

Development of a Researcher

- What's New At NIH
- NIH Budget
- Types of Awards
 - Training
 - Research
- **Application Tips**
- Alternate Careers

What's New

- New Applications Can Be Same as unfunded –A1
 - Two Submissions – Initial & -A1
 - New application after –A1 no longer screened for similarity
- Big Data & Data Sharing
- Publication Public Access

Budget, Pay Lines, & Scores Oh My !



F– Awards Pre/Post–Doctoral Training (NSRA /Kirschstein)

TYPES:

F30 – Pre-Doctoral Dual Degree

F31 – Pre-Doctoral Types

- Diversity
- MD/Ph.D.
- Pharm.D./Ph.D
- Nursing

Training beyond usual degree program requirements

F33 – Senior Fellowship

Mostly Salary

- New Skills
- Pre-Doctoral
 - Training beyond usual degree program requirements
- Post-Doctoral
 - New Skills

Limited Research Funds

- Document source of research funds

<https://grants.nih.gov/training/extramural.htm>

K– Awards Mentored / Career Development

TYPES:

- Degree: Health Care or Research
- Subjects: Humans/Patients or Pre-Clinical
- Career Level:
 - Junior-Mentored, New Skills
 - Mid-Career
 - Buy Time from other duties (teaching/clinical)
 - Mentoring
 - New Skills
 - Not a substitute for research salary support
- ~~Senior~~

Mostly Salary

- Major % Effort
- Cannot draw salary from other Federal research awards

Limited Research Funds

- Document source of research funds

<https://grants.nih.gov/training/extramural.htm>

Research Awards

TYPES:

- R- Awards
 - R03 – Small Grant
 - \$75K - \$150K 1 -2 years
 - R21 – Exploratory/
Developmental
 - \$275K over 2 years
 - R21/R33 Phased Innovation
 - **R01 – Gold Standard**
 - Typically 5 years
- Big Awards (P)
 - P01 – Program Project
 - P30 – Research Cores
 - P50 – Centers

Salary & Research Funds

- Single or Multiple PI
- Consortia / Collaborations

Budget

- Modular \$250K Direct Costs
- Need Permission if
> \$500K Direct Costs

Funding Opportunity Announcements

TYPES:

- PA – Program Announcement
 - Broad focus
 - PAR – Special Review
 - PAS – Set aside of funds
- RFA – Request for Applications
 - Set aside of funds
 - Special Review
 - One Shot
 - Narrow focus

Salary & Research Funds

- Single or Multiple PI
- Consortia / Collaborations

Budget

- Modular \$250K Direct Costs
- Need Permission if > \$500K Direct Costs

TIP: Always quote directly from FOA text, especially if special requirements or topics !! Reviewers not required to read PA's and may not read RFA in depth.

*Grant Application ≠
Publication*

Grant Application ≠ Research

“Writing winning proposals is
different from building
winning hardware

Albert D. Wheelon

NIH Mission Statement

“NIH’s mission is to seek fundamental knowledge about the nature and behavior of living systems and the application of that knowledge to enhance health, lengthen life, and reduce the burdens of illness and disability.”

Critical Assumption:

*Fundamental mechanism of a disease =
Rational target for intervention
(prevention or treatment)*

IMPACT SCORE

Priority Score => IMPACT/Priority Score
Score Range 10 (Best) - 90 (Worse)

Reflects the reviewers' assessment of the *likelihood* for the project to exert a *sustained, powerful influence* on the research field(s) involved

WHY IMPACT ?

Peer Review Regulations

“In carrying out its review under § 52h.7, the scientific peer review group shall assess the overall impact that the project could have on the research field involved, taking into account, among other pertinent factors...(review criteria)”

Impact Scores

Overall Impact:

The likelihood that a project will have a sustained and powerful influence on science (and/or clinical practice and/or technological developments?)

Overall Impact	High	Medium	Low
Score	1 2 3	4 5 6	7 8 9

Evaluating Overall Impact:

Consider the 5 criteria: significance, investigator, innovation, approach, environment (weighted based on reviewer's judgment)

e.g. Applications are addressing a problem of high importance in the field. May have some or no technical weaknesses.

e.g. Applications may be addressing a problem of high importance in the field, but weaknesses in the criteria bring down the overall impact to medium.

e.g. Applications may be addressing a problem of moderate importance in the field, with some or no technical weaknesses

e.g. Applications may be addressing a problem of moderate/high importance in the field, but weaknesses in the criteria bring down the overall impact to low.

e.g. Applications may be addressing a problem of low or no importance in the field, with some or no technical weaknesses.

12/13/2012

5 is a good medium-impact application, and the entire scale (1-9) should always be considered.

REVIEW CRITERIA

Core criteria order:

(* - receive individual score 1- 9)

Significance*

Innovation*

Approach*

Investigator(s)*

Environment*

Additional review criteria & considerations
expanded

SIGNIFICANCE

Does the project address an important problem or a critical barrier to progress in the field?

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?

INNOVATION

Does the application challenge and seek to shift current research or clinical practice paradigms by utilizing novel theoretical concepts, approaches or methodologies, instrumentation, or interventions?

Are the concepts, approaches or methodologies, instrumentation, or interventions novel to one field of research or novel in a broad sense?

Is a refinement, improvement, or new application of theoretical concepts, approaches or methodologies, instrumentation, or interventions proposed?

APPROACH

Are the overall strategy, methodology, and analyses well-reasoned and appropriate to accomplish the specific aims of the project?

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?

If the project involves clinical research, are the plans for 1) protection of human subjects from research risks, and 2) inclusion of minorities and members of both sexes/genders, as well as the inclusion of children, justified in terms of the scientific goals and research strategy proposed?

INVESTIGATORS

Are the PD/PIs, collaborators, and other researchers well suited to the project?

If Early Stage Investigators or New Investigators, 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*? (*Moved from Approach)

IMPACT V. 2.0

Unsettle Presumptions

Defamiliarize the Familiar

Reveal what is going on beneath and behind appearances (Fundamental Knowledge)

Disorient

Propose ways to Reorient

Harvard Report on Education (quoted by David Brooks NY Times 1/27/09)

Application Structure

Significance – Gap or Controversy
(not just see what happens)

Aims – What will YOU resolve

Hypotheses – What will YOU test ?

Approach – How will YOU test it ?

Interpretation – Alternative Outcomes & Limitations

Barriers to Innovation aka Challenges for Iconoclasts

- Perception -- seeing things for what they are instead of what past experience or other people say
- Fear -- fear of failure and fear of public ridicule
- Social Intelligence -- selling your ideas to non-iconoclasts

SUCCEES

- SIMPLE (Background)
- UNEXPECTED (Innovation)
- CONCRETE (Aims & Approach)
- CREDIBLE (CV)
- EMOTIONAL (Significance)
- STORY

“Made to Stick”
C. Heath, D. Heath

5 P's of Successful Applications

- **PRODUCTIVITY**
 - Publications
 - Funding
- **PILOT DATA (Feasibility)**
 - Proof of Concept/Effect
 - Guarantee of detectable signal (avoid Type II Error)
 - Power Analysis
- **PRODUCTION (Factory)**
 - Mechanistic
 - Assembly Line (Directional)
 - No Negative Results
- **PERSEVERANCE (Funding)**
- **PROGRAM OFFICER (Friend)**

4 **F**'s of Successful Applications

- **FRESH**
- **FEASIBLE**
- **FACTORY**
- **FUNDING**

What Else is Possible ?

- **Federal**
 - NIH Staff
 - Program
 - Review
 - Policy
 - SAMSHA – Services & Treatment Support
 - Military
 - Intelligence
 - USAJOBS.GOV
 - Check every day – only 5 day window for applications
- **Private Research**
 - “Big Pharma”
 - “Small Pharma”
 - Private Research Laboratories (Allen Brain Institute; HHMI)
- **Bio-Technology & BioEngineering**
 - Brain Computer Interface
 - Cognitive Training & Rehabilitation
- **Business & Finance**
 - Marketing
 - Leadership
- **Science Writing**

Questions ??

What's New At NIH

- Budget
- BRAIN Initiative
- Public Access Policy
- Big Data & Sharing
- Application Tips

DATA

Big Data to Knowledge (BD2K)
FY14

Data Sharing / Open Access
Human Connectome Project
NIDA Supplements PAR-12-204

Public Access Policy

NIH will delay processing of an award if publications arising from it are not in compliance with the NIH public access policy.

Effective July 1, 2012 for non-competing continuation grant awards

<http://publicaccess.nih.gov/>

Use My NCBI to enter papers onto progress reports. Papers can be associated electronically using the Research Performance Progress Report (RPPR), or included in the PHS 2590 using the My NCBI generated PDF report.

Create a My NCBI account using your eRA Commons ID, or link your current account with your eRA Commons account.