

Global Change, Ultraviolet Radiation Monitoring and Research Program

Fiscal Year (FY) 2016 Request for Applications (RFA)

APPLICATION DEADLINE: May 16, 2016

ELIGIBILITY: See Part III, A of RFA

ANTICIPATED AWARD AMOUNT: \$3,925,000



United States
Department of
Agriculture

National Institute
of Food and
Agriculture

NATIONAL INSTITUTE OF FOOD AND AGRICULTURE; U.S. DEPARTMENT OF AGRICULTURE

Global Change, Ultraviolet Radiation Monitoring and Research Program

INITIAL ANNOUNCEMENT

CATALOG OF FEDERAL DOMESTIC ASSISTANCE: This program is listed in the Catalog of Federal Domestic Assistance under 10.200.

DATES: Applications must be received by **5:00 p.m. Eastern Time on May 16, 2016**. Applications received after this deadline will normally not be considered for funding (see Part IV, C. of this RFA). Comments regarding this request for applications (RFA) are requested within 6 months from the issuance of this notice. Comments received after that date will be considered to the extent practicable.

STAKEHOLDER INPUT: The National Institute of Food and Agriculture (NIFA) seeks your comments about this RFA. We will consider the comments when we develop the next RFA for the program, if applicable, and we'll use them to meet the requirements of section 103(c)(2) of the Agricultural Research, Extension, and Education Reform Act of 1998 (7 U.S.C. 7613(c)(2)). Submit written stakeholder comments by the deadline set forth in the DATES portion of this Notice via e-mail to: Policy@nifa.usda.gov. (This e-mail address is intended only for receiving comments regarding this RFA and not requesting information or forms.) In your comments, please state that you are responding to the **Global Change, Ultraviolet Radiation Monitoring and Research Program RFA**.

EXECUTIVE SUMMARY: NIFA requests applications for the Global Change, Ultraviolet Radiation Monitoring and Research Program (GC/UV-B) for fiscal year (FY) 2016 to: provide climatological data on ultraviolet radiation (UV-B) reaching the Earth's surface; uncover the biological responses of plants, animals, and ecosystems to UV-B; and assess the combined impact of UV-B and other stressors on crops, forests, and rangelands. This is a three (3) year program for approximately \$3.9 million. The amount available for NIFA to support this grant in FY 2016 is \$1,308,336. NIFA anticipates that only one (1) award will be made at this amount. Subsequent annual increments of funding will be dependent on satisfactory progress by the awardee and the availability of appropriated funds.

This notice identifies the objectives for GC/UV-B projects, the eligibility criteria for projects and applicants, and the application forms and associated instructions needed to apply for a GC/UV-B grant.

Table of Contents

PART I—FUNDING OPPORTUNITY DESCRIPTION 4
 A. Legislative Authority and Background 4
 B. Purpose and Priorities 4

PART II—AWARD INFORMATION 7
 A. Available Funding..... 7
 B. Types of Applications 7
 C. Project Types..... 7
 D. Scientific Peer Review 7
 E. Responsible and Ethical Conduct of Research..... 8

PART III—ELIGIBILITY INFORMATION..... 9
 A. Eligible Applicants..... 9
 B. Cost Sharing or Matching 9
 A. Electronic Application Package..... 11
 B. Content and Form of Application Submission..... 12
 C. Submission Dates and Times 16
 D. Funding Restrictions 16
 E. Other Submission Requirements..... 17

PART V—APPLICATION REVIEW REQUIREMENTS 18
 A. General..... 18
 B. Evaluation Criteria 18
 C. Conflicts of Interest and Confidentiality 19
 D. Organizational Management Information 19
 E. Application Disposition 19

PART VI—AWARD ADMINISTRATION 20
 A. General..... 20
 B. Award Notice..... 20
 C. Administrative and National Policy Requirements 21
 D. Expected Program Outputs and Reporting Requirements 21

PART VII—AGENCY CONTACTS 22

PART VIII—OTHER INFORMATION..... 23
 A. Access to Review Information 23
 B. Use of Funds; Changes 23
 C. Confidential Aspects of Applications and Awards 24
 D. Regulatory Information 24
 E. Definitions..... 24

PART I—FUNDING OPPORTUNITY DESCRIPTION

A. Legislative Authority and Background

The authority for this program is contained in subsection (c)(1)(B) of section 2 of the Competitive, Special, and Facilities Research Grant Act, of Pub. L. No. 89-106, as amended (7 U.S.C. 450i(c)(1)(B)). Of the administrative regulations at 7 CFR part 3400, only section 3400.1, Applicability of Regulations, subpart C, Peer and Merit Review Arranged by Grantees, and subpart D, Annual Reports, apply to the Special Grants Programs solicited and awarded under the authority of section 2(c)(1)(B) of this Act (7 U.S.C. 450i(c))

In accordance with the statutory authority, grants awarded under this program will be for the purpose of facilitating or expanding ongoing State-Federal food and agricultural research programs that: (i) Promote excellence in research on a regional and national level; (ii) promote the development of regional research centers; (iii) promote the research partnership between the Department of Agriculture, colleges and universities, research foundations, and State agricultural experiment stations for regional research efforts; and (iv) facilitate coordination and cooperation of research among States through regional research grants.

B. Purpose and Priorities

The Global Change, Ultraviolet Radiation Monitoring and Research Program is aligned with the [USDA Research, Education, and Economics Action Plan](#), and specifically addresses: Goal 1 – Sustainable Intensification of Agricultural Production, by projecting medium-and long-range shifts in regional and national crop productivity and their economic impacts; and Goal 2 – Responding to Climate and Energy Needs, by understanding changes in solar radiation and their impacts on agriculture. GC/UV-B is aligned with the [NIFA Strategic Plan](#), and specifically addresses Strategic Goal 1 (Science), by advancing our ability to fight hunger and ensure global food security (Subgoal 1.1) and by advancing development and delivery of science for agricultural, forest, and range systems adapted to climate variability and to mitigate climate impacts (Subgoal 1.2).

The USDA has long been concerned about high levels of ultraviolet radiation (UV-B) from the Sun, which are known to have harmful effects on agricultural crops, rangelands, forest ecosystems, livestock, humans, and built infrastructure. The purpose of the Global Change, Ultraviolet Radiation Monitoring and Research Program is to support research and research infrastructure which:

- generates an uninterrupted stream of climatology data;
- determines mechanisms and symptoms of plant and animal response; and
- applies tightly integrated models to assess regional and national impacts (both biological and economic) of multiple plant stressors.

These three (3) components are detailed immediately below. **Only applications that address all three (3) elements of the above “purpose” statement will be accepted for peer review. Furthermore, NIFA expects to make only one (1) award that encompasses the full scope of the program.**

Climatology Data Collection. To understand better the impacts of UV-B radiation on U.S. agricultural production systems, NIFA is soliciting applications that can generate and deliver high-quality UV-B radiation data for use by USDA and plant and animal scientists nationally. To be useful, multi-band and broadband UV-B data must be collected at a minimum of 25 locations around the continental U.S., covering different eco-regions, elevations, and land-use types. Sites should include a mix of crop, forest, and range lands. Measurements should be taken at least every quarter hour and made available via the Internet within 48 hours of collection. Companion measurements of photosynthetically active radiation and basic weather information (temperature, humidity, and barometric pressure) are also expected to be part of the data stream. Extensive quality assurance and quality control protocols should be included to ensure that the delivered data meet the highest possible scientific standards. In addition to the above requirements, the immediate need for uninterrupted data demands that applicants must provide a plan that demonstrates the capability to maintain uninterrupted data collection and availability for the user community.

Effects Research. In addition to the climatology data collection component, applications must include research activities to evaluate the isolated effects of elevated UV-B, as well as the combined effects of UV-B and other stress factors, such as moisture (drought), elevated temperature, ozone, soil nutrients, and elevated CO₂ on agriculturally important plants, such as crops, range, and forests. Plant susceptibility and adaptability to elevated UV-B levels is extremely variable. For most economically important agricultural plants, both symptomatic and physiological responses are poorly understood. This research component supports experimental studies to advance the knowledge of UV-B induced phenological, morphological, physiological, and productivity changes in agricultural crops. In addition, projects may investigate the underlying metabolic pathways that mediate between gene expression and organism response. Quantified results of these plant effects studies should lead directly to algorithms that can be incorporated in crop models for use in a comprehensive assessment system (described immediately below).

Integrated Assessment. As our knowledge of plant exposure to UV-B increases and our understanding of UV-B effects becomes more refined and complete, we need to integrate such information for agricultural management across time and space. By examining how crop plant growth and productivity are affected over one (1) or more growing seasons, across large geographic areas, under differing management practices, and under the conditions of climate change, we can begin to understand the national implications of elevated UV-B in concert with other stress factors. Consequently, applications to GC/UV-B must also provide for the development and application of an integrated crop assessment modeling system that accurately simulates crop productivity and its dependence on various climatic and environmental stress factors at the regional and national scales. As a minimum requirement, such a system must be capable of predicting both climate and UV-B variations, using mechanistic dynamic models for crop growth and development that are fully coupled with regional climate models. The assessment system should also effectively assimilate or integrate satellite remote sensing and in-situ measurement data most relevant to crop-climate-UV-B interactions. As such, any proposed assessment system should demonstrate the capability to address UV-B effects on crop productivity in concert with other stressors, including variability and changes in water (drought), temperature (heat), and soil nutrients, as well as elevated ambient CO₂ and/or ozone

concentrations. Furthermore, applicants must demonstrate (via published literature such as refereed journals or scientific proceedings) that they have already incorporated UV-B data into at least one (1) crop growth model, and that they can deliver scientifically credible regional crop predictions by the end of the one (1) year grant period using an assessment system with the aforementioned components. The focus should be on agricultural crops of economic importance as noted under Effects Research.

eXtension

GC/UV-B encourages, but does not require, projects that develop content suitable for delivery through eXtension (<https://extension.org/>).

PART II—AWARD INFORMATION

A. Available Funding

While GC/UV-B is a three (3) year program for approximately \$3.9 million, the amount available for NIFA support of this grant in FY 2016 is \$1,308,336. The funds will be awarded through a New Continuation grant. Subsequent annual increments of funding will be contingent upon on satisfactory progress by the awardee and the availability of appropriated funds. There is no commitment by USDA to fund any particular application. NIFA anticipates that only one (1) award will be made at this amount.

Awards issued as a result of this RFA will have designated the Automated Standard Applications for Payment System (ASAP), operated by the Department of Treasury's Bureau of the Fiscal Service, as the payment system for funds. For more information see <http://fms.treas.gov/index1.html>.

B. Types of Applications

In FY 2016, you may only submit a new application to the GC/UV-B Program.

New application. This is a project application that has not been previously submitted to the GC/UV-B Program. We will review all new applications competitively using the selection process and evaluation criteria described in Part V—Application Review Requirements.

C. Project Types

As noted above in the Purpose and Priorities, NIFA anticipates making a single award covering all three (3) components of the GC/UV-B. Only research projects covering the full scope of the GC/UV-B will be considered. The project period is three (3) years.

D. Scientific Peer Review

Subsection (c)(5) of the Competitive, Special, and Facilities Research Grant Act, as amended (7 U.S.C. 450i(c)(5)) requires applicants to conduct scientific peer review of their proposed research activities in accordance with regulations promulgated by the Secretary prior to the Secretary making a grant award under this authority. Regulations implementing this requirement are set forth in 7 CFR part 3400.20. The regulations impose the following requirements:

- 1) Scientific peer review. Prior to the award of a standard or continuation grant by NIFA any proposed project shall have undergone a review arranged by the grantee. For research projects, such review must be a scientific peer review conducted in accordance with 7 CFR 3400.21.
- 2) Credible and independent review. A review arranged by the grantee must provide for a credible and independent assessment of the proposed project. A credible review is one (1) that provides an appraisal of technical quality and relevance sufficient for an organizational

representative to make an informed judgment as to whether the proposal is appropriate for submission for Federal support. To provide for an independent review, such review may include USDA employees, but should not be conducted solely by USDA employees.

3) Notice of completion and retention of records. **A PDF version of the Scientific Peer Review Certification of the review shall be conveyed in writing to NIFA as part of the Other Attachments (Field 12. of the R&R Other Project Information Form).** The written notice constitutes certification by the applicant that a review in compliance with these regulations has occurred. Applicants are not required to submit results of the review to NIFA; however, proper documentation of the review process and results should be retained by the applicant. **Please note: award funds cannot be released until the Scientific Peer Review Certification is received.**

E. Responsible and Ethical Conduct of Research

In accordance with sections 2, 3, and 8 of 2 CFR Part 422, institutions that conduct USDA-funded extramural research must foster an atmosphere conducive to research integrity, bear primary responsibility for prevention and detection of research misconduct, and maintain and effectively communicate and train their staff regarding policies and procedures. In the event an application to NIFA results in an award, the Authorized Representative (AR) assures, through acceptance of the award that the institution will comply with the above requirements. Award recipients shall, upon request, make available to NIFA the policies, procedures, and documentation to support the conduct of the training.

See <http://nifa.usda.gov/responsible-and-ethical-conduct-research> for more information.

PART III—ELIGIBILITY INFORMATION

A. Eligible Applicants

Applications may only be submitted by State agricultural experiment stations, land-grant colleges and universities, research foundations established by land-grant colleges and universities, colleges and universities receiving funds under the Act of October 10, 1962, as amended (16 USC 582a et seq.), and accredited schools or colleges of veterinary medicine. Award recipients may subcontract to organizations not eligible to apply provided such organizations are necessary for the conduct of the project. Failure to meet an eligibility criterion by the time of application deadline may result in the application being excluded from consideration or, even though an application may be reviewed, will preclude NIFA from making an award.

B. Cost Sharing or Matching

In accordance with section 1492 of the National Agricultural Research, Extension, and Teaching Policy Act of 1977 (7 U.S.C. 3371), as added by section 7128 of the Agricultural Act of 2014 (Pub. L. 113-79), for grants awarded after October 1, 2014, the recipient of an award from the Global Change (GC/UV-B) program must provide funds, in-kind contributions, or a combination of both, from sources other than funds provided through such grant in an amount that is at least equal to the amount awarded by NIFA unless one (1) of the exemptions described herein is applicable. Note that NIFA included information at http://www.nifa.usda.gov/business/awards/matching_require.html to further assist you in determining if you must meet the new matching requirement.

The matching funds requirement does not apply to grants awarded:

1. To a research agency of the United States Department of Agriculture (USDA); or
2. To an entity eligible to receive funds under a capacity and infrastructure program (as defined in section 251(f)(1)(C) of the Department of Agriculture Reorganization Act of 1994, 7 U.S.C. 6971(f)(1)(C)), including a partner (see Part VIII, E. Definitions for definition of partnership) of such an entity.

Entities eligible to receive funds under a capacity and infrastructure program and exempt from the matching funds requirement include:

- a. 1862 Land-grant Institutions, including State Agricultural Experiment Stations receiving funding under the Hatch Act of 1887
- b. 1890 Land-grant Institutions
- c. 1994 Land-grant Institutions
- d. Entities eligible to receive funds under the of Continuing Animal Health and Disease, Food Security, and Stewardship Research, Education, and Extension Program Funds — Capacity and Infrastructure Program (CIP)
- e. Hispanic-Serving Agricultural Colleges and Universities (HSACU)

- f. Insular Area Schools Eligible to Receive Funds from the Distance Education/Resident Instruction Grant Programs
- g. Entities eligible to receive funds under the of McIntire-Stennis Cooperative Forestry Program Funds
- h. Non-Land Grant Colleges of Agriculture (NLGCA) – (for exemption from the new matching requirement, these applications must include NLGCA certification, see instructions for requesting certifications at <http://www.nifa.usda.gov/form/form.html>, and for attaching the certification in Part IV, B. of this RFA).
- i. Entities eligible to receive funds under the of funds under a program established under section 1417(b) of the National Agricultural Research, Extension, and Teaching Policy Act of 1977 (7 U.S.C. 3152(b)), including: (1) 1890 Institution Teaching, Research, and Extension Capacity Building Grants Program; (2) Higher Education Challenge Grants Program; (3) Higher Education Multicultural Scholars Program; and (4) Food and Agricultural Sciences National Needs Graduate and Postgraduate Fellowship Grants Program.
- j. Individual public or private, nonprofit Alaska Native-Serving and Native Hawaiian-Serving Institutions of higher education (see 20 U.S.C. 1059d).

A proposal submitted in response to this RFA may indicate that the work will be completed by multiple entities as a collaborative partnership. All partners must have a substantial involvement in the project throughout the life of the project. If a partnership among multiple entities is proposed, the proposal must clearly identify the following:

- 1) A narrative of each entity's clearly established role in the project;
- 2) How each entity involved as a partner on the project will contribute to execution of project objectives, determination of experimental design, development of the project work plan and time table, and submission of collaborative, timely reports; and
- 3) A comprehensive project budget that reflects each entity's financial or third party in-kind contribution (see section 2 of 7 CFR 3430 or section 96 of 2 CFR part 200) to the total project budget costs.

If a proposal indicates that the work on the project will be completed by multiple entities as partners, and at least one (1) entity is exempt from the matching requirement under #2 above, the entire project will be exempt from the matching requirement regardless of whether all entities involved are otherwise exempt. Any partner entity can serve as the lead entity on the project. All partners must be significantly involved in the project.

After proposals have been recommended for award, NIFA will determine if the submitted proposal and proposed division of work reflects substantial involvement of all entities involved. If a proposal is recommended for award to a lead entity not otherwise exempt from the matching requirement and the proposal does not reflect substantial involvement of at least one (1) partner that is exempt under #2 above, then the matching requirement will apply. Exemption from the matching requirement for an entity not otherwise exempt is limited to the project for which it is a partner.

Waiver of Match - NIFA may waive the matching funds requirement for a recipient for one (1) year with respect to a competitive grant that involves research or extension activities that are consistent with the priorities established by the National Agricultural Research, Education, Extension and Economics Advisory Board (NAREEEAB) for the year involved. To determine whether proposed activities are consistent with the priorities of the NAREEEAB, please refer to the [2014 Research, Education and Economics Action Plan. Instructions for requesting a waiver are included in Part IV, C. of this RFA.](#)

A. Electronic Application Package

Only electronic applications may be submitted via Grants.gov to NIFA in response to this RFA. We urge you to submit early to the Grants.gov system. For an overview of the Grants.gov application process see <http://www.grants.gov/web/grants/applicants/grant-application-process.html>.

New Users of Grants.gov

Prior to preparing an application, we recommend that the Project Director/Principal Investigator (PD/PI) first contact an Authorized Representative (AR, also referred to as Authorized Organizational Representative or AOR) to determine if the organization is prepared to submit electronic applications through Grants.gov. If not (e.g., the institution/organization is new to the electronic grant application process through Grants.gov), then the one-time registration process must be completed PRIOR to submitting an application. It can take as long as 2 weeks to complete the registration process so it is critical to begin as soon as possible. In such situations, the AR should go to **“Register” in the top right corner of the Grants.gov web page (or go to <http://www.grants.gov/web/grants/register.html>) for information on registering the institution/organization with Grants.gov.** Part II.1. of the NIFA Grants.gov Application Guide contains detailed information regarding the registration process. Refer to item 2. below to locate the “NIFA Grants.gov Application Guide”.

Steps to Obtain Application Package Materials

To receive application materials:

1. You must download and install a version of Adobe Reader compatible with Grants.gov to access, complete, and submit applications. For basic system requirements and download instructions, see <http://www.grants.gov/web/grants/support/technical-support/software/adobe-reader-compatibility.html>. Grants.gov has a test package that will help you determine whether your current version of Adobe Reader is compatible.
2. To obtain the application package from Grants.gov, go to <http://www.grants.gov/web/grants/applicants/apply-for-grants.html>. Under Step 1 click on “Download a Grant Application Package,” and enter the funding opportunity number

Funding Opportunity Number: USDA-NIFA-SRGP-005797 in the appropriate box and click “Download Package.” From the search results, click “Download” to access the application package.

Contained within the application package is the “NIFA Grants.gov Application Guide.” This guide contains an introduction and general Grants.gov instructions, information about how to use a Grant Application Package in Grants.gov, and instructions on how to complete the application forms.

If you require assistance to access the application package (e.g., downloading or navigating Adobe forms) **or submitting the application**, refer to resources available on the Grants.gov website (<http://www.grants.gov/web/grants/applicants/applicant-resources.html>). Grants.gov assistance is also available at:

Grants.gov customer support
800-518-4726 Toll-Free or 606-545-5035
Business Hours: 24 hours a day, 7 days a week. Closed on [federal holidays](#).
Email: support@grants.gov

Grants.gov iPortal (see <https://grants-portal.psc.gov/Welcome.aspx?pt=Grants>):
Top 10 requested help topics (FAQs), Searchable knowledge base, self-service ticketing and ticket status, and live web chat (available 7 a.m. - 9 p.m. ET). Get help now!

Have the following information available when contacting Grants.gov:

- Funding Opportunity Number (FON)
- Name of agency you are applying to
- Specific area of concern

B. Content and Form of Application Submission

You should prepare electronic applications following Parts V and VI of the NIFA Grants.gov Application Guide. This guide is part of the corresponding application package (see Section A. of this Part). The following is **additional information** needed to prepare an application in response to this RFA. **If there is discrepancy between the two (2) documents, the information contained in this RFA is overriding.**

Note the attachment requirements (e.g., PDF) in Part III section 3. of the guide. ANY PROPOSALS THAT ARE NON-COMPLIANT WITH THE REQUIREMENTS (e.g., content format, PDF file format, file name restrictions, and no password protected files) WILL BE AT RISK OF BEING EXCLUDED FROM NIFA REVIEW. Grants.gov does not check for NIFA required attachments or that attachments are in PDF format; see Part III section 6.1 of the guide for how to check the manifest of submitted files. Partial applications will be excluded from NIFA review. We will accept subsequent submissions of an application until close of business on the closing date in the RFA (see Part V, 2.1 of the NIFA Grants.gov Application Guide for further information).

For any questions related to the preparation of an application, review the NIFA Grants.gov Application Guide and the applicable RFA. If assistance is still needed for preparing application forms content, contact:

- Email: electronic@nifa.usda.gov
- Phone: 202-401-5048
- Business hours: Monday through Friday, 7 a.m. – 5 p.m. ET, excluding federal holidays.

1. SF 424 R&R Cover Sheet

Information related to the questions on this form is dealt with in detail in Part V, 2. of the NIFA Grants.gov Application Guide. See Section 2.18 of the NIFA Grants.gov Application Guide which provides that the applicant's electronic signature on the SF-424 affirms its agreement with Federal representations and assurances (e.g., Prohibition Against FY 16 Appropriations Act Funding Under Grants and Cooperative Agreements With Entities Requiring Certain Internal Confidentiality Agreements...)

2. SF 424 R&R Project/Performance Site Location(s)

Information related to the questions on this form is dealt with in detail in Part V, 3. of the NIFA Grants.gov Application Guide.

3. R&R Other Project Information Form

Information related to the questions on this form is dealt with in detail in Part V, 4. of the NIFA Grants.gov Application Guide.

a. Field 7. Project Summary/Abstract. The summary should also include the relevance of the project to the goals of GC/UV-B. See Part V. 4.7 of NIFA Grants.gov Application Guide for further instructions and a link to a suggested template.

b. Field 8. Project Narrative.

NOTE: The Project Narrative shall not exceed 20 pages of written text regardless of whether it is single- or double-spaced and up to 5 additional pages for figures and tables. We have established this maximum (25 pages) to ensure fair and equitable competition. The Project Narrative must include all of the following:

- 1) Introduction: Include a clear statement of the long-term goal(s) and supporting objectives of the proposed activities. Summarize the body of knowledge or other past activities that substantiate the need for the proposed project. Describe ongoing or recently completed significant activities that relate to the proposed project including the work of key project personnel. Include preliminary data/information pertinent to the proposed project. In addition, this section should include in-depth information on the following, when applicable:
 - a. Estimates of the magnitude of the issues and their relevance to stakeholders and to ongoing state-federal food and agricultural research, education and extension programs.
 - b. The role of stakeholders in problem identification, planning, implementation, and evaluation as appropriate.

c. Reasons for performing the work at the proposing institution.

- 2) Objectives. A clear, concise, complete, and logically arranged statement(s) of the specific aims of the proposed effort must be included in all applications. For renewal applications, a restatement of the objectives outlined in the active grant also should be provided
- 3) Procedures. The procedures or methodology to be applied to the proposed effort should be explicitly stated. This section should include but not necessarily be limited to: (i) a description of the proposed investigations and/or experiments in the sequence in which it is planned to carry them out; (ii) techniques to be employed, including their feasibility; (iii) kinds of results expected; (iv) means by which data will be analyzed or interpreted; (v) pitfalls which might be encountered; and (vi) limitations to proposed procedures.
- 4) Literature Review. A summary of pertinent publications with emphasis on their relationship to the effort being proposed should be provided and should include all important and recent publications from other institutions, as well as those from your institution. The citations themselves should be accurate, complete, and written in an acceptable journal format.
- 5) Current Work. Current unpublished institutional activities to date should be described, as they relate to this program.
- 6) Project Timetable. The application should outline all important phases as a function of time, year by year, for the entire project period.

An application must be sure to include the following specific information appropriate to each of the three (3) GC/UV-B components described above:

1) Climatology Data Collection:

- a. Clearly demonstrate the ability to collect multi-band and broadband UV-B data at a minimum of 25 locations around the continental U.S., including coverage for different eco-regions, elevations, and land-use types.
- b. Document each proposed data collection site. Proposals must include a mix of crop, forest, and range lands.
- c. Describe a comprehensive process of logging measurements taken at least every quarter hour and disseminating data via the Internet within 48 hours of collection. Companion measurements of photosynthetically active radiation and basic weather information (temperature, humidity, and barometric pressure) must be included as part of the comprehensive process.
- d. List and describe all quality control protocols that will ensure that the delivered data meet the highest possible scientific standards.
- e. Describe a plan that ensures uninterrupted data collection and availability that is contiguous with the current climatology data stream.

2) Effects Research:

- a. Clearly describe proposed experimental studies that will advance the knowledge of UV-B induced phenological, morphological, physiological, and productivity changes in plants.
- b. Explain how experimental results will be utilized to support integrated climate-crop modeling priorities.
- c. Clearly define a process for converting quantified results of these plant effects studies directly into algorithms that can be incorporated in crop models for use in a comprehensive assessment system.
- d. Describe the capacity of the proposing institution to perform the proposed work.

3) Integrated assessment:

- a. Describe plans to develop and apply an integrated crop assessment modeling system that accurately simulates crop productivity and its dependence on various climatic and environmental stress factors at the regional and national scales.
- b. Describe proposed development of a crop assessment modeling system capable of predicting both climate and UV-B variations, using mechanistic dynamic models for crop growth and development that are fully coupled with regional climate models.
- c. Proposed projects must demonstrate effective assimilation or integration of satellite remote sensing and in-situ measurement data most relevant to crop-climate-UV-B interactions.
- d. Demonstrate the capability to address UV-B effects on crop productivity in concert with other stressors, including variability and changes in water (drought), temperature (heat), and soil nutrients, as well as elevated ambient CO₂ and/or ozone concentrations.
- e. Applicants must demonstrate (via published literature such as refereed journals or scientific proceedings) that they have previously incorporated UV-B data into at least one (1) crop growth model, and that they can deliver scientifically credible regional crop predictions by the end of the one (1) year grant period using an assessment system with the aforementioned components.

4. R&R Senior/Key Person Profile (Expanded)

Information related to the questions on this form is dealt with in detail in Part V, 5. of the NIFA Grants.gov Application Guide. This section of the Guide includes information about the people who require a Senior/Key Person Profile, and details about the Biographical Sketch and the Current and Pending Support, including a link to a suggested template for the Current and Pending Support.

5. R&R Personal Data – As noted in Part V, 6. of the NIFA Grants.gov Application Guide, the submission of this information is voluntary and is not a precondition of award. However, NIFA strongly encourages applicants to provide the requested information to help NIFA identify and address any inequities based on gender, race, ethnicity, or disability of its proposed PDs/PIs and co-PDs/PIs. Information not submitted will seriously undermine the statistical validity, and therefore the usefulness, of information received from others.. The information you submit will be kept confidential and will be used only for tracking and statistical purposes necessary to meet the demands of the agency and will not be part of the review process.

6. R&R Budget

Information related to the questions on this form is dealt with in detail in Part V, 7. of the NIFA Grants.gov Application Guide.

7. Supplemental Information Form

Information related to the questions on this form is dealt with in detail in Part VI, 1. of the NIFA Grants.gov Application Guide.

- a. **Field 2. Program to which you are applying.** Enter the program code name (i.e., enter “**Global Change/Ultraviolet Radiation**”) and the program code (i.e., enter “**HZ**”). Note that accurate entry of the program code is very important for proper and timely processing of an application.
- b. **Field 8. Conflict of Interest List.** See Part VI, 1.8 of the NIFA Grants.gov Application Guide for further instructions and a link to a suggested template.

C. Submission Dates and Times

Prior to electronic submission of the application via Grants.gov, it is strongly recommended that an administrative review be conducted to ensure that an application complies with all application preparation instructions. An application checklist is included in Part VII of the NIFA Grants.gov Application Guide to assist with this review.

Instructions for submitting an application are included in Part IV, Section 1.9 of the NIFA Grants.gov Application Guide.

Applications must be received by Grants.gov by **5:00 p.m. Eastern Time on May 16, 2016**. Applications received after this deadline will normally not be considered for funding.

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

We send email correspondence to the AR regarding the status of submitted applications. Therefore, applicants are strongly encouraged to provide accurate e-mail addresses, where designated, on the SF-424 R&R Application for Federal Assistance.

If the AR has not received correspondence **from NIFA** regarding a submitted application within 30 days of the established deadline, contact the Agency Contact identified in Part VII of the applicable RFA and request the proposal number assigned to the application. **Failure to do so may result in the application not being considered for funding by the peer review panel. Once the application has been assigned a proposal number, this number should be cited on all future correspondence.**

D. Funding Restrictions

Pursuant to Section 1473 of the National Agriculture Research, Extension, and Teaching Policy Act of 1977, as amended, 7 USC 3319, indirect costs or tuition remission are not allowable costs under section 2(c)(1)(B) projects, and no funds will be approved for this purpose. Further, costs that are a part of an institution's indirect cost pool (e.g., administrative or clerical salaries) may not be reclassified as direct costs for the purpose of making them allowable.

NIFA has determined that grant funds awarded under this authority may not be used for the renovation or refurbishment of research, education, or extension space; the purchase or installation of fixed equipment in such space; or the planning, repair, rehabilitation, acquisition, or construction of buildings or facilities.

Any costs being charged to this award must be incurred within the project period.

If a project is selected for funding, additional information may be requested from the applicant.

E. Other Submission Requirements

You should follow the submission requirements noted in Part IV, section 1.9 in the document entitled “NIFA Grants.gov Application Guide.”

For information about the **status of a submitted application**, see Part III., section 6. of the NIFA Grants.gov Application Guide.

See Part V., Section 4.12. of the NIFA Grants.gov Application Guide (Field 12 on the Form) for instructions regarding **mandatory** Felony Convictions or Tax Delinquent Status”.

PART V—APPLICATION REVIEW REQUIREMENTS

A. General

We evaluate each application in a 2-part process. First, we screen each application to ensure that it meets the administrative requirements as set forth in this RFA. Second, a technical peer review panel will evaluate applications that meet the administrative requirements.

We select peer reviewers based upon their training and experience in relevant scientific, extension, or education fields, taking into account the following factors: (a) The level of relevant formal scientific, technical education, or extension experience of the individual, as well as the extent to which an individual is engaged in relevant research, education, or extension activities; (b) the need to include as reviewers experts from various areas of specialization within relevant scientific, education, or extension fields; (c) the need to include as reviewers other experts (e.g., producers, range or forest managers/operators, and consumers) who can assess relevance of the applications to targeted audiences and to program needs; (d) the need to include as reviewers experts from a variety of organizational types (e.g., colleges, universities, industry, state and federal agencies, and private profit and non-profit organizations) and geographic locations; (e) the need to maintain a balanced composition of reviewers with regard to minority and female representation and an equitable age distribution; and (f) the need to include reviewers who can judge the effective usefulness of each application to producers and the general public.

After initial review and screening by a peer panel of experts, the highest-ranked application will be further evaluated through on-site review by that same peer review panel, accompanied by GC/UV-B program staff.

When the peer review panel has completed its deliberations, the responsible program staff of GC/UV-B will recommend that the project: (a) be approved for support from currently available funds or (b) be declined due to insufficient funds or unfavorable review.

NIFA reserves the right to negotiate with the PD/PI and/or with the submitting organization or institution regarding project revisions (e.g., reductions in the scope of work, funding level, period, or method of support) prior to recommending any project for funding.

B. Evaluation Criteria

We will use the evaluation criteria below to review applications submitted in response to this RFA:

- (1) Technical Merit – 25%
 - a. Proposed objectives and outcomes are clearly described, adequate, and appropriate;
 - b. Proposed approaches, procedures, or methodologies are innovative, original, clearly defined, and feasible; and
 - c. Expected outcomes are clearly stated and achievable.

- (2) Project Relevance to Program Purpose and Priorities – 50%

- a. Adequacy of proposal response to items required in the Project Narrative;
- b. Proposal methodology articulates how the project meets the stated requirements for the full scope of GC/UV-B priorities; and
- c. Demonstration of feasibility through preliminary results, operational models, peer-reviewed publications, and an agricultural climatology track record.
- d. Uninterrupted data collection and availability can be maintained with the current climatology data stream.

(3) Qualifications of Project Personnel, Adequacy of Facilities, and Project Management – 25%

- a. Roles of key personnel are clearly defined;
- b. Key personnel have sufficient prior experience to complete the proposed project;
- c. Extensive, documented experience in developing, leading, and managing a nationally recognized program of substantial complexity; and
- d. Evidence of institutional capacity, facilities, competence, and experience in the area of UV-B climatology and large-scale modelling, particularly as they relate to the requirements stated in the program priorities.

C. Conflicts of Interest and Confidentiality

During the peer evaluation process, we take extreme care to prevent any actual or perceived conflicts of interest that may impact review or evaluation. See http://www.nifa.usda.gov/business/competitive_peer_review.html for further information about conflicts of interest and confidentiality as related to the peer review process.

D. Organizational Management Information

Specific management information relating to an applicant shall be submitted on a one time basis, with updates on an as needed basis. This requirement is part of the responsibility determination prior to the award of a grant identified under this RFA, if such information has not been provided previously under this or another NIFA program. We will provide you copies of forms recommended for use in fulfilling these requirements as part of the preaward process. Although an applicant may be eligible based on its status as one (1) of these entities, there are factors that may exclude an applicant from receiving federal financial and nonfinancial assistance and benefits under this program (e.g., debarment or suspension of an individual involved or a determination that an applicant is not responsible based on submitted organizational management information).

E. Application Disposition

An application may be withdrawn at any time before a final funding decision is made regarding the application. Each application that is not selected for funding, including those that are withdrawn, will be retained by GC/UV-B for a period of three (3) years.

PART VI—AWARD ADMINISTRATION

A. General

Within the limit of funds available for such purpose, the NIFA awarding official shall make grants to those responsible, eligible applicants whose applications are judged most meritorious under the procedures set forth in this RFA. The date specified by the NIFA awarding official as the effective date of the grant shall be no later than September 30 of the federal fiscal year in which the project is approved for support and funds are appropriated for such purpose, unless otherwise permitted by law. The project need not be initiated on the grant effective date, but as soon thereafter as practical so that project goals may be attained within the funded project period. All funds granted by NIFA under this RFA may be used only for the purpose for which they are granted in accordance with the approved application and budget, regulations, terms and conditions of the award, applicable federal cost principles, USDA assistance regulations, and NIFA General Awards Administration Provisions at 7 CFR part 3430, subparts A through E.

B. Award Notice

The award document will provide pertinent instructions and information including, at a minimum:

- (1) Legal name and address of performing organization or institution to which the director has issued an award under the terms of this request for applications;
- (2) Title of project;
- (3) Name(s) and institution(s) of PDs chosen to direct and control approved activities;
- (4) Identifying award number and the Federal Agency Identification Number assigned by NIFA;
- (5) Project period, specifying the amount of time NIFA intends to support the project without requiring recompetition for funds;
- (6) Total amount of financial assistance approved for the award;
- (7) Legal authority(ies) under which the award is issued;
- (8) Appropriate Catalog of Federal Domestic Assistance (CFDA) number;
- (9) Applicable award terms and conditions (see <http://www.nifa.usda.gov/business/awards/awardterms.html> to view NIFA award terms and conditions);
- (10) Approved budget plan for categorizing allocable project funds to accomplish the stated purpose of the award; and

(11) Other information or provisions deemed necessary by NIFA to carry out its respective awarding activities or to accomplish the purpose of a particular award.

C. Administrative and National Policy Requirements

Several federal statutes and regulations apply to grant applications considered for review and to project grants awarded under this program. These may include, but are not limited to, the ones listed on the NIFA web page - <http://nifa.usda.gov/federal-regulations>.

NIFA Federal Assistance Policy Guide—a compendium of basic NIFA policies and procedures that apply to all NIFA awards, unless there are statutory, regulatory, or award-specific requirements to the contrary is available at <http://nifa.usda.gov/policy-guide>.

Responsible and Ethical Conduct of Research

Please refer to Part II, E. for more information.

D. Expected Program Outputs and Reporting Requirements

The output and reporting requirements are included in the award terms and conditions (see <http://www.nifa.usda.gov/business/awards/awardterms.html> for information about NIFA award terms). If there are any program or award-specific award terms, those, if any, will be identified in the award.

In particular, as the awarded project proceeds, the awardee will coordinate with the Program Contact to update and revise the GC/UV-B Three (3) Year Strategic Plan for electronic distribution.

PART VII—AGENCY CONTACTS

Applicants and other interested parties are encouraged to contact:

Programmatic Contact –

Daniel Schmoldt

Title: National Program Leader

Unit(s): Division of Agricultural Systems;
Institute of Food Production and Sustainability

Location: 3328 Waterfront Centre

Phone: (202) 720-4807

Email: dschmoldt@nifa.usda.gov



Administrative/Business Contacts –

Rochelle McCrea

Title: Team Leader

Unit: Office of Grants and Financial Management
Awards Management Division

Phone: (202) 401-2880

Email: rmccrea@nifa.usda.gov

Sondra Watkins

Title: Team Leader

Unit: Office of Grants and Financial Management
Awards Management Division

Phone: (202) 401-4249

Email: swatkins@nifa.usda.gov

PART VIII—OTHER INFORMATION

A. Access to Review Information

We will send copies of reviews, not including the identity of reviewers, and a summary of the panel comments to the applicant PD after the review process has been completed.

B. Use of Funds; Changes

1. Delegation of Fiscal Responsibility

Unless the terms and conditions of the award state otherwise, awardees may not in whole or in part delegate or transfer to another person, institution, or organization the responsibility for use or expenditure of award funds.

2. Changes in Project Plans

a. The permissible changes by the awardee, PD(s), or other key project personnel in the approved project shall be limited to changes in methodology, techniques, or other similar aspects of the project to expedite achievement of the project's approved goals. If the awardee or the PD(s) is uncertain as to whether a change complies with this provision, the question must be referred to the Authorized Departmental Officer (ADO) for a final determination. The ADO is the signatory of the award document, not the program contact.

b. The awardee must request, and the ADO must approve in writing, all changes in approved goals or objectives prior to effecting such changes. In no event shall requests be approved for changes that are outside the scope of the original approved project.

c. The awardee must request, and the ADO must approve in writing, all changes in approved project leadership or the replacement or reassignment of other key project personnel, prior to effecting such changes.

d. The awardee must request, and the ADO must approve in writing, all transfers of actual performance of the substantive programmatic work in whole or in part and provisions for payment of funds, whether or not federal funds are involved, prior to instituting such transfers, unless prescribed otherwise in the terms and conditions of the award.

e. The project period may be extended without additional financial support, for such additional period(s) necessary to complete or fulfill the purposes of an approved project, but in no case shall the total project period exceed any applicable statutory limit or expiring appropriation limitation. The terms and conditions of award include information about no-cost extensions of the award and when ADO's prior approval is necessary.

f. Changes in Approved Budget: Unless stated otherwise in the terms and conditions of award, changes in an approved budget must be requested by the awardee and approved in writing by the ADO prior to instituting such changes, if the revision will involve transfers or expenditures of

amounts requiring prior approval as set forth in the applicable Federal cost principles, Departmental regulations, or award.

C. Confidential Aspects of Applications and Awards

When an application results in an award, it becomes a part of the record of NIFA transactions, available to the public upon specific request. Information that the Secretary determines to be of a confidential, privileged, or proprietary nature will be held in confidence to the extent permitted by law. Therefore, any information that the applicant wishes to have considered as confidential, privileged, or proprietary should be clearly marked within the application. The original copy of an application that does not result in an award will be retained by the Agency for a period of three (3) years. Other copies will be destroyed. Such an application will be released only with the consent of the applicant or to the extent required by law. An application may be withdrawn at any time prior to the final action thereon.

D. Regulatory Information

For the reasons set forth in the final Rule related Notice to 2 CFR part 415, subpart C , this program is excluded from the scope of the Executive Order 12372 which requires intergovernmental consultation with State and local officials. Under the provisions of the Paperwork Reduction Act of 1995 (44 U.S.C. chapter 35), the collection of information requirements contained in this Notice have been approved under OMB Document No. 0524-0039.

E. Definitions

Please refer to [7 CFR 3430, Competitive and Noncompetitive Non-formula Financial Assistance Programs--General Award Administrative Provisions](#), for applicable definitions for this NIFA grant program.