Introduction to Grantsmanship –
NIH Funding Realities and Opportunities
2012
Getting Acquainted with the NIH’s Office of Extramural Research (OER)

- **www.nih.gov Websites**
  - [grants1.nih.gov/grants.oer.htm](https://grants1.nih.gov/grants.oer.htm)
  - commons.era.gov/
  - crisp.cit.nih.gov/
  - [enhancing-peer-review.nih.gov/](https://enhancing-peer-review.nih.gov/)
  - [grants.nih.gov/grants/peer_review_process.htm](https://grants.nih.gov/grants/peer_review_process.htm)
  - [grants.nih.gov/grants/peer/peer.htm](https://grants.nih.gov/grants/peer/peer.htm)
  - [cms.csr.nih.gov/AboutCSR/Welcome+to+CSR/](https://cms.csr.nih.gov/AboutCSR/Welcome+to+CSR/)

- **Receive the NIH Guide and Extramural Nexus**
- **Read and ponder the SF424 application packet**
Funding and the Young Investigator in the Current Era

The problem:

• Most academic faculty are expected to bring in their own research support within 2-3 years of appointment as an Assistant Professor

• Obtaining funding is hard, especially for new investigators without a funding track record

• In a tight fiscal environment (NIH funding levels are approaching single digits at some institutes) funding is harder than ever
NIH Spending History
Fiscal Years 1992 – 2011

Note: Data was taken from NIH OB website: http://officeofbudget.od.nih.gov/

#***FY 2011 – Continuing Resolution

**Excludes ARRA**
<table>
<thead>
<tr>
<th></th>
<th>FY 2010 Actual</th>
<th>FY 2011 Actual</th>
<th>FY 2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current NIH Budget (in Billions)</td>
<td>$31,243</td>
<td>$30,943</td>
<td>$31,987</td>
</tr>
</tbody>
</table>
FY 2012 Budget: $31.987 Billion

Research Project Grants: 53.0%
Research Mgmt Training: 2.5%
Intramural Research: 10.0%
Research Centers: 10.0%
R&D Contracts: 11.0%
Other Research: 3.5%
Career Dev. 2.1%
All Other: 5.0%

~$794 M Training
~$652 M Career
~$1.43 Billion
R01-Equivalent grants
Average size

- Current $ (solid blue line)
- Constant (1999) $ (green dotted line)

![Graph showing the average size of R01-equivalent grants over fiscal years 1999 to 2011. The graph compares current dollars and constant 1999 dollars, with a general trend of increase in average size over time.]
The Chance of Getting Funded
<table>
<thead>
<tr>
<th>FY</th>
<th>New Applications by Submission Number</th>
<th>Success Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>First (Original) Submission</td>
<td>9.5%</td>
</tr>
<tr>
<td>2011</td>
<td>First Resubmission (A1)</td>
<td>36.8%</td>
</tr>
<tr>
<td>2011</td>
<td>Second Resubmission (A2)</td>
<td>26.1%</td>
</tr>
<tr>
<td><strong>2011</strong></td>
<td>TOTAL</td>
<td><strong>15.1%</strong></td>
</tr>
<tr>
<td>2010</td>
<td>First (Original) Submission</td>
<td>10.4%</td>
</tr>
<tr>
<td>2010</td>
<td>First Resubmission (A1)</td>
<td>31.9%</td>
</tr>
<tr>
<td>2010</td>
<td>Second Resubmission (A2)</td>
<td>43.5%</td>
</tr>
<tr>
<td><strong>2010</strong></td>
<td>TOTAL</td>
<td><strong>17.8%</strong></td>
</tr>
<tr>
<td>2009</td>
<td>First (Original) Submission</td>
<td>8.8%</td>
</tr>
<tr>
<td>2009</td>
<td>First Resubmission (A1)</td>
<td>29.3%</td>
</tr>
<tr>
<td>2009</td>
<td>Second Resubmission (A2)</td>
<td>48.2%</td>
</tr>
<tr>
<td>2009</td>
<td>Third Resubmission (A3)</td>
<td>0.0%</td>
</tr>
<tr>
<td><strong>2009</strong></td>
<td>TOTAL</td>
<td><strong>17.8%</strong></td>
</tr>
<tr>
<td>2008</td>
<td>First (Original) Submission</td>
<td>8.4%</td>
</tr>
<tr>
<td>2008</td>
<td>First Resubmission (A1)</td>
<td>31.7%</td>
</tr>
<tr>
<td>2008</td>
<td>Second Resubmission (A2)</td>
<td>55.0%</td>
</tr>
<tr>
<td>2008</td>
<td>Third Resubmission (A3)</td>
<td>33.3%</td>
</tr>
<tr>
<td><strong>2008</strong></td>
<td>TOTAL</td>
<td><strong>19.0%</strong></td>
</tr>
<tr>
<td>2007</td>
<td>First (Original) Submission</td>
<td>8.4%</td>
</tr>
<tr>
<td>2007</td>
<td>First Resubmission (A1)</td>
<td>30.4%</td>
</tr>
<tr>
<td>2007</td>
<td>Second Resubmission (A2)</td>
<td>55.4%</td>
</tr>
<tr>
<td>2007</td>
<td>Third Resubmission (A3)</td>
<td>44.4%</td>
</tr>
<tr>
<td><strong>2007</strong></td>
<td>TOTAL</td>
<td><strong>19.2%</strong></td>
</tr>
</tbody>
</table>
Funding and the Young Investigator
R01-Equivalent investigators
Number supported on competing awards, by career stage of investigator

[Graph showing the number of first-time and established investigators supported on competing awards from 1999 to 2011. The graph indicates a trend where the number of established investigators is consistently higher than that of first-time investigators. The number of first-time investigators shows minor fluctuations, while the number of established investigators has a more gradual increase with a peak in 2002.]

Fiscal Year:
- 1999
- 2000
- 2001
- 2002
- 2003
- 2004
- 2005
- 2006
- 2007
- 2008
- 2009
- 2010
- 2011

Investigators:
- First-Time
- Established
Figure 1. Average Age of Principal Investigators with MD, MD-PhD, or PhD at the time of First R01 Equivalent Award from NIH, Fiscal Years 1980 to 2011
Funding and the Young Investigator

The good news:

• The NIH is aware of the problem and is committed to improving the situation
• There are new funding programs specifically for young investigators
• There are institute commitments to support success rates for young investigators
First Time R01-Equivalent investigators
R01-Equivalent grants, New (Type 1)
Success rates, by career stage of investigator

![Graph showing success rates by fiscal year for First-Time and Established investigators. The graph indicates a decline in success rates over time, with a notable decrease around 2008-2009. A red arrow points to a specific data point in 2009.](image-url)
Getting Started –
the R01 is not the way to go

NIH has a number of grant programs that are specifically designed for individuals who are still in training or have recently become faculty members.

Success rates for these grants are substantially better than for traditional R01 applications.
NRSA Fellowships and Training Grants (F & T Awards) for Individuals With or Earning a Research Doctorate

- Predoctoral Fellowships (F31)
- Institutional Training Grants (T32)
- Postdoctoral Fellowships (F32)
- Senior Fellowships (F33)

- College
- Graduate School
- Postdoctoral
- Independent Investigator
Kirschstein-NRSA post-doctoral fellowships (F32s)
Applications, awards, and success rates

![Graph showing applications, awards, and success rates over fiscal years 1998 to 2011.]
Career Development (K) Awards
Research Career Development Awards
Total funding and average size
Research Career Development Awards
Number of entry-level awards

![Bar chart showing the number of entry-level awards by fiscal year for different award types (K01, K08, K23, K25, K99). Each fiscal year from 1997 to 2011 is represented, with the number of awards varying across the years and award types.]
Trends in Number of Individual NIH K Awards by Institute or Center
Fiscal Years 1998 - 2009
Mentored K Grant Common Features

**Costs**

- Can vary across NIH I/Cs (review I/C PAs)
- **Salaries**
  - $75,000 to $XXX,XXX depending on award and specialty
  - Salary supplements are okay but must come from non-federal source and cannot be compensation for work that infringes on 75%
  - Fringe benefits are over and above salary
  - Indirects limited to 8%
- **Research and development costs**
  - $25,000-$50,000 for supplies, equipment, travel, etc.
Research Degree

K02 Provides support for newly independent scientists who need a period of intensive research focus as a means of enhancing their research careers

K01 For scientists switching to a substantially new health-related research field:
  • background in bio-medicine, OR
  • had a hiatus in career because of illness or family care responsibilities, OR
  • delayed completion of training to serve as faculty at a minority serving university

K25 Scientist switching to a biomedically-related research field AND whose background is in a quantitative science (e.g. mathematics or statistics)
Health Professional Degree

K23 Professional has completed specialty or subspecialty training and is seeking salary and research support for a full-time supervised career development experience in patient-oriented research (POR).

K08 Professional seeking salary and research support for a full-time supervised career development experience in area of health-related research that does not involve patients.
NIH Success Rates for Selected $K$ Activities
Fiscal Years 1996 - 2011
NIH Success Rates for Selected $K$ Activities
Fiscal Years 1996 - 2011
K08 Awardees’ Subsequent Application for and Receipt of NIH RPGs*
K23 Awardees’ Subsequent Application for and Receipt of NIH RPGs
NIH Pathway to Independence Award Program K99

- Program announced by Dr. Zerhouni in 2006
- NIH will issue between 150 and 200 awards for this program in its initial year, beginning in Fall 2006
  - 183 awards given out in 2007
  - 180 awards given out in 2008
  - 204 awards given out in 2009
  - 194 awards given out in 2010
  - 180 awards given out in 2011
- All NIH Institutes and Centers are participating
Eligibility:

– Outstanding postdoctoral candidates who have a clinical or research doctorate (including Ph.D., M.D., D.O., D.C., N.D., D.D.S., D.V.M., Sc.D., D.N.S., Pharm.D. or equivalent doctoral degrees)

– No more than 5 years of postdoctoral research training at the time of application
NIH Pathway to Independence Award Program K99

The award works as follows:

The initial 1-2 year mentored phase will allow investigators to complete their supervised research work, publish results, and search for an independent research position. $90,000/year

The second, independent phase, years 3-5, will allow awardees who secure an assistant professorship, or equivalent position, to establish their own research program and successfully apply for an NIH Investigator-Initiated (R01) grant. $250,000/year
Success Rate of K99 Awards

- **Reviewed**
- **Awarded**
- **Success Rate**

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Reviewed</th>
<th>Awarded</th>
<th>Success Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>900</td>
<td>300</td>
<td>33.3%</td>
</tr>
<tr>
<td>2008</td>
<td>800</td>
<td>200</td>
<td>25%</td>
</tr>
<tr>
<td>2009</td>
<td>700</td>
<td>150</td>
<td>21.4%</td>
</tr>
<tr>
<td>2010</td>
<td>600</td>
<td>100</td>
<td>16.7%</td>
</tr>
<tr>
<td>2011</td>
<td>500</td>
<td>90</td>
<td>18%</td>
</tr>
</tbody>
</table>
The Application Cycle is now Open!
The Extramural LRP Application Cycle is from September 1 to November 15, 2012.

GET STARTED

1. about the programs
2. eligibility
3. apply online

EXTRAMURAL LRP
S FOR RESEARCHERS OUTSIDE NIH
- CLINICAL RESEARCH
- PEDIATRIC RESEARCH
- HEALTH DISPARITIES RESEARCH
- CONTRACEPTION AND INFERTILITY RESEARCH
- CLINICAL RESEARCH FOR INDIVIDUALS FROM DISADVANTAGED BACKGROUNDS

INTRAMURAL LRP
S FOR NIH EMPLOYEE RESEARCHERS
- AIDS RESEARCH
- CLINICAL RESEARCH FOR INDIVIDUALS FROM DISADVANTAGED BACKGROUNDS

Application Cycle Deadlines and Contract Start Date

Extramural
New and Renewal
New Contracts Start: September 1, 2012 - November 15, 2012
July 1, 2013

Intramural
Renewal
September 1, 2012 - February 1, 2013

New
September 1, 2012 - April 1, 2013

ACGME
September 1, 2012 - June 17, 2013

Click here for a new step-by-step guide
NIH Loan Repayment Programs

In exchange for a two or three-year (for Intramural General Research) commitment to your research career, NIH will repay up to $35,000 per year of your qualified educational debt.

In addition, the NIH will make corresponding Federal tax payments for credit to your Internal Revenue Service tax account at the rate of 39% of each loan repayment to cover your increased Federal taxes.

The NIH may also reimburse any increased state or local taxes and/or additional increased Federal taxes (where the Federal tax payments were not sufficient to fully cover your increased Federal taxes) that you incur as a result of your LRP benefits.
The Basic Eligibility Requirements for NIH Loan Repayment Programs:

- Doctoral-level degree
- Government research funding (Federal, state or local) or domestic nonprofit research funding
- Student loan debt equal to at least 20% of annual salary
- U.S. citizenship or permanent residency
- Non-Federal government job
The 5 Loan Repayment Programs

- Clinical Research
- Pediatric Research
- Health Disparities Research
- Clinical Researchers from Disadvantaged Backgrounds
- Contraception and Infertility Research

DEADLINES: Extramural LRP Applications:
September 1, 2012 - November 15, 2012
http://www.lrp.nih.gov/
Individuals from Disadvantaged Backgrounds

Clinical Research

Pediatric

Health Disparities

Contraception & Infertility
NIH is attempting to assist new investigators

**New Investigator:** An NIH research grant Program Director/Principal Investigator (PD/PI) who has not yet competed successfully for a substantial, competing NIH research grant is considered a New Investigator.

A PD/PI who has received a Small Grant (R03) or an Exploratory/Developmental Research Grant Award (R21) retains his or her status as a New Investigator.

Examples of current NIH Institute and Center practices to foster new investigator independence:

Practices vary by Institute, but may include:

• First-time R01 investigators given an extended percentile payline (generally 5% greater than regular payline)

• Additional funds are being allocated to pay eligible applications beyond this extended payline as exceptions

• Funding new investigators for all years requested
Early Stage Investigator (ESI):

New or First-Time Investigator within 10 years of completing his/her terminal research degree or is within 10 years of completing medical residency

"Applications from ESIs will be given special consideration during peer review and at the time of funding. Peer reviewers will be instructed to focus more on the proposed approach than on the track record, and to expect less preliminary data than would be provided by an established investigator. "
New Investigators as well and ESIs will be eligible for the:

“Full Implementation to Shorten the Review Cycle for New Investigator R01 Applications Reviewed in Center for Scientific Review (CSR) Recurring Study Sections”

• New investigators receive their summary statements no later than March 1, July 1, or November 1.

• The Summary Statements for qualifying applications will have an explicit note indicating eligibility for next cycle submission.

• Resubmission applications for consideration at the next cycle must be submitted by March 20, July 20, or November 20.

• New Investigators who do not choose the next cycle option will use the standard resubmission dates for subsequent cycle submission (March 5, July 5, or November 5).
New Investigators Program Resources for New Investigators

[ Back to New Investigators Home Page ]


Statement of Commitment to New Investigators

New investigators are the innovators of the future - they bring fresh ideas and technologies to existing biomedical research problems, and they pioneer new areas of investigation. Entry of new investigators into the ranks of independent, NIH-funded researchers is essential to the health of this country’s biomedical research enterprise. NIH’s interest in the training and research funding of new investigators is understandably deep and longstanding. Over the years, special programs to assist new investigators in obtaining independent research funding have been created - for example the New Investigator Research Award (NIRA or R23), in 1977, and the First Independent Research Support and Transition (FIRST or R29) Award, which superceded the NIRA in 1986. Both of these special programs were discontinued because neither was able to significantly enhance the availability of independent grants for new investigators.