Deciphering the NINDS Grant Life Cycle: Review process, funding and Diversity Initiatives

June 28, 2023

National Institute of Neurological Disorders and Stroke

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Laura Ngwenya, MD, PhD
University of Cincinnati

Director of Neurotrauma Center, University of Cincinnati Gardner Neuroscience Institute

Associate Professor, Depts of Neurosurgery and Neurology & Rehabilitation Medicine

Dr. Ngwenya is a neurosurgeon scientist with a clinical and research focus on traumatic brain injury (TBI). Dr. Ngwenya earned her MD, PhD degree from Boston University School of Medicine in 2008. She then underwent training in Neurological Surgery at The Ohio State University and completed a Neurotrauma fellowship at University of California San Francisco. Dr. Ngwenya became the Director of the UC Gardner Neuroscience Institute Neurotrauma Center in 2016, where she is actively involved in translational research to find better outcomes for patients with TBI. She is the UC site PI for many national clinical TBI trials, and her translational neurotrauma laboratory focuses on mechanisms underlying poor cognitive recovery after TBI. She currently uses a rodent model to define the effects of spreading depolarizations on cognitive recovery after TBI, with an ultimate goal of improving outcomes in patients. Dr. Ngwenya's laboratory efforts have been funded by local and federal grants and are currently funded by a DOD ERP grant and a NIH/NINDS R01 award.

Miranda Leal, MS & Dylan A McCreedy, PhD

Texas A & M University

Miranda Leal received her B.S. in Biomedical Science and her M.S. in Biology from Texas A&M University – Kingsville. She is currently a PhD candidate at Texas A&M University in Dr. Dylan McCreedy's lab. Her current research focuses on L-selectin, an adhesion and signaling receptor on neutrophils, and its role in functional recovery after spinal cord injury. She is currently supported by an NIH NINDS Research Supplement to Promote Diversity in Health-Related Research.

Dr. Dylan McCreedy received his B.S. in Biomedical Engineering from the University of Utah and his Ph.D. in Biomedical Engineering from Washington University in St. Louis. He did his postdoctoral research at the University of California – San Francisco, and the Gladstone Institutes. Dr. McCreedy joined the Department of Biology at Texas A&M University in 2019 as an Assistant Professor and holds a courtesy appointment in the Department of Biomedical Engineering. He is a TIRR Foundation Faculty Fellow and a Scialog Fellow for Advancing BioImaging. His lab's research focuses on the mechanisms of acute inflammatory damage following spinal cord injury and the development of three-dimensional imaging techniques to assess neural circuits, inflammation, and secondary tissue damage in the injured spinal cord.

Today's workshop

- Overview of NINDS & Grant Mechanisms

  Hibah Awwad, PhD

- Preparing for grant applications – Do's and Don'ts

  Adele Doperalski, PhD

- Review process at NIH

  Natalia Strunnikova, PhD

- Neurosurgeon Science – From K08 to R01

  Laura Ngwenya, MD, PhD

- NINDS Diversity Supplement Award recipient

  Miranda Leal, predoctoral student

  Mentor: Dr. Dylan McCreedy

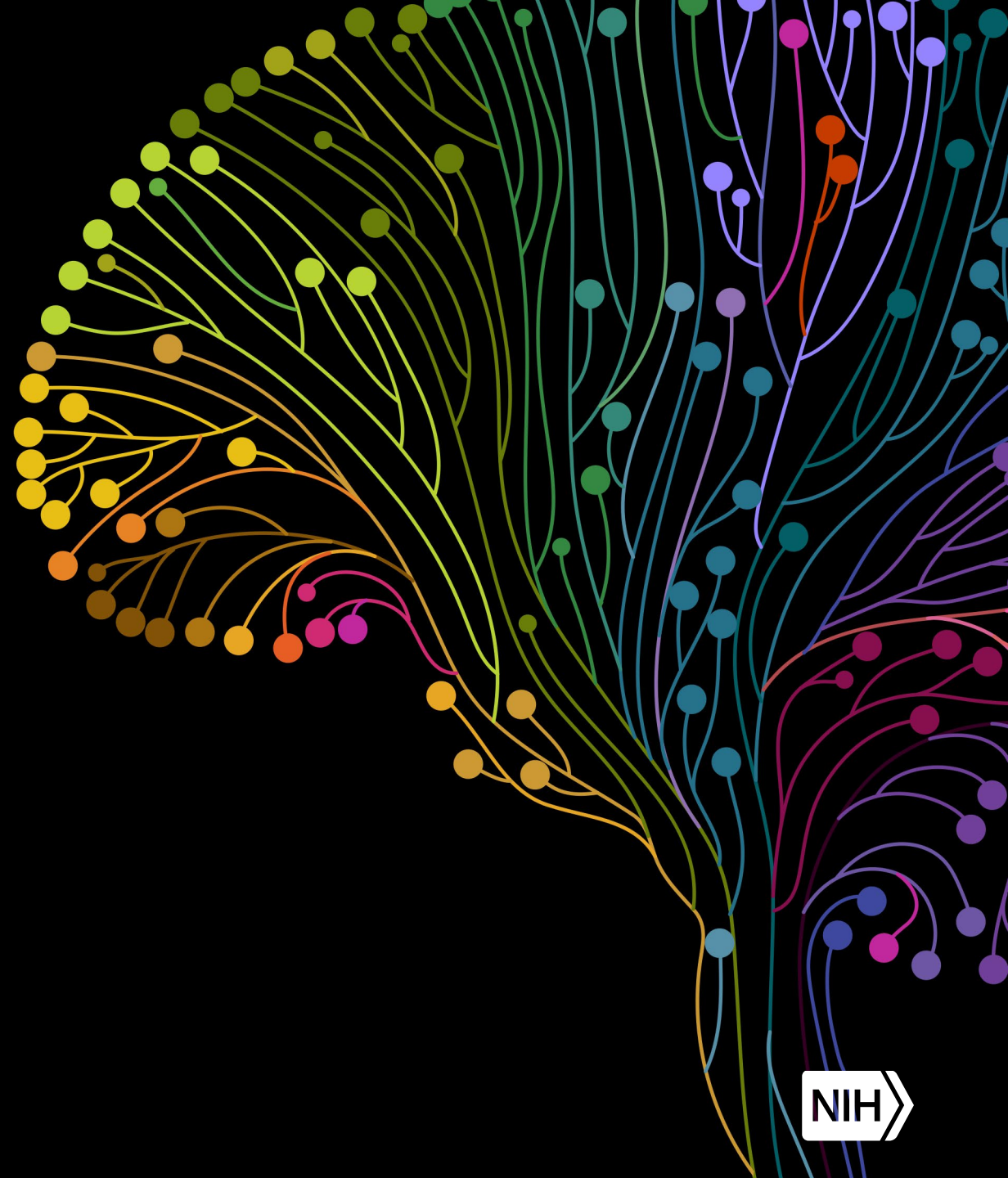
Roundtable discussions

Disclosure Statement

We are government official.

Any personal views presented in this presentation are our own and do not represent the official view of the NIH.

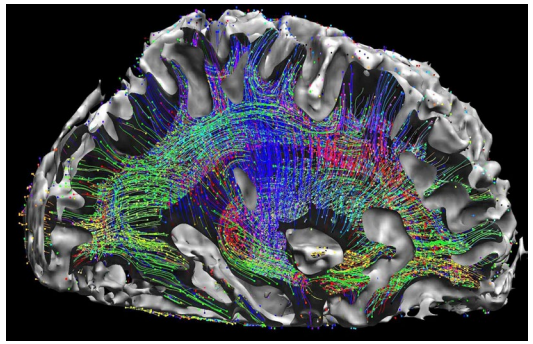
We have no financial conflicts of interest.

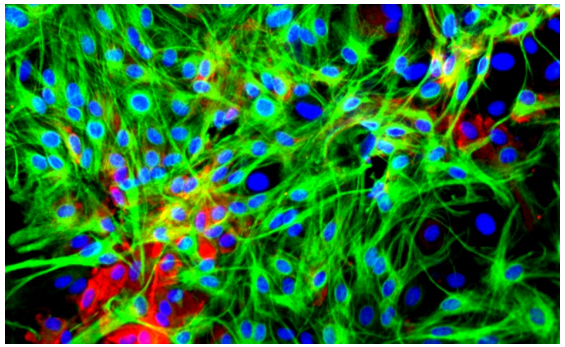
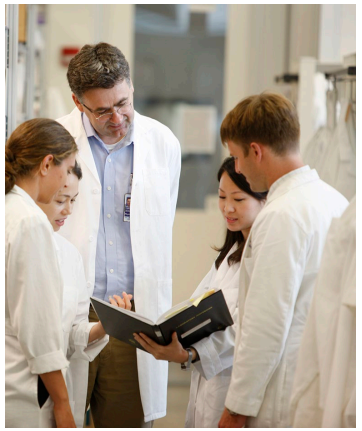


National Institute of Neurological Disorders & Stroke

NINDS mission:

To seek fundamental knowledge about the brain and nervous system and to use that knowledge to reduce the burden of neurological disease.



NIH National Institute of Neurological Disorders and Stroke

https://www.ninds.nih.gov/

NIH

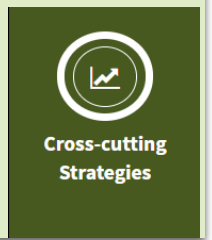
NINDS Strategic Plan (2021-2026): Looking to the Future

With the guiding vision **of a world free from the burden of neurological disorders**, the NINDS Strategic Plan provides an overarching framework to accelerate science that will result in improved quality of life for all people with neurological disorders, and ultimately to prevent or cure these diseases.

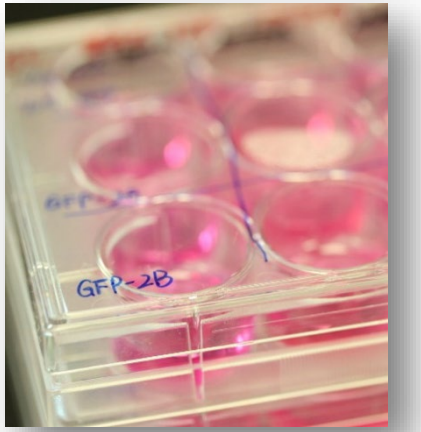
https://www.ninds.nih.gov/About-NINDS/Strategic-Plans-Evaluations/Strategic-Plans/NINDS-Strategic-Plan-and-Priorities

Cross-cutting strategies are important across all NINDS scientific goals and essential to implementation:

- Rigor and Transparency
- Investigator-initiated Research
- Team Science
- Data Sharing and Data Science
- Models for Neuroscience Research
- Technology Access
- Diversity and Inclusion
- Neuroethics
- Patient Engagement
- Collaboration and Partnership
- NINDS Intramural Research



NINDS invests across the research spectrum



Basic
Fundamental Neuroscience
Disease-Focused Research

Translational
Pipeline through to FDA IND/IDE

Clinical
Phase I, II, III Trials
FDA Review

Division of Neuroscience

Division of Translational Research

Division of Clinical Research

Division of Extramural Activities (includes Diversity and Training programs)

NINDS programs across the translational and clinical spectrum

Preclinical Readiness / Proof of Concept	Therapeutics Development	Clinical Trial Readiness	Phase I First in Human	Phase Ib First in Target population	Phase IIa Proof of Concept (Biomarker)	Phase IIb Preliminary Efficacy (Clinical)	Phase III Definite Efficacy	Phase IV Post Marketing Surveillance	Dissemination Implementation CER
IGNITE Screening		PAR CT Readiness		PAR Exploratory Clinical Research					PAR Dissemination Implementation
IGNITE PoC	BPN (Small Molecules)					Cooperative Programs in Clinical Research PAR Phase II/III CTs			
IGNITE Models	CREATE (Biologics) – BPN-Biologics					SIREN			PAR Comparative Effectiveness
	URGent (Gene Base, Ultra-rare)				NeuroNEXT				
	MedTech (Device)				StrokeNet				
	TND (Devices)				HEAL EPPIC-NET				
CounterAct (Chemical Threats)									
Small Business Innovation Grants (SBIR/STTR)									
Biomarker Discovery/Validation									
PSPP Pain Models/Testing	Outcome Discovery/Validation								
ETSP Epilepsy Models/Testing	Clinical Trial Embedded Natural History Studies								
SPAN	Common Data Elements								

Division of Neuroscience Division of Translational Research Division of Clinical Research

NINDS Office of Global Health & Health Disparities
Director: Dr. Richard Benson

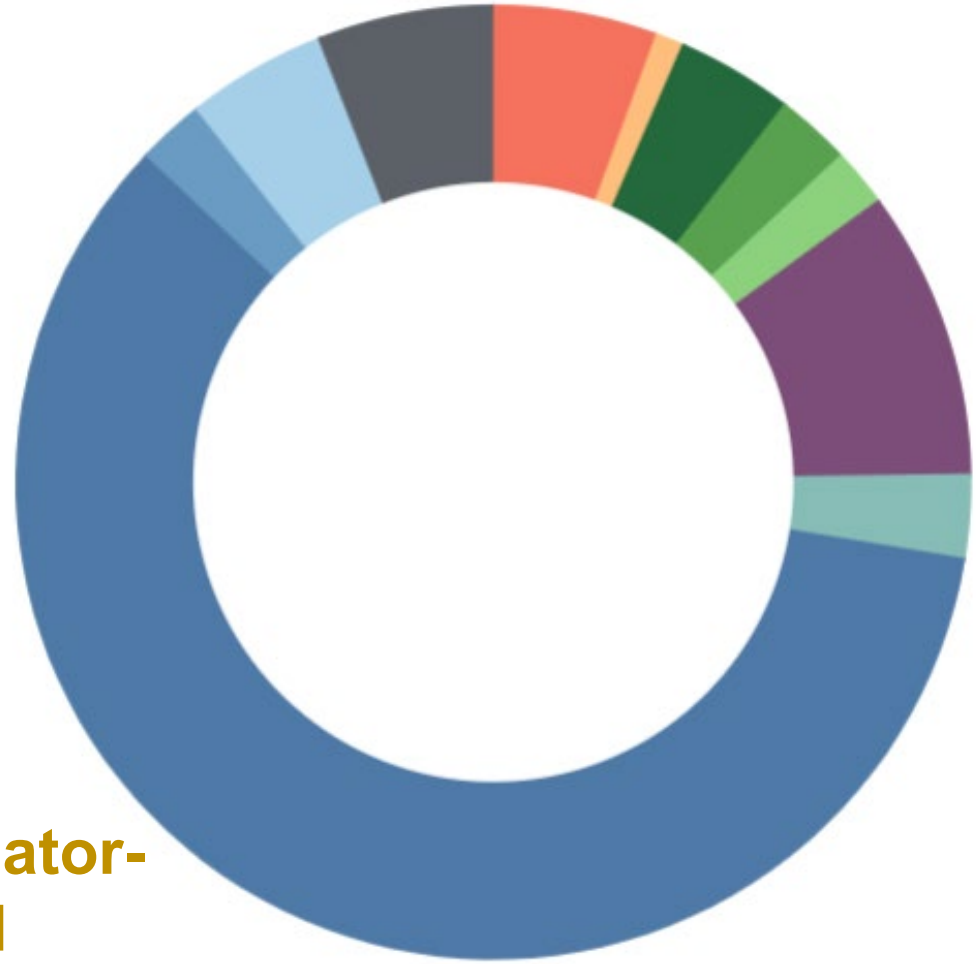
Primary Objectives

Global Health: Support global research partnerships aimed at strengthening our understanding of the burden of neurological disease and identifying opportunities for improved diagnostics, treatment, and prevention strategies. Building sustainable capacity in low-and middle-income countries to enable the conduct of research and training in neurological disorders and stroke in low-resource settings is also of interest.

Health Disparities: Advance research on disparities (or inequities) in neurological disease, healthcare, and health outcomes in disparate populations, including racial and ethnic minorities, the geographically disadvantaged, sex and gender minorities, and others who have been historically underserved, socioeconomically disadvantaged, marginalized, or adversely affected by persistent inequality. The Office seeks to support rigorous research, from basic science to implementation, that will identify, monitor, and target biological, environmental, behavioral, social, and/or healthcare system factors that influence disparities in neurological disease.

https://www.ninds.nih.gov/funding/about-funding/global-health-research/office-global-health-and-health-disparities

FY 2022 NINDS Extramural Research Funds



- Conferences
- Contracts and OT
- Miscellaneous
- Network Clinical Trials and Infrastructure
- Non-Network Clinical Trials and Large Cohort Studies
- Other Clinical (Trial Readiness, Dissemination, Implemen...
- Other RPG
- P01s and Centers
- R01
- R01 Equivalent
- R35
- Training

Investigator-initiated research is the mainstay!

Total Extramural Research Appropriation:

$1,640,814,696

Parent Announcements

Investigator-Initiated

Grant Code	Description
R01	Up to 5 years, budget to suit proposed Aims
R03	Up to 2 years, maximum $50K DC per year well suited to tool development
R15 AREA and REAP	Up to 3 years, maximum $300K DC aggregate only for eligible colleges/Institutions
NS- R21 (CT Optional)	*Up to 2 years, maximum $275K DC aggregate Specific for NINDS* ***PA-21-219***

Peer-Reviewed, Scored and funded within NINDS payline.

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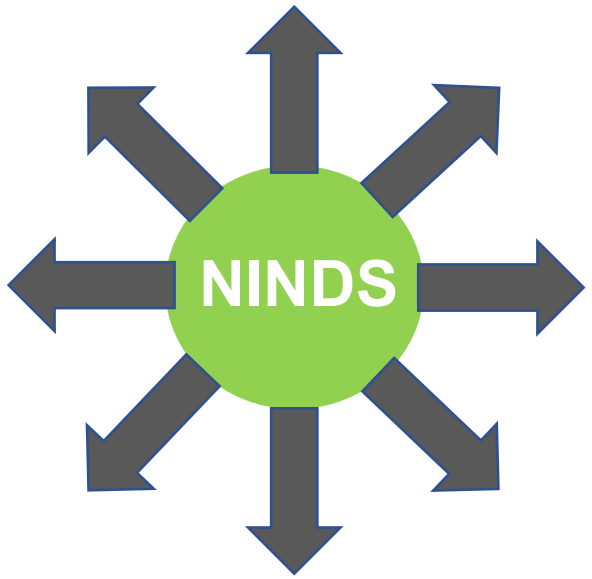
https://www.ninds.nih.gov/

Special Research Initiatives



Category	Grant Code	Grant description
PAS, PAR and RFAs	R01, R21, SBIR/STTR, R35	Addresses a gap in research area (e.g., Basic Neuroscience), may have set aside $$
Cooperative Agreements	U01, U24, U54	Involvement of NIH Staff, typically with annual milestones (e.g., resources and Centers, Clinical Trials and networks)
Phased Awards	R21/R33; R61/R33; UG3/UH3	Clear go/no-go transition milestones (e.g., translational research grants)

Peer-Reviewed, Scored and funding not necessarily by payline.

National Institute of Neurological Disorders and Stroke

https://www.ninds.nih.gov/

Current Trans-NIH Research Initiatives

ADRD Funding Opportunities

HEAL Funding Opportunities

BRAIN Initiative Opportunities

RECOVER Initiative Opportunities

https://www.ninds.nih.gov/

NINDS Extramural Training & Career Development
Director: Dr. Stephen Korn

Find Training Grants by Eligibility

- High School, Undergraduate, & Post-Baccalaureate
- Predoctoral Fellows
- Postdoctoral Fellows
- Clinician-Scientists
- Faculty
- Diversity Awards
- Institutional Grants

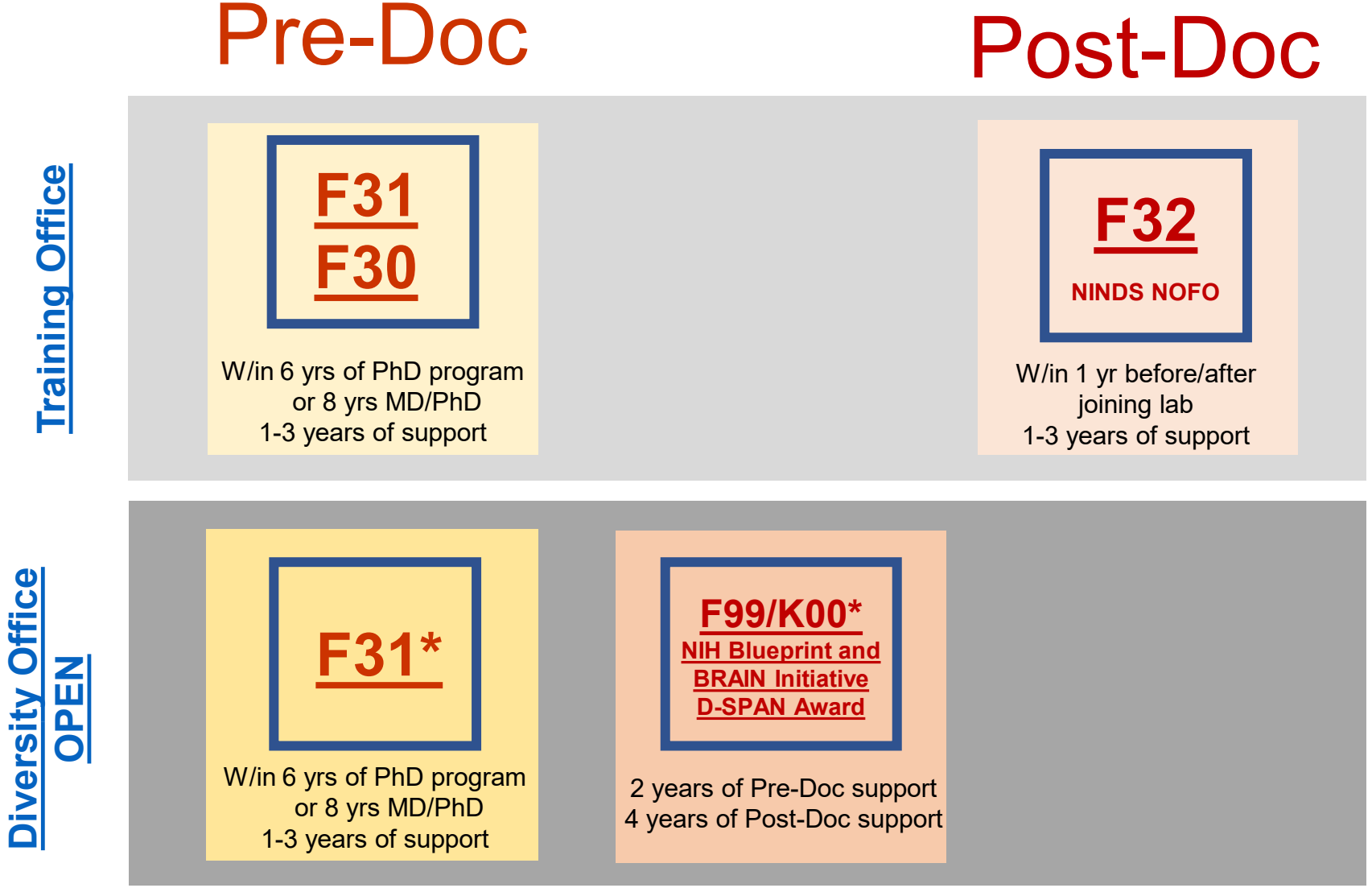
https://www.ninds.nih.gov/funding/training-career-development

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

https://www.ninds.nih.gov/about-ninds/workforce-diversity/enhancing-diversity

Fellowships

- Individual fellowships
- obtain individualized, mentored research training
- Conduct well-defined research projects



K99/R00 Pathway to Independence Mechanism

K99/R00 awards will provide *up to 5 years* of support in two phases:

- **K99** phase provides support for *up to 2 years* of mentored **postdoctoral** research training and career development.
- **R00** phase provides *up to 3 years* of independent research support, contingent on satisfactory progress during the K99 phase and an approved, independent, **tenure-track (or equivalent) faculty position.**
- Apply within first 4 years of post-doc
- NIH Parent K99/R00: Only training award open to non-US Citizens

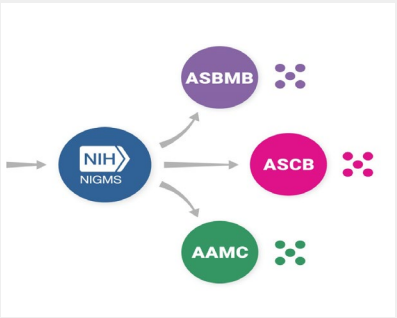
Diversity K99/R00*

BRAIN
HEAL: Pain/Addiction
Alzheimer's/Dementias

Maximizing Opportunities for Scientific and Academic Independent Careers (MOSAIC) Postdoctoral Career Transition Award to Promote Diversity K99/R00*

MOSAIC K99/R00 Applicants Compete

MOSAIC K99/R00 Scholars Participate in Cohorts Organized by UE5



K Awards for Independent Researchers

K01* Faculty Development Award to Promote Diversity in Neuroscience Research

- NINDS specific NOFO: apply within first three years of tenure track position (or have offer)
- Cannot have an R01 (or equivalent) award
- 3-5 year award: protected research-intensive time under the guidance of a mentor
- Goal: launch independent research career / prepare for R01 submission

K08 Mentored Clinical Scientist Research Career Development Award

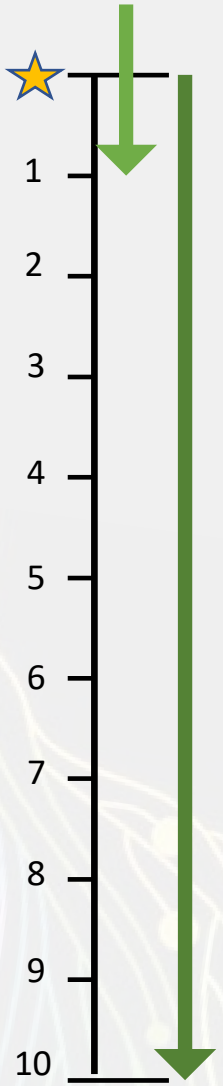
K23 Mentored Patient-Oriented Research Career Development Award

- Clinical doctoral degree (MD, DO, DVM etc.)
- Similar to K01

K02 Independent Research Scientist Development Award

- NINDS Specific NOFO: Clinicians; already achieved independent status
- 3-5 years of salary (protected research time); Last 2 years contingent on R01

Early-Stage Awards: High Risk High Reward



NIH Director's Early Independence Award (DP5)

- Eligibility: Degree conferred 06/01/2022-09/30/2024; non-independent, but has institute's commitment of independent research position
- No preliminary data
- 1.25 Million over 5 years

NIH Director's New Innovator Award (DP2)

- Early stage investigator (ESI): Within 10 years of degree; no R01; independent faculty position
- Preliminary data accepted but not required
- 1.5 Million over 5 years

ESI Status on NINDS R01s

PAYLINE	**14%**
ESI Payline	**25%**

- Within 10 years of degree
- No R01 (or equivalent)
- *MPI applications: all PIs must be ESI*

ESI Extension for lapses or significant in research training

NIH

Diversity Supplements

- Support Training
- Work with your PI; many mechanisms are eligible:
  - Rs, DPs, Us, RCs, RF1, RM1, SCa, Us, UCs, UGs, UHs, UMs
- Work with your Program Director and NINDS OPEN Office staff

High School Through Faculty Awards

SUP* **Research Supplements to Promote Diversity in Health-Related Research**

Administrative supplements to currently active NIH research grants to support the training of underrepresented individuals and enhance the diversity of the research workforce.

SUP* **Supplements to Promote Diversity in Research and Development Small Businesses-SBIR/STTR**

Administrative supplements to active NIH SBIR/STTR grants to enhance the diversity of the research workforce and increase the participation of women and socially and economically disadvantaged individuals in small businesses

SUP* **NIH HEAL Initiative Research Supplements to Promote Diversity**

Administrative supplements to currently active NINDS research HEAL grants to support the training of underrepresented individuals and enhance the diversity of the research workforce.

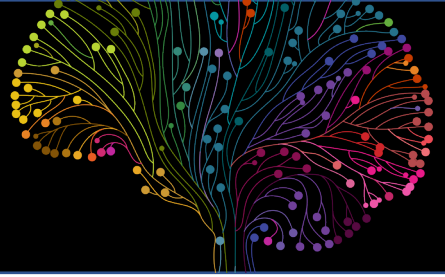
SUP* **NIH BRAIN Initiative Research Supplements to Promote Diversity**

Administrative supplements to currently active NINDS research BRAIN grants to support the training of underrepresented individuals and enhance the diversity of the research workforce.

SUP* **Alzheimer's Disease and Alzheimer's Disease-Related Dementias (AD/ADRD) Research Supplements to Promote Diversity in Health-Related Research**

Administrative supplements to currently active NINDS research AD/ADRD grants to support the training of underrepresented individuals and enhance the diversity of the research workforce.

New Grant Mechanisms to Promote Workforce Diversity



R01- New and "At-Risk" Investigators to Promote Workforce Diversity

PAR-22-181 encourages a more diverse pool of PIs to contribute to neuroscience research areas via R01 applications

Research With Activities Related to Diversity (ReWARD) R01

PAR-23-122

- The ReWARD program provides support for the health-related research of scientists who are making a significant contribution to Diversity, Equity, Inclusion, and Accessibility (DEIA) and who have no current NIH research project grant funding at time of award.

NIH Repays Your Student Loans

NIH Loan Repayment Programs

Researchers who secure a qualified position funded by a domestic nonprofit, university or U.S. government entity may be eligible for loan repayment. For more information and to apply, go to www.lrp.nih.gov

About the NIH LRPs

NIH Loan Repayment Programs (LRPs) are a **vital component** in our nation's effort to keep health professionals in research careers

Here's how it works:

YOU: Commit to perform research for 2 years

NIH: Repays up to **$100,000** of your qualified educational debt **and** covers resulting Federal tax (39%)

Outcome: Increase in nation's stock of biomedical research scientists

1 Eligibility Review

- Visit the LRP website at **www.lrp.nih.gov**
- Review program information and eligibility criteria
- Read NIH IC Mission and Priorities and talk to a Program Officer

2 Before Application

- Obtain your Commons ID
- Talk to your Mentor and potential Referees
- Contact a Business Official at your Research Center

3 Application

- Prepare all your application materials and gather loan account statements
- Start your application as early as September 1st
- Submit your application by the mid-November deadline. Visit www.lrp.nih.gov for more information on the annual deadline.

Connect with your Program Directors at NINDS

National Institute of Neurological Disorders and Stroke (NINDS)

- Brain for Life on Facebook
- @NINDSdirector
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- @NINDStrials
- @NIHPainResearch
- @NINDStranslate
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- NINDS News Articles RSS Feed

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NIH NINDS Building up the Nerve

https://ninds.buzzsprout.com/

OPEN Connections

Twitter: @NINDSDiversity

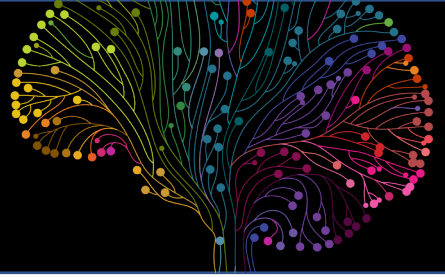
Listserv *NINDS Diversity News to Use*
http://go.usa.gov/xkpN6

LinkedIn: **NINDS Diversity Training**

Email:
NINDSDiversityTraining@mail.nih.gov

Podcast: ninds.buzzsprout.com

We're hiring! Open Positions at NINDS



Program Director:

- Global Health
- Epilepsy
- Neurodevelopment
- Parkinson's disease
- Stroke and cerebrovascular biology
- Vascular contributions to cognitive impairment and dementia (VCID)
- Pain
- Neural Engineering
- Neurodegeneration

Health Program Specialists

Program Manager:

- Data Science

Staff Clinician:

- Neuroimmunology Clinic

Director:

- Biologics Neurotherapeutic Development, Division of Translational Research
- Neurology Consultation Service, Division of Intramural Research
- EEG and Epilepsy Clinic, Division of Intramural Research (opening soon)

Subscribe to our Job Announcements listserv

Email this text to listserv@list.nih.gov:

Subscribe NINDS-job-announcements *your name*

More Information – Career Opportunities at NINDS:

Slides from this workshop will be posted to link on NINDS TBI website

TBI @ NINDS

TBI Listserve

RP flyer

https://www.ninds.nih.gov/current-research/focus-disorders/focus-traumatic-brain-injury-research