1. INTRODUCTION

The NIH Innovative Programs to Enhance Research Training (IPERT) R25 mechanism (PAR-19-383) is intended to support educational activities that complement and/or enhance the training of a workforce to meet the nation’s biomedical, behavioral, and clinical research needs. This program will support creative educational activities primarily focused on 1) Courses for Skills Development or 2) Mentoring Activities.

This planning guide was drafted to support faculty and institutional alignment for and preparation of a competitive proposal in response to the NIH IPERT (R25) program. All information provided in this guide is derived from the most recent IPERT Program Announcement (PAR-19-383), the SF424 (R&R) Application Guide, and the National Institute of General Medical Sciences (NIGMS) IPERT webpage. Careful review of the entire Program Announcement as well as pertinent sections of the Application Guide is highly recommended.

This guide contains the following sections: 2) Program Overview, 3) Award Details, 4) Proposal Preparation, 5) Proposal Review & Criteria, 6) Suggested Milestones for Proposal Development, 7) Comparable Institutions with IPERT Awards, and 8) Links to Additional Resources. Appendix A includes a preliminary listing of planning questions to support the proposal development process.
2. PROGRAM OVERVIEW

NIH RESEARCH EDUCATION PROGRAM (R25)

The NIH Research Education Program (R25) supports research educational activities that complement other formal training programs in the mission areas of the NIH Institutes and Centers (I/Cs). The specific goals of the NIH R25 program are to:

1. Complement and/or enhance the training of a workforce to meet the nation’s biomedical, behavioral and clinical research needs;
2. Encourage individuals from diverse backgrounds, including those from groups underrepresented in the biomedical and behavioral sciences, to pursue further studies or careers in research;
3. Help recruit individuals with specific specialty or disciplinary backgrounds to research careers in biomedical, behavioral and clinical sciences; and
4. Foster a better understanding of biomedical, behavioral and clinical research and its implications.

BACKGROUND

The recent NIGMS Strategic Plans emphasized that:

1. Research training is a responsibility shared by the NIH, academic institutions, faculty, and trainees;
2. Research training must focus on student development, rather than simply the selection of talent;
3. Breadth and flexibility enable research training to keep pace with the opportunities and demands of contemporary science and provide the foundation for a variety of scientific career paths;
4. Diversity is an indispensable component of research training excellence and must be advanced across the entire research enterprise.

NEED FOR THE PROGRAM

Through this program, NIGMS wishes to encourage innovative biomedical research education activities designed to keep pace with the rapid evolution of the research enterprise that is increasingly complex, interdisciplinary, and collaborative. As the scientific enterprise has expanded, there is greater variation in the backgrounds of people participating, approaches taken to investigate research questions, and the range of the careers in the biomedical research workforce that Ph.D. recipients are pursuing. There is also an increasing recognition of the need to enhance reproducibility of biomedical research results through scientific rigor and transparency and to reinforce the principles of the responsible conduct of research. The current Program Announcement, PAR-19-383, is intended to enable the scientific community to develop and implement innovative activities that will provide high-quality skills development, mentoring, and outreach to equip diverse cohorts of participants with technical, operational, or professional skills required for careers in the biomedical research workforce.

PROGRAMMATIC APPROACH

The overarching objective of this funding opportunity is to design IPERT activities that are open to the broader biomedical community and not restricted to individuals from a single department, program or institution. NIGMS encourages applications that are intended for individuals in a variety of biomedical fields; however, if a scientific area is described, it must be within the NIGMS mission. The activities may focus on individuals at a particular research career stage or at a range of career stages. NIGMS will support programs designed for research-oriented individuals from the...
undergraduate to independent faculty stages.\(^1\) Applications are not acceptable from for-profit institutions or for courses that are or would become part of the standard/required curriculum of an academic degree program. The R25 IPERT Program may not be used to support meetings, conferences, etc.\(^2\)

All applications must include a sustainability plan to describe how the program will be maintained once IPERT funding for it ends.

Potential applicants are strongly advised to communicate with the Scientific/Research staff (see Links to Additional Resources) prior to writing an application to determine whether the IPERT is the appropriate program for the proposed efforts to enhance research training.

Research education programs may complement ongoing research training and education occurring at the applicant institution, but the proposed educational experiences must be distinct from those training and education programs currently receiving Federal support. R25 programs may augment institutional research training programs (e.g., T32, T90) but cannot be used to replace or circumvent Ruth L. Kirschstein National Research Service Award (NRSA) programs.

The goal of the IPERT program is to enable the scientific community to develop and implement innovative educational activities to equip diverse cohorts of participants with technical, operational or professional skills required for careers in the biomedical research workforce, by effectively integrating the required core elements described below:

1. **Courses for Skills Development**: For example, support for short courses designed to develop technical (e.g., appropriate methods, technologies, and quantitative/computational approaches), operational (e.g., independent knowledge acquisition, rigorous experimental design, and interpretation of data) and/or professional (e.g., management, leadership, communication, and teamwork) skills necessary to conduct rigorous and reproducible research, and to transition successfully into careers in the biomedical research workforce. These courses could be in-person or provided electronically. Dissemination of educational materials and outreach activities to benefit individuals from a variety of backgrounds are required components of the program.

2. **Mentoring Activities**: For example, activities designed to provide career information, advice, and support to research-oriented undergraduates, graduate students, postdoctoral fellows, or independent faculty in biomedical fields. The activities should provide participants with a perspective on the biomedical research training pathway and tools for overcoming challenges, navigating career transition points, and successfully transitioning into careers in the biomedical research workforce.

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\(^1\) Programs designed for pre-college participants should utilize the Science Education Partnership Awards (SEPA) funding opportunities rather than the IPERT.

\(^2\) Applicants interested in obtaining support for scientific meetings, conferences, seminars, or similar activities should apply to the “NIH Support for Conferences and Scientific Meetings (R13)”. Note that NIGMS only funds R13 grants in limited circumstances, as described on the “Support for Scientific Meetings (R13)”. 
ELIGIBILITY

Eligible Organizations
Institutions of Higher Education are eligible to apply to the IPERT program, including: 1) Public/State Controlled Institutions of Higher Education and 2) Private Institutions of Higher Education. Those that are always encouraged to apply for NIH support as Public or Private Institutions of Higher Education include: 1) Hispanic-Serving Institutions, 2) Historically Black Colleges and Universities (HBCUs), 3) Tribally Controlled Colleges and Universities (TCCUs), 4) Alaska Native and Native Hawaiian Serving Institutions, and 5) Asian American Native American Pacific Islander Serving Institutions (AANAPISIs).

The sponsoring institution must assure support for the proposed program. Appropriate institutional commitment to the program includes the provision of adequate staff, facilities, and educational resources that can contribute to the planned program. Institutions with existing Ruth L. Kirschstein NRSA institutional training grants (e.g., T32) or other Federally funded training programs may apply for a research education grant provided that the proposed educational experiences are distinct from those training programs receiving federal support. In many cases, it is anticipated that the proposed research education program will complement ongoing research training occurring at the applicant institution.

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

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, 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 should be reviewed.

The PD/PI should be an established investigator in the scientific area in which the application is targeted and capable of providing both administrative and scientific leadership to the development and implementation of the proposed program. The PD/PI will be expected to monitor and assess the program and submit all documents and reports as required.

Program Faculty
Researchers from diverse backgrounds, including racial and ethnic minorities, persons with disabilities, and women are encouraged to participate as preceptors/mentors. Mentors should have research expertise and experience relevant to the proposed program. Mentors must be committed
to continuing their involvement throughout the total period of this award.

PARTICIPANTS
NIGMS will support programs designed for research-oriented individuals across the training pathway, including undergraduates, graduate students, postdoctoral fellows, and independent faculty in biomedical fields. As previously noted, the activities may include individuals at a particular research career stage or at a range of career stages. Unless strongly justified on the basis of exceptional relevance to NIH, research education programs should be used primarily for the education of U.S. citizens and permanent residents.

3. AWARD DETAILS

BUDGET
Application budgets need to reflect the actual needs of the proposed project and are limited to $500,000 per year in direct costs.

DURATION
The scope of the proposed project should determine the project period. The maximum project period is 5 years.

PERSONNEL COSTS
Individuals designing, directing, and implementing the research education program may request salary and fringe benefits appropriate for the person months devoted to the program. Salaries requested may not exceed the levels commensurate with the institution’s policy for similar positions and may not exceed the congressionally mandated cap. (If mentoring interactions and/or other activities with the individuals in the IPERT program are considered part of the faculty’s regular academic duties, then any costs for such work, representing additional compensation above the institutional base salary, are not allowable costs from grant funds).

PARTICIPANT COSTS
Participants may be paid if specifically required for the proposed research education program and sufficiently justified. Participant costs must be itemized in the proposed budget. Allowable participant costs depend on the educational level/career status of the individuals to be selected to participate in the program.

Individuals supported by NIH training and career development mechanisms (K, T, or F awards) may receive, and indeed are encouraged to receive, educational experiences supported by an R25 program, as participants, but may not receive salary or stipend supplementation from a research education program.

Because the R25 program is not intended as a substitute for an NRSA institutional training program
(e.g., T32), costs to support full-time participants (supported for 40 hours/week for a continuous, 12-month period) are not allowable.

Funds may be requested for the travel of participants to the IPERT activity. Travel costs may not exceed coach class fares. In all cases, U.S. Flag carriers must be used where possible. Foreign travel is not an allowable expense.

Per diem costs for meals and lodging for activity participants may be requested and will be limited to the days of attendance at the planned activity plus the travel time to and from the activity location. Where meals and/or lodging are furnished without charge or at a nominal cost, such as part of a registration fee, an appropriate deduction must be made from the authorized per diem.

**OTHER PROGRAM-RELATED EXPENSES**

Consultant costs, equipment, supplies, travel for key persons, and other program-related expenses may be included in the proposed budget. These expenses must be justified as specifically required by the proposed program and must not duplicate items generally available at the applicant institution.

**INDIRECT COSTS**

Indirect costs (also known as Facilities & Administrative [F&A] Costs) are reimbursed at 8% of modified total direct costs (exclusive of tuition and fees and expenditures for equipment), rather than on the basis of a negotiated rate agreement.

4. **PROPOSAL PREPARATION**

It is critical that applicants follow the instructions in the Research (R) Instructions in the SF424 (R&R) Application Guide except where instructed in this funding opportunity announcement (PAR-19-383) 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 will not be reviewed. When the program-specific instructions deviate from those in the Application Guide, follow the program-specific instructions.

**CONTENT AND FORM OF APPLICATION SUBMISSION**

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

**INSTRUCTIONS FOR APPLICATION SUBMISSION**

The funding notice contains supplements to the instructions found in the SF424 (R&R) Application Guide and should be used for preparing an application to this mechanism.

- **SF424(R&R) Cover**: Follow all instructions provided in the SF424 (R&R) Application Guide.

- **SF424(R&R) Project/Performance Site Locations**: Follow all instructions provided in the SF424
(R&R) Application Guide.

- **SF424(R&R) Other Project Information Component**: Follow all instructions provided in the SF424 (R&R) Application Guide with the following exceptions:
  - **Facilities & Other Resources**: Describe the educational environment, including the facilities, laboratories, participating departments, computer services, and any other resources to be used in the development and implementation of the proposed program. List all thematically related sources of support for research training and education following the format for Current and Pending Support.
  - **An Advisory Committee Plan (1-page maximum)** is not a required component of a career development program; however, if an Advisory Committee is intended, provide a plan for the appointment of an Advisory Committee to monitor progress of the program. The roles, responsibilities, and desired expertise of committee members, frequency of committee meetings, and other relevant information should be included. Describe how the Advisory Committee will evaluate the overall effectiveness of the program. Advisory Committee members should not be identified or contacted prior to receiving an award. Name the file “Advisory_Committee.pdf”.
  - **Outcomes Data Collection and Storage Plan (2-page maximum)**. The applicant must provide a plan to track outcomes. Programs are encouraged to make the aggregate outcome data available on the grantee’s website. If the applicant intends to make the data available, describe how the aggregate data will be de-identified before public posting. The applicant must include a strategy to ensure the secure storage and preservation of program data and outcomes. Please name the file “Data_Collection_Storage_Plan.pdf”. If this attachment is not included, the application will be considered incomplete and will not be reviewed.
  - The filename provided for each “Other Attachment” will be the name used for the bookmark in the electronic application in eRA Commons.

- **Biographical Sketch**: Follow all instructions provided in the SF424 (R&R) Application Guide with the following additional instructions: The personal statement should describe a commitment to scientific rigor, research training, mentoring, as well as to promoting inclusive and supportive scientific environments.

- **PHS 398 Research Plan**: All instructions in the SF424 (R&R) Application Guide must be followed, with the following additional instructions:

  The Research Strategy section must be used to upload the Research Education Program which is described immediately following this listing. The Research Education Plan must include the following components:
  - Proposed Research Education Program
  - Program Director/Principal Investigator
  - Program Faculty
Proposed Research Education Program. While the proposed research education program may complement ongoing research training and education occurring at the applicant institution, the proposed educational experiences must be distinct from those research training and research education programs currently receiving federal support. Applicants should describe the following:

**Specific aims.** Applicants should provide a succinct summary of the (a) measurable and obtainable objectives; (b) the evidence-based activities designed to accomplish the objectives; (c) the participants or beneficiaries of the activities; and (d) how the proposed IPERT will contribute to the NIGMS goals for training a diverse biomedical research workforce to address the nation’s needs.

**Rationale for the proposed program.** Describe the gap in biomedical research training the program is intended to address. The application should include existing baseline data to provide a strong justification for the program. For renewals, or for programs previously funded by NIH, provide a detailed description of how the proposed program is new, innovative, and differs from the original program.

**The specific, obtainable, and measurable short-term and long-term objectives of the proposed program.** The objectives should align with the overarching goal of the IPERT described above. Applicants are encouraged to develop the Research Education Program Plan in consultation with the evaluation team (see Evaluation Plan section below) to ensure the activities are designed to meet the objectives and that the milestones for success are measurable.

**Scientific focus (if applicable).** When a scientific focus is proposed, how the program aligns with the NIGMS mission.

**Innovative activities designed to develop the technical, operational, and professional skills of the participants.** Provide details on planned courses, seminars, or workshops (applicants may include the “Required Research Education Activities” appendix, described in the Appendix instructions below, to provide material for required training activities). Applicants should describe how the activities employ evidence-based approaches to teaching and learning.
The mentoring activities. The application should describe the plans for mentoring participants and describe how the plans address the program objectives. The application should describe how the mentors are trained in using evidence-based mentoring practices that promote the development of individuals from all backgrounds, including those from underrepresented groups in the biomedical sciences (NIH's Interest in Diversity).

Outreach. Describe the activities designed to ensure a diverse group of individuals will benefit from the research education resources or materials developed under the auspices of the proposed IPERT program.

Learning Environment. How the activities employ evidence-based methods that promote learning environments that are supportive, safe and inclusive.

Synergies. How the skills development, mentoring, and outreach activities synergize and are designed to accomplish the objectives.

Program Director/Principal Investigator. Describe arrangements for administration of the program. Provide evidence that the Program Director/Principal Investigator is actively engaged in research and/or teaching in an area related to the mission of NIH, and can organize, administer, monitor, and evaluate the research education program. For programs proposing multiple PDs/PIs, describe the complementary and integrated expertise of the PDs/PIs, their leadership approach, and governance appropriate for the planned project.

Program Faculty. The application should describe how the program faculty will promote the success of the participants. Describe how the program will build a diverse team of participating faculty (e.g., individuals from underrepresented backgrounds (NIH's Interest in Diversity), women, and faculty at different career stages) to help participants gain access to potential role models and to enhance the excellence of the research education environment. Applicants should summarize and expand on the material presented in the biosketches while addressing how the program faculty:

- Have sufficient time to commit to training given their other professional obligations;
- Will receive training in effective, evidence-based mentoring and teaching practices; and
- Demonstrate a commitment to effective mentoring and to promoting inclusive, safe, and supportive scientific and research education environments.

Program Participants. Applications must describe the intended participants, and the eligibility criteria and/or specific educational background characteristics that are essential for participation in the proposed research education program. Identify the career levels for which the proposed program is planned. Expand upon the Recruitment Plan to Enhance Diversity (see below) and explain how the program will identify and recruit a diverse pool of potential candidates from a wide variety of institution types and backgrounds, e.g., (see NIH's Interest in Diversity). When relevant, describe the plans for a holistic candidate review process (i.e., a process that considers metrics beyond the
inclusion, GPA, and standardized test scores) that will select a diverse group of promising participants who are committed to contributing to the biomedical research enterprise (appointment procedure protocols may be provided in the "Participant Appointment Procedures" Appendix).

**Recruitment Plan to Enhance Diversity.** The plan should include outreach strategies and activities designed to recruit potential candidates who are from diverse backgrounds, including underrepresented racial and ethnic groups, students from low socio-economic backgrounds, and individuals with disabilities (see NIH's Interest in Diversity). Applicants are encouraged to consult the NIGMS webpage for strategies to enhance diversity in training programs when designing their plans. Describe the specific efforts to be undertaken by the program and how these might coordinate with recruitment efforts of the institution(s). Centralized institutional efforts alone will not satisfy the requirement to recruit individuals from diverse backgrounds.

**Plan for Instruction in Methods for Enhancing Reproducibility.** Applicants must provide a Plan for Instruction in Methods for Enhancing Reproducibility through rigor and transparency. The plan should describe how participants will be instructed in principles important for enhancing research reproducibility, for example, critical evaluation of foundational research underlying a project, rigorous experimental design and data interpretation, consideration of relevant biological variables such as sex, authentication of key biological and/or chemical resources, data and material sharing, record keeping, and transparency in reporting. The plan should be appropriate and reasonable for the nature and duration of the proposed activities. Applicants are encouraged to consult the NIGMS clearinghouse for training modules to enhance data reproducibility and other resources when developing the plans. Describe how the methods for enhancing reproducibility strategies are integrated into proposed activities. If a plan for the instruction in methods for enhancing reproducibility is not included, the application will be considered incomplete and will not be reviewed.

**Plan for Instruction in the Responsible Conduct of Research.** Applicants must provide a plan in the Responsible Conduct of Research (RCR) for example, conflict of interest, authorship, data management, human subjects and animal use, laboratory safety, research misconduct, and research ethics. The plan should be appropriate and reasonable for the nature and duration of the proposed activities. Explain how the teaching of RCR synergizes with elements of the activities designed to enhance the participants' ability to conduct rigorous and reproducible research. Applications lacking a responsible conduct of research plan will not be reviewed.

**Evaluation Plan.** NIGMS-funded research education programs must conduct ongoing evaluations to monitor the success of the activities. The application may include the "Evaluation and Assessment Instruments" appendix to provide blank survey instruments, rubrics or forms. The evaluation plan should describe the following: The methods, metrics, and timeline to determine whether the program is effective in meeting its objectives with respect to the participants' development; Characteristics of the data to be collected. The data should be centered not only on psychosocial factors (e.g., self-perceived gains, belonging, science identity, self-efficacy, career satisfaction), but also on outcomes (e.g., pursuit of a science degree, degree attainment, success in
career transitioning, grant submissions, publications);

If possible, a comparator group (e.g., individuals with similar demographics and aptitude metrics who are at a similar training level and will not participate in program activities). If applicants are not able to identify a comparator group, provide the framework for determining whether the program activities were effective and did not simply recruit talented individuals already on a successful trajectory;

The mechanism for determining whether the skill development and mentoring activities are conducted in environments that are inclusive, safe, and supportive of the participants' development; The plans for being responsive to internal and external outcomes analyses, critiques, surveys and evaluations. Programs are expected to obtain feedback from the participants about the effectiveness of the activities using confidential methods; and

How the program will effectively track outcomes while ensuring the data collection and storage methods will be safeguarded and preserved by briefly expanding upon the "Outcomes Data Collection and Storage Plan" attachment.

**Sustainability Plan.** NIGMS intends to fund innovative programs and to use IPERT awards to catalyze advances in biomedical research education in a wide variety of areas; therefore, applicants should not assume renewals of their programs will be possible and must include a sustainability plan describing how successful IPERT activities and elements will be continued beyond the duration of the award. Sustainability plans may include, but are not limited to, innovative business models or strategies to secure external sources of government, private sector, or professional society funding.

**Dissemination Plan.** A specific plan must be provided to disseminate nationally any findings resulting from or materials developed under the auspices of the research education program. Examples include, but are not limited to, sharing material via internet educational portals, conducting webinars, running workshops, or presenting at scientific meetings. Publication of the program's activities and outcomes in peer-reviewed journals is highly encouraged. See also the expectations for sharing resources developed with the support of an IPERT award in the instructions for Resource Sharing Plans below.

**Letters of Support.** A letter of institutional commitment must be attached as part of Letters of Support. Appropriate institutional commitment should include the provision of adequate staff, facilities, and educational resources that can contribute to the planned research education program. Applications lacking a letter of institutional commitment will not be reviewed.

**Resource Sharing Plans.** Individuals are required to comply with the instructions for the Resource Sharing Plans as provided in the SF424 (R&R) Application Guide. When relevant, applications are expected to include a software dissemination plan if support for development, maintenance, or enhancement of software is requested in the application. There is no prescribed single license for
software produced. However, the software dissemination plan should address, as appropriate, the following goals: Software source code should be freely available to biomedical researchers and educators in the non-profit sector, such as institutions of education, research institutions, and government laboratories. Users should be permitted to modify the code and share their modifications with others. The terms of software availability should permit the commercialization of enhanced or customized versions of the software, or incorporation of the software or pieces of it into other software packages. To preserve utility to the community, the software should be transferable such that another individual or team can continue development in the event that the original investigators are unwilling or unable to do so.

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

Required Research Education Activities. To adequately assess the content of the didactic portion of the research education program, the application may include syllabi/ outlines of all required training activities (e.g., syllabi for courses, mentor training materials, professional development workshops, career exploration opportunities, skills development activities).

Participant Selection and Appointment Procedures (3 pages maximum). Materials may include, but not be limited to, appointment protocols and/or blank applications. Evaluation and Assessment Instruments. The application may include blank surveys, rubrics, and/or forms used to (a) document and monitor participant progress and (b) determine whether the research education environment is effective, inclusive, safe, and supportive.

Conflict Resolution Protocols (3-page maximum). The application may include detailed protocols for addressing (1) mentor/mentee matches, (2) faculty with unacceptable training/mentoring skills and (3) multi PD(s)/PI(s).

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. Generally, not applicable.
- Delayed Onset Study Note: Delayed onset 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. Generally, not applicable.

SUBMISSION DATES AND TIMES

Letters of intent are not applicable. A full application is due October 15, 2020 by 5:00 PM local time
of the applicant organization. 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, the application deadline is automatically extended to the next business day.

**PROPOSAL SUBMISSION**

Organizations must submit applications to Grants.gov (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, 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. **PROPOSAL REVIEW & CRITERIA**

**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 are evaluated for scientific and technical merit through the NIH peer review system.

For this FOA: The goal of this R25 program is to support innovative, high-quality skills development, mentoring, and outreach educational activities to equip a diverse cohort of participants with the technical, operational, and professional skills required for careers in the biomedical research workforce.

**OVERALL IMPACT**

Reviewers will provide an overall impact score to reflect their assessment of the likelihood for the project to strongly advance research education by fulfilling the goal of this R25 Education Program, 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.
a. **Significance.** Does the proposed program address a key audience and an important aspect or important need in research education? Is there convincing evidence in the application that the proposed program will significantly advance the stated goal of the program?

b. **Investigator(s).** Is the PD/PI capable of providing both administrative and scientific leadership to the development and implementation of the proposed program? Is there evidence that an appropriate level of effort will be devoted by the program leadership to ensure the program's intended goal is accomplished? If applicable, is there evidence that the participating faculty have experience in mentoring students and teaching science? If applicable, are the faculty good role models for the participants by nature of their scientific accomplishments? 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?

c. **Innovation.** Taking into consideration the nature of the proposed research education program, does the applicant make a strong case for this program effectively reaching an audience in need of the program’s offerings? Is the proposed program developing or utilizing innovative approaches and latest best practices to improve the knowledge and/or skills of the intended audience?

For this FOA: If previously supported activities are proposed, are there new elements that are likely to result in outcomes that increase the reach and/or impact of the activities?

d. **Approach.** Does the proposed program clearly state its goals and objectives, including the educational level of the audience to be reached, the content to be conveyed, and the intended outcome? Is there evidence that the program is based on a sound rationale, as well as sound educational concepts and principles? Is the plan for evaluation sound and likely to provide information on the effectiveness of the program? If the proposed program will recruit participants, are the planned recruitment, retention, and follow-up (if applicable) activities adequate to ensure a highly qualified participant pool?

For this FOA: Are the proposed strategies for meeting the goals and objectives well-conceived? If the application proposes to continue previously supported activities, is documentation of the success of those previous activities provided? Is the proposed plan for sustainability of identified activities feasible and likely to result in lasting changes beyond the duration of the award? Is the proposed plan for dissemination of the education program sound and likely to provide useful information to the broader scientific community?

e. **Environment.** Will the scientific and educational environment of the proposed program contribute to its intended goals? Is there a plan to take advantage of this environment to enhance the educational value of the program? Is there tangible evidence of institutional commitment? Is there evidence that the faculty have sufficient institutional support to create a sound educational
environment for the participants?

Where appropriate, is there evidence of collaboration and buy-in among participating programs, departments, and institutions?

**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.

a. **Training in Methods for Enhancing Reproducibility.** Does the Instruction in Methods for Enhancing Reproducibility plan describe a well-conceived approach to instructing participants in principles important for enhancing research reproducibility and transparency in reporting? Are the components sufficiently well integrated into the overall program?

b. **Protections for Human Subjects.** Generally not applicable. Reviewers should bring any concerns to the attention of the Scientific Review Officer.

c. **Inclusion of Women, Minorities, and Individuals Across the Lifespan.** Generally not applicable. Reviewers should bring any concerns to the attention of the Scientific Review Officer.

d. **Vertebrate Animals.** Generally not applicable. Reviewers should bring any concerns to the attention of the Scientific Review Officer.

e. **Biohazards.** Generally not applicable. Reviewers should bring any concerns to the attention of the Scientific Review Officer.

**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.

a. **Recruitment Plan to Enhance Diversity.** Peer reviewers will separately evaluate the recruitment plan to enhance diversity after the overall score has been determined. Reviewers will examine the strategies to be used in the recruitment of individuals from underrepresented groups. The review panel’s evaluation will be included in the summary statement. Plans will be rated as acceptable or unacceptable, and the summary statement will provide the consensus of the review committee.

b. **Training in the Responsible Conduct of Research.** Taking into account the specific characteristics of the proposed research education program and the level of participant experience, the reviewers will evaluate the adequacy of the proposed RCR training. Are the components sufficiently well integrated into the overall program? The review panel’s evaluation will be included in the summary statement. Plans will be rated as acceptable or unacceptable, and the summary statement will provide the consensus of the review committee.
6. SUGGESTED MILESTONES FOR PROPOSAL DEVELOPMENT

PROPOSAL PRODUCTION TIMELINE

The following timeline outlines a recommended plan for proposal production. The primary components to be developed would include the Specific Aims and the Research Strategy. Appendix A offers an initial series of proposal planning questions that will be refined after further discussion.

<table>
<thead>
<tr>
<th>Activity / Deliverable</th>
<th>Lead Team</th>
<th>Due Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deliver Planning Guide</td>
<td>Hanover</td>
<td>Early May</td>
</tr>
<tr>
<td>Proposal Production Launch Call (#1) to discuss IPERT program goals and objectives and review planning questions</td>
<td>All</td>
<td>TBD</td>
</tr>
<tr>
<td>Refine Proposal Planning Questions (see Appendix A)</td>
<td>Hanover</td>
<td>mid-May</td>
</tr>
<tr>
<td>Outline Specific Aims page for PO outreach</td>
<td>Hanover</td>
<td>End of May</td>
</tr>
<tr>
<td>Review Specific Aims draft and refine</td>
<td>XULA</td>
<td>Early Jun</td>
</tr>
<tr>
<td>Email/schedule PO call to review concept—Specific Aims</td>
<td>XULA</td>
<td>mid-Jun</td>
</tr>
<tr>
<td>Post-PO Debrief call (#2)</td>
<td>All</td>
<td>TBD</td>
</tr>
<tr>
<td>Deliver Draft #1, Research Strategy (a skeleton draft)</td>
<td>Hanover</td>
<td>by Aug 1</td>
</tr>
<tr>
<td>Proposal call #3</td>
<td>All</td>
<td>TBD</td>
</tr>
<tr>
<td>Review and return comments for Draft #1</td>
<td>XULA</td>
<td>mid-Aug</td>
</tr>
<tr>
<td>Deliver Draft #2, Research Strategy</td>
<td>Hanover</td>
<td>Early Sep</td>
</tr>
<tr>
<td>Proposal call #4</td>
<td>All</td>
<td>TBD</td>
</tr>
<tr>
<td>[optional] Share addt’l materials for review—Facilities, etc</td>
<td>XULA</td>
<td>mid-Sep</td>
</tr>
<tr>
<td>Review and return comments from Draft #2, Specific Aims</td>
<td>XULA</td>
<td>3rd week of Sep</td>
</tr>
<tr>
<td>Finalize Specific Aims and Research Strategy for delivery</td>
<td>Hanover</td>
<td>Early Oct 2020</td>
</tr>
<tr>
<td>Return additional materials with feedback/revision</td>
<td>Hanover</td>
<td></td>
</tr>
<tr>
<td>[optional] Final proposal call (#5)</td>
<td>All</td>
<td>TBD</td>
</tr>
<tr>
<td><em>Submit complete application</em></td>
<td>XULA</td>
<td>in advance of 10/15/2020</td>
</tr>
</tbody>
</table>

BUDGET AND BUDGET JUSTIFICATION PREPARATION

XULA will be required to develop a budget and budget justification narrative. The Hanover Grants Consultant can review these documents to ensure that (1) they are compliant with the solicitation’s restrictions on allowable costs, (2) requested funding amounts and line items appear reasonable to an outside reviewer, and that (3) the budget justification narrative includes sufficient detail regarding
the overall project costs as well as explanation for any unusual expenses. It is the responsibility of XULA to ensure that the budget is compliant with institutional/county/state policies such as mandated F&A rates and any other internal restrictions.

7. COMPARABLE INSTITUTIONS WITH IPERT AWARDS

The following programs were selected to highlight potentially comparable IPERT awards.

<table>
<thead>
<tr>
<th>Institution</th>
<th>IPERT Title</th>
<th>City, State</th>
<th>PI</th>
<th>Total Amount</th>
<th>XULA feature</th>
</tr>
</thead>
<tbody>
<tr>
<td>University of Alabama in Tuscaloosa</td>
<td>Expanding the Genomics Education Partnership: Regional Mentoring and Training Networks to Diversify Bioinformatics Education and Research</td>
<td>Tuscaloosa, AL</td>
<td>Laura Reed</td>
<td>$442,112</td>
<td>HBCU</td>
</tr>
<tr>
<td>Jackson State University</td>
<td>A Train-the-Trainers Approach to Developing a Diverse and Successful Workforce in Behavioral and Biomedical Sciences</td>
<td>Jackson, MS</td>
<td>Joseph Whitaker</td>
<td>$171,843</td>
<td>HBCU and Total # of undergrad only 5300</td>
</tr>
<tr>
<td>Brown University</td>
<td>The Leadership Alliance Innovative Programs to Enhance Research Training (TIA-IPERT)</td>
<td>Providence, RI</td>
<td>Medeeva Ghee</td>
<td>$480,279</td>
<td>Private</td>
</tr>
</tbody>
</table>

8. LINKS TO ADDITIONAL RESOURCES

NIGMS IPERT SCIENTIFIC/RESEARCH CONTACTS
Edgardo Falcón, Ph.D. Email: edgardo.falcon@nih.gov
Desirée L. Salazar, Ph.D. Email: desiree.salazar@nih.gov
Michael Sesma, Ph.D. Email: msesma@nigms.nih.gov

ELECTRONIC RESOURCES
- R25 Award Information from NIH
- IPERT FAQs
- Notice of NIH’s Interest in Diversity
- NIH SF424 Application Guide How to Apply
APPENDIX A. PROPOSAL DEVELOPMENT PLANNING QUESTIONS—PRELIMINARY

1. What is your vision for an IPERT award? Who is the key audience, e.g., participants? Does the key audience need to be recruited?

2. How does your vision leverage any current programs at XULA? Are you considering how your proposed program may develop or utilize innovative approaches and the latest best practices to improve the knowledge and/or skills of the intended audience?

3. Do you have institutional commitment for this proposed IPERT program?

4. Who will comprise the leadership team? Have any faculty been identified to participate? If so, do they have experience in mentoring science and teaching science?

5. What elements of the project plan will address these program improvement or capacity expansion needs?

6. What are the strategic goals of your proposed IPERT project?

7. What are the long-range project objectives (5-year goals) associated with the program?

8. How will elements of the project plan address institutional strategic goals?

9. What aspect(s) of your vision will differentiate its proposal from the rest of the applicant pool?

10. What type of activities do you envision?

11. What do you envision for a dissemination plan? Will the new knowledge be beneficial to the broader scientific community?

12. What additional involvement or investment is needed to support your IPERT?

13. Will you utilize an internal or external evaluator? What will constitute a robust project evaluation?

14. Can you document that faculty have sufficient institutional support to create a sound educational environment for the participants? Where appropriate, is there evidence of collaboration and buy-in among participating programs, departments, and institutions?

15. Do you have an aggregated description of relevant facilities and resources relevant to the IPERT project that could be refined and utilized?

16. Is your IPERT program (or its elements) sustainable after the funding period ends?