# Sharing experiences and tips for writing NIH Research Grant Applications

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Victoria Loerzel, RN, PhD, FAAN

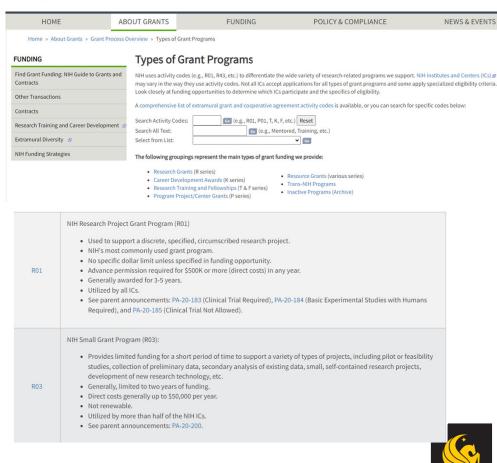
Professor, Beat M. and Jill L. Kahli Endowed Professorship in Oncology Nursing, College of Nursing, University of Central Florida

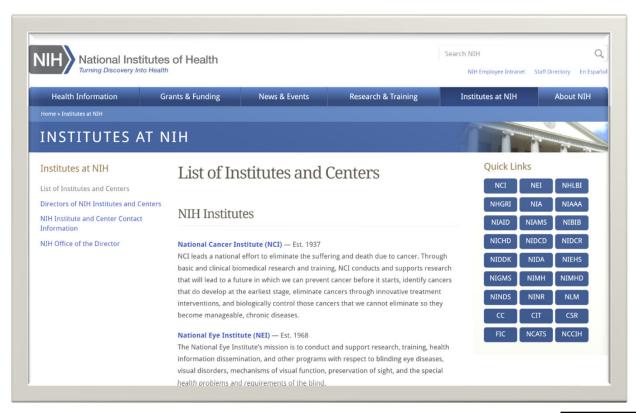


### **Content Outlines**

- Introduction...NIH & Presenters
- Overall impact
- Where to begin?
- How do you know if you have a good "fundable" idea?
- How to find and read NIH funding opportunities?
- NIH REPORTER
- Writing and writing and rewriting (specific aims page)
- Significance, Innovation, Approach, Environment, Investigators
- Biographical sketch
- Letters of support
- Building a research team
- Preliminary data/ pilot studies
- Center of Scientific Review (CSR)
- Outside reviewers
- Responding to rejection of grant applications/proposals
- Q&A







### National Institute on Minority Health and Health Disparities (NIMHD) — Est. 2010

NIMHD has a long history, beginning in 1990 as an Office and later designated a Center in 2000. The mission of NIMHD is to lead scientific research to improve minority health and eliminate health disparities. To accomplish its mission, NIMHD plans, reviews, coordinates, and evaluates all minority health and health disparities research and activities of the National Institutes of Health; conducts and supports research in minority health and health disparities; promotes and supports the training of a diverse research workforce; translates and disseminates research information; and fosters innovative collaborations and partnerships.

#### National Institute of Nursing Research (NINR) — Est. 1986

The mission of the National Institute of Nursing Research (NINR) is to lead nursing research to solve pressing health challenges and inform practice and policy—optimizing health and advancing health equity into the future.

### National Library of Medicine (NLM) — Est. 1956

NLM collects, organizes, and makes available biomedical science information to scientists, health professionals, and the public. The Library's Web-based databases, including PubMed/Medline and MedlinePlus, are used extensively around the world. NLM conducts and supports research in biomedical communications; creates information resources for molecular biology, biotechnology, toxicology, and environmental health; and provides grant and contract support for training, medical library resources, and biomedical informatics and communications research.

### National Institute on Aging (NIA) — Est. 1974

NIA leads a national program of research on the biomedical, social, and behavioral aspects of the aging process; the prevention of age-related diseases and disabilities; and the promotion of a better quality of life for all older Americans.

#### Center for Scientific Review (CSR) — Est. 1946

CSR is the portal for NIH grant applications and their review for scientific merit. CSR oversees and implements peer review for over 75% of the more than 88,000 applications submitted to NIH each year, as well as for some other components of HHS. The mission of CSR is to see that NIH grant applications receive fair, independent, expert, and timely scientific reviews — free from inappropriate influences — so NIH can fund the most promising research.

### Fogarty International Center (FIC) — Est. 1968

FIC promotes and supports scientific research and training internationally to reduce disparities in global health.



# Vicki Loerzel RN, PhD, FAAN



- Focus: Older adults with cancer
- From R15 to R01
  - Ovarian Cancer Alliance of Florida
  - CON funding
  - American Nurses Association
  - UCF Office of Research
  - Private Funding
  - National Institute of Nursing Research



# Ladda Thiamwong, PhD. RN



### Research of interest/ target populations:

Falls prevention, fear of falling, health aging, low-income older adults, community-based interventions

### From internal to external grants and R03 to R01

09/01/2017-	Co-I	Adaptation of brain and body	National Institute of	Extramural	\$1,494,713
05/31/2022		responded to perturbations	Health (NIA &	(R01)	Funded
		during gait in young and older	NINDS)		
		adults			
		PI: Helen J. Huang (CECS).			
08/2017-	PI	Characterizing eye movement as	UCF Office of	Intramural	\$2,000
07/2018		a detector of fear of falling	Research and		Funded
		among older adults	Commercialization		
		Mentor: Gregory Welch (CON)	(Research Mentoring)		
05/2017-	PI	Development of a fall prevention	Learning Institute for	Intramural	\$2,650
04/2018		program for older adults: A pilot	Elders at the		Funded
		study	University of Central		
		Co-I: Norma E. Conner (CON)	Florida (LIFE)		
05/2017-	PI	The effects of a balance-training	In-House Research	Intramural	\$7,500
04/2018		program combined with an	Grants, UCF Office of	Advancement	Funded
		educational program on balance	Research and	of Early	
		performance, muscle strength,	Commercialization	Career	
		fear of falling, and adherence in		Researchers	
		community-dwelling older adults.		(AECR)	
		Co-Is: Jeffrey Stout (CHIP),		award	
		Xin Yan (Statistics).			



# What reviewers evaluate:

- Significance/Scientific merit
  - Impact
- Appropriate approach
- Innovation
- Team/Researcher capability
- Supportive environment
- Reviewers do not always agree!

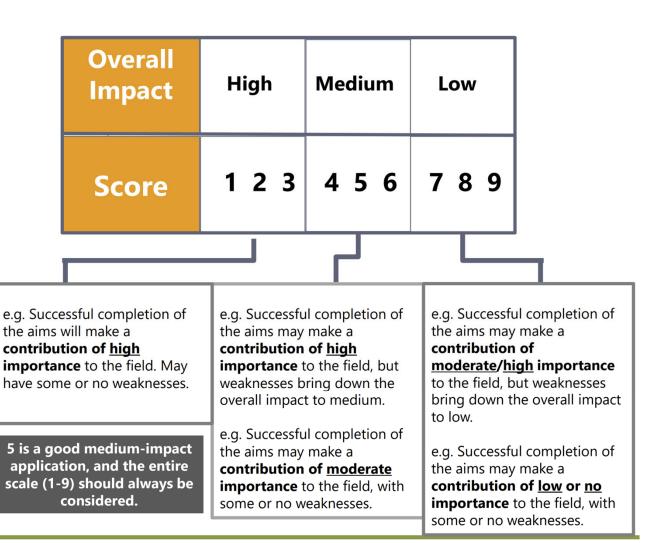


# **Overall Impact:**

The likelihood for a project to exert a <u>sustained</u>, <u>powerful</u> influence on research field(s) involved

# **Evaluating Overall Impact**:

Consider the 5 criteria: significance, investigator, innovation, approach, environment (weighted based on reviewer's judgment) and other score influences (e.g. human subjects)



# Where to begin?

- Request sample grants
  - College/university colleagues
  - NIH
- Follow a model
  - Use a formula that has worked for other people
- Books/Guides
- NIH
  - Lots of help and resources



# How do you know if you have a good "fundable" idea?

- Talk to people and ask questions
  - Colleagues, Associate Dean for Research, Mentors, Program Officers
- Funding agency website
  - Look for research priorities
  - NIH REPORTER



# How to find and review NIH funding opportunities (FOAs)?

- NIH Funding Opportunities now available in RSS (Really Simple News Syndication) format - see <a href="https://grants.nih.gov/grants/guide/rss">https://grants.nih.gov/grants/guide/rss</a> info.htm for details.
- To Subscribe from the NIH Guide Weekly TOC LISTSERV, follow the instructions at <a href="https://grants.nih.gov/grants/guide/listserv.htm">https://grants.nih.gov/grants/guide/listserv.htm</a>
- Past Weekly Listings





### Department of Health and Human Services Part 1. Overview Information Participating Organization(s) National Institutes of Health (NIH) Components of Participating Organizations Fogarty International Center (FIC) National Heart, Lung, and Blood Institute (NHLBI) National Institute on Aging (NIA) National Institute on Drug Abuse (NIDA) National Institute of Environmental Health Sciences (NIEHS) National Institute of Mental Health (NIMH) National Institute of Neurological Disorders and Stroke (NINDS) National Institute on Minority Health and Health Disparities (NIMHD) All applications to this funding opportunity announcement should fall within the mission of the Institutes/Centers. The following NIH Offices may co-fund applications assigned to those Institutes/Centers Division of Program Coordination, Planning and Strategic Initiatives, Office of Disease Prevention (ODP) Funding Opportunity Title Implementation Research on Noncommunicable Disease Risk Factors among Low- and Middle-Income Country and Tribal Populations Living in City Environments (R01 Clinical Trial Optional) Activity Code R01 Research Project Grant Announcement Type

### Part 2. Full Text of Announcement

#### Section I. Funding Opportunity Description

#### Purpose

The National Institutes of Health (NIH) participating Institutes and Centers (ICs), in collaboration with the Global Alliance for Chronic Diseases (GACD), invite applications for implementation research focused on addressing risk factors for common noncommunicable diseases (NCDs) in World Bank-defined low- and middle-income countries (LMICs) and American Indian/Alaska Native (AI/AN) populations in the United States (US). Air, water, and soil pollution; calke of greenspace; urban heat islands; lack of safe infrastructure for walking, cycling, and active living; lack of access to healthcare facilities, lack of health insurance, and cost of medications; housing condition; and wide availability of tobacco, alcohol, and unhealthy foods and beverages contribute to the NCD epidemic in city environments. In the context of this Funding Opportunity Announcement (FOA), "othes" include/tros and/or among AI/AN populations in US; cities, with the potential to equip policymakers and practitioners with evidence-based strategies for prevention and/or management of NCDs among disadvantaged populations up of policymakers and practitioners with evidence-based strategies for prevention and/or management of NCDs among disadvantaged populations to globally. NIH defines implementation research as the scientific study of the use of strategies to adopt and integrate evidence-based health interventions into clinical and community settings to improve individual outcomes and benefit population health.

Applications will be accepted from US and LMIC institutions only. Eligible LMIC institutions are defined by the World Bank at the following link:

datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups

### Introduction

NCDs account for 60% of deaths globally where 8 in 10 deaths caused by NCDs occur in LMIGs. While NCDs account for the greatest loss of disability-adjusted life years (DALYs) around the world, research to study prevention and treatment is relatively under-resourced in LMIGs and Al/AN communities where the burden is increasing. The GACD was formed in 2010 in response to this concern and supports research and associated training to accelerate and improve prevention and treatment of NCDs in under-resourced environments.

The GACD represents 15 of the world's largest funding agencies, including the NIH, and is the first alliance to specifically address NCDs. Collectively, GACD partner agencies provide over 80% of global public funding for health research and, since 2010, have supported 110 projects in the areas of hypertension, lung diseases, diabetes, mental health, cancer, stroke, and hypertension/diabetes intervention scale-up. GACD has supported 1,200 researchers at 300 institutions in 70 countries through investment of over US \$220 million through its partner agencies. NIH has supported 11 GACD awards across these NCD domains.

This FOA is aligned with the overall GACD initiative to support implementation research, defined as the scientific study of the use of strategies to adopt and integrate evidence-based health interventions into clinical and community settings to improve individual outcomes and benefit population health. Implementation research examines which strategies work, for whom, and under what circumstances to promote the uptake, scale-up and spread of effective interventions. Projects may also address how interventions can be adapted and scaled up in ways that are feasible, acceptable accessible, sustainable, and equilable in a diven national context.

Funding Opportunity Announcement (FOA) Number	PAR-23-042
Companion Funding Opportunity	PAR-23-043 (Implementation Research on Noncommunicable Disease Risk Factors among Low- and Middle-Income Country and Tribal Populations Living in City Environments (R61/R33 Clinical Trial Required)), R61/R33 Phase 1 Exploratory/Developmental Grant/ Exploratory/Developmental Grants Phase II
Number of Applications	See Section III. 3. Additional Information on Eligibility.
Assistance Listing Number(s)	93,989, 93,866, 93,393, 93,837, 93,838, 93,839, 93,840, 93,233, 93,307, 93,113, 93,853, 93,242, 93,279
Funding Opportunity Purpose	The National Institutes of Health (NIH) participating Institutes and Centers (ICs), in collaboration with the Global Alliance for Chronic Diseases (GACD), invite applications for implementation research focused on addressing risk factors for common noncommunicable diseases (NCDs) in World Bank-defined low- and middle-income countries (LMICs) and American Indian/Alaska Native (Al/AN) populations in the United States (US). Air, water, and soil pollution; lack of greenspace; urban heat islands; lack of safe infrastructure for walking, cycling, and active living; lack of access to healthcare facilities, lack of health insurance, and cost of medications; housing condition; and wide availability of tobacco, alcohol, and whealthly foods and beverages contribute to the NCD epidemic in city environments. In the context of this Funding Opportunity Announcement (FOA), "cities" include urban centers, informal settlements, slums, and periurban areas. This FOA supports applications that propose implementation research to reduce the risks of NCDs in the context of cities in LMICs and/or among Al/AN populations in US cities, with the potential to equip policymakers and practitioners with evidence-based strategies for prevention and/or management of NCDs among disadvantaged populations globally. NIH defines implementation research as the scientific study of the use of strategies to adopt and integrate evidence-based health interventions into clinical and community settings to improve individual outcomes and benefit population health.  All applications must be within the scope of the mission of one of the Institutes/Centers listed above (see "Components of Participating Organizations," excluding the Fogarty International Center which manages this program but does not support awards). Applications will be accepted from US and World Bank-defined LMIC institutions only.

#### Section V. Application Review Information

#### 1. 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.

Note: Effective for due dates on or after January 25, 2023, the Data Sharing Plan and Genomic Data Sharing Plan (GDS) will not be evaluated at time of review.

A proposed Clinical Trial application may include study design, methods, and intervention that are not by themselves innovative but address important questions or unmet needs. Additionally, the results of the clinical trial may indicate that further clinical development of the intervention is unwarranted or lead to new avenues of scientific investigation.

#### **Overall Impact**

Reviewers will provide an overall impact score to reflect their assessment of the likelihood for the project to exert a sustained, powerful influence on the research field(s) involved, 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. For example, a project that by its nature is not innovative may be essential to advance a field.

#### Significance

Does the project address an important problem or a critical barrier to progress in the field? Is the prior research that serves as the key support for the proposed project rigorous? If the aims of the project are achieved, how will scientific knowledge, technical capability, and/or clinical practice be improved? How will successful completion of the aims change the concepts, methods, technologies, treatments, services, or preventative interventions that drive this field?

#### In addition, for applications involving clinical trials

Are the scientific rationale and need for a clinical trial to test the proposed hypothesis or intervention well supported by preliminary data, clinical and/or preclinical studies, or information in the literature or knowledge of biological mechanisms? For trials focusing on clinical or public health endpoints, is this clinical trial necessary for testing the safety, efficacy or effectiveness of an intervention that could lead to a change in clinical practice, community behaviors or health care policy? For trials focusing on mechanistic, behavioral, physiological, biochemical, or other biomedical endpoints, is this trial needed to advance scientific understanding?

#### Specific to this FO

• Is there compelling evidence that the implementation research proposed is contextually appropriate for addressing prevention or mitigation of NCDs across the lifespan in the LMIC or Al/AN population in the context of the city environment where the study is to be performed?

### Send a specific aims page to PO for feedback

### Section VII. Agency Contacts

We encourage inquiries concerning this funding opportunity and welcome the opportunity to answer questions from potential applicants.

#### **Application Submission Contacts**

eRA Service Desk (Questions regarding ASSIST, eRA Commons, application errors and warnings, documenting system problems that threa issues)

Finding Help Online: https://www.era.nih.gov/need-help (preferred method of contact)

Telephone: 301-402-7469 or 866-504-9552 (Toll Free)

General Grants Information (Questions regarding application instructions, application processes, and NIH grant resources)

Email: GrantsInfo@nih.gov (preferred method of contact)

Telephone: 301-637-3015

Grants.gov Customer Support (Questions regarding Grants.gov registration and Workspace)

Contact Center Telephone: 800-518-4726

Email: support@grants.gov

#### Scientific/Research Contact(s)

Brad Newsome, Ph.D.

Fogarty International Center (FIC) Telephone: 301-480-8389 Email: FIC-GACD@mail.nih.gov

Kathleen Etz

National Institute on Drug Abuse (NIDA)

Phone: (301) 402-1749 E-mail: ketz@mail.nih.gov

Key	Dates	

Posted Date December 07, 2022

Open Date (Earliest Submission Date) February 09, 2023

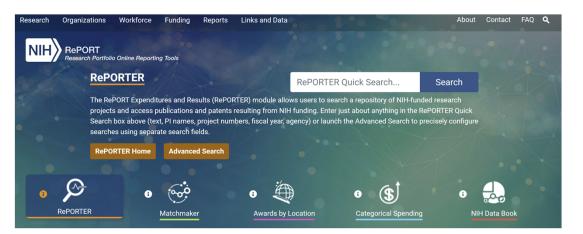
Letter of Intent Due Date(s) 30 days before receipt date.

Application Due Dates			Review and Award Cycles			
Renewal / Resubmission / New Revision (as allowed)		AIDS	Scientific Merit Advisory Council Review Review Ear		Earliest Start Date	
March 09, 2023	Not Applicable	March 09, 2023	July 2023	October 2023	December 2023	

All applications are due by 5:00 PM local time of applicant organization.

Applicants are encouraged to apply early to allow adequate time to make any corrections to errors found in the application during the submission process by the due date.





Welcome to

### Research Portfolio Online Reporting Tools (RePORT)

In addition to carrying out its scientific mission, the NIH exemplifies and promotes the highest level of public

### Spotlight

NIH COVID-19 Research

Explore NIH's comprehensive summary of ongoing COVID-19 research, including funding, clinical trials, and more

List Charts Map	T Act Project Year Sub	Project Leader(s)	. Organization	Fiscal Year	Admin IC	Funding IC	FY Total Cost by IC	Similar Projects	
Citat S Wap	World Anti-Bullying Foru	m 2023							
ilters	1 R13HD112131-01	ESPELAGE, DOROTHY L Z	UNIV OF NORTH CAROLINA CHAPEL HILL	2023	NICHD	NICHD	\$10,000	View >	
Active Projects	MS Falls InsightTrack (M	IS FIT): A personal health lib	rary to reduce falls in patients with MS						
Fiscal Years	5 R01LM013396-03	BOVE, RILEY MARIE	UNIVERSITY OF CALIFORNIA, SAN	2023	NLM	NLM	\$343,188	View >	
Org Names		BROWNE 🗹	FRANCISCO						
Agencies	Subthalamic deep brain	stimulation to modulate vest	ibular heading perception in Parkinson's	disease.					
States	<u>5 I01CX002086-03</u>	SHAIKH, AASEF G 🗹	LOUIS STOKES CLEVELAND VA MEDICAL CENTER	2023	VA			View >	
Countries	Integrated Tele-Behavio	ral Activation and Fall Preven	tion for Low-income Homebound Older	Adults with	Depression				
Principal Investigators	5 R01MD009675-09	CHOI, NAMKEE G 🗹	UNIVERSITY OF TEXAS AT AUSTIN	2023	NIMHD	NIMHD	\$619,012	View >	
	HIV and musculoskeleta	I frailty: implications for care	policy and research						
	5 R01NR020765-02	LOSINA, ELENA 🗹	BRIGHAM AND WOMEN'S HOSPITAL	2023	NINR	NINR	\$859,206	View >	
	Optimizing a technology-based body and mind intervention to prevent falls and reduce health disparities in low-income populations								
	5 R01MD018025-02	ATHIAMWONG, LADDA	UNIVERSITY OF CENTRAL FLORIDA	2023	NIMHD	NIMHD	\$570,844	View >	
	Optimizing a technology-based body and mind intervention to prevent falls and reduce health disparities in low-income populations.								
	3 R01MD018025-02	ATHIAMWONG, LADDA	UNIVERSITY OF CENTRAL FLORIDA	2023	NIMHD	OD	\$356,934	View >	
	Mobility in Daily Life and	Falls in Parkinson's Disease	: Potential for Rehabilitation						
	5 R01HD100383-04	ADRAK, FAY BAHLING C MANCINI, MARTINA C	OREGON HEALTH & SCIENCE UNIVERSITY	2023	NICHD	NICHD	\$524,377	View >	

# Writing and writing and rewriting

- Start with easy
  - Methods? Preliminary studies?
- Make an outline
  - What evidence do you need to make your case?
- Get it all out, then cut it down
- Ask colleagues to review sections
- Be creative with tables and figures
- Make hard decisions



# Significance

- Make a strong case for your study (Strong premise)
  - Focus on what your funding organization is interested in!
  - Highlight their priorities
- Gaps in current literature
  - Reviewers may not know, so outline it for them
- Impact to public health
  - Reiterates why your proposed study is important



# **Innovation**

- Highlight innovation of the topic, intervention etc.
- If there is little innovation
  - Talk about what is new
  - Sell it!



# Approach

- Are the overall strategy, methodology, and analyses well-reasoned and appropriate to accomplish the specific aims of the project?
- Have the investigators included plans to address weaknesses in the rigor of prior research that serves as the key support for the proposed project?
- Have the investigators presented strategies to ensure a robust and unbiased approach, as appropriate for the work proposed?
- Are potential problems, alternative strategies, and benchmarks for success presented?
- If the project is in the early stages of development, will the strategy establish feasibility and will particularly risky aspects be managed?
- Have the investigators presented adequate plans to address relevant biological variables, such as sex, for studies in vertebrate animals or human subjects?
- \*See more info. in FOA for applications involving clinical trials.



# **Environment**

- Highlight how your environment is positioned to help you succeed in the study.
  - Facilities
  - Partnerships
  - Equipment



# Investigators

- Are the PD(s)/PI(s), collaborators, and other researchers well suited to the project?
- If Early Stage Investigators or those in the early stages of independent careers, do they have appropriate experience and training?
- If established, have they demonstrated an ongoing record of accomplishments that have advanced their field(s)?
- 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?



# Investigators

- Describe (while minimizing repetition from the individual biosketches) how the expertise and experience of the investigator team will be leveraged, organized, and managed to meet the objectives of the proposed project.
- Address the management and coordination of efforts.
- Identify the collaborative process for engagement and involvement of stakeholders to participate fully in all phases of the implementation strategy, including design, deployment, testing, and reporting of results.



# Letters of support If you want it done right...

- DO IT YOURSELF
  - Letters of support
  - Biosketches

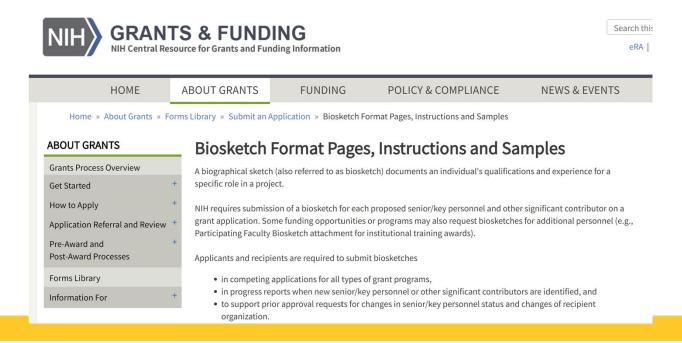
### **Letters of Support:**

To be considered complete, applications must include letter(s) of support from collaborating partners, and/or other organization(s) indicating their relevant expertise and commitment to participate. Applications without the required letter(s) of support will not be reviewed.

If partial funding is to be provided by sources other than NIH, provide letter(s) of support from the source(s) signed by an authorized representative.

# Biographical sketch

- Check NIH for latest version
- Goal: Highlight yourself and qualifications that position you to be successful on the proposed project!
  - Prepare contributions, experience, prior funding, and publications





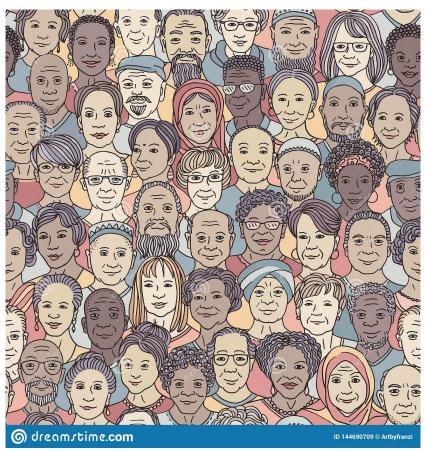
# Build your team

- Be active in seeking collaborators
  - Conferences
  - Emails
  - Really describe in detail what their expertise is and what they will do.
     Be specific in how you will use their skills
  - Everyone needs to fit!
  - If they ask for a specific consultant or team member, just give it to them.





**Interdisciplinary Team** 



**Diverse older adults** 



# Research Team



Nursing, Kinesiology, Neuropsychology, Engineering, and Data Science



# Preliminary and pilot studies

- Do them!
  - even small and unfunded





What are you searching for?

Q

For Applicants | For Reviewers | News & Policy | Study Sections | Review Panels & Dates | About CSR



Learn About the Benefits of CSR's Early Career Reviewer (ECR) Program



Proposed Changes to NIH Peer Review



See CSR's Initiatives to Address Bias in Peer Review

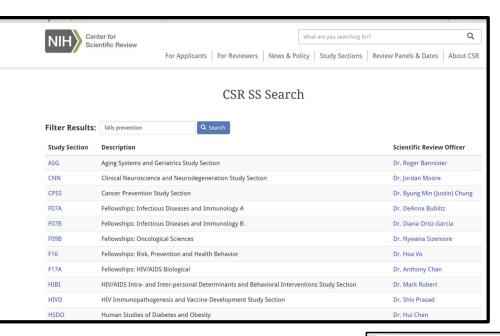
Find a Study Section

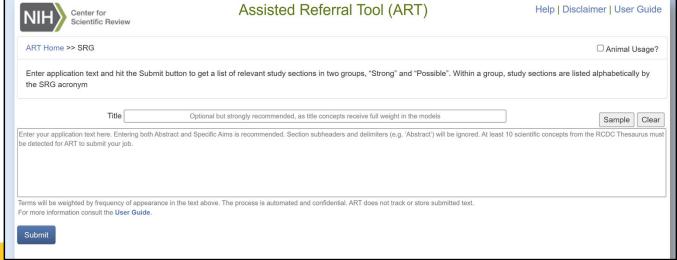
Enter Keyword or Title

- or -

Use the Assisted Referral Tool >







# Outside reviewers

- Ask the experts
- Can be paid to review
- Get this out 2 months before its due to be submitted, give them specific directions
- Pick and choose what you need to change
  - Whim versus consensus



# Responding to rejection of grant proposals

# Thinking/train your mind

-Ask yourself:

Does this matter?

-Consider the negative input as "DATA"

# Action plan /manage your schedule/time

-Look at the big picture \*How your actions can affect the overall success of your research trajectory and career development

(polishes your skillset towards improvement)?

- -Learning by example
- \* CV(s)
- \* R01, R03, R34, etc.
- \*Research methods, approach section

### **Outcomes**

Kill two (or four) birds with one stone.

### Birds:

- 1. grant proposals,
- 2. publications,
- 3. promotion/tenure,
- 4. target population



# Questions?

