

# Grant writing workshop

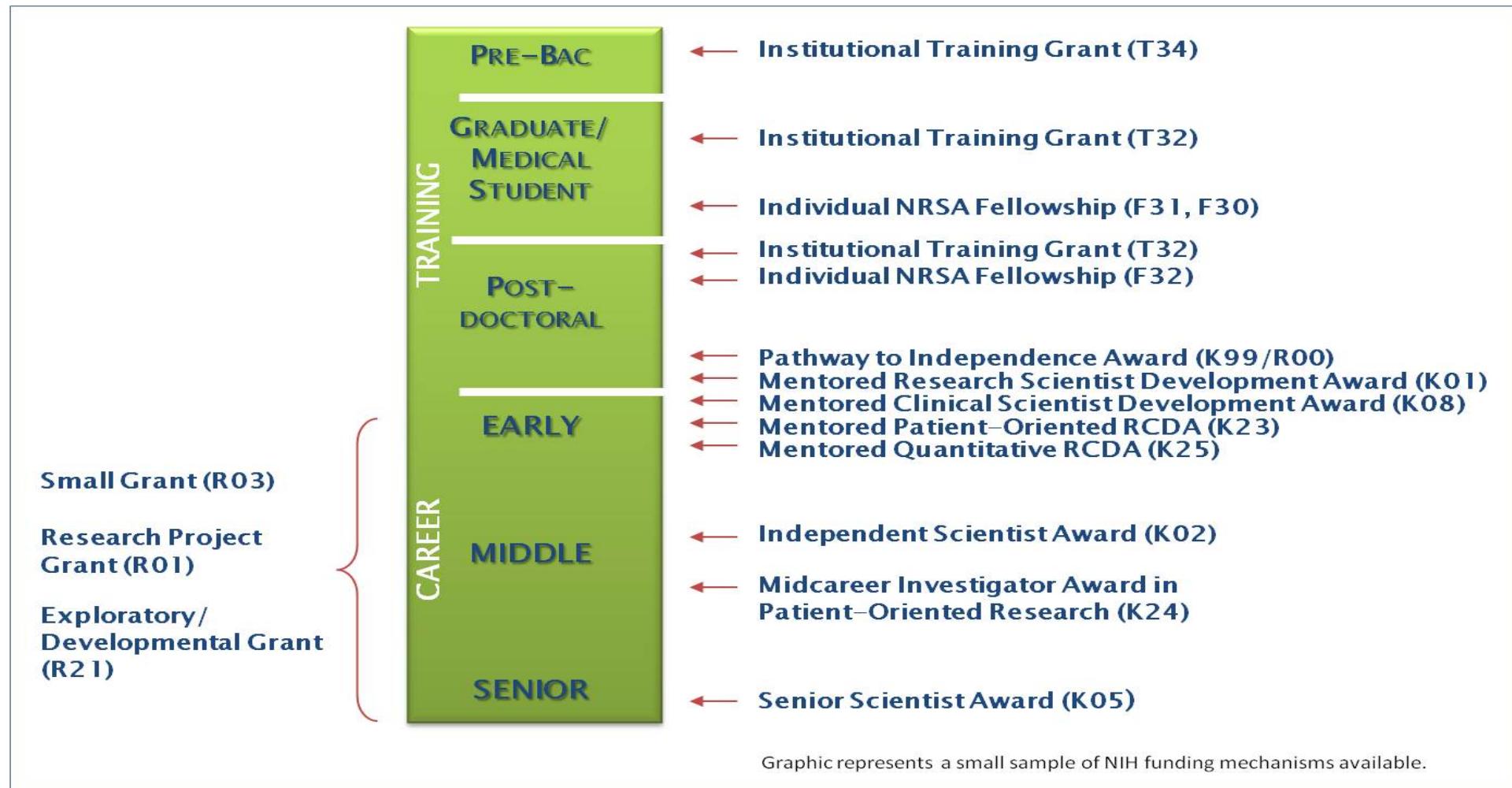
SSNAP 2021

# NIH Funding Mechanisms

- F = Fellowships (pre- & post-doc)
- K = Career Development Awards
- T = Training Grants
- R = Research Projects
- P = Program Project/Center Grants
- U = Cooperative Agreements Grants

# Career Development Awards

- <http://nexus.od.nih.gov/all/2011/10/07/trends-in-nih-training-and-career-development-awards/>



# Research Grants: R03

- Small grants – Scope includes:
  - Pilot/feasibility studies
  - Secondary analyses
  - Small, self-contained research project
  - Development of research methodology or technology
- Maximum time = 2 years (non-renewable)
- Maximum budget = \$100,000 (\$50K/yr)
- URL: <https://grants.nih.gov/grants/funding/r03.htm>

# Research Grants: R21

- Focus on exploratory/developmental work
  - Novel/innovative/riskier ideas
  - “High risk high reward studies that may lead to a breakthrough in a particular area, or result in novel techniques, agents, methodologies, models or applications that will impact biomedical, behavioral, or clinical research.”
  - Different from those supported through R01.
- Maximum time = 2 years (non-renewable)
- Maximum budget = \$275,000 (no more than \$200K in a single yr)
- URL: <https://grants.nih.gov/grants/funding/r21.htm>

# Research Grants: R01

- Research project grant
  - “The Research Project (R01) grant is an award made to support a discrete, specified, circumscribed project to be performed by the named investigator(s) in an area representing the investigator's specific interest and competencies, based on the [mission of the NIH](#).”
- Maximum time = 5 years, some eligible for competitive renewal
  - Many argue for smaller first project (3 yr)
- Maximum budget = no specified limit
  - Best to aim for \$350K/yr to start
- URL: <https://grants.nih.gov/grants/funding/r01.htm>

# What Grant Type? What Institute?

- Step 1: Draft an abstract with Aims (with input from mentors!)
- Step 2: Choose an Institute
  - Read their web pages to learn about THEIR priorities
  - Decide how your work fits/enhances their research agenda/portfolio
- Step 3: Call the Program Officer
  - Job = advocate for researchers, demystify process
  - Will help you with “fit” – how your work aligns with Institute mission

# 27 Institutes/Centers + Director's Office

<a href="#">NCI</a> Cancer	<a href="#">NIAMS</a> Arthritis & Musculoskeletal/ Skin	<a href="#">NIEHS</a> Environmental Health	<a href="#">NCCAM</a> Complementary & Alternative Medicine
<a href="#">NEI</a> Eye	<a href="#">NIBIB</a> Biomed Imaging & Bioeng.	<a href="#">NIGMS</a> General Medical Sciences	<a href="#">NCATS</a> Advancing Translational Science
<a href="#">NHLBI</a> Heart, Lung, Blood	<a href="#">NICHD</a> Child Health & Development	<a href="#">NIMH</a> Mental Health	<a href="#">CIT</a> Information Technology
<a href="#">NHGRI</a> Genome	<a href="#">NIDCD</a> Deafness & Comm Disorders	<a href="#">NIMHD</a> Minority Health/Disparities	<a href="#">CSR</a> Scientific Review
<a href="#">NIA</a> Aging	<a href="#">NIDCR</a> Dental & Craniofacial Research	<a href="#">NINDS</a> Neuro & Stroke	<a href="#">FIC</a> Fogarty Int'l Center
<a href="#">NIAAA</a> Alcohol	<a href="#">NIDDK</a> Diabetes, Digestive & Kidney	<a href="#">NINR</a> Nursing Research	<a href="#">CC</a> Clinical Center
<a href="#">NIAID</a> Allergy/ Infectious Disease	<a href="#">NIDA</a> Drug Abuse	<a href="#">NLM</a> Library of Medicine	<a href="#">OD</a> Office of the Director

# Review of your proposal

- There are hundreds of study sections
- 60-100 grant / study section
- Study section rosters (about 20 people) can be found at:  
[http://www.csr.nih.gov/Roster\\_proto/section1.asp](http://www.csr.nih.gov/Roster_proto/section1.asp)
- Each grant has about 3 reviewers
- All study section members score the grant 100-500
- Choose a study section that has goals consistent  
with your proposal  
[http://www.csr.nih.gov/Roster\\_proto/section1.asp](http://www.csr.nih.gov/Roster_proto/section1.asp)  
<http://grants1.nih.gov/grants/award/award.htm>
- You can lose on the abstract and first page

## Roster Index for Regular Standing Study Sections and Continuing SEPs

Study Section	Study Section Description	SRO
APDA	<a href="#">Adult Psychopathology and Disorders of Aging Study Section</a>	<a href="#">Chu, Serena</a>
ASG	<a href="#">Aging Systems and Geriatrics Study Section</a>	<a href="#">Beitins, Inese</a>
CNN	<a href="#">Clinical Neuroscience and Neurodegeneration Study Section</a>	<a href="#">Edwards, Samuel</a>
CP	<a href="#">Cognition and Perception Study Section</a>	<a href="#">Plude, Dana</a>
LAM	<a href="#">Neurobiology of Learning and Memory Study Section</a>	<a href="#">Zhao, Wei-Qin</a>
MESH	<a href="#">Biobehavioral Mechanisms of Emotion, Stress and Health Study Section</a>	<a href="#">Champoux, Maribeth</a>
NMB	<a href="#">Neurobiology of Motivated Behavior Study Section</a>	<a href="#">Gaiano, Nicholas</a>
NPAS	<a href="#">Neural Basis of Psychopathology, Addictions and Sleep Disorders Study Section</a>	<a href="#">Cinque, Julius</a>
SEIR	<a href="#">Societal and Ethical Issues in Research Study Section</a>	<a href="#">Helmers, Karin</a>
SMI	<a href="#">Sensorimotor Integration Study Section</a>	<a href="#">Bishop, John</a>
SPC	<a href="#">Mechanisms of Sensory, Perceptual, and Cognitive Processes Study Section</a>	<a href="#">Thompson, Kirk</a>
SPIP	<a href="#">Social Psychology, Personality and Interpersonal Processes Study Section</a>	<a href="#">Boulay, Marc</a>
SSPA	<a href="#">Social Sciences and Population Studies A Study Section</a>	<a href="#">Ryan, Suzanne</a>
SSPB	<a href="#">Social Sciences and Population Studies B Study Section</a>	<a href="#">Durrant, Valerie</a>

# Grant Cycles – Standard Dates

<http://grants.nih.gov/grants/funding/submissionschedule.htm>

Activity	Cycle I-Winter	Cycle II-Spring	Cycle III-Fall
Due Dates:			
R01	February 5	June 5	October 5
K	February 12	June 12	October 12
R03/R21	February 16	June 16	October 16
Scientific Merit Review	June – July	October – November	February - March
Advisory Council Round	August or October	January	May
Earliest Start Date	September or December	April	July

# What do the 1-9 scores mean?

Impact	Score	Descriptor	Additional Guidance
High	1	Exceptional	Exceptionally strong with essentially no weaknesses
	2	Outstanding	Extremely strong with negligible weaknesses
	3	Excellent	Very strong with only some minor weaknesses
	4	Very Good	Strong but with numerous minor weaknesses
	5	Good	Strong but with at least one moderate weakness
	6	Satisfactory	Some strengths but also some moderate weaknesses
Low	7	Fair	Some strengths but with at least one major weakness
	8	Marginal	A few strengths and a few major weaknesses
	9	Poor	Very few strengths and numerous major weaknesses

# Most common reasons for not receiving funds:

- Lack of new or original ideas
- Diffuse, superficial or unfocused research plan
- Lack of knowledge of published relevant work
- Lack of experience in the essential methodology
- Uncertainty concerning the future directions
- Questionable reasoning in experimental approach
- Absence of acceptable scientific rationale
- Unrealistically large amount of work
- Lack of sufficient experimental detail
- Uncritical approach

# R03

- Look for Parent Funding Opportunity Announcements (FOA)
  - URL: [https://grants.nih.gov/grants/guide/parent announcements.htm](https://grants.nih.gov/grants/guide/parent_announcements.htm)
- Application characteristics
  - Up to two years and a budget for direct costs of up \$50,000 per year.
  - The R03 cannot be renewed
  - No preliminary data are required but may be included if available.
  - The Research Strategy may not exceed 6 pages.
  - Introduction limited to 1 page.
  - A doctoral student may not apply for an R03 grant to support thesis or dissertation research. An R03 award may be used to assist students who are pursuing dissertation studies when the work is within the scope of the R03 award.

# R03 - Scope

- Fundable research projects include:
  - Pilot or feasibility studies
  - Secondary analysis of existing data
  - Small, self-contained research projects
  - Development of research methodology
  - Development of new research technology

## Additional Characteristics

- In contrast, R21-Maximum two-year award, \$275K in directs total (no more than \$200K in any one year) (Six-page app).
- Applications for R21 awards should describe projects distinct from those supported through the traditional R01 mechanism. For example, long-term projects, or projects designed to increase knowledge in a well-established area, will not be considered for R21 awards.
- Applications submitted under this mechanism should be exploratory and novel.
- These studies should break new ground or extend previous discoveries toward new directions or applications.
- **Projects of limited cost or scope that use widely accepted approaches and methods within well established fields are better suited for the R03 small grant mechanism.**

Sections:

1. Title
2. Personnel
  - a. Name
  - b. Position
  - c. Institution
3. Project Summary (30 lines max)
4. Project Narrative (5 lines max)
5. Biographical Sketch
6. Personnel Justification
7. Specific aims (1 page)
8. Research Strategy (6 pages)
  - a. Significance
  - b. Innovation
  - c. Research Plan
    - i. Rationale.
    - ii. Method
    - iii. Analysis
9. Bibliography
10. Budget and timeline

## **Proposal Title**

- Title should be compelling and informative.
- The title should be relatively short, descriptive, and jargon-free.
- It should be sufficiently flexible and general to encompass not only the experiments you propose but also other experiments that may accrue from the results that you will obtain.
- Title should emphasize the payoff of your research.

## **Project Summary/Abstract**

- Must be less than 30 lines with margins of  $\frac{1}{2}$  inch on each side of the page.
- This is the most important part of the proposal, as it is the only part that everyone will read.
- This section must be succinct, pithy, and must convey all that is in the specific aims, but in less space. Work on this carefully.
- Use critical colleagues to re-review the content and form of this document multiple times. Choose individuals who are carefull and who are invested in your success.
- It should be clear, compelling, and understandable. Your goal here is not to impress the study section with your “in depth” knowledge of the subject.

## Narrative

- This is a PDF file of no more than three or four sentences.
  - It is meant to be a lay description of what your proposal is about.

## Biographical Sketch

- Url: <https://grants.nih.gov/grants/forms/biosketch.htm>

OMB No. 0925-0001 and 0925-0002 (Rev. 12/2020 Approved Through 02/28/2023)

**BIOGRAPHICAL SKETCH**

Provide the following information for the Senior/key personnel and other significant contributors.  
Follow this format for each person. **DO NOT EXCEED FIVE PAGES.**

NAME:

ERA COMMONS USER NAME (credential, e.g., agency login):

POSITION TITLE:

EDUCATION/TRAINING (*Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.*)

INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	Start Date MM/YYYY	Completion Date MM/YYYY	FIELD OF STUDY

### **A. Personal Statement**

#### B. Positions, Scientific Appointments and Honors

## C. Contributions to Science

#### D. Scholastic Performance

YEAR	COURSE TITLE	GRADE
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## Specific Aims

- Make a **bullet outline** to assist you in laying out its structure. Suggestion below:

Introductory paragraph

Opening sentence

Current knowledge

Gap in knowledge/unmet need

Focus on goals

Long term goal

Objective of application

Central hypothesis and rationale

Specific Aims Paragraph

Aim I

Hypothesis

Methods

Experiments to be performed

Result

Aim II....

Payoff statement (How is the world benefitted by your work.)

## **Significance**

- Positive effect that successful completion of your
- Should be no more than  $\frac{1}{2}$  - 1 page.
- Can be divided into three parts:
  - Critical review of the literature that describes an unmet need.
  - Statement of significance.
  - Discussion of benefits of your work.

## Innovation

- Significance vs Innovation: “Significance is the positive effect that something is likely to have on other things”.... “Innovation is a new and substantially different way of considering and addressing something which results in positive change.”\*

\*Grant Application Writers Workbook, P77.

- What is the norm (methodology, interpretation, mechanisms, etc.). Document with citations.
- How does your approach depart from the status quo?
- How will this departure project to fundamental progress in the field?

# **Research plan**

## Aim I

- Statement of hypothesis
- Rationale that supports hypothesis
  - Literature
  - Impact
  - Preliminary data/feasibility
- Experimental design
- Expected outcomes and statistical analysis
- Pitfalls and alternative plans

## Aim II

- Statement of hypothesis
- Rationale that supports hypothesis
  - Literature
  - Impact
  - Preliminary data/feasibility
- Experimental design
- Expected outcomes and statistical analysis
- Pitfalls and alternative plans

## Other components

- Bibliography
- Budget (get help from your university/institution)
- Timetable (realistic!!)

### Questions pertaining the SSNAP sub-awards

- What if our project is not experimental?
- Could we format our proposal with the structure of an NSF grant?
- Who could be the PI?
- Can we have more than one PI?
- What can we budget? (50% limit for salary; 10% limit for travel/lodging)
- Why is the overhead 5%?
- What's the timeline? (Submission July 5<sup>th</sup>; Decisions: July 30<sup>th</sup>)