and Grants.gov

When the agency successfully retrieves the application from Grants.gov and acknowledges the download of submissions, Grants.gov will also provide an electronic acknowledgment of receipt of the application to the applicant.

5. Intergovernmental Review

This funding opportunity is not subject to Executive Order 12372, “Intergovernmental Review of Federal Programs.”

6. Funding Restrictions

Funds may not be used to pay any of the following costs unless otherwise permitted by law and approved in writing by the agency in advance of incurring such costs:

- a. Costs above the amount of funds authorized for the project;
- b. Costs incurred prior to the effective date of the award, including time spent applying for this opportunity;
- c. Costs which lie outside the scope of the approved project and amendments thereto;
- d. Entertainment costs, regardless of their apparent relationship to project objectives;
- e. Compensation for injuries to persons, or damage to property arising out of project activities;
- f. Consulting services performed by a Federal employee during official duty hours when such consulting services result in the payment of additional compensation to the employee; and
- g. Renovation or refurbishment of research or related spaces, the purchase or installation of fixed equipment in such spaces, and the planning, repair, rehabilitation, acquisition, or construction of buildings or facilities.
- h. Management fees and profit. Any funds awarded to for-profit entities must be used for reimbursement of award related direct and indirect costs only;
- i. Meals: Meals may be charged to an award only if they are necessary for the performance of the project. For instance, meals (normally only lunch) that are a necessary part of the costs of meetings and conferences (i.e., required attendance and continuity of a meeting), the primary purpose of which is the dissemination of information, are allowable, as are costs of transportation, rental of facilities, speakers’ fees, and other items incidental to such meetings or conferences. Note: Meals consumed while in official travel status do not fall in this category. They are considered to be per diem expenses and should be reimbursed in accordance with the organization’s established travel policies subject to statutory limitations or in accordance with Federal travel policies.
- j. Costs normally charged as indirect costs may not be charged as direct costs without proper justification and agency approval. Proper justification includes documentation that the costs meet the criteria for allowability (see 2

CFR 200.403). Examples of such costs include rent, utilities, depreciation on buildings and equipment, the costs of operating and maintaining facilities, and general administration and general expenses, such as the salaries and expenses of executive officers, personnel administration, and accounting.

- k. Salaries that are not commensurate with level of work: All costs must be reasonable to be allowable (CFR 200.403), and 2 CFR 200.404 defines a reasonable cost as one if, in its nature and amount, it does not exceed that which would be incurred by a prudent person under the circumstances prevailing at the time the decision was made to incur the cost. Salaries determined not to be reasonable compared to the level of work will be unallowable.

This list is not exhaustive. Questions regarding the allowances of particular items of cost should be directed to the administrative contact listed in this NFO.

7. Indirect costs limitations:

- a. A non-profit organization or institution of higher education awarded a cooperative agreement will be limited to a 10 percent indirect cost rate in accordance with the agency's annual appropriations act. The 10 percent indirect cost rate applies to both federal and non-federal funds. Other types of entities are not subject to this statutory limitation.
- b. To be eligible to recover any indirect cost under a Federal award, recipients must either 1) have a current negotiated indirect cost rate agreement (NICRA) with a Federal agency that has not expired; or 2) qualify for use of the *de minimis* rate authorized by 2 CFR 200.414(f). A State, local, or tribal governmental department or agency unit that receives more than \$35 million in direct Federal funding is not eligible for the *de minimis* rate.
- c. If an applicant with a current NICRA is subject to the statutory limitation, indirect costs must be calculated as follows. First, multiply the NICRA rate by the base stated in the NICRA to arrive at Amount A. Next, multiply the statutory limit of 10 percent by the total of all direct costs to arrive at Amount B. The lower of Amount A and B is the amount of indirect cost to include on the budget.
- d. Applicants not subject to a statutory limitation, which have a current NICRA must calculate indirect costs using the rate and base specified in their NICRA. A recipient may voluntarily reduce or waive recovery of indirect costs at its sole discretion and must not be encouraged or coerced in any way to do so by the agency. A copy of the applicant's current NICRA must be provided with the application. Indirect costs may not be recovered under an expired NICRA.
- e. Entities that are eligible for the *de minimis* rate who already have a *de minimis* rate agreement must use the rate and base specified in the agreement, which is

modified total direct costs (MTDC) as defined by 2 CFR 200.68 and also excluding the amount of each subaward exceeding \$25,000. Note that MTDC excludes certain costs from the base to which the rate is applied. A copy of the applicant's de minimis rate agreement must be provided with the application. If a recipient is eligible to use the de minimis rate, but does not have a de minimis rate agreement, use an indirect cost rate of no more than 10 percent of MTDC when preparing the budget. If selected for award, a de minimis rate agreement will be executed along with the award.

- f. Applicants who are individuals applying for funds separate from a business or non-profit organization they may operate are not eligible to charge indirect costs to their award. If you are an individual applying for funding, do not include any indirect costs in your proposed budget.
- g. For examples, please refer to "Budget Narrative Guidance" document in "Related Documents" tab in grants.gov Opportunity listing.

E. APPLICATION REVIEW INFORMATION

1. Review and Selection Process

Applications will be screened for completeness and compliance with the provisions of this notice. Incomplete, noncompliant, and/or applications not meeting the formatting criteria may be eliminated from competition. In that event, the agency will send notification of elimination to the applicant. The agency intends to make a selection and award without conducting any discussions or allowing applicants to correct deficiencies or omissions in their applications. Consequently, applicants must ensure their applications are complete and accurate. However, while the agency intends to make a selection without contacting applicants, it reserves the right to request applicants to revise their applications to correct deficiencies or omissions it identifies. If this occurs, the agency will conduct discussions with all applicants, identify deficiencies and omissions for all, and give applicants an opportunity to submit a revised application by a common cut-off date. The agency may also contact individual applicants to clarify certain components of their applications.

Merit/technical reviews will be conducted by a technical review board nominated by the approving official. Risk reviews will be conducted by the FPAC Business Center, Grants and Agreements Division. The approving official will make the final award decisions. The approving official for this opportunity is the National Leader for Soil Research.

2. Merit/Technical Criteria

Proposals will be evaluated according to the following criteria:

Collaboration: Does the proposal explicitly document direct collaboration with multiple NCSS collaborators and NRCS/NSSC affiliated soil scientists?
Relevance and importance: Does the proposal fit within the mission of the Soil Survey and directly address a research priority described in Section A (Program Description)? Are the results potentially applicable to more than one State or MLRA?
Scientific merit: Does the proposed research have potential to expand the fundamental knowledge in its priority area(s)? Is it scientifically sound? Is the investigator aware of past research in the area? Is the proposal well written, organized, and complete?
Feasibility: Are the hypotheses, objectives, methodologies, designs, and techniques adequate and completely described? What is the likelihood of success given the methods, timeframe, and funding proposed?
Information transfer: Can the proposed research results enhance and improve our ability to meet one or more parts of the Soil Survey mission? Does the proposal address methods to transfer knowledge gained and potential impact of the results?
Data Management: Does the proposal contain an appropriate data management plan?
Training: Does the proposal have a strong educational component and provide for student support?
Qualifications of the investigators: Are the qualifications of the investigators adequate to complete the proposed research? Are the facilities and equipment adequate?
Budget: Is the budget reasonable and adequate for the proposed research?

3. Administrative and Risk Criteria

Notice of selection after merit/technical evaluation does not guarantee that an applicant will receive an award. Following notification of selection for funding (see section F), the FPAC Business Center, Grants and Agreements Division's staff conducts a final administrative and risk review of those applications. The administrative review includes, but is not limited to, a check to ensure that NFO requirements were met (e.g., applicant meets eligibility criteria, application was submitted via Grants.gov by the established deadline), and proposed costs are allowable, allocable and necessary. During this process, it may be necessary to request further documentation from the applicant (e.g., organizational information as part of the risk assessment, more detail regarding proposed costs).

In addition, to comply with the requirements at 2 CFR 200.205, the agency will follow, at a minimum, the risk review process described below (additional steps may be taken).

The awarding agency will check SAM to ensure the applicant is not suspended or debarred, which would preclude receiving an award. In addition, prior to making a Federal award with a total Federal share greater than the simplified acquisition threshold (\$250,000), the agency must review and consider any information about the applicant that is in the designated integrity and performance system accessible through SAM (the Federal Awardee Performance Integrity Information System, FAPIIS) (see 41 U.S.C. 2313 and 2 CFR 200.205(a)).

An applicant must meet the following standards to be considered for award:

- a. Financial Stability. The applicant maintains an adequate financial resources or cash flow to meet its financial obligations on a routine basis in order to successfully complete any agreement it may be awarded.
- b. Quality of Management Systems and Ability to meet Management Standards prescribed in 2 CFR Part 200. The applicant has a financial management system adequate to segregate and track federal funds. It has adequate systems in place for proper agreement administration; compliance with the standards outlined in 2 CFR Part 200 Section D for procurement, property, and records management; and required financial and performance reporting.
- c. History of Performance. If the applicant has previously obtained Federal financial assistance award, it has never failed to materially comply with the Federal award terms and conditions and further that it has never had an award terminated on that basis.

Submission of an application constitutes certification that an applicant meets these standards (items a through c. above). The agency may request documentation to substantiate the certification. Based on risk assessment, the agency may impose specific award conditions in accordance with 2 CFR 200.207.

4. Awards Over the Simplified Acquisition Threshold (if applicable)

- a. Prior to making a Federal award with a total Federal share greater than the simplified acquisition threshold (\$250,000), the agency must review and consider any information about the applicant that is in the designated integrity and performance system accessible through SAM (the Federal Awardee Performance Integrity Information System, FAPIIS) (see 41 U.S.C. 2313 and 2 CFR 200.205(a));
- b. An applicant may review information in FAPIIS accessible through SAM and comment on any information about it that a Federal awarding agency previously entered;
- c. The agency will consider any comments by the applicant, in addition to the other information in the designated integrity and performance system, in making a judgment about the applicant's integrity, business ethics, and record of performance under Federal awards when completing the review of risk posed by applicants as described in 2 CFR 200.205, Federal awarding agency review of risk posed by applicants.

5. Anticipated Selection Announcement and Federal Award Dates

The agency anticipates announcing or notifying successful and unsuccessful applicants by July 15, 2021 and expects to have Federal awards in place by September 30, 2021.

F. FEDERAL AWARD ADMINISTRATION INFORMATION

1. Federal Award Notices

The agency will provide notice that an application has been selected before it actually makes the Federal award. As such, the selection notification is not an authorization to begin performance. Any pre-award costs incurred by the awardee will not be reimbursed. The Notice of Grant and Agreement Award (ADS-093) signed by the authorized agency official is the only authorizing document and will be provided electronically to the entity's authorized official for signature.

Both successful and unsuccessful applicants will be notified of the award decision via letter.

2. Administrative and National Policy Requirements

All project funds will be used in accordance with 2 CFR 200 and the General Terms and Conditions, which are included in the Related Documents tab of the opportunity on Grants.gov.

Projects performed pursuant to this opportunity may be subject to the National Environmental Policy Act (NEPA). If applicable, NRCS must work with awardees to complete an environmental review of each awarded project before project commencement. In addition, prior to any ground-disturbing activities related to NRCS funding, the awardee must work with NRCS staff to complete an environmental evaluation (EE) related to those activities. Awardees may be required to prepare or pay for preparation of an environmental assessment (EA) or environmental impact statement (EIS), should any environmental review find that an EA or EIS is required.

In addition, a National Historic Preservation Act (NHPA), Section 106 review and consultation by an NRCS State or area office with consulting parties (such as the pertinent State Historic Preservation Officer and federally recognized Indian Tribes) may be required prior to the implementation of project activities that have the potential to impact cultural resources. NHPA Section 106, its implementing regulations (36 CFR Part 800), and other related authorities, require Federal agencies to determine if a project has the potential to cause an effect to historic properties and, if so, if they are adverse and how the effects may be addressed. The NHPA review and compliance in accordance with section 106 of NHPA and implementing regulations at 36 CFR Part 800 must be completed by NRCS and applicants may be required to pay for any cultural resource surveys needed for NRCS to assess project effects. More information on the applicant's role in the NHPA Section 106 process can be found on the Advisory Council on Historic Preservation website at <https://www.achp.gov/digital-library-section-106-landing/section-106-applicant-toolkit>.

Consultation with the U.S. Fish & Wildlife Service and/or the National Marine Fisheries Service under the section 7 of the Endangered Species Act (ESA) is also required for projects that may affect listed or proposed species or destroy or modify critical habitat. The ESA consultation in accordance with section 7 of the ESA and implementing regulations at 50 CFR Part 402 must be completed by NRCS prior to the implementation of project activities that have the potential to impact species or habitat protected under the ESA. More information on the section 7 consultation process can be found at <https://www.fws.gov/endangered/what-we-do/consultations-overview.html>.

The data from these agreements will be made available on a public repository and shared with the National Soil Survey Center.

3. Reporting

Reporting will follow the guidelines included in the agency's General Terms and Conditions, which are included in the Related Documents tab of the opportunity on Grants.gov.

If the Federal share of any agreement awarded under this opportunity notice may include more than \$500,000 over the period of performance, recipients must also comply with the post award reporting requirements reflected in Appendix XII of 2 CFR Part 200 —Award Term and Condition for Recipient Integrity and Performance Matters.

Applicants that receive awards pursuant to this opportunity and any subawardees must comply with the reporting requirements described at 2 CFR Part 170, unless an exception applies. Applicants must ensure they have the necessary processes and systems in place to comply with those requirements. A list of exceptions can be found at 2 CFR 170.110(b).

G. FEDERAL AWARDING AGENCY CONTACT

For questions regarding this opportunity, please contact the following individual with the NFO number in the subject line:

Name: Aileen Anderson
Grants Management Specialist
FPAC Business Center

Mailing Address: USDA, 21168 State Route 232, Watertown, NY 13601-0838

Phone Number: 315-221-5884

Email: aileen.anderson@usda.gov with a copy to FPAC.BC.GAD@USDA.GOV (please copy and paste “USDA-NRCS-NHQ-SOILS-21-NOFO0001107” in the subject line)

H. OTHER INFORMATION

1. Questions regarding this opportunity must be submitted to the Federal Awarding Agency Contact identified above via email with the NFO number in the subject line. Questions must be submitted by May 15, 2021. A summary of questions and answers will be posted to the Related Documents tab of this NFO in Grants.gov approximately two weeks before the application due date.
2. For technical issues with Grants.gov, please contact Grants.gov Applicant Support at 1-800-518-4726 or support@grants.gov. Awarding agency staff cannot support applicants regarding Grants.gov accounts.
3. **Freedom of Information Act (FOIA)**
Applications are considered confidential information. Applications are not shared with individuals or entities seeking public disclosure through the Freedom of Information Act (FOIA) without the consent of the applicant. More specifically, Executive Order 12600 and USDA FOIA regulation 7 CFR Part 1, Subpart A requires the awarding agency to provide notice to applicants that a third party has requested

copies of their business information, and requires the awarding agency to consult with applicants regarding the releasing their records.

4. Government Obligation

The Federal Government is not obligated to make any Federal award as a result of this opportunity. Only authorized federal officials can bind the Federal Government to the expenditure of funds.

This request represents the continuation of annual funded research projects for the last ten years. It is anticipated that there will be continued funded research at a level dependent on agency priorities and allocations. More information on the USDA/NRCS soils program can be found at <https://soils.usda.gov>.

U.S. Department of Agriculture Non-Discrimination Statement

In accordance with Federal civil rights law and U.S. Department of Agriculture (USDA) civil rights regulations and policies, the USDA, its Agencies, offices, and employees, and institutions participating in or administering USDA programs are prohibited from discriminating based on race, color, national origin, religion, sex, gender identity (including gender expression), sexual orientation, disability, age, marital status, family/parental status, income derived from a public assistance program, political beliefs, or reprisal or retaliation for prior civil rights activity, in any program or activity conducted or funded by USDA (not all bases apply to all programs). Remedies and complaint filing deadlines vary by program or incident.

Persons with disabilities who require alternative means of communication for program information (e.g., Braille, large print, audiotope, American Sign Language, etc.) should contact the responsible Agency or USDA's TARGET Center at (202) 720-2600 (voice and TTY) or contact USDA through the Federal Relay Service at (800) 877-8339. Additionally, program information may be made available in languages other than English.

To file a program discrimination complaint, complete the USDA Program Discrimination Complaint Form, AD-3027, found online at <https://www.ascr.usda.gov/filing-program-discrimination-complaint-usda-customer> and at any USDA office or write a letter addressed to USDA and provide in the letter all of the information requested in the form. To request a copy of the complaint form, call

(866) 632-9992. Submit your completed form or letter to USDA by:

(1) mail: U.S. Department of Agriculture

Office of the Assistant Secretary for Civil Rights

1400 Independence Avenue, SW

Washington, D.C. 20250-9410;

(2) fax: (202) 690-7442; or

(3) email: program.intake@usda.gov.

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