Introduction to Grantsmanship –
NIH Funding Realities and Opportunities
2013
Getting Acquainted with the NIH’s Office of Extramural Research (OER)

- www.nih.gov Websites
  - grants1.nih.gov/grants.oer.htm
  - commons.era.gov/
  - crisp.cit.nih.gov/
  - enhancing-peer-review.nih.gov/
  - grants.nih.gov/grants/peer_review_process.htm
  - grants.nih.gov/grants/peer/peer.htm
  - cms.csr.nih.gov/AboutCSR/Welcome+to+CSR/

- Receive the NIH Guide and Extramural Nexus
- Read and ponder the SF424 application packet
NIH DATA BOOK

The NIH Data Book (NDB) provides basic summary statistics on extramural grants and contract awards, grant applications, the organizations that NIH supports, the trainees and fellows supported through NIH programs, and the national biomedical workforce. Tables and charts are provided in a variety of formats, including PowerPoint (PPT) slides and Portable Document Format (PDF) files.

NIH Budget History

- NIH budget mechanism detail FY 2000 - 2009
- NIH budget mechanism detail FY 1995 - 1999
- Total NIH budget authority: FY 2009 actual
- Total NIH budget authority: FY 2010 enacted

Research Grants

- Research and training grants: Competing applications by mechanism and selected activity codes
- Research and training grants: Competing awards by mechanism and selected activity codes
- Research and training grants: Success rates by mechanism and selected activity codes

http://report.nih.gov/nihdatabook/
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
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
Do your homework –

Find out what options you have and select those that make most sense for your

- career stage
- citizenship
- research focus
Sources of Funding

NIH

Other Governmental Sources - DOD

Non Profit Organization
(ex: Foundations)

Industry

Philanthropy
FY 2012 Budget: $31.987 Billion

- Research Project Grants: 53.0%
- Intramural Research: 10.0%
- Research Mgmt & Support: 5.0%
- All Other: 2.0%
- Career Dev: 2.1%
- Research Centers: 10.0%
- R&D Contracts: 11.0%
- Other Research: 3.5%

~$794 M Training
~$652 M Career
~$1.43 Billion
NIH Spending History
Fiscal Years 1992 – 2011

Note: Data was taken from NIH OB website: http://officeofih.gov/

#***FY 2011 – Continuing Resolution

#**Excludes ARRA
The Chance of Getting Funded
R01-Equivalent grants
Applications, awards, and success rates

[Bar chart showing applications, awards, and success rates from 1998 to 2012. The chart displays the trends in applications, awards, and success rates over time.]
<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>New Applications by Submission Number</th>
<th>Success Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>New - First Submission (A0)</td>
<td>8.6%</td>
</tr>
<tr>
<td>2012</td>
<td>New with Resubmissions (A1+)</td>
<td>37.2%</td>
</tr>
<tr>
<td>2012</td>
<td><strong>FY TOTAL</strong></td>
<td><strong>18.4%</strong></td>
</tr>
<tr>
<td>2011</td>
<td>New - First Submission (A0)</td>
<td>9.5%</td>
</tr>
<tr>
<td>2011</td>
<td>New with Resubmissions (A1+)</td>
<td>34.9%</td>
</tr>
<tr>
<td>2011</td>
<td><strong>FY TOTAL</strong></td>
<td><strong>18.7%</strong></td>
</tr>
<tr>
<td>2010</td>
<td>New - First Submission (A0)</td>
<td>10.4%</td>
</tr>
<tr>
<td>2010</td>
<td>New with Resubmissions (A1+)</td>
<td>35.5%</td>
</tr>
<tr>
<td>2010</td>
<td><strong>FY TOTAL</strong></td>
<td><strong>22.3%</strong></td>
</tr>
<tr>
<td>2009</td>
<td>New - First Submission (A0)</td>
<td>8.8%</td>
</tr>
<tr>
<td>2009</td>
<td>New with Resubmissions (A1+)</td>
<td>35.7%</td>
</tr>
<tr>
<td>2009</td>
<td><strong>FY TOTAL</strong></td>
<td><strong>22.2%</strong></td>
</tr>
<tr>
<td>2008</td>
<td>New - First Submission (A0)</td>
<td>8.4%</td>
</tr>
<tr>
<td>2008</td>
<td>New with Resubmissions (A1+)</td>
<td>39.2%</td>
</tr>
<tr>
<td>2008</td>
<td><strong>FY TOTAL</strong></td>
<td><strong>23.3%</strong></td>
</tr>
<tr>
<td>2007</td>
<td>New - First Submission (A0)</td>
<td>8.4%</td>
</tr>
<tr>
<td>2007</td>
<td>New with Resubmissions (A1+)</td>
<td>38.1%</td>
</tr>
<tr>
<td>2007</td>
<td><strong>FY TOTAL</strong></td>
<td><strong>23.6%</strong></td>
</tr>
</tbody>
</table>
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
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
R01-Equivalent grants, New (Type 1)
Success rates, by career stage of investigator

![Graph showing success rates by career stage of investigator over fiscal years 1998 to 2012. The graph displays two lines: one for First-Time investigators and another for Established investigators. The success rate for First-Time investigators shows a steady decline with a notable drop between 2008 and 2012. The success rate for Established investigators also shows a decline but at a slower pace, with a slight increase around 2004-2005 before declining again. A magenta oval highlights a specific area of the graph.]
Career Development (K) Awards
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.
Research Career Development Awards
Research Career Development Awards
Total funding and average size
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 - 2012

[Graph showing success rates for K08 and K23 activities from 1996 to 2012.]
**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)
NIH Success Rates for Selected $K$ Activities
Fiscal Years 1996 - 2012
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.
Trends in Number of Individual NIH K Awards by Institute or Center Fiscal Years 2005 - 2012
Applications and Awards by Institute or Center, FY 2007
Does Getting a K Award Make a Difference?

YES
Table 15. Applicant publication outcomes

<table>
<thead>
<tr>
<th>Funding Status</th>
<th>Total K Applicant Authors</th>
<th>Total Publications</th>
</tr>
</thead>
<tbody>
<tr>
<td>K01 (FY2000 – FY2005)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Funded (n=134)</td>
<td>118 (88%)</td>
<td>884</td>
</tr>
<tr>
<td>Unfunded (n=134)</td>
<td>96 (72%)</td>
<td>682</td>
</tr>
<tr>
<td>K08 (FY1990 – FY2005)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Funded (n=468)</td>
<td>393 (84%)</td>
<td>4,886</td>
</tr>
<tr>
<td>Unfunded (n=468)</td>
<td>244 (52%)</td>
<td>2,797</td>
</tr>
<tr>
<td>K23 (FY2000 – FY2005)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Funded (n=190)</td>
<td>177 (93%)</td>
<td>1,845</td>
</tr>
<tr>
<td>Unfunded (n=190)</td>
<td>139 (73%)</td>
<td>1,164</td>
</tr>
</tbody>
</table>
Figure 15. Subsequent NIH grant outcomes, by K program
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
  - 212 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 will work 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
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

FOR RESEARCHERS OUTSIDE NIH

- CLINICAL RESEARCH
- PEDIATRIC RESEARCH
- HEALTH DISPARITIES RESEARCH
- CONTRACEPTION AND INFERTILITY RESEARCH
- CLINICAL RESEARCH FOR INDIVIDUALS FROM DISADVANTAGED BACKGROUNDS

INTRAMURAL LRP

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 ▶
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 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 - November 15
http://www.lrp.nih.gov/
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
Is it hard to get funded? YES

Will you have to be persistent? YES

Will you get frustrated? YES

Please don’t give up We need you!