Where’s the Money?
Grants for Developing your Career

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Career Opportunities as a Physician-Scientist
Fundamentals of Research

• Identify an important problem
• Ask a good/interesting question
• Propose a solution
• Is the proposed solution new or novel?
• Is the proposed solution feasible? Can it be tested?
• Test the solution
• Critically evaluate the results of the testing
• Move forward or back to the drawing board
Funding for Career Development

• Provides protected time to develop the foundational knowledge and experience necessary for a career as an independent scientist

• Provides support to generate data demonstrating the feasibility of your independent grant proposal

• Allows you to develop the credibility to be a successful applicant for independent funding
  o Credibility = publications

• The purpose of a career development award is to prepare you to obtain future funding for research projects
"Only 3 publications and he expects to get tenure...."
Funding Sources for Career Development

- **Institutional awards/resources**
  - CTSA
  - BIRCWH
  - T32

- **Foundations**
  - Rheumatology Research Foundation
  - Arthritis Foundation
  - Other

- **Individual career development awards**
  - NIH: K-series, LRP
  - VA
“It is the responsibility of those of us involved in today’s biomedical research enterprise to translate the remarkable scientific innovations we are witnessing into health gains for the nation”

Zerhouni, *NEJM*, 2005
The National Institutes of Health Clinical and Translational Science Initiative

- **Transform** and **consolidate** existing research and research training services into an **integrated** center for clinical and translational research

- **Goals of the CTSA:**
  - Accelerate movement of basic science discoveries to clinical trials
  - Accelerate discoveries validated in clinical trials to changes in clinical practice
Clinical and Translational Science Awards (CTSA)

• 62 CTSA in 31 states and the District of Columbia

• All CTSA have a KL2 program
  o Research training for MD, PhD or equivalent

• Resources to facilitate research
  o Clinical research facilities (clinical research centers)
  o Statistical support
  o Help in finding collaborators
CTSA Core Competencies in Clinical and Translational Research

1. Clinical and translational research questions
2. Literature critique
3. Study design
4. Research implementation
5. Sources of error
6. Statistical approaches
7. Biomedical informatics
8. **Clinical research interactions**: regulatory support and knowledge, responsible conduct of research
9. Scientific communication
10. Cultural diversity
11. Translational teamwork
12. Leadership
13. Cross disciplinary training
14. Community engagement
Other Institutional Resources

• **Grant review studios**
  o Critical review of a grant

• **Statistical support**

• **Internal study section**
  o Conducted by senior faculty before submission
  o Library of successful applications

• **Useable grant text**
  o Research-related resources

• **Letters of support**

• **Etc.**
Building Interdisciplinary Research Careers in Women’s Health (BIRCWH)

- BIRCWH is a K12 institutional training award
  - Women’s health
  - Sex differences

- Currently 29 programs active nationwide
  - Program began in 2000
  - 63 grants to 39 institutions supporting 493 junior faculty

- Coordinated through the ORWH
Institutional Training Grants (T32)

- Award made to institutions that have assembled a team of investigators around a theme for training
- Pays salary, support for research expected through mentors
- Pre- and/or post-doctoral trainees
- Look broadly within your institution for relevant T32 opportunities
Research Training Grants and Fellowships: Funding of Kirschstein-NRSA and non-NRSA Awards
Kirschstein-NRSA Training Grants and Fellowships: Funding in Current and Constant Dollars
Kirschstein-NRSA Institutional Research Training Grants: Applications, Awards, and Success Rates
Rheumatology Research Foundation

• Core Programs
  o Medical Students, Graduate Students & Residents
  o Training Programs
  o Fellows/Junior Faculty
    o Rheumatologists and Health Professionals
  o Educators

• Targeted Research
  o Pilot Grants
  o Innovative Research Grants
Rheumatology Research Foundation

- The Foundation’s awards and grants program helps ensure the future of rheumatology by providing funding for research, training, and education.

- In the coming year, the Rheumatology Research Foundation has committed **$13.3 million** to continue the needed programs that will lead to advancing treatment and finding cures.

- Visit [www.rheumatology.org/Foundation](http://www.rheumatology.org/Foundation) for more information and to apply online.

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Disease Targeted Innovative Research Grants
Disease Targeted Pilot Grants

Clinician Scholar Educator Award
Career Development Supplement in Geriatric Medicine
Career Development Bridge Funding Award: K Bridge
Career Development Bridge Funding Award: K Supplement
Career Development Bridge Funding Award: R Bridge
Investigator Award
Scientist Development Award

Marshall J. Schiff, MD Memorial Fellow Research Award
Amgen Fellowship Training Award
Paula de Merieux Fellowship Training Award
Health Professional Online Education Grant

Ephraim P. Engleman Endowed Resident Research Preceptorship
Resident Research Preceptorship
Medical and Pediatric Resident Research Award
Pediatric Research Award
Pediatric Visiting Professorship

Health Professional Research Preceptorship
Medical Student Clinical Preceptorship
Medical Student Research Preceptorship
Student Achievement Award
Rheumatology Research Foundation Funding

*FY 2014 is budgeted amount
A variety of scientific areas are addressed through the research resulting from these Core awards, with more than half addressing pathogenesis and outcomes.

Core research awards are open to all disease areas. Consideration is given to both the quality of the applicant and the individual. RA, SLE and OA are the most funded disease areas.
## Arthritis Foundation Research Program

**Historical Data Since Inception (1948-2012)**

<table>
<thead>
<tr>
<th>Category</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Funded Researchers</td>
<td>2653</td>
</tr>
<tr>
<td>Number of Funded Institutions</td>
<td>236</td>
</tr>
<tr>
<td>Number of Training Grants</td>
<td></td>
</tr>
<tr>
<td>Invested Amount</td>
<td>$456,299,676</td>
</tr>
</tbody>
</table>

**2012**

<table>
<thead>
<tr>
<th>Category</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Active Research Grants</td>
<td>107</td>
</tr>
<tr>
<td>Number of Training Grants</td>
<td>54</td>
</tr>
<tr>
<td>Number of Currently Funded Institutions</td>
<td>61</td>
</tr>
</tbody>
</table>

| Total Funded Amount             | $13,110,000 |
Other Foundations

• **Lupus Foundation of America Career Development Award**
  o Intended for fellows interested in pursuing lupus research

• **Doris Duke Charitable Foundation Clinical Scientist Development Award**
  o Assistant Professor appointed between Nov 1, 2008 and Nov 1, 2012 with space and 75% protected time

• **Robert Wood Johnson Foundation Health & Society Scholars**
  o 2 years of support at all stages of a career

• **Look around for other opportunities!**
**Funding Opportunities and Notices**

The NIH Guide for Grants and Contracts is the official publication for NIH medical and behavioral research grant policies, guidelines and funding opportunities. Definitions and More Information...

Search the NIH Guide for:
- Active RFAs (Requests for Applications)
- Active PAs (Program Announcements)
- Notices

With Announcement # or Keywords: (Optional)

Browse Active Funding Opportunities
- Requests for Applications (RFAs)
- Program Announcements (PAs)
- Parent Announcements (unsolicited applications)

Browse Recent Policies and Guidelines
- Notices (Released in last 12 months)

Recovery Act Funding
- Current NIH Funding Opportunities and Notices
- Grant Funding Opportunities Web Page
The FY 2014 Application Cycle is now Open! Click on “about the programs” below to learn more about the NIH Loan Repayment Programs and to get started on your application.

GET STARTED

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

EXTRAMURAL LRP
For researchers outside NIH
- CLINICAL RESEARCH
- PEDIATRICS RESEARCH
- HEALTH DISPARITIES RESEARCH
- CONTRACEPTION AND INFERTILITY RESEARCH
- CLINICAL RESEARCH FOR INDIVIDUALS FROM DISADVANTAGED BACKGROUNDS

INTRAMURAL LRP
For NIH employees/researchers
- AIDS RESEARCH
- CLINICAL RESEARCH FOR INDIVIDUALS FROM DISADVANTAGED BACKGROUNDS
- GENERAL RESEARCH (INCLUDING LRP FOR AAND M FELLOWS)

NIH EMPLOYEE STUDENT LOAN REPAYMENT PROGRAM
APPLICANT INFORMATION BULLETIN
REPORTS & STATISTICS
POLICY & GUIDANCE
SIGN UP FOR LISTSERV

Application Cycle Deadlines and Contract Start Date

Extramural
New and Renewal: September 1, 2013 - November 15, 2013
New Contracts Start: July 1, 2014

Intramural
Renewal: September 1, 2013 - February 3, 2014
New: September 1, 2013 - April 1, 2014
ACEME: September 1, 2013 - June 10, 2014

We strongly encourage you to learn about the NIH institutes and centers (ICs) related to your respective area(s) of research. Visit the IC websites, review their missions and research priorities, and contact the LRP liaisons using the IC Contacts and Research Priorities List.

Freedom To Pursue Your Career In Research

Research scientists develop treatments and discover cures for diseases and disorders that affect us all. More researchers are needed to meet today’s critical health needs. The NIH Loan Repayment Programs (LRPs) encourage promising researchers and scientists to pursue research careers by repaying up to $10,000 of their qualified student loan debt each year, through...

Extramural LRP - for researchers and scientists conducting research at universities and other nonprofit organizations.
NIH Loan Repayment Program

• Available if you are conducting research in qualified areas:
  o Clinical research
  o Pediatric research
  o Health disparities research
  o Contraception and infertility research
  o Clinical research for individuals from disadvantaged backgrounds

• Eligibility
  o US citizen, national, or permanent resident with a doctoral degree
  o Total qualified education debt equal to or in excess of 20% of your institutional base salary at the time of the award
  o Research supported by a domestic non-profit foundation, university, professional association, US government agency
  o Research is 50% of effort
NIH Extramural Financial Operations

On This Page:
- Introduction
- General Resources
- Resources for FY 2013
- Resources for FY 2012
- Resources for FY 2011
- Resources for FY 2010
- Resources for FY 2009
- FY 2013 Funding Strategies
- FG Financial Operations Archive
- Contact

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Introduction

Welcome to the NIH’s Financial Operations Website. On this page you will find the most recent information about NIH’s financial operations plans for the fiscal year, links to the financial management plans of NIH institutes and centers, and answers to frequently asked questions.

We hope that you will find the information on this site helpful.

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General Resources

- NIH Office of Budget - with current and historical NIH budget information.

- Percentile Ranking vs. Percent Success Rate: What is the difference? (MS Word - 40 KB) (01/25/2006) - Comparison of Success Rates to Percentile Paylines

- Description of the NIH Budget Process (PDF - 164 KB) - From the NIH Office of Budget Web Site.

- Historical information on RPG success rates for NIH Institutes and Centers
Percentile Rank, Payline, and Success Rate: Please explain!

• Percentile rank = how well your application did in comparison to others reviewed by the same study section

• Payline = percentile rank up to which an institute or center intends to fund the majority of the applications assigned to it
  o Varies between institutes and in some cases program to program within an institute

• Success rate = the percentage of reviewed applications that were funded
Research Grants: Funding by Mechanism

Research Career Awards ~2% of NIH Grant Funding
NIH Research Career Development Awards: Number of Entry-Level Awards

Success rates for K08/K23 ~40% in 2012
## NIAMS New K08/K23 FY2012

<table>
<thead>
<tr>
<th></th>
<th>K08</th>
<th>K23</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applications</td>
<td>16</td>
<td>14</td>
</tr>
<tr>
<td>Avg Cost</td>
<td>$120,059</td>
<td>$130,897</td>
</tr>
<tr>
<td>Funding</td>
<td>$1,080,528</td>
<td>$1,178,073</td>
</tr>
<tr>
<td>Awards</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>Success Rate</td>
<td>56%</td>
<td>64%</td>
</tr>
</tbody>
</table>

- Rheumatology Research Foundation/AF funds a 1-year bridge award for excellent applications that do not receive funding.
- Remember that most institutes use the K-mechanism, so can target the institute most appropriate to your research.
NIH Research Grant Investigators: Representation of Women by Mechanism

More than 40% research career awards are to women
Career Development Program

VA’s Career Development Program was established to provide mentoring for junior researchers so they can learn from renowned, experienced VA researchers. Awardees from this program have become national and international leaders in their research fields. Awards are provided in all areas of VA’s research enterprise: biomedical laboratory, clinical science, health services, and rehabilitation research.

Career Development Award Levels

- **CDA-1**: This entry level career development program is open to both clinicians and non-clinicians. Review criteria emphasize candidate qualifications, mentorship, and career development plan.
- **CDA-2**: This mid-level program also is open to both clinicians and non-clinicians who must specify their career development plans and research project over a 3-5 year duration.
- **CDEA**: The career development enhancement award for senior VA scientists is now also open to non-clinicians as well as clinicians. This award will provide up to six-months of salary for scientists to learn new research skills.

How to Apply

Candidates for Career Development Awards need not have VA appointments at the time they apply, but must be nominated by a VA facility and must identify an appropriate VA mentor. The CDP is open to all researchers, both MDs and PhDs, who have the appropriate experience and training as stated in the eligibility section of the [CDP Handbook](#). Nominees should work closely with their sponsoring research office to prepare a Letter of Intent (LOI), which is the first step in the review process. If the LOI is approved, the nominee may prepare an application in accordance with CDP guidelines. The sponsoring VA research office must submit the application on behalf of the nominee.
VA Career Development Program

• **CDA-1**
  - Entry level no more than 2 years beyond clinical training
  - Up to 2 years funding
  - Review criteria emphasize candidate qualifications, mentorship, and career development plan

• **CDA-2**
  - Mid-level no more than 5 years beyond clinical training
  - Rank of assistant professor suggested
  - Specify career development plans and research project over a 3-5 year duration

• **CDTA (Transition) and CDEA (Enhancement)**

• **Specifics**
  - Do not need VA appointment at the time of application, but must be nominated by a VA facility and must have a VA mentor
    - Must be 5/8ths salaried
  - Programs in biomedical laboratory, clinical science, health services, rehabilitation
Training: T32, RRF-SDA, CDA-1, LFA

Career Development: Foundation-IA, K-series, CDA-2, Doris Duke, RWJ

Research Project Grant
HOW TO FUND SCIENCE: 
THE FUTURE OF MEDICAL 
RESEARCH

A Workshop Sponsored by the 
American Association for the Advancement of Science

Funding First Program of the Mary Woodard Lasker Trust
And Cosponsored by the 
Burroughs Wellcome Fund

February 14-16, 1999
The Aspen Institute
Wye River Conference Centers
Queenstown, Maryland

The Honorable Mark O. Hatfield
Chairman, Funding First

Dr. Leon E. Rosenberg
President and CEO, Funding First

Dr. Albert H. Teich
Director, AAAS Science and Policy Programs
Executive Summary

“The National Institutes of Health (NIH), the major source of federal dollars for medical research, and other federal research agencies rely on the annual decisions of congressional authorizers and appropriators. These decisions are subject to the fits and starts of current economic and political conditions and, in the future, outside pressures may upset the long-term stability that this field has enjoyed.”

“The extreme volatility of the budgetary environment can dramatically change the fiscal landscape within which priority decisions are made.”

**General Finding.** Medical research is an interdisciplinary, multi-agency effort involving the federal government, academic institutions, and the private sector, and requiring progress in many diverse fields of science and engineering to succeed. Therefore, medical research should be defined in the broadest possible sense, encompassing not only NIH but life sciences research in other agencies, health care and health services research in the Department of Health and Human Services, enabling research in other scientific and engineering disciplines, and infrastructure and facilities as well.
Recommendations

• The primary source of federal funding for medical research should remain within the discretionary portion of the federal budget and should be allocated through established authorization and appropriations processes.

• A secondary source of funding, in the form of a trust or reserve fund for medical research, in addition to the regular discretionary budget, could provide an important supplement to annual appropriations.
  o taxes on tobacco products or allocations from state tobacco settlements
  o assessments on private health insurance premiums
  o Fees on medical products resulting from federally funded research, in the form of payments in exchange for patent extensions
  o Federal reallocation of funds within the existing highway trust fund
Recommendations

• Public and private insurance systems should be mandated to pay the cost of health care services for beneficiaries participating in federally-supported clinical trials.

• The research and experimentation (R&E) tax credit should be made permanent and expanded to include research in clinical trials. The basic research credit, which applies to industry-academic research contracts, should be restructured as a flat credit at a 20 percent rate and enhanced with incentives to better encourage partnerships between industry and academic institutions.
Conclusions

• Biomedical research funding is cyclical but it will stabilize and likely improve

• A career in research is achievable and satisfying

• There are many people and organizations invested in the success of young investigators who will help

• Reaching out is the best way to find a helping hand