

Department of Health and Human Services

Part 1. Overview Information

Participating Organization(s)

National Institutes of Health ([NIH \(http://www.nih.gov\)](http://www.nih.gov))

Components of Participating Organizations

National Cancer Institute ([NCI \(https://www.cancer.gov/\)](https://www.cancer.gov/))

National Eye Institute ([NEI \(https://www.nei.nih.gov/\)](https://www.nei.nih.gov/))

National Institute of Arthritis and Musculoskeletal and Skin Diseases ([NIAMS \(https://www.niams.nih.gov/\)](https://www.niams.nih.gov/))

Eunice Kennedy Shriver National Institute of Child Health and Human Development ([NICHD \(https://www.nichd.nih.gov/\)](https://www.nichd.nih.gov/))

National Institute on Deafness and Other Communication Disorders ([NIDCD \(https://www.nidcd.nih.gov/\)](https://www.nidcd.nih.gov/))

National Institute of Dental and Craniofacial Research ([NIDCR \(https://www.nidcr.nih.gov/\)](https://www.nidcr.nih.gov/))

National Institute of Neurological Disorders and Stroke ([NINDS \(https://www.ninds.nih.gov/\)](https://www.ninds.nih.gov/))

Funding Opportunity Title

Bioengineering Research Grants (BRG) (R01 Clinical Trial Not Allowed)

Activity Code

[R01 \(https://grants.nih.gov/grants/funding/ac_search_results.htm?text_curr=r01&Search.x=0&Search.y=0&Search_Type=Activity\)](https://grants.nih.gov/grants/funding/ac_search_results.htm?text_curr=r01&Search.x=0&Search.y=0&Search_Type=Activity) **Research Project Grant**

Announcement Type

Reissue of [PAR-19-158 \(https://grants.nih.gov/grants/guide/pa-files/PAR-19-158.html\)](https://grants.nih.gov/grants/guide/pa-files/PAR-19-158.html)

Related Notices

[NOT-HD-22-050 \(https://grants.nih.gov/grants/guide/notice-files/NOT-HD-22-050.html\)](https://grants.nih.gov/grants/guide/notice-files/NOT-HD-22-050.html) - Notice of NICHD Participation in PAR-22-242

[NOT-OD-22-190 \(https://grants.nih.gov/grants/guide/notice-files/NOT-OD-22-190.html\)](https://grants.nih.gov/grants/guide/notice-files/NOT-OD-22-190.html) - Adjustments to NIH and AHRQ Grant Application Due Dates Between September 22 and September 30, 2022

Funding Opportunity Announcement (FOA) Number

PAR-22-242

Companion Funding Opportunity

[PAR-22-243 \(https://grants.nih.gov/grants/guide/pa-files/PAR-22-243.html\)](https://grants.nih.gov/grants/guide/pa-files/PAR-22-243.html), **R01**
 [\(https://grants.nih.gov/grants/funding/ac_search_results.htm?text_curr=R01&&Search.x=0&&Search.y=0&&Search_Type=Activity\)](https://grants.nih.gov/grants/funding/ac_search_results.htm?text_curr=R01&&Search.x=0&&Search.y=0&&Search_Type=Activity)
Research Project

Number of Applications

See [Section III. 3. Additional Information on Eligibility.](#)

Assistance Listing Number(s)

93.399, 93.393, 93.394, 93.395, 93.396, 93.853, 93.173, 93.121, 93.846, 93.867, 93.865

Funding Opportunity Purpose

Purpose of this funding opportunity announcement is to encourage collaborations- between life science and physical science- that: 1) apply a multidisciplinary bioengineering approach to solve biomedical problems; and 2) develop, integrate, optimize, validate, translate or accelerate adoption of promising tools, methods and techniques: a) that fulfill an unmet need and address specific research or clinical problem in basic, translational, and/or clinical science and practice, b) capable of enhancing our understanding of health and disease, and/or c) improve practice of medicine. Applications may propose design-directed, developmental, discovery-driven, or hypothesis-driven

research, and this FOA is appropriate for small teams applying an integrative approach to increase our understanding of and solve problems in biological, clinical or translational science.

Key Dates

Posted Date

September 08, 2022

Open Date (Earliest Submission Date)

October 01, 2022

Letter of Intent Due Date(s)

Not Applicable

The following table includes NIH [standard due dates \(https://grants.nih.gov/grants/how-to-apply-application-guide/due-dates-and-submission-policies/due-dates.htm\)](https://grants.nih.gov/grants/how-to-apply-application-guide/due-dates-and-submission-policies/due-dates.htm) marked with an asterisk.

Application Due Dates			Review and Award Cycles		
New	Renewal / Resubmission / Revision (as allowed)	AIDS	Scientific Merit Review	Advisory Council Review	Earliest Start Date
October 31, 2022	November 05, 2022 *	January 07, 2023 *	March 2023	May 2023	July 2023
February 05, 2023 *	March 05, 2023 *	May 07, 2023 *	July 2023	October 2023	December 2023
June 05, 2023 *	July 05, 2023 *	September 07, 2023 *	November 2023	January 2024	April 2024
October 05, 2023 *	November 05, 2023 *	January 07, 2024 *	March 2024	May 2024	July 2024
February 05, 2024 *	March 05, 2024 *	May 07, 2024 *	July 2024	October 2024	December 2024
June 05, 2024 *	July 05, 2024 *	September 07, 2024 *	November 2024	January 2025	April 2025
October 05, 2024 *	November 05, 2024 *	January 07, 2025 *	March 2025	May 2025	July 2025
February 05, 2025 *	March 05, 2025 *	May 07, 2025 *	July 2025	October 2025	December 2025
June 05, 2025 *	July 05, 2025 *	September 07, 2025 *	November 2025	January 2026	April 2026

All applications are due by 5:00 PM local time of applicant organization.

Applicants are encouraged to apply early to allow adequate time to make any corrections to errors found in the application during the submission process by the due date.

Expiration Date

September 08, 2025

Due Dates for E.O. 12372

Not Applicable

Required Application Instructions

It is critical that applicants follow the instructions in the Research (R) Instructions in the [SF424 \(R&R\) Application Guide \(https://grants.nih.gov/grants/guide/uri_redirect.htm?id=82400\)](https://grants.nih.gov/grants/guide/uri_redirect.htm?id=82400), except where instructed to do otherwise (in this FOA or in a Notice from NIH [Guide for Grants and Contracts \(https://grants.nih.gov/grants/guide/uri_redirect.htm?id=11164\)](https://grants.nih.gov/grants/guide/uri_redirect.htm?id=11164)).

Conformance to all requirements (both in the Application Guide and the FOA) is required and strictly enforced. Applicants must read and follow all application instructions in the Application Guide as well as any program-specific instructions noted in [Section IV](#). When the program-specific instructions deviate from those in the Application Guide, follow the program-specific instructions.

Applications that do not comply with these instructions may be delayed or not accepted for review.

There are several options available to submit your application through Grants.gov to NIH and Department of Health and Human Services partners. You must use one of these submission options to access the application forms for this opportunity.

1. Use the NIH ASSIST system to prepare, submit and track your application online.

Apply Online Using ASSIST

2. Use an institutional system-to-system (S2S) solution to prepare and submit your application to Grants.gov and eRA Commons (<https://grants/guide/ApplyButtonSplash.cfm?dest=https://public.era.nih.gov/commons/>) to track your application. Check with your institutional officials regarding availability.
3. Use Grants.gov (<https://grants/guide/ApplyButtonSplash.cfm?dest=GrantsGov&oppNum=PAR-22-242>) Workspace to prepare and submit your application and eRA Commons (<https://grants/guide/ApplyButtonSplash.cfm?dest=http://public.era.nih.gov/commons/>) to track your application.

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Part 2. Full Text of Announcement

Section I. Funding Opportunity Description

Purpose

The goal of the bioengineering research grant (BRG) program is to foster development of innovative technologies, methods, tools, models or designs (for brevity, here onwards referred to as tools) that have the potential for significant impact on biomedical research by infusing principles and concepts from quantitative sciences. The purpose of this FOA is to encourage BRG applications that: 1) apply a multidisciplinary approach to solve biomedical problems; and 2) develop, integrate, optimize, validate, translate or accelerate adoption of promising tools, methods, and techniques for a specific research or clinical problem in basic, translational, and/or clinical science and practice. A BRG application may propose design-directed, developmental, discovery-driven, or hypothesis-driven research and the FOA is appropriate for small teams applying an integrative approach to increase our understanding of and solve problems in biological, clinical, or translational science.

Research Objectives

Many major biomedical research problems are best addressed with a multidisciplinary approach that bridges life sciences and physical sciences. Principles and techniques in quantitative sciences such as physics, mathematics, chemistry, computer sciences, and engineering are increasingly applied to enable and advance biomedical research. Bioengineering approaches integrate principles from diverse technical and biomedical fields, and the resulting multi-disciplinary research provides new understanding, innovative technologies, and new products that improve basic knowledge, human health, and quality of life. This FOA seeks to encourage collaborations among investigators in the fields of quantitative science and physical science with biomedical researchers to catalyze the development of innovative bioengineering approaches to solve important problems in biomedical research, translational research, clinical investigations, and medical practice.

Significant projects may include, but are not limited to: development, validation, and translation of promising modalities for the disease continuum, including tools for risk prediction, screening, prevention, detection, diagnosis, disease progression, intervention, monitoring treatment response, prognosis, or survival; development of quantitative, predictive models of complex biological systems; integration and optimization of technologies that significantly increase sensitivity, specificity, positive predictive value, negative predictive value, efficiency, or throughput of analysis to address unsolved biological or medical questions; *in vitro* and *in vivo* models, cell/tissue culture systems and organoids that closely mimic physiological conditions and allow mechanistic studies or engineering and testing of delivery systems, molecules/cells/tissues for therapeutic purposes, therapeutics, implants, and prosthetics that may improve treatment and healthcare.

Innovation in this biomedical engineering FOA has a broad definition that includes development of new methods, ideas, or tools, integration of existing components into new combinations that deliver new and/or greater capabilities, new efficiencies, and/or greater effects. Overall impact of these advances may include improving our understanding of molecular mechanisms, reducing disparities in access to care, promoting wellness and independent living, increasing access to and utility of technologies to improve quality of life, reducing the cost and complexity of procedures, and/or increasing throughput, sensitivity, and specificity of diagnostic tests.

A project must clearly serve the mission of one or more of the NIH Institutes or Centers participating in this FOA. Investigators are encouraged to contact the designated Scientific/Research contacts for individual institute focus areas that will be supported. Applicants who seek to establish proof-of-concept are encouraged to respond to the Exploratory Bioengineering Research Grant (EBRG) FOA (<https://grants.nih.gov/grants/guide/pa-files/par-22-091.html>) (<https://grants.nih.gov/grants/guide/pa-files/par-22-091.html>).

IC-Specific Interests

National Institute of Dental and Craniofacial Research (NIDCR)

The [NIDCR \(http://www.nidcr.nih.gov/\)](http://www.nidcr.nih.gov/) conducts and fosters research on the etiology, pathogenesis, prevention, diagnosis, and treatment of oral, craniofacial, and dental (DOC) diseases and conditions. Within the goals of this FOA, NIDCR is interested in supporting applied and translational research that leverages multidisciplinary principles and concepts from quantitative, biological and clinical sciences to advance the development of innovative technologies, model systems, techniques, designs, and methods with potential to significantly improve DOC health. Specific topics could include but are not limited to:

- Development and translation of technologies targeted at regeneration and restoration of diseased and injured tissues of the oral and craniofacial complex. Of interest are multi-tissue composites and organs, such as vascularized and innervated bone and muscle, salivary gland, tooth, periodontium, bone-periodontal ligament-cementum interface and osteochondral complexes such as the TMJ condyle.
- Imaging diagnostics to accelerate clinical implementation of reliable, reproducible, highly specific, and sensitive diagnostic instruments for various DOC applications.
- Safe and effective biosensors for noninvasive, dynamic, real-time monitoring of physiological status in the human body using the oral cavity as the sensing site.
- Methods, materials, and devices for orthodontic, prosthetic, periodontic, endodontic and craniofacial applications including those that can be used for bone distraction, reconstruction, hard and soft tissue healing, and regeneration, and scarless tissue repair of the craniofacial complex.
- Microphysiological systems and organoids that can be adapted to high-throughput formats for a broad range of applications, such as analysis of biomaterial and tissue function, drug efficacy and toxicology assays, biocompatibility assays, genetic screening, and elucidating mechanisms of DOC development and disease.

National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS)

In addition to mission-relevant R01 projects, the [NIAMS \(http://www.niams.nih.gov/\)](http://www.niams.nih.gov/) would specifically like to stimulate and promote research in building complex 3-dimensional in vitro human musculoskeletal and skin tissue models to study developmental biology, physiology, and disease pathogenesis of musculoskeletal tissues and skin as well as for drug discovery and toxicity studies. NIAMS is not interested in applications that are developing 3D tissues for transplantation, or engineering non-human tissue models, or developing simple 3-D models that do not go significantly beyond those currently in use, such as human skin equivalents composed of only normal keratinocytes and fibroblasts.

National Eye Institute (NEI)

The [NEI \(https://www.nei.nih.gov/\)](https://www.nei.nih.gov/) supports a broad range of basic and clinical research, clinical trials, epidemiologic studies related to health and disease in the eye and visual system. Research proposed should address a significant aspect of the leading causes of blindness and impaired vision, mechanisms of visual function, preservation of sight, or the special health problems and requirements of the blind.

National Cancer Institute (NCI)

The [NCI \(https://www.cancer.gov/\)](https://www.cancer.gov/) leads, conducts, and supports cancer research across the nation to advance scientific knowledge and help all people live longer, healthier lives. As the leader of the cancer research enterprise, collectively known as the National Cancer Program, and the largest funder of cancer research in the world, NCI manages a broad range of research, training, and information dissemination activities that reach across the entire country, meeting the needs of all demographics—rich and poor, urban and rural, and all racial/ethnic populations.

Examples of technologies that are of interest to NCI include, but are not limited to:

- *That assess the fit-for-purpose of biospecimens: determine the effects of collection, handling, processing, and storage on molecular and cellular components of interest;*
- *For quantitative and qualitative measurement of molecular and cellular markers of cancer risk, causation, and risk modification—specifically the technologies that address preanalytic factors and optimized to work with non-invasive, minimally invasive or archived samples collected from multiple populations to enable high throughput analysis at scale;*
- *For automated sample preparation for -omic analysis, and advanced multiplex and biosensor technologies for multiomic analysis*
- *Portable non-sequencing based multiplex genotyping assays;*
- *That measure cancer-relevant exposures, and molecular and cellular markers of exposures including human and microbial metabolites associated with cancer;*
- *Computational and AI strategies intended for predicting cancer-relevant exposures or history of human exposures- based on host response including immune response, pathologies, molecular markers, and metabolites to inform basic and translational studies;*
- *For advanced multiplex high-throughput technologies and biosensors for measuring natural anti-tumor immunity, immuno- genotyping and phenotyping*
- *Blood immune cell and molecular profiling;*
- *To monitor cancer treatment-related adverse events;*
- *Wearable devices and biosensors to monitor lifestyle factors and cancer-relevant exposures;*
- *At-home, high sensitivity and specific point-of-care or point-of-need cancer risk or prognostic tools;*
- *Innovative tools intended for disseminating information such as risk, and cancer-related health outcomes to different population group;*
- *Synthetic biology devices to advance understanding of cancer biology with a goal of improving cancer diagnosis and treatment;*
- *Nanotechnologies capable of biological discovery;*
- *Tools to enable deep tissue ex vivo and in vivo imaging and integration;*
- *Next-generation non-invasive cancer molecular diagnostics platforms beyond tissue biopsies;*
- *In vitro imaging diagnostic technologies;*
- *Liquid biopsy technologies with the goal of improving cancer diagnosis and treatment;*
- *Technologies for the detection and evaluation of cancer of unknown primary (CUP);*

- *Technologies for neoantigen identification, including dendritic cell-displayed antigens and neoantigens; and*
- *Engineered biomaterials that display, detect, or respond to physiologically-relevant properties of tumors or the tumor microenvironment.*

National Institute of Neurological Disorders and Stroke (NINDS)

Within the goals of this FOA, NINDS is particularly interested in bioengineering research that advances technologies directly related to the nervous system and its disorders. Examples of areas of interest include the development and validation of invasive and non-invasive devices, diagnostic/monitoring tools, advanced imaging techniques, computational models, tissue engineering, and other innovative methods directly related to reducing the negative impact of neurological disorders and stroke. Applicants are strongly encouraged to contact NINDS Scientific Program staff prior to submission. Applicants interested in translational activities of therapeutic and diagnostic devices for disorders that affect the nervous or neuromuscular systems may be more appropriate for other NINDS translational research opportunities ([Translational Devices | National Institute of Neurological Disorders and Stroke \(nih.gov\)](https://www.ninds.nih.gov/current-research/research-funded-ninds/translational-research/translational-devices?search-term=translational%20nerual%20devices) (<https://www.ninds.nih.gov/current-research/research-funded-ninds/translational-research/translational-devices?search-term=translational%20nerual%20devices>)).

Applications Not Responsive to this FOA

The following types of studies are not responsive to this FOA. Applications proposing such studies will be considered non-responsive and will not be reviewed:

Applications that do not seek to demonstrate feasibility and/or potential utility of new capabilities or improvements for solution of problems in basic biomedical, pre-clinical, or clinical research, clinical care delivery, or accessibility will be considered nonresponsive to this funding opportunity announcement, for example:

- Pursuit of a biological or clinical hypothesis where no technology development is proposed;
- Using existing technologies that do not need modifications or adaptations to answer a biomedical question; and
- Traditional biological hypothesis-driven research using unmodified existing technologies.

See [Section VIII. Other Information](#) for award authorities and regulations.

Section II. Award Information

Funding Instrument

Grant: A support mechanism providing money, property, or both to an eligible entity to carry out an approved project or activity.

Application Types Allowed

New
Renewal
Resubmission
Revision

The [OER Glossary](https://grants.nih.gov/grants/guide/url_redirect.htm?id=11116) (https://grants.nih.gov/grants/guide/url_redirect.htm?id=11116) and the SF424 (R&R) Application Guide provide details on these application types. Only those application types listed here are allowed for this FOA.

Clinical Trial?

Not Allowed: Only accepting applications that do not propose clinical trials.

[Need help determining whether you are doing a clinical trial?](https://grants.nih.gov/grants/guide/url_redirect.htm?id=82370) (https://grants.nih.gov/grants/guide/url_redirect.htm?id=82370)

Funds Available and Anticipated Number of Awards

The number of awards is contingent upon NIH appropriations and the submission of a sufficient number of meritorious applications.

Award Budget

Application budgets are not limited but need to reflect the actual needs of the proposed project.

Award Project Period

The scope of the proposed project should determine the project period. The maximum award period is 5 years depending on the policy of each NIH Institute. Applicants are encouraged to review the current funding policy of each NIH Institute.

NIH grants policies as described in the [NIH Grants Policy Statement](https://grants.nih.gov/grants/guide/url_redirect.htm?id=11120) (https://grants.nih.gov/grants/guide/url_redirect.htm?id=11120) will apply to the applications submitted and awards made from this FOA.

Section III. Eligibility Information

1. Eligible Applicants

Eligible Organizations

Higher Education Institutions

- Public/State Controlled Institutions of Higher Education
- Private Institutions of Higher Education

The following types of Higher Education Institutions are always encouraged to apply for NIH support as Public or Private Institutions of Higher Education:

- Hispanic-serving Institutions
- Historically Black Colleges and Universities (HBCUs)
- Tribally Controlled Colleges and Universities (TCCUs)
- Alaska Native and Native Hawaiian Serving Institutions
- Asian American Native American Pacific Islander Serving Institutions (AANAPISIs)

Nonprofits Other Than Institutions of Higher Education

- Nonprofits with 501(c)(3) IRS Status (Other than Institutions of Higher Education)
- Nonprofits without 501(c)(3) IRS Status (Other than Institutions of Higher Education)

For-Profit Organizations

- Small Businesses
- For-Profit Organizations (Other than Small Businesses)

Local Governments

- State Governments
- County Governments
- City or Township Governments
- Special District Governments
- Indian/Native American Tribal Governments (Federally Recognized)
- Indian/Native American Tribal Governments (Other than Federally Recognized)

Federal Government

- Eligible Agencies of the Federal Government
- U.S. Territory or Possession

Other

- Independent School Districts
- Public Housing Authorities/Indian Housing Authorities
- Native American Tribal Organizations (other than Federally recognized tribal governments)
- Faith-based or Community-based Organizations
- Regional Organizations
- Non-domestic (non-U.S.) Entities (Foreign Institutions)

Foreign Institutions

Non-domestic (non-U.S.) Entities (Foreign Institutions) are eligible to apply.

Non-domestic (non-U.S.) components of U.S. Organizations are eligible to apply.

Foreign components, as defined in the *NIH Grants Policy Statement* ([//grants.nih.gov/grants/guide/redirect.htm?id=11118](https://grants.nih.gov/grants/guide/redirect.htm?id=11118)), are allowed.

Required Registrations**Applicant Organizations**

Applicant organizations must complete and maintain the following registrations as described in the SF 424 (R&R) Application Guide to be eligible to apply for or receive an award. All registrations must be completed prior to the application being submitted. Registration can take 6 weeks or more, so applicants should begin the registration process as soon as possible. The *NIH Policy on Late Submission of Grant Applications* ([//grants.nih.gov/grants/guide/notice-files/NOT-OD-15-039.html](https://grants.nih.gov/grants/guide/notice-files/NOT-OD-15-039.html)) states that failure to complete registrations in advance of a due date is not a valid reason for a late submission.

- **System for Award Management (SAM)** – (<https://grants.nih.gov/grants/guide/redirect.htm?id=82390>) Applicants must complete and maintain an active registration, which requires renewal at least annually. The renewal process may require as much time as the initial registration. SAM registration includes the assignment of a Commercial and Government Entity (CAGE) Code for domestic organizations which have not already been assigned a CAGE Code.
 - **NATO Commercial and Government Entity (NCAGE) Code** ([//grants.nih.gov/grants/guide/redirect.htm?id=11176](https://grants.nih.gov/grants/guide/redirect.htm?id=11176)) – Foreign organizations must obtain an NCAGE code (in lieu of a CAGE code) in order to register in SAM.
 - **Unique Entity Identifier (UEI)**– A UEI is issued as part of the SAM.gov registration process. The same UEI must be used for all registrations, as well as on the grant application.
- **eRA Commons** (<https://grants.nih.gov/grants/guide/redirect.htm?id=11123>) – Once the unique organization identifier is established, organizations can register with eRA Commons in tandem with completing their full SAM and Grants.gov registrations; all registrations must be in place by time of submission. eRA Commons requires organizations to identify at least one Signing Official (SO) and at least one Program Director/Principal Investigator (PD/PI) account in order to submit an application.
- **Grants.gov** ([//grants.nih.gov/grants/guide/redirect.htm?id=82300](https://grants.nih.gov/grants/guide/redirect.htm?id=82300)) – Applicants must have an active SAM registration in order to complete the Grants.gov registration.

Program Directors/Principal Investigators (PD(s)/PI(s))

All PD(s)/PI(s) must have an eRA Commons account. PD(s)/PI(s) should work with their organizational officials to either create a new account or to affiliate their existing account with the applicant organization in eRA Commons. If the PD/PI is also the organizational Signing Official, they must have two distinct eRA Commons accounts, one for each role. Obtaining an eRA Commons account can take up to 2 weeks.

Eligible Individuals (Program Director/Principal Investigator)

Any individual(s) with the skills, knowledge, and resources necessary to carry out the proposed research as the Program Director(s)/Principal Investigator(s) (PD(s)/PI(s)) is invited to work with his/her organization to develop an application for support. Individuals from diverse backgrounds, including underrepresented racial and ethnic groups, individuals with disabilities, and women are always encouraged to apply for NIH support.

For institutions/organizations proposing multiple PDs/PIs, visit the Multiple Program Director/Principal Investigator Policy and submission details in the Senior/Key Person Profile (Expanded) Component of the SF424 (R&R) Application Guide.

2. Cost Sharing

This FOA does not require cost sharing as defined in the [NIH Grants Policy Statement](https://grants.nih.gov/grants/guide/url_redirect.htm?id=11126). ([//grants.nih.gov/grants/guide/url_redirect.htm?id=11126](https://grants.nih.gov/grants/guide/url_redirect.htm?id=11126))

3. Additional Information on Eligibility

Number of Applications

Applicant organizations may submit more than one application, provided that each application is scientifically distinct.

The NIH will not accept duplicate or highly overlapping applications under review at the same time, per [2.3.7.4 Submission of Resubmission Application](https://grants.nih.gov/grants/policy/nihgps/HTML5/section_2/2.3.7_policies_affecting_applications.htm#Submissi) (https://grants.nih.gov/grants/policy/nihgps/HTML5/section_2/2.3.7_policies_affecting_applications.htm#Submissi). This means that the NIH will not accept:

- A new (A0) application that is submitted before issuance of the summary statement from the review of an overlapping new (A0) or resubmission (A1) application.
- A resubmission (A1) application that is submitted before issuance of the summary statement from the review of the previous new (A0) application.
- An application that has substantial overlap with another application pending appeal of initial peer review (see [2.3.9.4 Similar, Essentially Identical, or Identical Applications](https://grants.nih.gov/grants/policy/nihgps/HTML5/section_2/2.3.9_application_receipt_information_and_deadlines.htm#Similar) (https://grants.nih.gov/grants/policy/nihgps/HTML5/section_2/2.3.9_application_receipt_information_and_deadlines.htm#Similar))

Section IV. Application and Submission Information

1. Requesting an Application Package

The application forms package specific to this opportunity must be accessed through ASSIST, Grants.gov Workspace or an institutional system-to-system solution. Links to apply using ASSIST or Grants.gov Workspace are available in [Part 1](#) of this FOA. See your administrative office for instructions if you plan to use an institutional system-to-system solution.

2. Content and Form of Application Submission

It is critical that applicants follow the instructions in the Research (R) Instructions in the SF424 (R&R) Application Guide (https://grants.nih.gov/grants/guide/url_redirect.htm?id=82400) except where instructed in this funding opportunity announcement to do otherwise. Conformance to the requirements in the Application Guide is required and strictly enforced. Applications that are out of compliance with these instructions may be delayed or not accepted for review.

Page Limitations

All page limitations described in the SF424 Application Guide and the [Table of Page Limits](https://grants.nih.gov/grants/guide/url_redirect.htm?id=11133) ([//grants.nih.gov/grants/guide/url_redirect.htm?id=11133](https://grants.nih.gov/grants/guide/url_redirect.htm?id=11133)) must be followed.

Instructions for Application Submission

The following section supplements the instructions found in the SF424 (R&R) Application Guide and should be used for preparing an application to this FOA.

SF424(R&R) Cover

All instructions in the SF424 (R&R) Application Guide must be followed.

SF424(R&R) Project/Performance Site Locations

All instructions in the SF424 (R&R) Application Guide must be followed.

SF424(R&R) Other Project Information

All instructions in the SF424 (R&R) Application Guide must be followed.

SF424(R&R) Senior/Key Person Profile

All instructions in the SF424 (R&R) Application Guide must be followed.

R&R or Modular Budget

All instructions in the SF424 (R&R) Application Guide must be followed.

R&R Subaward Budget

All instructions in the SF424 (R&R) Application Guide must be followed.

PHS 398 Cover Page Supplement

All instructions in the SF424 (R&R) Application Guide must be followed.

PHS 398 Research Plan

All instructions in the SF424 (R&R) Application Guide must be followed, with the following additional instructions:

The Research Strategy should clearly address the purpose of this FOA and indicate:

- How the technology developments being proposed address unmet needs or unaddressed problems in human health, decrease in disparities, or increase access to care;
- How the proposed approach will use the concepts from engineering, physical science, computational, or other multidisciplinary methods to address the biomedical problem identified in the application;
- A coherent plan to advance the solution, which may include a long-term intent to translate, disseminate or otherwise promote adoption and use by potential end-users;
- Quantitative benchmarks for success; and
- Anticipated risks and limitations.

Resource Sharing Plan: Individuals are required to comply with the instructions for the Resource Sharing Plans as provided in the SF424 (R&R) Application Guide.

The following modifications also apply:

- All applications, regardless of the amount of direct costs requested for any one year, should address a Data Sharing Plan.

Appendix:

Only limited Appendix materials are allowed. Follow all instructions for the Appendix as described in the SF424 (R&R) Application Guide.

PHS Human Subjects and Clinical Trials Information

When involving human subjects research, clinical research, and/or NIH-defined clinical trials (and when applicable, clinical trials research experience) follow all instructions for the PHS Human Subjects and Clinical Trials Information form in the SF424 (R&R) Application Guide, with the following additional instructions:

If you answered "Yes" to the question "Are Human Subjects Involved?" on the R&R Other Project Information form, you must include at least one human subjects study record using the Study Record: PHS Human Subjects and Clinical Trials Information form or Delayed Onset Study record.

Study Record: PHS Human Subjects and Clinical Trials Information

All instructions in the SF424 (R&R) Application Guide must be followed.

Delayed Onset Study

Note: Delayed onset (<https://grants.nih.gov/grants/glossary.htm#DelayedOnsetStudy>) does NOT apply to a study that can be described but will not start immediately (i.e., delayed start). All instructions in the SF424 (R&R) Application Guide must be followed.

PHS Assignment Request Form

All instructions in the SF424 (R&R) Application Guide must be followed.

Foreign Institutions

Foreign (non-U.S.) institutions must follow policies described in the NIH Grants Policy Statement (https://grants.nih.gov/grants/guide/url_redirect.htm?id=11137), and procedures for foreign institutions described throughout the SF424 (R&R) Application Guide.

3. Unique Entity Identifier and System for Award Management (SAM)

See Part 1. Section III.1 for information regarding the requirement for obtaining a unique entity identifier and for completing and maintaining active registrations in System for Award Management (SAM), NATO Commercial and Government Entity (NCAGE) Code (if applicable), eRA Commons, and Grants.gov

4. Submission Dates and Times

Part I. Overview Information contains information about Key Dates and times. Applicants are encouraged to submit applications before the due date to ensure they have time to make any application corrections that might be necessary for successful submission. When a submission date falls on a weekend or Federal holiday (https://grants.nih.gov/grants/guide/url_redirect.html?id=82380), the application deadline is automatically extended to the next business day.

Organizations must submit applications to Grants.gov (https://grants.nih.gov/grants/guide/url_redirect.htm?id=11128) (the online portal to find and apply for grants across all Federal agencies). Applicants must then complete the submission process by tracking the status of the application in the eRA Commons (https://grants.nih.gov/grants/guide/url_redirect.htm?id=11123), NIH's electronic system for grants administration. NIH and Grants.gov systems check the application against many of the application instructions upon submission. Errors must be corrected and a changed/corrected application must be submitted to Grants.gov on or before the application due date and time. If a Changed/Corrected application is submitted after the deadline, the application will be considered late. Applications that miss the due date and time are subjected to the NIH Policy on Late Application Submission.

Applicants are responsible for viewing their application before the due date in the eRA Commons to ensure accurate and successful submission.

Information on the submission process and a definition of on-time submission are provided in the SF424 (R&R) Application Guide.

5. Intergovernmental Review (E.O. 12372)

This initiative is not subject to intergovernmental review.

(https://grants.nih.gov/grants/policy/nihgps/html5/section_10/10.10.1_executive_orders.htm)

6. Funding Restrictions

All NIH awards are subject to the terms and conditions, cost principles, and other considerations described in the NIH Grants Policy Statement (https://grants.nih.gov/grants/guide/url_redirect.htm?id=11120).

Pre-award costs are allowable only as described in the NIH Grants Policy Statement (https://grants.nih.gov/grants/guide/url_redirect.htm?id=11143).

7. Other Submission Requirements and Information

Applications must be submitted electronically following the instructions described in the SF424 (R&R) Application Guide. Paper applications will not be accepted.

Applicants must complete all required registrations before the application due date. Section III. Eligibility Information contains information about registration.

For assistance with your electronic application or for more information on the electronic submission process, visit How to Apply – Application Guide (<https://grants.nih.gov/grants/how-to-apply-application-guide.html>). If you encounter a system issue beyond your control that threatens your ability to complete the submission process on-time, you must follow the Dealing with System Issues (<https://grants.nih.gov/grants/how-to-apply-application-guide/due-dates-and-submission-policies/dealing-with-system-issues.htm>) guidance. For assistance with application submission, contact the Application Submission Contacts in Section VII.

Important reminders:

All PD(s)/PI(s) must include their eRA Commons ID in the Credential field of the Senior/Key Person Profile form. Failure to register in the Commons and to include a valid PD/PI Commons ID in the credential field will prevent the successful submission of an electronic application to NIH. See Section III of this FOA for information on registration requirements.

The applicant organization must ensure that the unique entity identifier provided on the application is the same identifier used in the organization's profile in the eRA Commons and for the System for Award Management. Additional information may be found in the SF424 (R&R) Application Guide.

See more tips (https://grants.nih.gov/grants/guide/url_redirect.htm?id=11146) for avoiding common errors.

Upon receipt, applications will be evaluated for completeness and compliance with application instructions by the Center for Scientific Review, and responsiveness by NCI, NIH. Applications that are incomplete, non-compliant and/or nonresponsive will not be reviewed.

Requests of \$500,000 or more for direct costs in any year

Applicants requesting \$500,000 or more in direct costs in any year (excluding consortium F&A) must contact a Scientific/ Research Contact at least 6 weeks before submitting the application and follow the Policy on the Acceptance for Review of Unsolicited Applications that Request \$500,000 or More in Direct Costs as described in the SF424 (R&R) Application Guide.

Post Submission Materials

Applicants are required to follow the instructions for post-submission materials, as described in the policy (https://grants.nih.gov/grants/guide/url_redirect.htm?id=82299). Any instructions provided here are in addition to the instructions in the policy.

Section V. Application Review Information

1. Criteria

Only the review criteria described below will be considered in the review process. Applications submitted to the NIH in support of the NIH mission (https://grants.nih.gov/grants/guide/url_redirect.htm?id=11149) are evaluated for scientific and technical merit through the NIH peer review system.

Overall Impact

Reviewers will provide an overall impact score to reflect their assessment of the likelihood for the project to exert a sustained, powerful influence on the research field(s) involved, in consideration of the following review criteria and additional review criteria (as applicable for the project proposed).

Scored Review Criteria

Reviewers will consider each of the review criteria below in the determination of scientific merit and give a separate score for each. An application does not need to be strong in all categories to be judged likely to have major scientific impact. For example, a project that by its nature is not innovative may be essential to advance a field.

Significance

Does the project address an important problem or a critical barrier to progress in the field? Is the prior research that serves as the key support for the proposed project rigorous? If the aims of the project are achieved, how will scientific knowledge, technical capability, and/or clinical practice be improved? How will successful completion of the aims change the concepts, methods, technologies, treatments, services, or preventative interventions that drive this field?

Investigator(s)

Are the PD(s)/PI(s), collaborators, and other researchers well suited to the project? If Early Stage Investigators or those in the early stages of independent careers, do they have appropriate experience and training? If established, have they demonstrated an ongoing record of accomplishments that have advanced their field(s)? If the project is collaborative or multi-PD/PI, do the investigators have complementary and integrated expertise; are their leadership approach, governance, and organizational structure appropriate for the project?

Specific to this FOA: Do the investigators have the experience and range of engineering and technical skills necessary to complete the proposed work? Does the team have experience developing and validating quantitative methods, tools and technologies using bioengineering approaches?

Innovation

Does the application challenge and seek to shift current research or clinical practice paradigms by utilizing novel theoretical concepts, approaches or methodologies, instrumentation, or interventions? Are the concepts, approaches or methodologies, instrumentation, or interventions novel to one field of research or novel in a broad sense? Is a refinement, improvement, or new application of theoretical concepts, approaches or methodologies, instrumentation, or interventions proposed?

Specific to this FOA: Does the proposed project address a significant biomedical research problem by development, optimization, and/or validation of new quantitative methods, technologies, or tools? Will the proposed integration of existing components into a new combination lead to a new capability?

Approach

Are the overall strategy, methodology, and analyses well-reasoned and appropriate to accomplish the specific aims of the project? Have the investigators included plans to address weaknesses in the rigor of prior research that serves as the key support for the proposed project? Have the investigators presented strategies to ensure a robust and unbiased approach, as appropriate for the work proposed? Are potential problems, alternative strategies, and benchmarks for success presented? If the project is in the early stages of development, will the strategy establish feasibility and will particularly risky aspects be managed? Have the investigators presented adequate plans to address relevant biological variables, such as sex, for studies in vertebrate animals or human subjects?

If the project involves human subjects and/or NIH-defined clinical research, are the plans to address 1) the protection of human subjects from research risks, and 2) inclusion (or exclusion) of individuals on the basis of sex/gender, race, and ethnicity, as well as the inclusion or exclusion of individuals of all ages (including children and older adults), justified in terms of the scientific goals and research strategy proposed?

Specific to this FOA: Are the proposed engineering, computational and physical science approaches appropriate and integrated into the research strategy? Are there metrics and milestones included in the approach for evaluating the performance of new methods, tools and technologies in relevant biological systems? Has feasibility already been established for the technologies involved?

Environment

Will the scientific environment in which the work will be done contribute to the probability of success? Are the institutional support, equipment, and other physical resources available to the investigators adequate for the project proposed? Will the project benefit from unique features of the scientific environment, subject populations, or collaborative arrangements?

Specific to this FOA: Does the application describe resources and arrangements that will promote a multidisciplinary approach?

Additional Review Criteria

As applicable for the project proposed, reviewers will evaluate the following additional items while determining scientific and technical merit, and in providing an overall impact score, but will not give separate scores for these items.

Protections for Human Subjects

For research that involves human subjects but does not involve one of the categories of research that are exempt under 45 CFR Part 46, the committee will evaluate the justification for involvement of human subjects and the proposed protections from research risk relating to their participation according to the following five review criteria: 1) risk to subjects, 2) adequacy of protection against risks, 3) potential benefits to the subjects and others, 4) importance of the knowledge to be gained, and 5) data and safety monitoring for clinical trials.

For research that involves human subjects and meets the criteria for one or more of the categories of research that are exempt under 45 CFR Part 46, the committee will evaluate: 1) the justification for the exemption, 2) human subjects involvement and characteristics, and 3) sources of materials. For additional information on review of the Human Subjects section, please refer to the [Guidelines for the Review of Human Subjects \(//grants.nih.gov/grants/guide/redirect.htm?id=11175\)](https://grants.nih.gov/grants/guide/redirect.htm?id=11175).

Inclusion of Women, Minorities, and Individuals Across the Lifespan

When the proposed project involves human subjects and/or NIH-defined clinical research, the committee will evaluate the proposed plans for the inclusion (or exclusion) of individuals on the basis of sex/gender, race, and ethnicity, as well as the inclusion (or exclusion) of individuals of all ages (including children and older adults) to determine if it is justified in terms of the scientific goals and research strategy proposed. For additional information on review of the Inclusion section, please refer to the [Guidelines for the Review of Inclusion in Clinical Research \(//grants.nih.gov/grants/guide/redirect.htm?id=11174\)](https://grants.nih.gov/grants/guide/redirect.htm?id=11174).

Vertebrate Animals

The committee will evaluate the involvement of live vertebrate animals as part of the scientific assessment according to the following criteria: (1) description of proposed procedures involving animals, including species, strains, ages, sex, and total number to be used; (2) justifications for the use of animals versus alternative models and for the appropriateness of the species proposed; (3) interventions to minimize discomfort, distress, pain and injury; and (4) justification for euthanasia method if NOT consistent with the AVMA Guidelines for

the Euthanasia of Animals. Reviewers will assess the use of chimpanzees as they would any other application proposing the use of vertebrate animals. For additional information on review of the Vertebrate Animals section, please refer to the [Worksheet for Review of the Vertebrate Animal Section \(//grants.nih.gov/grants/guide/uri_redirect.htm?id=11150\)](https://grants.nih.gov/grants/guide/uri_redirect.htm?id=11150).

Biohazards

Reviewers will assess whether materials or procedures proposed are potentially hazardous to research personnel and/or the environment, and if needed, determine whether adequate protection is proposed.

Resubmissions

For Resubmissions, the committee will evaluate the application as now presented, taking into consideration the responses to comments from the previous scientific review group and changes made to the project.

Renewals

For Renewals, the committee will consider the progress made in the last funding period.

Revisions

For Revisions, the committee will consider the appropriateness of the proposed expansion of the scope of the project. If the Revision application relates to a specific line of investigation presented in the original application that was not recommended for approval by the committee, then the committee will consider whether the responses to comments from the previous scientific review group are adequate and whether substantial changes are clearly evident.

Additional Review Considerations

As applicable for the project proposed, reviewers will consider each of the following items, but will not give scores for these items, and should not consider them in providing an overall impact score.

Applications from Foreign Organizations

Reviewers will assess whether the project presents special opportunities for furthering research programs through the use of unusual talent, resources, populations, or environmental conditions that exist in other countries and either are not readily available in the United States or augment existing U.S. resources.

Select Agent Research

Reviewers will assess the information provided in this section of the application, including 1) the Select Agent(s) to be used in the proposed research, 2) the registration status of all entities where Select Agent(s) will be used, 3) the procedures that will be used to monitor possession use and transfer of Select Agent(s), and 4) plans for appropriate biosafety, biocontainment, and security of the Select Agent(s).

Resource Sharing Plans

Reviewers will comment on whether the following Resource Sharing Plans, or the rationale for not sharing the following types of resources, are reasonable: (1) [Data Sharing Plan \(//grants.nih.gov/grants/guide/uri_redirect.htm?id=11151\)](https://grants.nih.gov/grants/guide/uri_redirect.htm?id=11151); (2) [Sharing Model Organisms \(https://sharing.nih.gov/other-sharing-policies/model-organism-sharing-policy#policy-overview\)](https://sharing.nih.gov/other-sharing-policies/model-organism-sharing-policy#policy-overview); and (3) [Genomic Data Sharing Plan \(GDS\) \(https://sharing.nih.gov/genomic-data-sharing-policy\)](https://sharing.nih.gov/genomic-data-sharing-policy).

Authentication of Key Biological and/or Chemical Resources:

For projects involving key biological and/or chemical resources, reviewers will comment on the brief plans proposed for identifying and ensuring the validity of those resources.

Budget and Period of Support

Reviewers will consider whether the budget and the requested period of support are fully justified and reasonable in relation to the proposed research.

2. Review and Selection Process

Applications will be evaluated for scientific and technical merit by (an) appropriate Scientific Review Group(s) convened by Center for Scientific Review, in accordance with [NIH peer review policy and procedures \(//grants.nih.gov/grants/guide/uri_redirect.htm?id=11154\)](https://grants.nih.gov/grants/guide/uri_redirect.htm?id=11154), using the stated [review criteria \(file:///C:/Users/mckenziene/AppData/Local/Microsoft/Windows/INetCache/Content.Outlook/13V4QPZR/Research%20Draft.doc# 1. Criteria\)](file:///C:/Users/mckenziene/AppData/Local/Microsoft/Windows/INetCache/Content.Outlook/13V4QPZR/Research%20Draft.doc# 1. Criteria). Assignment to a Scientific Review Group will be shown in the eRA Commons.

As part of the scientific peer review, all applications will receive a written critique.

Applications may undergo a selection process in which only those applications deemed to have the highest scientific and technical merit (generally the top half of applications under review) will be discussed and assigned an overall impact score.

Applications will be assigned on the basis of established PHS referral guidelines to the appropriate NIH Institute or Center. Applications will compete for available funds with all other recommended applications submitted in response to this FOA. Following initial peer review, recommended applications will receive a second level of review by the appropriate national Advisory Council or Board. The following will be considered in making funding decisions:

- Scientific and technical merit of the proposed project as determined by scientific peer review.
- Availability of funds.
- Relevance of the proposed project to program priorities.

3. Anticipated Announcement and Award Dates

After the peer review of the application is completed, the PD/PI will be able to access his or her Summary Statement (written critique) via the [eRA Commons \(https://grants.nih.gov/grants/guide/url_redirect.htm?id=11123\)](https://grants.nih.gov/grants/guide/url_redirect.htm?id=11123). Refer to Part 1 for dates for peer review, advisory council review, and earliest start date.

Information regarding the disposition of applications is available in the [NIH Grants Policy Statement \(https://grants.nih.gov/grants/guide/url_redirect.htm?id=11120\)](https://grants.nih.gov/grants/guide/url_redirect.htm?id=11120).

Section VI. Award Administration Information

1. Award Notices

If the application is under consideration for funding, NIH will request "just-in-time" information from the applicant as described in the [NIH Grants Policy Statement \(https://grants.nih.gov/grants/policy/nihgps/HTML5/section_2/2.5.1_just-in-time_procedures.htm\)](https://grants.nih.gov/grants/policy/nihgps/HTML5/section_2/2.5.1_just-in-time_procedures.htm).

A formal notification in the form of a Notice of Award (NoA) will be provided to the applicant organization for successful applications. The NoA signed by the grants management officer is the authorizing document and will be sent via email to the recipient's business official.

Recipients must comply with any funding restrictions described in Section IV.5. Funding Restrictions. Selection of an application for award is not an authorization to begin performance. Any costs incurred before receipt of the NoA are at the recipient's risk. These costs may be reimbursed only to the extent considered allowable pre-award costs.

Any application awarded in response to this FOA will be subject to terms and conditions found on the [Award Conditions and Information for NIH Grants \(https://grants.nih.gov/grants/policy/nihgps/HTML5/part_ii_subpart_b.htm\)](https://grants.nih.gov/grants/policy/nihgps/HTML5/part_ii_subpart_b.htm) website. This includes any recent legislation and policy applicable to awards that is highlighted on this website.

Institutional Review Board or Independent Ethics Committee Approval: Recipient institutions must ensure that protocols are reviewed by their IRB or IEC. To help ensure the safety of participants enrolled in NIH-funded studies, the recipient must provide NIH copies of documents related to all major changes in the status of ongoing protocols.

2. Administrative and National Policy Requirements

All NIH grant and cooperative agreement awards include the [NIH Grants Policy Statement \(https://grants.nih.gov/grants/guide/url_redirect.htm?id=11120\)](https://grants.nih.gov/grants/guide/url_redirect.htm?id=11120) as part of the NoA. For these terms of award, see the [NIH Grants Policy Statement Part II: Terms and Conditions of NIH Grant Awards, Subpart A: General \(https://grants.nih.gov/grants/guide/url_redirect.htm?id=11157\)](https://grants.nih.gov/grants/guide/url_redirect.htm?id=11157) and [Part II: Terms and Conditions of NIH Grant Awards, Subpart B: Terms and Conditions for Specific Types of Grants, Recipients, and Activities \(https://grants.nih.gov/grants/guide/url_redirect.htm?id=11159\)](https://grants.nih.gov/grants/guide/url_redirect.htm?id=11159), including of note, but not limited to:

- [Federalwide Research Terms and Conditions \(https://grants.nih.gov/grants/policy/nihgps/HTML5/section_3/3.1_federalwide_standard_terms_and_conditions_for_research_grants.htm\)](https://grants.nih.gov/grants/policy/nihgps/HTML5/section_3/3.1_federalwide_standard_terms_and_conditions_for_research_grants.htm)
- [Prohibition on Certain Telecommunications and Video Surveillance Services or Equipment \(https://grants.nih.gov/grants/guide/notice_files/NOT-OD-21-041.html\)](https://grants.nih.gov/grants/guide/notice_files/NOT-OD-21-041.html)
- [Acknowledgment of Federal Funding \(https://grants.nih.gov/grants/policy/nihgps/HTML5/section_4/4.2.1_acknowledgement_of_federal_funding.htm\)](https://grants.nih.gov/grants/policy/nihgps/HTML5/section_4/4.2.1_acknowledgement_of_federal_funding.htm)

If a recipient is successful and receives a Notice of Award, in accepting the award, the recipient agrees that any activities under the award are subject to all provisions currently in effect or implemented during the period of the award, other Department regulations and policies in effect at the time of the award, and applicable statutory provisions.

Should the applicant organization successfully compete for an award, recipients of federal financial assistance (FFA) from HHS must administer their programs in compliance with federal civil rights laws that prohibit discrimination on the basis of race, color, national origin, disability, age and, in some circumstances, religion, conscience, and sex (including gender identity, sexual orientation, and pregnancy). This includes ensuring programs are accessible to persons with limited English proficiency and persons with disabilities. The HHS Office for Civil Rights provides guidance on complying with civil rights laws enforced by HHS. Please see <https://www.hhs.gov/civil-rights/for-providers/provider-obligations/index.html> (<https://www.hhs.gov/civil-rights/for-providers/provider-obligations/index.html>) and <https://www.hhs.gov/civil-rights/for-individuals/nondiscrimination/index.html> (<https://www.hhs.gov/civil-rights/for-individuals/nondiscrimination/index.html>)

HHS recognizes that research projects are often limited in scope for many reasons that are nondiscriminatory, such as the principal investigator's scientific interest, funding limitations, recruitment requirements, and other considerations. Thus, criteria in research protocols that target or exclude certain populations are warranted where nondiscriminatory justifications establish that such criteria are appropriate with respect to the health or safety of the subjects, the scientific study design, or the purpose of the research. For additional guidance regarding how the provisions apply to NIH grant programs, please contact the Scientific/Research Contact that is identified in Section VII under Agency Contacts of this FOA.

- Recipients of FFA must ensure that their programs are accessible to persons with limited English proficiency. For guidance on meeting the legal obligation to take reasonable steps to ensure meaningful access to programs or activities by limited English proficient individuals see <https://www.hhs.gov/civil-rights/for-individuals/special-topics/limited-english-proficiency/fact-sheet-guidance/index.html> (<https://www.hhs.gov/civil-rights/for-individuals/special-topics/limited-english-proficiency/fact-sheet-guidance/index.html>) and <https://www.lep.gov> (<https://www.lep.gov>).
- For information on an institution's specific legal obligations for serving qualified individuals with disabilities, including reasonable accommodations and making services accessible to them, see <http://www.hhs.gov/ocr/civilrights/understanding/disability/index.html> (<http://www.hhs.gov/ocr/civilrights/understanding/disability/index.html>).
- HHS funded health and education programs must be administered in an environment free of sexual harassment, see <https://www.hhs.gov/civil-rights/for-individuals/sex-discrimination/index.html> (<https://www.hhs.gov/civil-rights/for-individuals/sex-discrimination/index.html>). For information about NIH's commitment to supporting a safe and respectful work environment, who to

contact with questions or concerns, and what NIH's expectations are for institutions and the individuals supported on NIH-funded awards, please see <https://grants.nih.gov/grants/policy/harassment.htm> (<https://grants.nih.gov/grants/policy/harassment.htm>).

- For guidance on administering programs in compliance with applicable federal conscience protection and associated anti-discrimination laws see <https://www.hhs.gov/conscience/conscience-protections/index.html> (<https://www.hhs.gov/conscience/conscience-protections/index.html>) and <https://www.hhs.gov/conscience/religious-freedom/index.html> (<https://www.hhs.gov/conscience/religious-freedom/index.html>).

Please contact the HHS Office for Civil Rights for more information about obligations and prohibitions under federal civil rights laws at <https://www.hhs.gov/ocr/about-us/contact-us/index.html> (<https://www.hhs.gov/ocr/about-us/contact-us/index.html>) or call 1-800-368-1019 or TDD 1-800-537-7697.

In accordance with the statutory provisions contained in Section 872 of the Duncan Hunter National Defense Authorization Act of Fiscal Year 2009 (Public Law 110-417), NIH awards will be subject to the Federal Awardee Performance and Integrity Information System (FAPIS) requirements. FAPIS requires Federal award making officials to review and consider information about an applicant in the designated integrity and performance system (currently FAPIS) prior to making an award. An applicant, at its option, may review information in the designated integrity and performance systems accessible through FAPIS and comment on any information about itself that a Federal agency previously entered and is currently in FAPIS. The Federal awarding agency will consider any comments by the applicant, in addition to other information in FAPIS, in making a judgement 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 45 CFR Part 75.205 and 2 CFR Part 200.206 "Federal awarding agency review of risk posed by applicants." This provision will apply to all NIH grants and cooperative agreements except fellowships.

Cooperative Agreement Terms and Conditions of Award

Not Applicable

3. Reporting

When multiple years are involved, recipients will be required to submit the [Research Performance Progress Report \(RPPR\)](https://grants.nih.gov/grants/rppr/index.htm) (<https://grants.nih.gov/grants/rppr/index.htm>) annually and financial statements as required in the [NIH Grants Policy Statement](https://grants.nih.gov/grants/policy/nihgps/HTML5/section_8/8.4.1_reporting.htm). (https://grants.nih.gov/grants/policy/nihgps/HTML5/section_8/8.4.1_reporting.htm)

A final RPPR, invention statement, and the expenditure data portion of the Federal Financial Report are required for closeout of an award, as described in the [NIH Grants Policy Statement](https://grants.nih.gov/grants/policy/nihgps/HTML5/section_8/8.6_closeout.htm) (https://grants.nih.gov/grants/policy/nihgps/HTML5/section_8/8.6_closeout.htm). NIH FOAs outline intended research goals and objectives. Post award, NIH will review and measure performance based on the details and outcomes that are shared within the RPPR, as described at 45 CFR Part 75.301 and 2 CFR Part 200.301.

The Federal Funding Accountability and Transparency Act of 2006 (Transparency Act), includes a requirement for recipients of Federal grants to report information about first-tier subawards and executive compensation under Federal assistance awards issued in FY2011 or later. All recipients of applicable NIH grants and cooperative agreements are required to report to the Federal Subaward Reporting System (FSRS) available at www.fsrs.gov (https://grants.nih.gov/grants/guide/url_redirect.htm?id=11170) on all subawards over \$25,000. See the [NIH Grants Policy Statement](https://grants.nih.gov/grants/policy/nihgps/HTML5/section_4/4.1.8_federal_funding_accountability_and_transparency_act_ffata.htm) ([https://grants.nih.gov/grants/policy/nihgps/HTML5/section_4/4.1.8_federal_funding_accountability_and_transparency_act_ffata .htm](https://grants.nih.gov/grants/policy/nihgps/HTML5/section_4/4.1.8_federal_funding_accountability_and_transparency_act_ffata.htm)) for additional information on this reporting requirement.

In accordance with the regulatory requirements provided at 45 CFR 75.113 and Appendix XII to 45 CFR Part 75, recipients that have currently active Federal grants, cooperative agreements, and procurement contracts from all Federal awarding agencies with a cumulative total value greater than \$10,000,000 for any period of time during the period of performance of a Federal award, must report and maintain the currency of information reported in the System for Award Management (SAM) about civil, criminal, and administrative proceedings in connection with the award or performance of a Federal award that reached final disposition within the most recent five-year period. The recipient must also make semiannual disclosures regarding such proceedings. Proceedings information will be made publicly available in the designated integrity and performance system (currently FAPIS). This is a statutory requirement under section 872 of Public Law 110-417, as amended (41 U.S.C. 2313). As required by section 3010 of Public Law 111-212, all information posted in the designated integrity and performance system on or after April 15, 2011, except past performance reviews required for Federal procurement contracts, will be publicly available. Full reporting requirements and procedures are found in Appendix XII to 45 CFR Part 75 – Award Term and Conditions for Recipient Integrity and Performance Matters.

Section VII. Agency Contacts

We encourage inquiries concerning this funding opportunity and welcome the opportunity to answer questions from potential applicants.

Application Submission Contacts

eRA Service Desk (Questions regarding ASSIST, eRA Commons, application errors and warnings, documenting system problems that threaten submission by the due date, and post-submission issues)

Finding Help Online: <http://grants.nih.gov/support/> (<https://grants.nih.gov/support/>) (preferred method of contact)

Telephone: 301-402-7469 or 866-504-9552 (Toll Free)

General Grants Information (Questions regarding application instructions, application processes, and NIH grant resources)

Email: GrantsInfo@nih.gov (<mailto:GrantsInfo@nih.gov>) (preferred method of contact)

Telephone: 301-945-7573

Grants.gov Customer Support (Questions regarding Grants.gov registration and Workspace)

Contact Center Telephone: 800-518-4726

Email: support@grants.gov (<mailto:support@grants.gov>)

Scientific/Research Contact(s)

For questions on cancer control and population sciences:

Rao Divi, Ph.D.

National Cancer Institute (NCI)

Telephone: 240-276-6913

Email: divir@mail.nih.gov (<mailto:divir@mail.nih.gov>)**For questions on cancer biology:**

David Jonathan Miller, PhD

National Cancer Institute (NCI)

Telephone: 240-276-6810

Email: david.miller3@nih.gov (<mailto:david.miller3@nih.gov>)**For other cancer related questions:**

Miguel R. Ossandon, Ph.D. (He/Him/His)

National Cancer Institute (NCI)

Telephone: 240-276-5714

Email: ossandom@mail.nih.gov (<mailto:ossandom@mail.nih.gov>)

Toyin Ajisafe, PhD

Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD)

Telephone: 301-827-9242

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Examine your eRA Commons account for review assignment and contact information (information appears two weeks after the submission due date).

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Section VIII. Other Information

Recently issued trans-NIH [policy notices](https://grants.nih.gov/grants/guide/url_redirect.htm?id=11163) ([//grants.nih.gov/grants/guide/url_redirect.htm?id=11163](https://grants.nih.gov/grants/guide/url_redirect.htm?id=11163)) may affect your application submission. A full list of policy notices published by NIH is provided in the [NIH Guide for Grants and Contracts](https://grants.nih.gov/grants/guide/url_redirect.htm?id=11164) ([//grants.nih.gov/grants/guide/url_redirect.htm?id=11164](https://grants.nih.gov/grants/guide/url_redirect.htm?id=11164)). All awards are subject to the terms and conditions, cost principles, and other considerations described in the [NIH Grants Policy Statement](https://grants.nih.gov/grants/guide/url_redirect.htm?id=11120) ([//grants.nih.gov/grants/guide/url_redirect.htm?id=11120](https://grants.nih.gov/grants/guide/url_redirect.htm?id=11120)).

Authority and Regulations

Awards are made under the authorization of Sections 301 and 405 of the Public Health Service Act as amended (42 USC 241 and 284) and under Federal Regulations 42 CFR Part 52 and 45 CFR Part 75.

[Weekly TOC for this Announcement](https://grants/guide/WeeklyIndex.cfm?09-09-22) ([//grants/guide/WeeklyIndex.cfm?09-09-22](https://grants/guide/WeeklyIndex.cfm?09-09-22))

[NIH Funding Opportunities and Notices](https://grants/guide/index.html) ([//grants/guide/index.html](https://grants/guide/index.html))



National Institutes of Health ([//grants/oer.htm](https://grants/oer.htm))
Office of Extramural Research



(<http://www.hhs.gov/>) Department of Health
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Note: For help accessing PDF, RTF, MS Word, Excel, PowerPoint, Audio or Video files, see [Help Downloading Files](https://grants/edocs.htm) ([//grants/edocs.htm](https://grants/edocs.htm)).

ขั้นตอนการสมัครขอรับทุน National Institute of Health (NIH)

1. ผู้สมัครจะต้องแจ้งความประสงค์และนำส่งข้อมูลเข้ามายังกองบริหารงานวิจัย ภายในกำหนดเวลาแจ้งความประสงค์การจัดส่งข้อเสนอในหนังสือประชาสัมพันธ์ โดยนำส่งข้อมูลทางอีเมล chittiporn.nua@mahidol.edu เพื่อขอเปิดบัญชี eRA commons และขอสร้างข้อเสนอโครงการในระบบออนไลน์ ASSIST ของแหล่งทุน NIH โดยแจ้งข้อมูลดังนี้

Name: Surname:

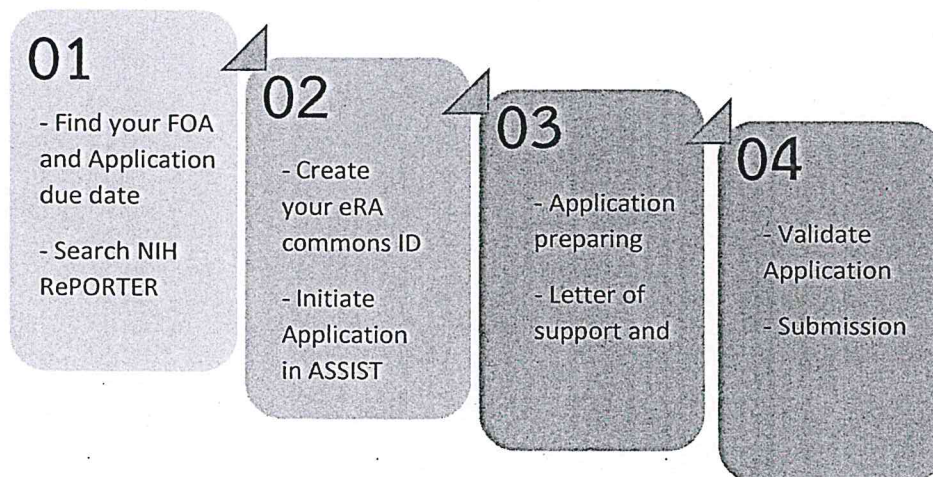
Email (XXXX@mahidol.ac.th หรือ XXXX@mahidol.edu):

Funding Opportunity Announcement (FOA) Number:

Application title:

Application due date:

2. ผู้สมัครขอรับทุนศึกษาประกาศทุน (Funding opportunity announcements หรือ FOA) อย่างละเอียด ตรวจสอบกำหนดการส่งข้อเสนอของมหาวิทยาลัย และสืบค้นข้อมูลที่เกี่ยวข้องกับงานวิจัยของตนเองผ่าน NIH RePORTER <https://reporter.nih.gov>
3. มหาวิทยาลัยสร้างบัญชี eRA commons และสร้างข้อเสนอโครงการในระบบ ASSIST ให้ผู้สมัครขอรับทุน ผู้ขอรับทุนจัดทำข้อเสนอโครงการและเอกสารที่เกี่ยวข้องตามข้อกำหนดของแหล่งทุนร่วมกับมหาวิทยาลัย
4. ผู้สมัครขอรับทุนนำส่งเอกสารข้อเสนอโครงการฉบับสมบูรณ์ผ่านหัวหน้าส่วนงานเพื่อขออนุมัติจัดส่งข้อเสนอโครงการผ่านระบบออนไลน์ ASSIST ตามกำหนดรับข้อเสนอของมหาวิทยาลัย** กองบริหารงานวิจัยตรวจสอบข้อเสนอโครงการ เสนออนุมิตินำส่งข้อเสนอโครงการและจัดส่งข้อเสนอโครงการในนามของมหาวิทยาลัยไปยังแหล่งทุน
(*หากผู้สมัครขอรับทุนนำส่งข้อเสนอโครงการให้กองบริหารงานวิจัยตรวจสอบล่าช้ากว่ากำหนดของมหาวิทยาลัย มหาวิทยาลัยขอสงวนสิทธิ์ในการรับข้อเสนอโครงการเพื่อนำส่งแหล่งทุนในรอบนั้นๆ)



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หน่วยสนับสนุนการขอทุนวิจัยจากแหล่งทุนต่างประเทศ

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