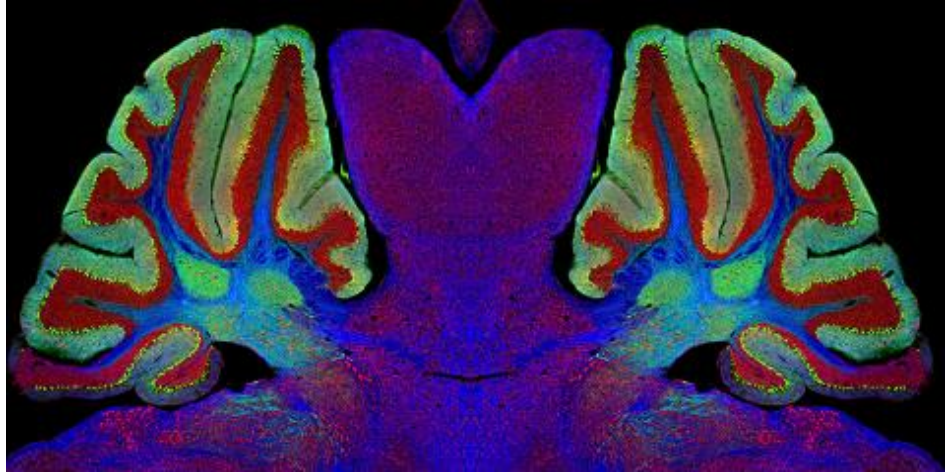
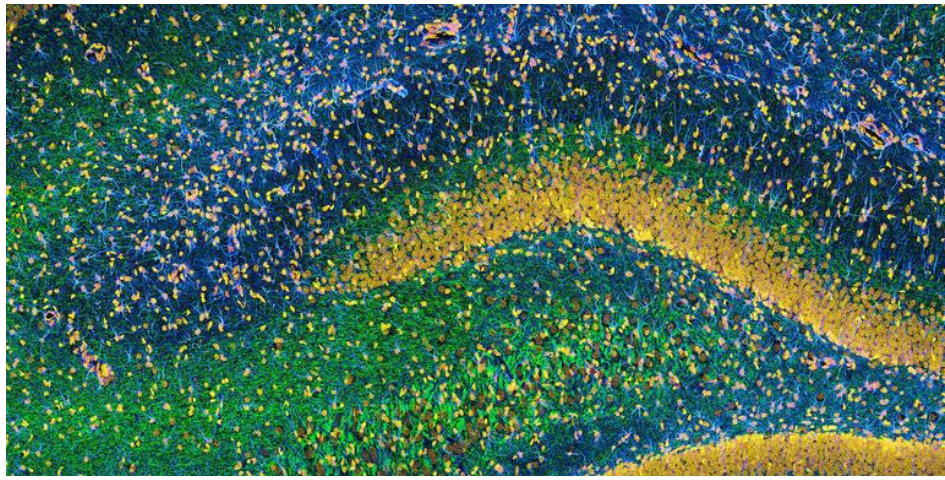
National Institutes of Health
Turning Discovery Into Health

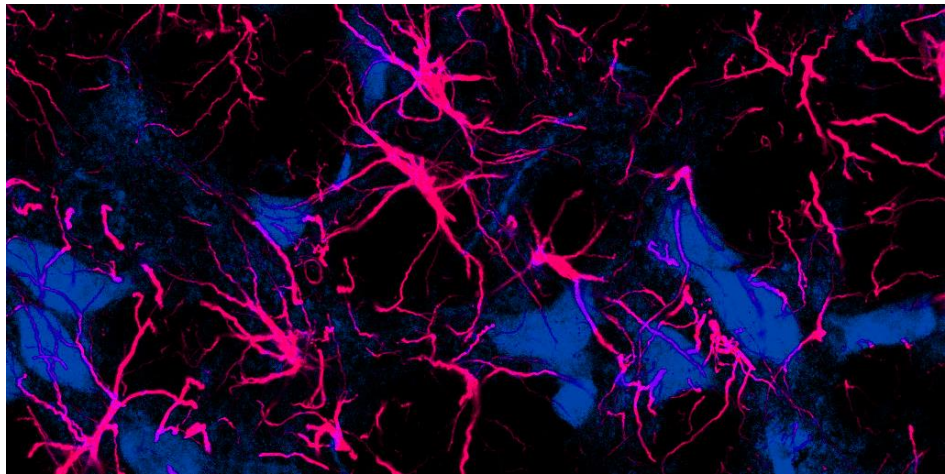
NIH Blueprint and BRAIN Initiative Program for Enhancing Neuroscience Diversity through Undergraduate Research Education Experiences (BP BRAIN-ENDURE) (R25 Clinical Trial Not Allowed)

September 20, 2023

NIH Blueprint and BRAIN

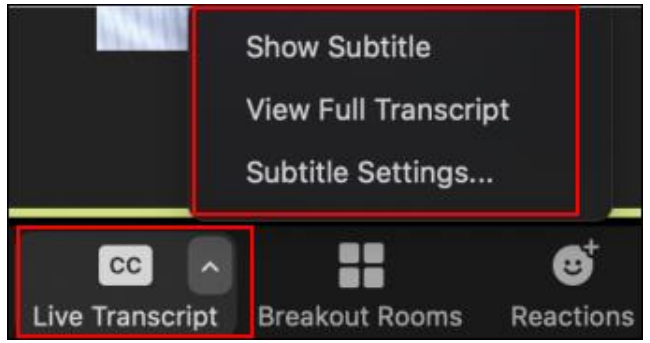






NIH ENDURE Technical Assistance Webinar

- Captions and live transcript are available.



- Type any questions into the Q&A box. Questions will be addressed after the presentation.

- The recording and webinar resource materials will be available in a few weeks.

Speakers

Dr. Michelle Jones-London
Chief
Office of Programs to Enhance Neuroscience (OPEN)
Workforce Diversity
NINDS

Dr. Marguerite Matthews
Program Director
Office of Programs to Enhance Neuroscience (OPEN)
Workforce Diversity
NINDS

Dr. Deanna Adkins
Scientific Review Officer
Scientific Review Branch
Training Cluster
NINDS

Outline of the Webinar

- Program Vision and Purpose
- Program Requirements and Components
- Review and Criteria
- Avoiding Frequent Mistakes

- Q&A

Program Vision and Purpose

NOFO Rationale and Purpose

- Prepare undergraduate students from diverse backgrounds, including those from groups underrepresented in biomedical and behavioral sciences, to enter Ph.D. degree programs in the neurosciences
- To accomplish the stated over-arching goal, this NOFO will support educational activities with a primary focus on:
    - ***Research Experiences***
    - ***Mentoring Activities***
    - ***Courses for Skills Development***

ENDURE Outcomes as of 2021

- 234 of 353 alumni (~66%) currently **enrolled or completed** post-graduate programs
  - 98 in biomedical PhD programs
  - 37 in postbacc/MS degree programs
  - 46 in clinical doctorate programs (MD or DO, MD/PhD, PharmD, PsyD, DPT)
  - 28 completed PhD programs
  - 16 in postdoctoral research
  - 9 in residency programs or practicing medicine
- 3 in other programs (social sciences and education)
- 28 in other research positions (lab technicians, clinical research associates)
- 58 in other fields (teaching, pharma/biotech industry, pharmacy, physical therapy, nursing, science writing, policy, etc.)

Must fit within the neuroscience mission area(s) of Blueprint and BRAIN Initiative participating NIH Institutes/Centers

- ENDURE is cross-cutting and will benefit the entire neuroscience community.
- ENDURE enhances a diverse neuroscience pathway to academic/research careers with potential benefit to all neuroscience ICs.

Several NIH Institutes and Centers also have R25s to enhance workforce diversity, find additional NIH research mission funding opportunities: https://researchtraining.nih.gov/programs/other-training-related/R25

Participating NIH Institutes and Centers

- NEI
- NIA
- NIAAA
- NIBIB
- NICHD
- NIDCD
- NIDCR
- NIDA
- NIEHS
- NIMH
- NINDS
- NCCIH
- OBSSR

Participating components of the collaborative research education partnerships should include:

1. One or more institutions that either:
   a) **have a historical and current mission** to educate students from any of the populations that have been identified as underrepresented in biomedical research as defined by the NSF; i.e., African Americans or Blacks, Hispanic or Latino Americans, American Indians, Alaska Natives, Native Hawaiians, U.S. Pacific Islanders, and persons with disabilities) **OR**
   b) **have a documented track record** of recruiting, training and/or educating, and graduating underrepresented students as defined by NSF (see above), which has resulted in increasing the institution's contribution to the national pool of graduates from underrepresented backgrounds who pursue biomedical research careers;
2. A research-intensive institution, defined as having an existing neuroscience or neuroscience-related program and a significant number of potential mentors with NIH R01 or equivalent extramural research support;
3. Formal alliances with one or more institutions with neuroscience-focused graduate research training programs that can provide summer research experiences

Required ENDURE Program Components

School Year	Summer
• Part-time research • Dedicated Mentoring • Courses for professional and skills development	• Full-time research • Networking

Over two years, ENDURE students:

- Participate in year-round authentic neuroscience research experiences
- Develop technical, research, and professional skills
- Receive outstanding mentorship
- Network with graduate programs
- Form a diverse and vibrant neuroscience community

Required Program Components

- **Research experiences**
  - part-time authentic neuroscience research experiences in extramurally-funded laboratories during the academic year
  - full-time summer neuroscience research experiences in laboratories that are part of a **neuroscience-focused graduate program**
- **Mentoring activities**
  - provide students with outstanding mentoring and education in critical skills such as leadership, grant and manuscript writing, and time management
  - modules for faculty to learn how to advise and mentor students from different backgrounds should be a component of a well-designed program
- **Courses for skills development**
  - courses should be integrated across the partnering institutions
  - approaches may include, but are not limited to:
    - core neuroscience coursework
    - courses on development of experimental rigor and quantitative skills
    - curriculum for specialized research techniques;
    - seminars emphasizing scientific reading comprehension, writing, and oral presentation skills;
    - research career seminars

Research Education Program Plan

- 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.
- It is not intended to support long-term training by NRSA-eligible individuals and can not be used to circumvent or supplement Ruth L. Kirschstein National Research Service Award (NRSA) mechanisms.
- Proposed program interventions should focus on asset models and leadership opportunities, rather than solely deficit models and remediation

Program Requirements and Components

Budget	$300K - $400K DC/year for 5 years
Personnel Costs	• Salary support for the PD/PI/or combination of multiple PDs/PIs is limited to up to 3.6 person months (i.e., 30% on a 12-month basis) • Individuals designing, directing, and implementing the research education program may request salary and fringe benefits appropriate for the person months devoted to the program
Salary	• NIH will provide salary and fringe benefits consistent with institutional salary policies. Institutional salary rates which exceed the hourly minimum wage must be justified. • Because the R25 program is not intended as a substitute for an NRSA institutional training program costs to support full-time participants (supported for 40 hours/week for a continuous, 12-month period) are not allowable.
Other Allowable Costs	• Salary support is allowed for sophomore, junior and/or senior year undergraduate students participating in a research experience, as long as there is an employee-employer relationship between the students and the institution. • NIH Blueprint and BRAIN Initiative Institutes will convene an annual meeting that will bring together ENDURE program directors and participating students and write that cost into the budget. • Consultant costs, equipment, supplies, travel for key persons, and other program-related expenses may be included in the proposed budget, if justified.

Unallowable Costs

- Undergraduate student tuition, housing, or food, during the academic year.
- Foreign travel and recruitment expenses.
- Support for students not matriculated at one of the partnering institutions.
- Costs for textbooks, incentives (including laptop computers), memberships, or subscriptions to Internet services or journals.
- Support for faculty research or purchase of research equipment.
- A summer “stand-alone” program for students not matriculated as full-time students at one of the applicant institutions

Institutional Eligibility

- Non-domestic (non-U.S.) Entities (Foreign Institutions) are **not** eligible to apply.
- Non-domestic (non-U.S.) components of U.S. Organizations are **not** eligible to apply.
- Scientific Societies and Small Businesses are eligible
- Appropriate institutional commitment to the program includes the provision of adequate staff, facilities, and educational resources that can contribute to the planned program.
- Only one application per institution (normally identified by having a unique entity identifier (UEI) or NIH IPF number) is allowed

Principal Investigator Eligibility

- PD(s)/PI(s) must be able to provide both administrative and scientific leadership to the development and implementation of the proposed program.
- At least one of the PD(s)/PI(s) should be an investigator with an active research program in the biomedical sciences (e.g., as demonstrated by recent publications and current research support).
- Additional PD(s)/PI(s), including individuals with experience in the science of education, relevant social science disciplines, program evaluation, mentoring, diversity, equity, inclusion and accessibility (DEIA) initiatives
- Early-stage investigators are eligible to serve as PD/PIs, as long as doing so will not detract from their research program and career advancement.
- Multiple PD(s)/PI(s) are encouraged, particularly when each brings an Institutional type perspective and skill set that will enhance the research education program.
- MPIs should have complementary and integrated expertise and must have leadership plan.
- Effort must be appropriate. Salary support for the PD/PI/or combination of multiple PDs/PIs is limited to up to 3.6 person months (i.e., 30% on a 12-month basis)
- Funding from the IC is not required.

Program Faculty

- Mentors should have research expertise and experience relevant to the proposed program.
- Mentors must be committed to continue their involvement throughout the total period of the mentee's participation in this award.
- Should demonstrate a history of, or the potential for, their intended roles as mentors.
- Faculty should come from a wide variety of neuroscience areas relevant to the NIH Blueprint and NIH BRAIN Initiative missions.
- Researchers from diverse backgrounds, including racial and ethnic minorities, persons with disabilities, and women are encouraged to participate as program faculty.
- **Program Faculty Biosketches** must be included. The personal statement should describe a commitment to scientific rigor, training, mentoring, as well as promoting diverse, inclusive, safe, and supportive scientific environments

Participant Eligibility

- Selection of program-supported participants is expected to take into consideration whether the participation would help achieve the overall goals/objectives of the NIH Blueprint and BRAIN Initiative ENDURE Program.
- NIH encourages institutions to recruit prospective participants from groups identified as underrepresented in the biomedical sciences (e.g., see the Notice of NIH's of Interest in Diversity).
- Undergraduate students from engineering, mathematics, computer science, physics, chemistry, biology, psychology, nursing and other relevant science programs who have an interest in the neurosciences are appropriate participants.
- To receive salary/wages from this initiative, individuals must be (a) U.S. citizens, non-citizen nationals, or permanent residents, and (b) must be full-time matriculated and be sophomores, juniors or seniors in a baccalaureate degree program at one of the partnering institutions.

Participants

- Applications must describe the intended participants, and the specific educational background characteristics that are essential for participation in the proposed research education program.
- Must include a description (including number and percent) of the potential applicant pool from the partnering institutions based on the selection criteria established for program.
- Describe the selection process and criteria (e.g. who will be on the selection committee; their experience evaluating such applications)
- Describe the retention strategies and follow-up activities across the participating institutions that would ensure students remain engaged and are receiving high quality mentorship and guidance within the program.

Institutional Environment and Commitment

- Letter of institutional commitment is required. The application must include a description of specific support (financial and otherwise) to be provided for the program.
- Appropriate institutional commitment should include the provision of adequate staff, facilities, and educational resources.
- Plans must be included for how early communication and interaction between the undergraduate participants and the graduate neuroscience program will enhance graduate school acceptance.
- Takes advantage of the educational environment.
- Collaboration and buy-in from all programs, departments, and institutions involved. All collaborative arrangements must be clearly described:
  - Letter of institutional commitment,
  - Description of their research education experience and resources,
  - Research funding of participating faculty, and
  - Plan for how the research education and research experience activities will be integrated across the different sites.

Advisory Committee

- Provide a plan for the appointment of an Advisory Committee to monitor progress of the research education program.
- The composition, 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.
- Renewal applications with Advisory Committees should include the names of all committee members during the past project period.

Recruitment Plan to Enhance Diversity

- New applications must include explicit plans to enhance diversity in recruitment, may include data in support of past accomplishments.
- Renewal applications must include detailed account of experiences in recruiting individuals from underrepresented groups during the previous funding period, including successful and unsuccessful recruitment strategies and how the proposed plan reflects the program's past experiences.

Evaluation Plan

- Benchmarks should be specified, and specific plans and procedures must be described to capture, analyze and report short or long-term outcome measures that would determine the success.
- Must specify baseline metrics (e.g., numbers, educational levels, and demographic characteristics of participants), and measures of short or long-term success.
- Applicants are encouraged to obtain feedback from participants.

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.
  - Sharing course curricula and related materials via web postings, presentations at scientific meetings, workshops
- *Publication of the program's findings and outcomes in peer-reviewed journals is highly encouraged.*

Renewal

- For Renewals, the committee will consider the progress made in the last funding period, and the success of the program in achieving its goals.
- Has the research education program successfully achieved its stated objectives during the prior project period(s)?
- Has the program had a strong impact on student success and if appropriate, provided added value to the participating institutions?
- Summarize program outcomes (e.g., number of participants who matriculated into and completed ENDURE, number who matriculated into a biomedical research-oriented doctoral degree program and the number of these students who progress in good standing in their degree programs).
- Describe what has been learned through program assessment and any changes made in the program because of the assessment. Indicate the institutional impact of the program (e.g., on the curriculum, training environment, or institutional practices).

Review Criteria

Review Criteria

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?
- Will the proposed ENDURE program significantly improve the institutional baseline number of students from the partnering institutions that enter high-quality, competitive graduate programs in the neurosciences?

Review Criteria

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?

Review Criteria

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?
- Where appropriate, is the proposed program developing or utilizing innovative approaches and latest best practices to improve the knowledge and/or skills of the intended audience?

Review Criteria

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?
- Are the planned recruitment, retention, and follow-up (if applicable) activities adequate to ensure a highly qualified participant pool?
- Do the proposed research experiences and courses for skills development meet the needs of participating students who are enrolled full-time at one of the applicant institutions, including those from underrepresented groups, and are they designed to support their competitiveness for completion of a Ph.D. degree in neuroscience?
- Does the program demonstrate that participants will have authentic, meaningful research experiences in neuroscience-related laboratories?

Review Criteria

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?
- How well and in what ways does this program interact with on- and off-site neuroscience training programs (including NIH-supported T32 training programs)?
- Is there evidence of commitment and integration with the T32 program beyond summer research exposure (for example, graduate program faculty involved in teaching the undergraduate program during the academic year or research seminars)?

Review Criteria

Additional Review Considerations

Evaluation Plan

- Are the evaluation plan and timeline adequate for assessing the effectiveness (process and outcome) of the program?
- If applicable, are the plans for obtaining feedback from participants adequate?
- What is the overall performance evaluation plan?

Dissemination Plan

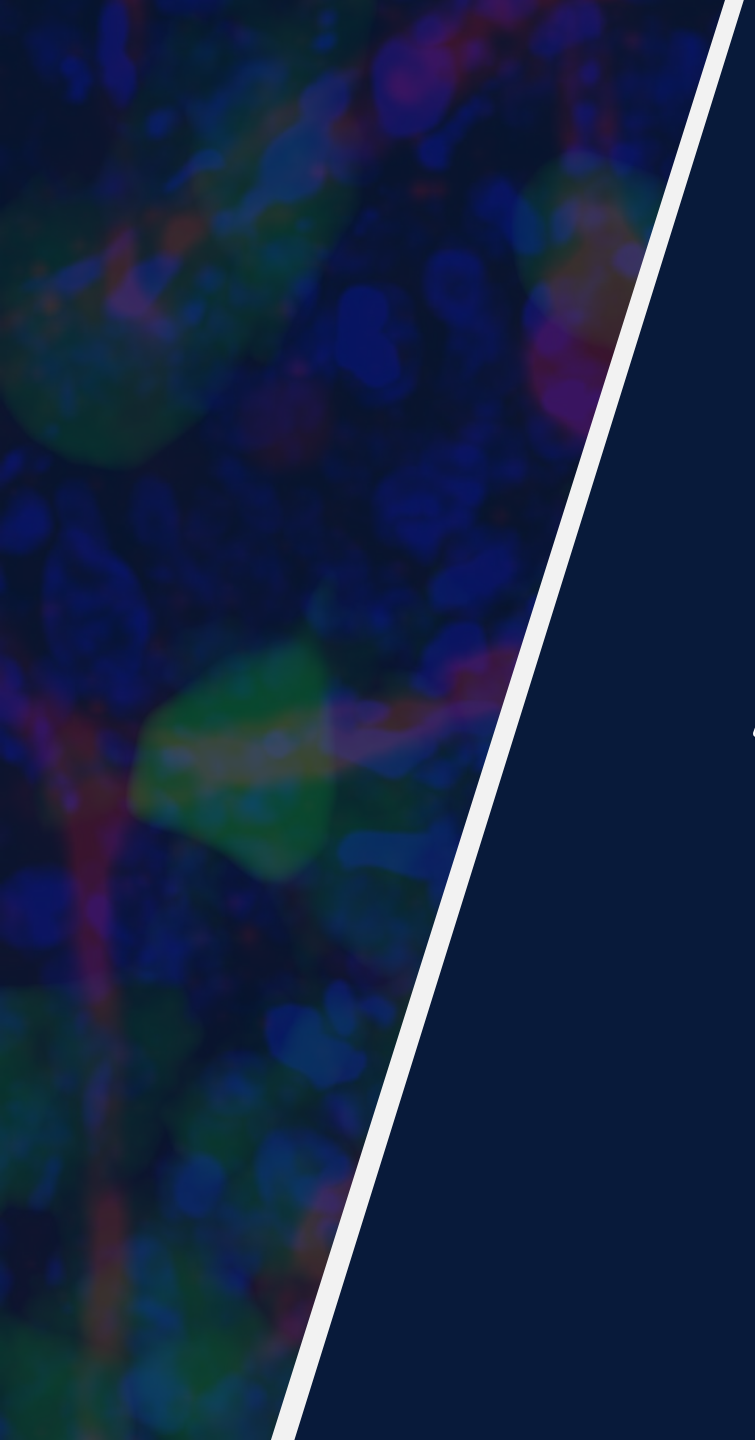
- Is the dissemination plan strong and of high quality?

Recruitment Plan to Enhance Diversity

- Reviewers will examine the strategies to be used in the recruitment of individuals from underrepresented groups.

Training in the Responsible Conduct of Research

- The reviewers will evaluate the adequacy of the proposed RCR training in relation to the five required components



Avoiding Frequent Mistakes

Letter of Intent

- Indicate intent to submit an application via email to jonesmiche@ninds.nih.gov
- Include the following information:
  - Descriptive title of proposed activity
  - Name(s), address(es), and telephone number(s) of the PD(s)/PI(s)
  - Names of other key personnel
  - Participating institution(s)
  - Number and title of this funding opportunity

Tips

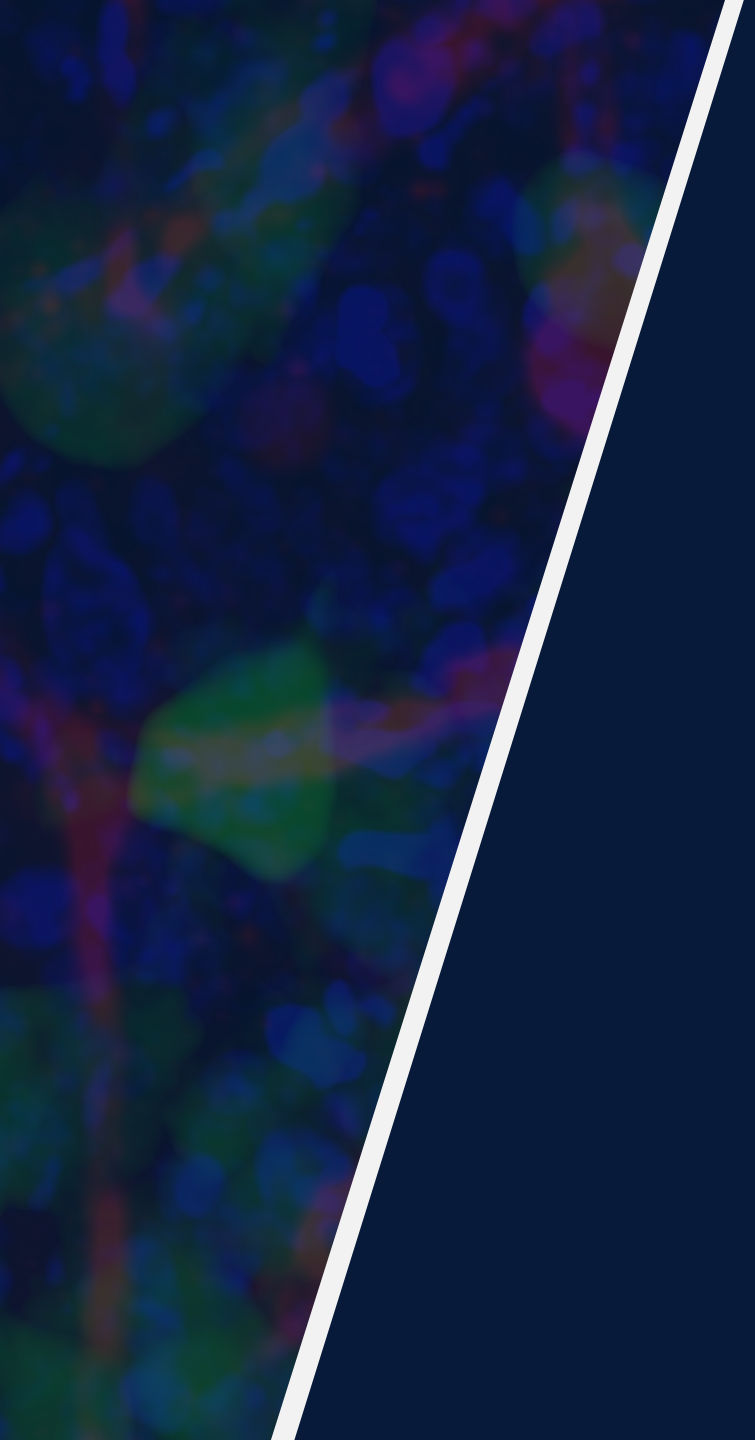
- Pay attention to allowable appendix materials
- Submit early—there is only one receipt date per year (February)
- Funding will likely start in December

Not One-Size-Fits-All

- Has **clear program goals** and milestones and a plan that will achieve those goals.
- Holistic approach – taking advantage of institutional strengths and community attributes.
- Innovation is a bonus—effectiveness is most important.
- Recruitment of diversity within diversity
- Screening genuine interest in PhD career track
- Balancing schedule of professional development activities during academic year for undergraduates
- Value of networking (neuro-pizza nights, science retreats, BP BRAIN-ENDURE panel discussions) and creating a scientific community
- Impacting research exposure AND other factors that affect graduate school admissions process (oral presentations, interviewing skills, neuroscience courses, and scientific writing)

Specific Lessons Learned for Partnerships

- Synergy with existing programs –integration and collaboration are necessary, leverage added value
- Distant summer research experiences need uniformity in the mentoring and supervision received by all trainees (requires careful oversight from ENDURE PI)
- Need bilateral education – trainees and admission committees
- Partners with vested interest and commitments to goals of the program, not just a brief summer guest



Questions?

Michelle Jones-London, Ph.D. *(Program)*
National Institute of Neurological Disorders and Stroke (NINDS)
NINDSDiversityTraining@mail.nih.gov

Marguerite Matthews, Ph.D. *(Program)*
National Institute of Neurological Disorders and Stroke (NINDS)
NINDSDiversityTraining@mail.nih.gov

DeAnna Adkins, Ph.D. *(Scientific Review)*
National Institute of Neurological Disorders and Stroke (NINDS)
NINDSDiversityTraining@mail.nih.gov