Navigating Neuroscience Funding at NIH

Ana Ebrahimi, PhD
Health Program Specialist
Office of Programs to Enhance the Neuroscience Workforce (OPEN), NINDS, NIH

Frank Shewmaker, PhD
Program Director
Neurodegeneration, Dementia, and Repeat Expansion Disorders Cluster, NINDS, NIH
Your Speakers Today

Frank Shewmaker, PhD
Program Director
Neurodegeneration, Dementia, and Repeat Expansion Disorders Cluster, NINDS, NIH

Ana Ebrahimi, PhD
Health Program Specialist
Office of Programs to Enhance the Neuroscience Workforce (OPEN), NINDS, NIH
Outline

• Navigating NINDS
• Finding Funding Opportunities
• Resources
Navigating NINDS
NIH & NINDS

- NIH has 27 Institutes and Centers (ICs)
  - Each IC has its own mission
  - Each IC has its own budget
  - Each IC has its own activities
  - Each IC has its own way of doing business
- Before your application goes to a specific IC, it gets reviewed by study sections organized by the Center for Scientific Review (CSR) (in some cases study sections are convened by the ICs instead of CSR)
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 people

- supporting basic, translational, and clinical research on the brain and nervous system
- fostering the training and career development of investigators in basic & clinical neurosciences
- seeking better understanding, diagnosis, treatment, and prevention of neurological disorders

(e.g. of topic areas - NINDS is the primary IC for research on ALS, Parkinson’s disease, autism, stroke, epilepsy, as well as hundreds of rare neurological disorders)
These NINDS missions are supported through standard funding mechanisms

- typically, an investigator-initiated research project (e.g. R01, R21, R03)

- training & career development projects (e.g. K or F awards)

- NOFOs of programmatic interest (e.g. specific topics and/or application criteria to meet mission-critical objectives)

*NOFO – Notice of Funding Opportunity (includes “parent” mechanisms and programmatic opportunities)
NINDS role in major trans-NIH efforts: BRAIN, HEAL, AD/ADRD

- **The BRAIN Initiative** (Brain Research Through Advancing Innovative Neurotechnologies) - aims to develop and apply innovative technologies to improve how we treat, prevent, and cure disorders of the brain (e.g. determining cell types and circuits)

- **The HEAL Initiative** (Helping to End Addiction Long-term) - trans-IC effort to stem the national opioid public health crisis

- **AD/ADRD** (Alzheimer’s Disease & Alzheimer’s Disease-Related Dementias) - Prevent and effectively treat Alzheimer's disease and related dementias
<table>
<thead>
<tr>
<th></th>
<th>FY 2020</th>
<th>FY 2021</th>
<th>FY 2022</th>
<th>FY 2023</th>
<th>FY 2024 Enacted</th>
</tr>
</thead>
<tbody>
<tr>
<td>NINDS Base</td>
<td>1,979,476</td>
<td>2,014,208</td>
<td>2,082,185</td>
<td>2,167,740</td>
<td>2,167,740</td>
</tr>
<tr>
<td>BRAIN</td>
<td>128,890</td>
<td>178,890</td>
<td>182,890</td>
<td>63,890</td>
<td>63,890</td>
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<tr>
<td>HEAL</td>
<td>266,321</td>
<td>270,295</td>
<td>270,295</td>
<td>280,295</td>
<td>285,295</td>
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<tr>
<td>AD/ADRD*</td>
<td></td>
<td>75,000</td>
<td>85,000</td>
<td></td>
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</tbody>
</table>

- Part of approximately $300M NINDS oversees on AD/ADRD projects, but most funds are managed by NIA.
27 Institutes and Centers
Each IC has its own personality, priorities, structure, and budget

NIH budget for neuroscience research in FY23 was $11.87 billion

FY23 NIH Budget

- Neurosciences: $11.87 billion
- Cancer: $7.97 billion
- Infectious Disease: $8.24 billion
- Cardiovascular: $2.88 billion

https://report.nih.gov/funding/categorical-spending/#/
Navigating NIH

• NIH is a federated model
• All institutes follow the same broad steps
• The specifics will be different at each institute

Find your IC, PO, and NOFO

Application goes to CSR and is assigned an IC, PO and study section

Study Section reviews the application and it’s scored
# Navigating NIH – Application & Review Cycles

<table>
<thead>
<tr>
<th></th>
<th>Cycle I</th>
<th>Cycle II</th>
<th>Cycle III</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application Due Dates</td>
<td>January 25 - May 7</td>
<td>May 25 - September 7</td>
<td>September 25 - January 7</td>
</tr>
<tr>
<td>Scientific Merit Review</td>
<td>June - July</td>
<td>October - November</td>
<td>February - March</td>
</tr>
<tr>
<td>Advisory Council Round</td>
<td>August or October *</td>
<td>January</td>
<td>May</td>
</tr>
<tr>
<td>Earliest Project Start Date</td>
<td>September or December *</td>
<td>April</td>
<td>July</td>
</tr>
</tbody>
</table>

![Diagram showing the process of preparing, reviewing, and funding with an internal deadline and up to 20 months of funding](image)
Find a Program Official and talk to them!

• Have many names: Program Director, Program Officer, Health Scientist Administrator

• Contact relevant POs listed on NOFOs, IC websites, or in NIH RePORTER Matchmaker
  • Most POs prefer to be contacted by email rather than a “cold call”
  • Share your Specific Aims/brief project description in advance
    • Helps PO assess “mission-relevance” and fit with NOFO
    • May facilitate follow-on discussions

• Initiate contact early in the application process
• You may talk to several POs before deciding where to submit
• Follow up after you receive the summary statement
NIH Reporter – Matchmaker tool is excellent for identifying an appropriate IC

Paste and search your draft Specific Aims in text box
NIH Reporter – Matchmaker tool is excellent for identifying an appropriate IC

Your project might align with the missions of multiple ICs
NIH Reporter – Matchmaker tool is excellent for identifying an appropriate Program Official

Your project might align with the portfolios of multiple Program Officials
NIH Reporter – Matchmaker tool is excellent for identifying an appropriate Program Official

Evaluating the portfolios of Program Officials will provide an idea of their expertise on your science
Finding Funding Opportunities
### National Institutes of Health

#### NIH programs help to prepare the skilled, creative and diverse biomedical research workforce of tomorrow.

**Undergraduate and Postbaccalaureate Education**
- Predoctoral Training/Clinical Doctorate
- Postdoctoral Training/Clinical Residency
- Early Research Career Development
- Investigator Development and Mentoring

**Resources**
- **NIH Research Training and Career Development Programs**
  - NIH programs help prepare individuals for careers in biomedical, behavioral, social, and clinical research.
  - Learn more about how NIH Institutes and Centers may vary in research and training.
  - Contact NIH extramural research training representatives to discuss how specific programs fit your training and career development.

**Recent Funding Announcements**
- **NIHES Research Education Opportunities (R25 Clinical Trial Not Allowed)**
  - May 15, 2024
- **Mentored Career Development Award to Promote Equity, Diversity, and Inclusion in Biomedical Research (K12)**

**About DBRW**
- Career Path
- Programs
- Institute/Program Matrix
- Search

**Division of Biomedical Research Workforce**

[https://researchtraining.nih.gov/](https://researchtraining.nih.gov/)

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**Additional Resources**
- [https://researchtraining.nih.gov/](https://researchtraining.nih.gov/)

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**Find Grant Funding**

**NIH Guide for Grants and Contracts**

The NIH Guide for Grants and Contracts is NIH’s official publication of notices of grant policies, guidelines, and funding opportunities.

We publish daily and issue a table of contents weekly. Subscribe to receive updates today!

<table>
<thead>
<tr>
<th>Title</th>
<th>NIH/NCI Notice Number</th>
<th>Issuing Organization</th>
<th>Release Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Notice of Change in NCI NIG Salary Caps in FY22 NCI Predoctoral to Postdoctoral Fellow Transition Award (5P50GM121231) Request for Information (RFI): NIGMS Mature Synthesis Program Evaluation</td>
<td>NOT-CA-24-004 NCI</td>
<td>May 17, 2024</td>
<td></td>
</tr>
<tr>
<td>Notice of Participation of the National Institute on Aging in RFA-AG-24-004 &quot;MLM: Tools to Advance Genomic Translational Research (Missions): Development Sites (UG3/UH3 Clinical Trials Not Allowed)&quot;</td>
<td>NOT-AG-24-001 NIA</td>
<td>May 17, 2024</td>
<td></td>
</tr>
<tr>
<td>Notice of Participation in RFA-OD-22-002, Predoctoral Training in Advanced Data Analytics for Behavioral and Social Sciences Research (BSMR) - Institutional Research Training Program (T32)</td>
<td>NOT-MD-24-013 NIMH</td>
<td>May 17, 2024</td>
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<tr>
<td>Notice of Participation of NIDA in RFA-DA-21-001 &quot;Advancing HIV service delivery through pharmacies and pharmacists (R21 Clinical Trial Optional)&quot;</td>
<td>NOT-DA-21-003 NIDA</td>
<td>May 16, 2024</td>
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<tr>
<td>OPEN House webinar for RFA-NS-24-030 NIH Blueprint and BRAIN Initiative Diversity-Specific Predoctoral to Postdoctoral Advancement in Neurosciences (SP2A) Award (F30/FT0 Clinical Trial Not Allowed)</td>
<td>NOT-NS-24-101 NINDS</td>
<td>May 16, 2024</td>
<td></td>
</tr>
<tr>
<td>Access and Manipulation of Brain Cell Subtypes Inactivated in Azece</td>
<td>RFA-AI-24-004 NIA</td>
<td>May 16, 2024</td>
<td></td>
</tr>
</tbody>
</table>
NINDS Extramural Training and Career Development Programs

- C-Clinician-scientist
- G-General
- D-Diversity
- I-Institutional

- F30
- K08/K23
- F31
- K02
- Residency & Fellowship R25
- NINDS K12
- Parent & HEAL K99/R00
- Loan Repayment Program
- Re-Entry Supplements
- Loan Repayment Program
- NINDS T32
- General R25
- BRAIN, HEAL, AD/ADRD, MOSAIC K99/R00
- F31
- BP & BRAIN F99/K00
- Faculty K01
- Diversity Research Supplements (AD/ADRD, BRAIN, SBIR/STR, HEAL)
- BP-ENDURE R25
- DR Program R25
- Advancing Diversity R25 Programs
- New Faculty
Select Individual Awards

- Research Supplements to Promote Diversity in Health-Related Research (HEAL, AD/ADRD, BRAIN, SBIR/STTR)
  - Additional funds to an active NIH grant (R, P, U, etc.) to support a diverse trainee (high school through junior faculty)
- F30/F31
  - To support training of predoctoral candidates with outstanding mentors.
- Blueprint and BRAIN Initiative D-SPAN F99/K00
  - Provides funds for the last 1-2 years of graduate school and 4 years of postdoc
- Parent F32/NINDS F32
  - To support training of postdoctoral candidates with outstanding mentors. Must apply to NINDS F32 in first 12 months of joining a lab.
- K99/R00 (MOSAIC, BRAIN, AD/ADRD, HEAL Diversity; Parent)
  - Transition award from postdoc to faculty
- Loan Repayment Program
  - Repays up to $50,000/year for two years of qualified educational debt in return for a commitment to engage in NIH research
Fellowship review criteria framework will change for applications submitted on or after January 25, 2025

Learn more: https://grants.nih.gov/policy/peer/revisions-nih-fellowship-application-review-process/changes-to-fellowship-applications.htm
Diversity Predoc Fellowship (F31)

The Ruth L. Kirschstein National Research Service Award (NRSA) Individual Predoctoral Fellowship to Promote Diversity in Health-Related Research (F31) will enable promising underrepresented predoctoral students to obtain individualized, mentored research training from outstanding faculty sponsors while conducting well-defined research projects.

- Duration of support:
  - Up to 5 years of aggregate NRSA predoctoral support (up to 6 years for dual degree training, e.g., MD/PhD), including any combination of support from institutional training grants (T32) and an individual fellowship award.

- Award budget:
  - Stipend
  - Tuition and fees
  - Institutional allowance (health insurance, research supplies, equipment, books, and travel to scientific meetings)
NIH Blueprint and BRAIN Initiative Diversity Specialized Predoctoral to Postdoctoral Advancement in Neuroscience Award (F99/K00)

**FORMAT**

<table>
<thead>
<tr>
<th>1-2 Years</th>
<th>4 Years</th>
</tr>
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<tbody>
<tr>
<td>F99</td>
<td>K00</td>
</tr>
</tbody>
</table>

Graduate Student

PhD Defense

Postdoctoral Fellow

**Next Due Date:** October 8, 2024

**PARTICIPATING INSTITUTES**

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

**INTENDED FOR**

PhD students with 1-2 years left in a research doctoral degree program;

From diverse backgrounds, including:

- Individuals from nationally underrepresented racial and ethnic groups (African Americans, Hispanic/Latinx, American Indians, Alaska Natives, Native Hawaiians, and other Pacific Islanders),
- Individuals with disabilities, and
- Individuals from disadvantaged backgrounds (NOT-OD-20-031);

Performing neuroscience research within the BRAIN Initiative or Blueprint missions;

At a U.S. domestic institution; and are

U.S. citizens or permanent residents by time of award

RFA-NS-24-030
NIH Blueprint
for Neuroscience Research

D-SPAN F99/K00 OPEN House
July 30, 2024 | 1 - 2:30 PM ET

For graduate students & advisors to ask questions of NIH Program Staff before applying for the NIH Blueprint and BRAIN Initiative Diversity Specialized Predoctoral to Postdoctoral Advancement in Neuroscience (D-SPAN) Award (RFA-NS-24-030)

NINDS Postdoctoral NRSA Fellowship (F32) – PAR-21-032

**INTENDED FOR**
- Postdoctoral Fellows that are early in their training;
  - Can apply before joining the postdoc lab you will be doing the F32 project in
  - Preliminary data are **NOT** required!
  - Not intended to continue training in same research environment
  - Encourage creative, bold, innovative ideas that are an intellectual collaboration between the individual and their mentor
  - Do not wait to apply!

- Performing neuroscience research within the NINDS mission (please send specific aims to Michael Tennekoon to confirm)

- U.S. citizens or permanent residents by time of award

- At a U.S. domestic institution or;
  - **Foreign institution** – however, it must be justified as to why this work cannot be done at a US. Domestic institution

**FORMAT**

<table>
<thead>
<tr>
<th>12 months before starting F32</th>
<th>Start in F32 lab</th>
<th>12 months</th>
<th>48 months</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grad school/prior postdoc</td>
<td>F32 postdoc lab</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Application window</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Funding window (maximum 36 months)</td>
<td></td>
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</tbody>
</table>

Next Due Date: October 10, 2024

Contact: Michael Tennekoon
Michael.tennekoon@nih.gov
K99/R00 Transition Award

- K99/R00 awards provide up to 5 years of support in two phases
- 4 year limit of postdoctoral research experience (except BRAIN K99, which is 5 years).
  - Eligibility extensions are available in some circumstances
K99/R00 – Many Options

• Parent NOFO (NINDS-mission)
• Diversity
  • MOSAIC (NINDS-mission)
  • BRAIN Initiative (circuits, tools and technology)
  • HEAL Initiative (pain)
  • AD/ADRD (Alzheimer’s and related dementias)
• Reach out before you apply to understand program relevance!
K01 - NINDS Faculty Development Award to Promote Diversity

• For support of diverse faculty scientists committed to research, in need of both mentored research training and additional experience

• Eligibility
  • Must have a tenure-track or equivalent position by time of award
  • In the first 3 years of a faculty position
  • Underrepresented background; US citizen or permanent resident

• Timing
  • Up to 5 years of support, last two years contingent upon sufficient progress

• Additional Notes
  • $95,000 salary, $100,000 research costs, plus fringe and indirects
NINDS Extramural Training and Career Development Programs

- C-Clinician-scientist
- G-General
- D-Diversity
- I-Institutional

- Summer Research R25G\textsuperscript{i}

- Diversity Research Supplements (AD/ADRD, BRAIN, SBIR/STR, HEAL)D
  - BP-ENDURE R25D\textsuperscript{j}
  - DR Program R25D\textsuperscript{j}
  - Advancing Diversity R25 ProgramsD\textsuperscript{j}

- High School Student
- Undergraduate Student
- Post-baccalaureate
- Graduate/ Medical Student
- Postdoc
- New Faculty

- Residents & Fellows R25G\textsuperscript{i}
- NINDS K12G\textsuperscript{i}
- Loan Repayment ProgramG
- Re-Entry SupplementsG
- JSPTPN T32G\textsuperscript{i}
- NINDS T32G\textsuperscript{i}
- General R25G\textsuperscript{i}

- Parent & HEAL K99/R00G
- F30C
- K08/K23C
- K02C
- F31G
- F31D
- BP & BRAIN F99/K00D
- Faculty K01D

National Institute of Neurological Disorders and Stroke
## R25 Programs

<table>
<thead>
<tr>
<th>Program</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>NINDS Summer R25 Program</strong></td>
<td>To provide high quality research experience for high school and college students or high school teachers during the summer academic break.</td>
</tr>
<tr>
<td><strong>Doctoral Readiness Program</strong></td>
<td>To provide high quality research experiences for a diverse cadre of postbaccalaureates who have not had access to substantive research opportunities (No active NOFO)</td>
</tr>
<tr>
<td><strong>Blueprint ENDURE R25 Program</strong></td>
<td>ENDURE provides undergraduate research training so that diverse trainees are prepared to enter and successfully complete neuroscience Ph.D. programs.</td>
</tr>
<tr>
<td><strong>NINDS Diversity R25 Programs</strong></td>
<td>Foster the development of neuroscience researchers from diverse backgrounds through innovative mentoring and professional development activities. Graduate through junior faculty</td>
</tr>
</tbody>
</table>

**NOT-NS-23-111** - Interest in receiving grant applications focused on advancing the careers of a diverse translational research workforce
NIH Neuroscience Development for Advancing the Careers of a Diverse Research Workforce (R25)

• Foster the development of neuroscience researchers from diverse backgrounds, including from underrepresented groups across career stages.
• Post-bac to junior faculty
• Local and national
Neuroscience Scholars Program at the Society for Neuroscience (SfN)

• NINDS investment and SfN partnership has supported more than 550 diverse trainees
  • A 2-year training program for underrepresented graduate students and postdoctoral researchers
  • Travel awards, mentoring, and professional development

Photos courtesy of SfN
American Academy of Neurology (AAN) TRANSCENDS

• Trains promising early-career neurologists to conduct high-quality neurologic research and achieve a successful academic career.
<table>
<thead>
<tr>
<th><strong>Diversity R01</strong> - PAR-22-181</th>
<th><strong>ReWARD R01</strong> - PAR-23-122</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Purpose</strong></td>
<td></td>
</tr>
<tr>
<td>To enhance the diversity of R01-funded investigators</td>
<td>To support the research of scientists who are making a significant contribution to Diversity, Equity, Inclusion, and Accessibility (DEIA)</td>
</tr>
<tr>
<td><strong>PD(s)/PI(s)</strong></td>
<td></td>
</tr>
<tr>
<td>New Investigators (including Early Stage Investigators) or At Risk Investigators from diverse backgrounds, including those from groups underrepresented in the health-related sciences (e.g., NOT-OD-20-031, NIH’s Interest in Diversity)</td>
<td>Has no NIH Research Project Grant (RPG) funding at time of award and is making significant, sustained, and impactful, contributions to DEIA</td>
</tr>
<tr>
<td><strong>Support for</strong></td>
<td></td>
</tr>
<tr>
<td>Research in areas related to the programmatic interests of NINDS</td>
<td>Research in areas related to the programmatic interests of NINDS and ongoing DEIA activities focused on enhancing diversity in the US biomedical research enterprise</td>
</tr>
<tr>
<td><strong>Participating ICs</strong></td>
<td></td>
</tr>
<tr>
<td>NINDS; NIDA; NIMH; NINR; NIAAA; NHGRI; NIBIB; NCCIH; NEI; NIA</td>
<td>NIGMS; NEI; NHGRI; NIAAA; NIAMS; NIBIB; NIDCD; NIDCR; NIDA; NIMH; NINDS; NINR; NIMHD; NLM; NCCIH; OD; OBSSR; ORWH; NIEHS; NIH BRAIN Initiative</td>
</tr>
</tbody>
</table>

- **New Investigator**, including **ESI**: has not competed successfully for substantial, independent funding from NIH.
- **At-Risk Investigator**: has had prior support as a PI on a substantial independent research award and, unless successful in securing a substantial research grant award in the current fiscal year, will have no substantial research grant funding in the following fiscal year.
Resources
Many Resources Available

Training & Career Development

Choose an Award by Career Stage & Eligibility
- High School, Undergraduate, & Post Baccalaureate
- Predoctoral Fellows
- Postdoctoral Fellows
- Clinician-Scientist
- Faculty
- Diversity Awards
- Institutional Grants

Choose an Award by Program Type
- Individual Fellowships (F10, F31, F32, F39/40)
  Research training opportunities for trainees at the graduate and postdoctoral levels.
- Career Development Awards (K01, K02, K08, K22, K23, R01/R03)
  Research training opportunities for scientists and clinical-researchers at the postdoctoral and early career faculty levels.
- Other Training-Related Programs (L1P, LBP)
  These programs have unique elements including specific institutional eligibility, or supplementation of an existing NINDS award.
- Institutional Grants (T32, K12, K23, K16)
  Research training opportunities on an institutional level to support multiple scientists and clinician-researchers at all levels of training.

Virtual NIH Grants Conference & PreCon Events

We hope you enjoyed the 2022-2023 conference season!

RESOURCES AND FUTURE EVENT INFORMATION:

All 2-day conference and precon event resources from the 2022-2023 season are now available!
- PowerPoints
- Videos
- Transcripts

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BUILDING UP THE NERVE
A podcast from the National Institute of Neurological Disorders and Stroke, part of the National Institutes of Health

WITH HOSTS
Lauren Ulrich, PhD
Marguerite Matthews, PhD

SEASON 1
The Life Cycle of an NINDS Grant
We discuss the NIH grant process from application to award with NINDS staff.

SEASON 2
Building a Grant Application
We discuss the components of fellowship & career award applications with awardees.

SEASON 3
Mentoring
We discuss strengthening your mentoring relationships with trainees and faculty.

SEASON 4
Demystifying the Hidden Curriculum
We discuss the unwritten rules of scientific training and careers with scientists.

https://www.ninds.nih.gov/Funding/Training-Career-Development
Loan Repayment Program

• To recruit and retain highly qualified health professionals into biomedical research careers

• Eligibility
  • US citizen or permanent resident
  • 20% debt-to-income ratio
  • Clinical, pediatric, health disparities, contraception and infertility research, clinical research for individuals from disadvantaged backgrounds, or research in emerging areas critical to human health

• Timing
  • Repays up to $50,000/year for two years of qualified educational debt in return for a commitment to engage in NIH mission-relevant research

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Grants and Funding – Grants.nih.gov

http://grants.nih.gov/grants/oer.htm
NINDS Resources

• Archived webinars:
  • F99/K00
  • K01
  • K22
  • BRAIN K99/R00

• Tip sheets:
  • K01
  • K22
  • Career Development Plan

https://www.ninds.nih.gov/Funding/Training-Career-Development