Informational Webinar:

NINDS Support of Neural Exposome Research

Presenter: Shardell M. Spriggs, PhD
Acting Director
Office of Neural Exposome and Toxicology Research (ONETOX)

April 7, 2026

NIH National Institute of Neurological Disorders and Stroke

Webinar Overview

Neural Exposome Research

ONETOX and Neural Exposome Introduction

Find Funding Opportunities

Resources and Tips

NIH National Institute of Neurological Disorders and Stroke

The NINDS
Office of Neural Exposome and Toxicology Research

ONETOX

Neural Exposome

Chemical Threats

Chemical Safety

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Acting Director

Neel Dhruv, PhD
Program Director

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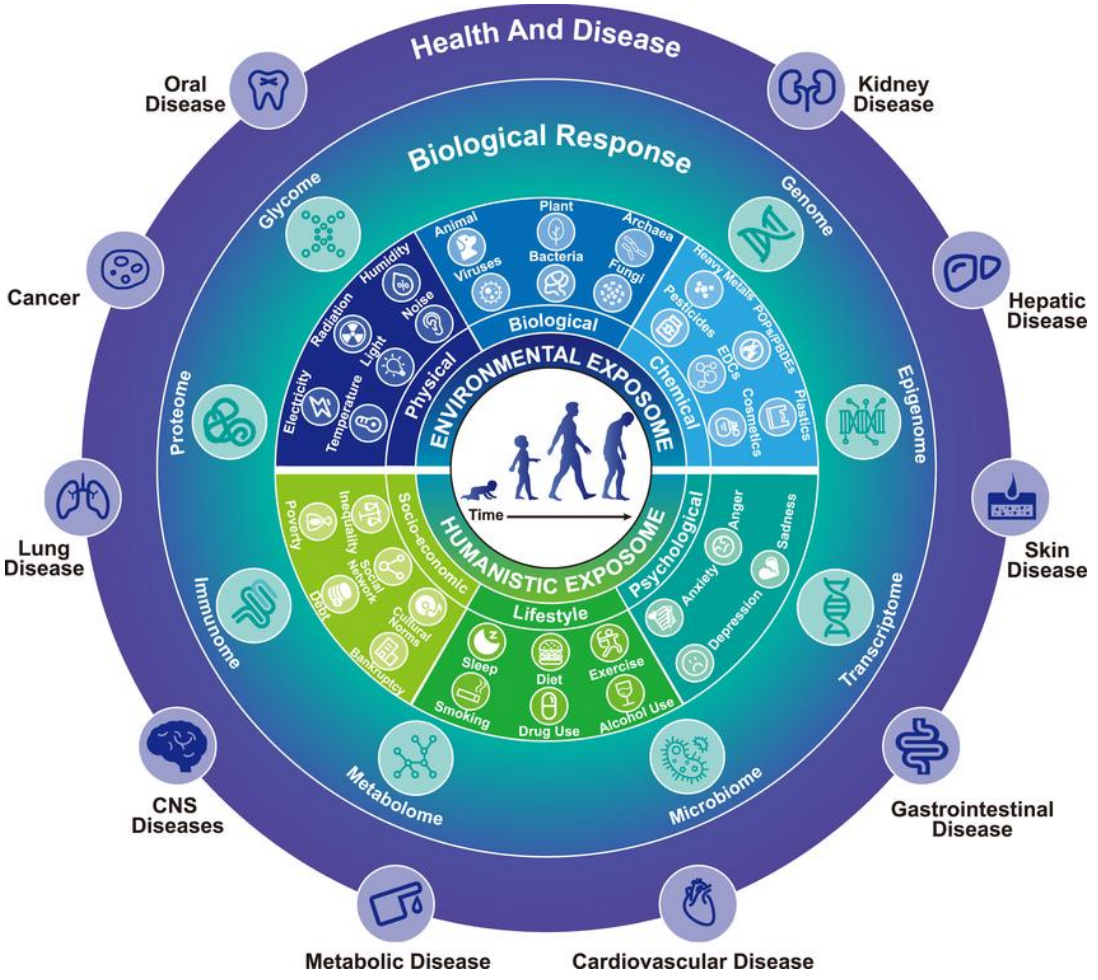
Health Program Specialist

Sara Sameni, PhD
Health Program Specialist

Ashley Givens-Burton, MEd
Program Analyst

Genes and the Exposome



Genetics: accounts for only about 10% of diseases.

Exposome: the integrated compilation of all physical, chemical, biological, and psychosocial factors that impact biology.

The exposome may unlock the causes and eventually the prevention of diseases.

Adapted from Wei et al., *iMeta*, 2022
Miller and Banbury Exposomics Consortium, *Science*, 2025

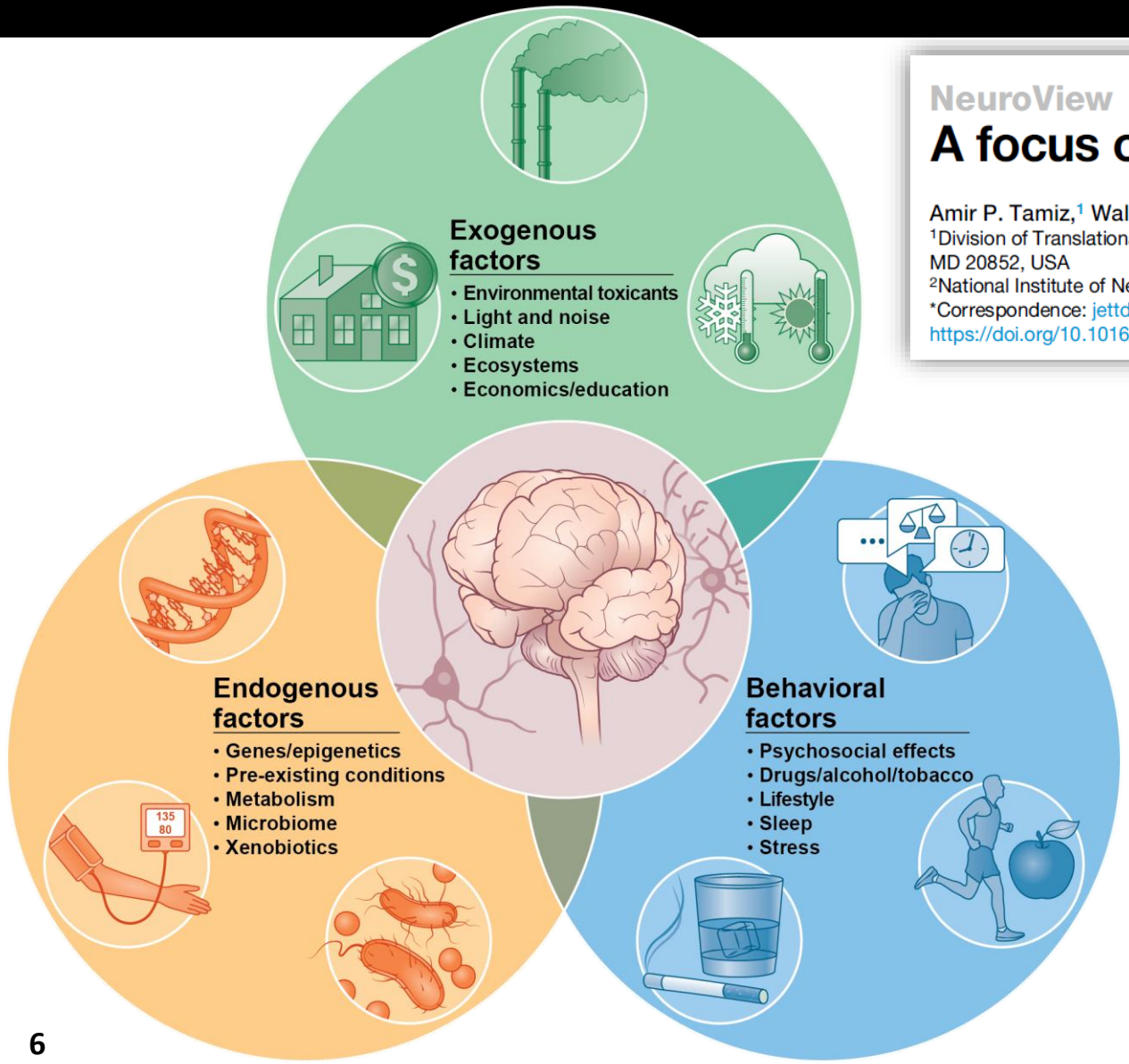
NIH National Institute of Neurological Disorders and Stroke

Mission of NINDS

The mission of NINDS is to seek fundamental knowledge about the brain and nervous system and to use that knowledge to reduce the burden of neurological disease for all

- Support and perform basic, translational, and clinical neuroscience research
- Fund and conduct research training and career development programs and ensure a vibrant, talented, and diverse workforce
- Promotes the timely dissemination of scientific discoveries and their implications for neurological health to the public

The *Neural* Exposome



NeuroView

A focus on the neural exposome

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https://doi.org/10.1016/j.neuron.2022.03.019

Exposome research aligns with high priority areas for HHS and NIH

Modifiable factors have cumulative impacts on health and contribute to chronic disease.

Advancing Exposome Research in Neurological Disorders and Stroke

January 13-14, 2026

Scientific Sessions:

- **Vulnerable life stages and cumulative effects of exposure in neurological health**
- **Model systems and technological advancements**
- **Mechanisms and therapeutic approaches to promote neurological resilience across the lifespan**

Recordings Available

Day 1

Day 2

Workshop Co-chairs

Pamela J. Lein, PhD
University of California, Davis

Gina Poe, PhD
University of California, Los Angeles

Keynote Speakers

Robert O. Wright, MD, MPH
Icahn School of Medicine at Mount Sinai

Gary W. Miller, PhD
Columbia University

Highlighted Topics (HT)

Topics represent a **selected research priority area** within one or more NIH Institutes, Centers, or Offices (ICOs).

https://grants.nih.gov/funding/find-a-fit-for-your-research/highlighted-topics

Apply through an appropriate NIH Parent Funding Announcement or another broad available NIH opportunity.

NIH GRANTS & FUNDING

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Home > Funding > Find a Fit for Your Research > Highlighted Topics

Funding

- Explore NIH Grant Opportunities
- Funding Categories
- Find a Fit for Your Research
  - Highlighted Topics
  - NIH Institutes, Centers, and Offices
- Explore Who and What NIH Funds
- NIH Guide for Grants and Contracts

Highlighted Topics

Consider NIH's centralized list of highlighted topics for your next investigator-initiated grant application. Each topic represents a selected research priority area within one or more NIH Institutes, Centers, or Offices (ICOs) that may or may not have dedicated funding. How to use these topics:

- Apply through an appropriate funding opportunity, such as NIH Parent Funding Announcement or other broad NIH opportunities on Grants.gov.
- Reach out early to the appropriate scientific contacts to discuss how your research idea may align with the topics, appropriate parent funding opportunities, and other questions related to your application.
- If an ICO opts to dedicate funding to particular topics, the amount of funding awarded will depend on the availability of funds, the number of meritorious applications, and competing ICO priorities.
- Applying in a Highlighted Topic area will not affect NIH referral or review of applications.
- NIH supports many types of research beyond the highlighted topics listed below.
  - Check the NIH ICO Profiles for scientific mission areas, priorities, and opportunities.
  - Explore NIH Grant Opportunities.

Check the list regularly and consider subscribing for email alerts as new topics are added in the coming months and beyond. Read more in the Highlighted Topics FAQs and in the December 2025 NIH Extramural Nexus article.

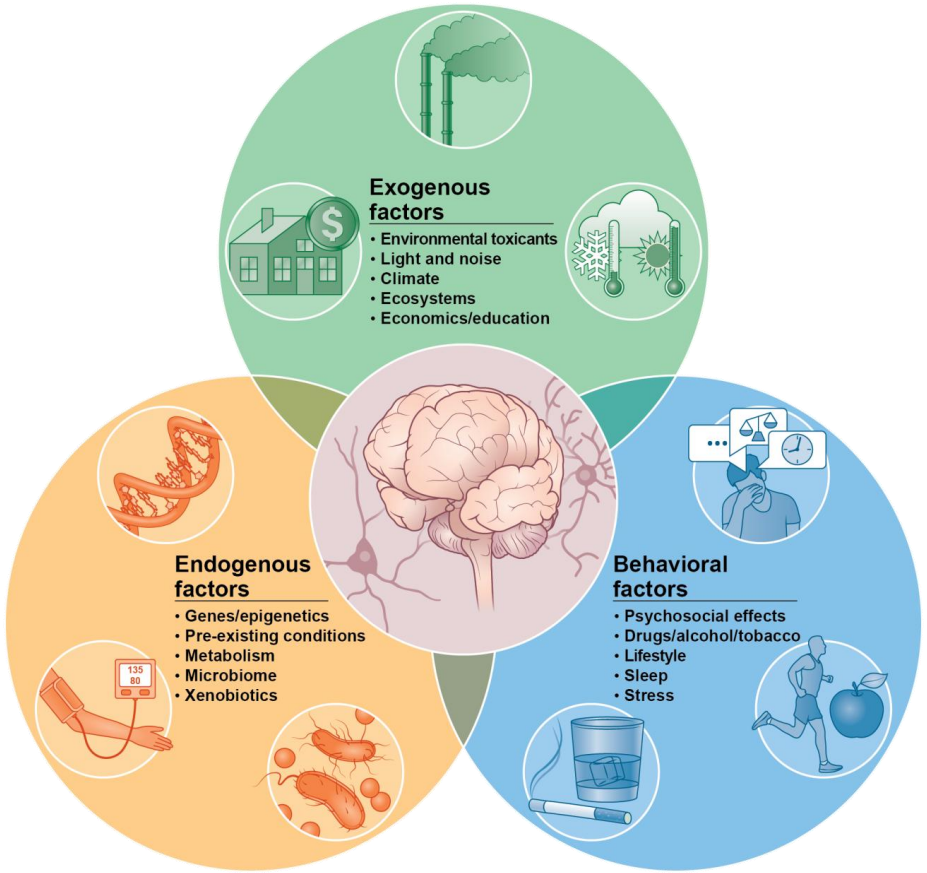
Search All

Title	Lead ICO	Participating ICOs	Posted Date	Expiration Date
	NINDS	All		
BRAIN Initiative: Data Knowledgebase Ecosystem and NeuroAI Integration	NINDS	NINDS, NCCIH, NEI, NIA, NIAAA, NIBIB, NIDA, NIDCD, NIMH, ORWH	February 24, 2026	September 29, 2026
BRAIN Initiative: Advancing Human Neuroscience and Precision Molecular Therapies for Transformative Treatments	NINDS	NINDS, NCCIH, NEI, NIA, NIAAA, NIBIB, NIDA, NIDCD, NIMH, ORWH, OBSSR	February 5, 2026	January 22, 2027
Neural Exposome Factors that Affect Brain Health and Neurological Disorders	NINDS	NINDS, NHLBI, NIDA, ORWH, NEI, NIA	December 2, 2025	December 2, 2026
Priority Research Questions in Fundamental Cellular and Molecular Neuroscience	NINDS	NINDS, NIBIB, NIDA, NIMH, ORWH, NEI	September 29, 2025	September 15, 2026

ONETOX

THE NEURAL EXPOSOME | CHEMICAL THREATS | CHEMICAL SAFETY

HT – Neural Exposome Factors that Affect Brain Health and Neurological Disorders

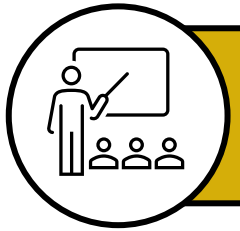


Areas of interest include, but are not limited to:

- Mechanistic studies that explore exposome factors as drivers of brain health and/or neurologic disease
- Identification of multiple exposome factors and their composite impact across the lifespan
- Leveraging existing data sets and expansion of longitudinal cohorts
- Elucidating the underlying mechanisms of gene-environment interactions that promote neuropathology
- Novel, human-relevant models for neural exposome research
- Development and validation of biomarkers

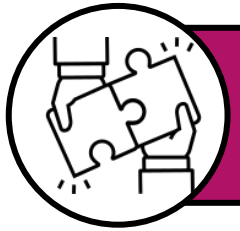
NIH National Institute of Neurological Disorders and Stroke | NIH National Institute on Aging | NIH National Institute on Drug Abuse | NIH National Eye Institute | NIH National Heart, Lung, and Blood Institute | NIH National Institutes of Health Office of Research on Women's Health

Multiple NIH Funding Opportunities Available



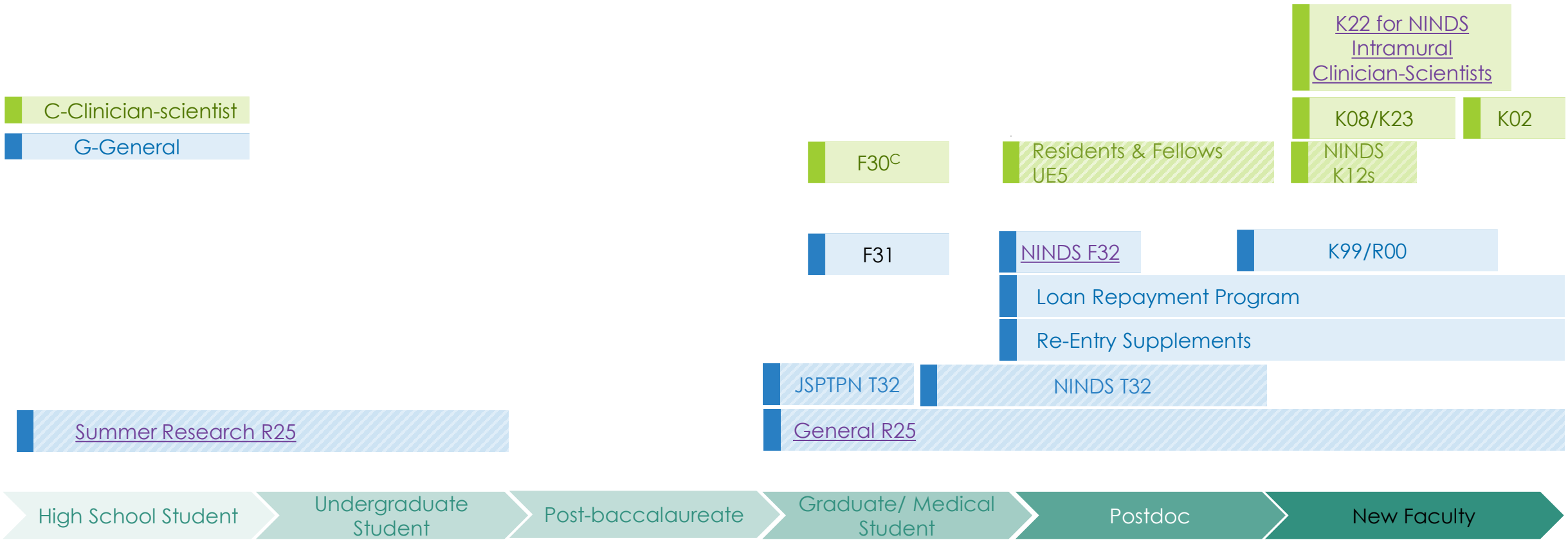
Training and Career Development Mechanisms (K/F)

Research Project Grant Mechanisms (R21, R01)



Specialized Grant Mechanisms (R61/R33, RM1)

NINDS Training and Career Development Programs



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NINDSTrainingOffice@ninds.nih.gov

https://www.ninds.nih.gov/funding/training-career-development

National Institute of Neurological Disorders and Stroke

R01 Research Project Grants

Receipt Dates:

NEW
June 5, 2026
October 5, 2026
February 5, 2027

RESUBMISSION
July 5, 2026
November 5, 2026
March 5, 2027

Scope and Purpose

- **Investigator-initiated** research with appropriate team expertise.
- **Well-defined, discrete project**.
- Should include **substantial preliminary data**.

Budget and Project Period

- Budgets are **not limited**, but must reflect actual needs of the project
- Project period determined by scope, but not to exceed **5 years**.

NOT-OD-26-019, NIH Administrative Burden Reduction Effort

R21 Exploratory/Developmental Research Project Grants

Receipt Dates:

NEW
June 16, 2026
October 16, 2026
February 16, 2027

RESUBMISSION
July 16, 2026
November 16, 2026
March 16, 2027

- Supports early and conceptual stages of **high-risk/high-reward projects.**
- **Novel scientific ideas**, model systems, tools, agents, targets, technologies
- **Preliminary data not required.**

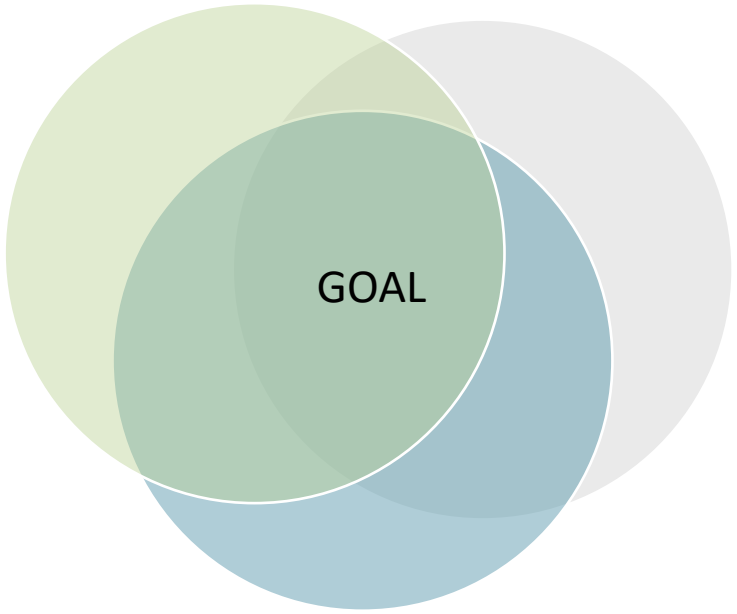
Scope and Purpose

- **Combined two-year budget** is limited to **$275,000** in direct costs with no single year to exceed $200,000.
- Project period is not to exceed 2 years.

Budget and Project Period

Upcoming Funding Opportunity for Team Science (RM1)

RFA-NS-26-009 Collaborative Opportunities for Multi-disciplinary, Bold, and Innovative Neuroscience (COMBINE)



Circles = MPI contributions

- 3-6 MPIs **integrating and combining** distinct expertise necessary to solve a **single, focused, transformative** goal within 5-years.
- Thoughtful plan for managing the team and meeting deliverables.

TRANSFORMATIVE. INTEGRATIVE. ACHIEVABLE.

Karen David, PhD
Nina Hsu, PhD
NINDSteamscience@nih.gov

National Institute of Neurological Disorders and Stroke

Upcoming Funding Opportunity on Neural Exposome Research Related to ADRD

2025 ADRD Summit

RFA-NS-26-031 Exposomic Contributions to ADRD Pathology and Resilience

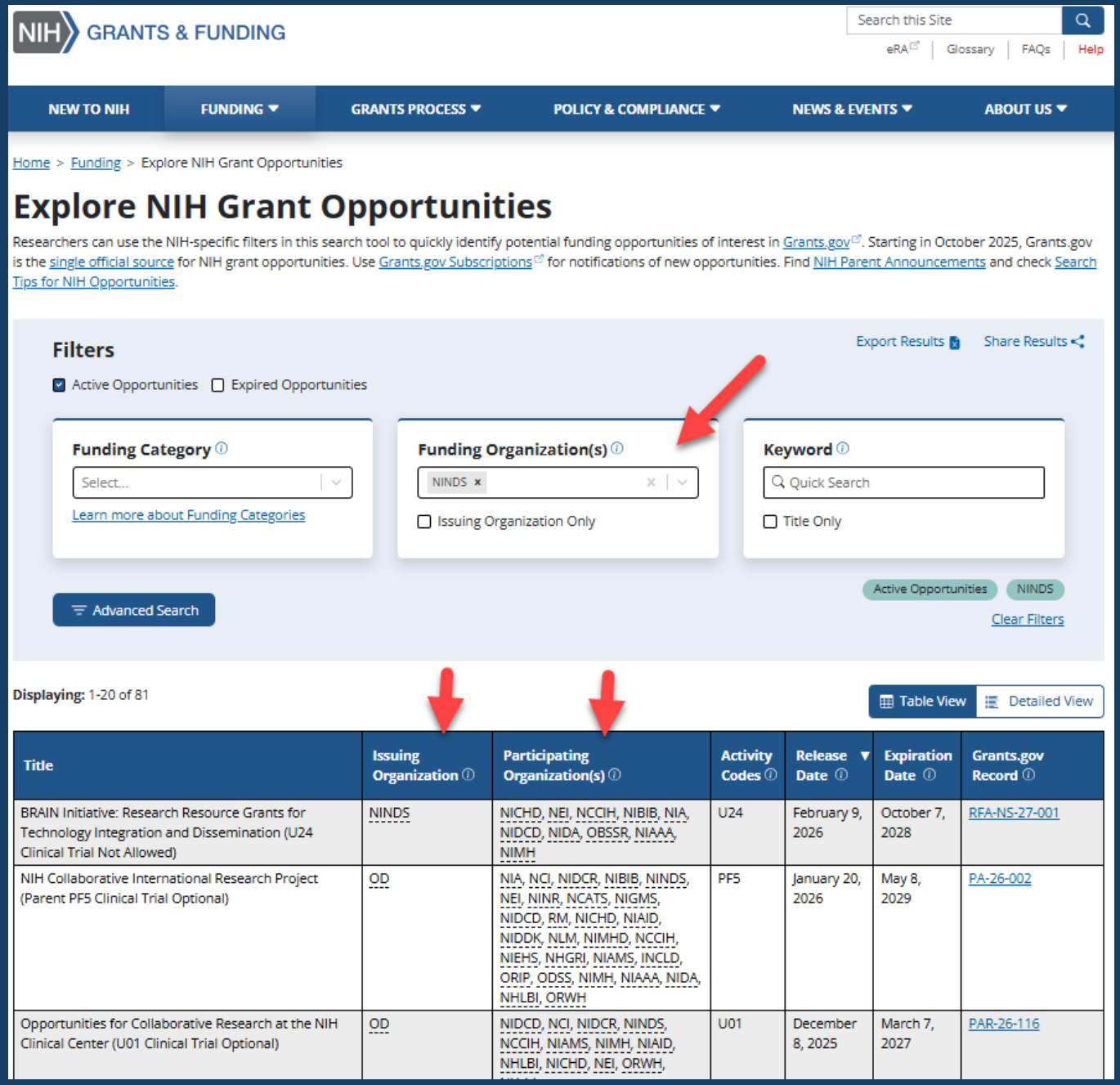
Phased mechanism (R61/R33)

Investigate how neural exposome factors contribute mechanistically to Alzheimer's disease-related dementias (ADRD) pathology and resilience

- **Focus on synergistic interactions of exposome factors and their composite effects on neural mechanisms relevant to ADRD.**
- **Focus on pathways (e.g., microbiome–brain interactions, neuroimmune signaling, epigenetic modifications) that link exposures to ADRD risk, progression, and resilience.**
- **Encouraged to consider studies that cover the lifespan, including work that investigates critical or sensitive periods of exposure, or factors that may lead to neurological health disparities.**

Find NIH Grant Opportunities

https://grants.nih.gov/funding/explore-nih-opportunities



Suggestions to direct applications to the NINDS Office of Neural Exposome and Toxicology Research

Contact ONETOX Program Officers before submitting your application

PHS Assignment Request form. Specify NINDS as the desired IC in the “Awarding Component Assignment” Section

Cover letter. Describe how your research aligns with the NINDS Neural Exposome Programs Mission

These are just suggestions; IC assignment is not guaranteed

NIH Early-stage Investigator (ESI) Policies

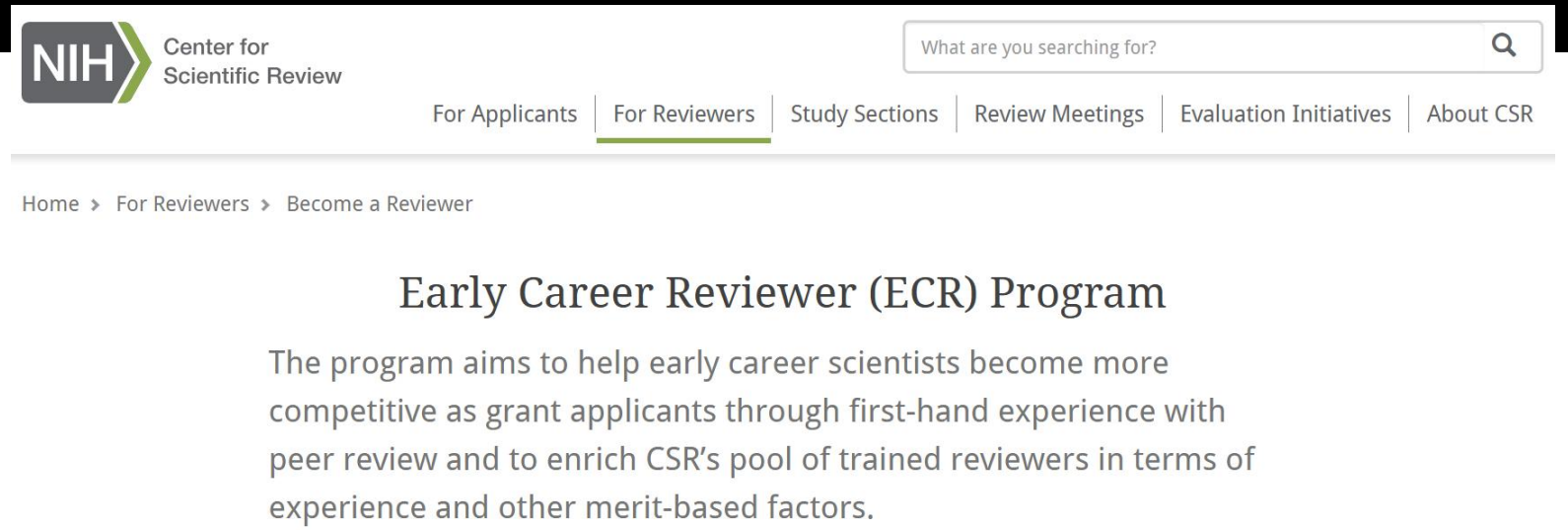
An ESI is a Program Director/Principal Investigator who has completed their **terminal research degree** or end of post-graduate clinical training, **within the past 10 years** and who has **not previously competed successfully as a PD/PI for a substantial NIH independent research award**.

- Prioritized for funding (reviewers focus on potential rather than achievement).
- Status (at the time of submission), eRA Commons personal profile.
- **Extension of ESI status** based on significant life events – childbirth, medical concerns, disability, family care responsibilities, natural disasters, active-duty military service.

https://grants.nih.gov/policy/early-stage/extensions

https://grants.nih.gov/policy/early-stage/index.htm

Participate in the CSR Early Career Reviewer Program



- Work with leading researchers to help NIH identify the most promising grant applications
- Learn how reviewers determine overall impact scores
- Improve grant writing skills by learning how applications are evaluated
- Serve the scientific community by participating in NIH peer review
- Develop research-evaluation and critique-writing skills

https://public.csr.nih.gov/ForReviewers/BecomeAReviewer/ECR

Watch a Mock Study Section

NIH Peer Review: Mock Study Section

NIH Grants
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https://www.youtube.com/watch?v=fAFth5aiBpU

National Institute of Neurological Disorders and Stroke

https://ninds.buzzsprout.com/

NINDS's Building Up the Nerve

NINDS

The fourth season of the National Institute of Neurological Disorders and Stroke's Building Up the Nerve podcast demystifies the unwritten rules, or "hidden curriculum," of scientific research at every career stage. We know that navigating your career can be daunting, but we're here to help—it's our job!

Review Season 1:

- **Episode 12: Managing the NINDS Portfolio** MARCH 20, 2020
- **Episode 11: Monitoring Grant Performance** MARCH 06, 2020
- **Episode 10: Issuing the Grant Award** FEBRUARY 21, 2020
- **Episode 9: Resubmission** FEBRUARY 07, 2020
- **Episode 8: Council Review** JANUARY 24, 2020
- **Episode 7: Program Recommendation** JANUARY 10, 2020
- **Episode 6: Scientific Review** DECEMBER 27, 2019
- **Episode 5: Receipt and Referral** DECEMBER 13, 2019
- **Episode 4: Preparing the Application** NOVEMBER 29, 2019
- **Episode 3: Initiating the Research Idea** NOVEMBER 15, 2019
- **Episode 2: The Grant Cycle** NOVEMBER 01, 2019
- **Episode 1: Get to Know NINDS** OCTOBER 18, 2019
- **Building Up the Nerve Introduction** OCTOBER 18, 2019
- **Building Up the Nerve Trailer** OCTOBER 01, 2019

Please contact your Program Officer & Discuss a Resubmission!

Marguerite Matthews, PhD
Program Director,
Office of Training and Workforce Development, NINDS

Lauren Ullrich, PhD
Deputy Director,
Office of Training and Workforce Development, NINDS

National Institute of Neurological Disorders and Stroke

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ONETOX RESOURCES

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ONETOX@ninds.nih.gov

Make sure to contact us before submitting your application!

National Institute of Neurological Disorders and Stroke

Thank you

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