Introduction to Research

8-Week Course

Lecture 1
October 13, 2016

Betty Weiss, MBA
Office of Research Services
Department of Medicine

Office of Research Services (ORS)

Nasia Safdar, MD, PhD
Vice Chair for Research

Office of Research Services Contacts:
- Betty Weiss, MBA  Pre-award Grant Management/ Effort Coordinator
- Kelly Richie, BS, Compliance Officer
- Dana Coshenet, BA, Post-award Accountant
- Jinn-ing Liou, MS Data Analyst
What is Research?

• RESEARCH is an ORGANIZED and SYSTEMATIC way of finding answers to questions.

• The acquiring and disseminating knowledge.

• Research is a process of steps used to collect and analyze information to increase our understanding of a topic.

• It consists of three steps:
  • Pose a question,
  • collect data to answer the question, and
  • provide an answer to the question.

3 Types of Research

**Basic scientific research** is defined as fundamental theoretical or experimental investigative research to advance knowledge without a specifically envisaged or immediately practical application. It is the quest for new knowledge and the exploration of the unknown.

Often called or bench research—provides the foundation of knowledge for the applied science that follows. This type of research encompasses familiar scientific disciplines such as biochemistry, microbiology, physiology, and pharmacology, and their interplay, and involves laboratory studies with cell cultures, animal studies or physiological experiments.
3 Types of Research

**Translational research** applies findings from basic science to enhance human health and well-being. In a medical research context, it aims to "translate" findings in fundamental research into medical practice and meaningful health outcomes. Translational research implements a "bench-to-bedside", from laboratory experiments through clinical trials to point-of-care patient applications, model, harnessing knowledge from basic sciences to produce new drugs, devices, and treatment options for patients. The end point of translational research is the production of a promising new treatment that can be used with practical applications, that can then be used clinically or are able to be commercialized.

3 Types of Research

**Clinical research** is research with human subjects that is performed in a healthcare environment to test the safety and effectiveness of drugs, diagnostic tests, and devices that could be used in the detection, treatment, prevention or tracking of a disease.

1. Patient-oriented research where the PI directly interacts with the human subjects. (Excluded from this definition are in vitro studies that utilize human tissues that cannot be linked to a living individual).
   - mechanism of human disease
   - therapeutic interventions
   - clinical trials
   - development of new techniques
2. Epidemiological and behavioral studies
3. Outcomes research and health services
4 phases of Clinical Trials

There are 4 basic phases to a clinical trial. Each phase is performed sequentially to systematically study the drug or device.

**Phase I**: This is the first time the drug or device has been in humans and it is used on a small number of patients in low doses to see whether or not it is safe and what the side-effects may be. At this point, the clinicians are not trying to determine if the treatment works or not.

**Phase II**: In this phase, more patients are treated with the device or drug to test safety (because more side effects may be identified in a larger, more diverse population) and whether the drug or device is effective (in other words, does it work?).

**Phase III**: This is the phase that focuses on whether the drug or device is effective compared to what is typically already used to treat patients. It's used on a large group of people and “end points” like increase in survival or decrease in tumor size are used to evaluate its effectiveness.

**Phase IV**: These trials are done after the drug has gone to market to see if it works in various populations.

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I want to do Research

- RESEARCH requires money/funding
- Need to apply for grant funding
- Internal, agency and federal resources
- Start by searching for the right:
  - Mentor(s)
  - Collaborator(s)
  - Funding opportunities.
Where to start

Searching for Research Interests/finding a Mentor

- DOM: [http://www2.medicine.wisc.edu/home/research](http://www2.medicine.wisc.edu/home/research)
  Activities in DOM: Research Day (May), SWIFT Session (Oct), and Introduction to Research- course (Fall)
- SMPH:
  [http://www.med.wisc.edu/](http://www.med.wisc.edu/)
- University:
  [http://discoveryportal.org/default.aspx](http://discoveryportal.org/default.aspx)
- NIH-Career Resources:
  [http://grants1.nih.gov/training/resources.htm](http://grants1.nih.gov/training/resources.htm)
Welcome to Research in the Department of Medicine

OVERVIEW: The research faculty of the UW Department of Medicine has a strong history of research advancement. In addition to exciting new research endeavors, including the creation of a new translational research institute, many faculty members hold scientific leadership positions. They participate in the peer-review process for grants and manuscripts, teaching and mentoring, preparation of clinical guidelines, and in the writing of book chapters or review articles. Departmental research is especially strong in the areas of asthma, geriatrics, and cardiovascular medicine. For more details about the types of research within the department or by division please click on the links below:

- Basic Research
- Clinical Research by Special Topics
- Clinical Research by Division

http://www2.medicine.wisc.edu/home/research
University Links

- Office of Biological Safety (OBS)
- Health Sciences Institutional Review Board (HS-IRB)
- Research Animal Resources Center (RARC)
- Research and Sponsored Programs (RSP)
  - RSP's Frequently Needed Data
  - Training opportunities for working in WISPER and Cayuse are offered on a regular basis by
    Research and Sponsored Programs and through the Graduate School Seminar Series
  - RSP Rate Page
  - WISPER
  - Cayuse
  - ERC effort certification

- UW Graduate School
  - Outside Activities Disclosure
- UW Institute for Clinical & Translational Research (ICCTR)
  - Clinical and Translational Research Core (CTR Core)
  - Office of Clinical Trials (OCT)
- UW School of Medicine and Public Health
  - Research and Graduate Studies
  - Laboratory Animal Resources (LAR)
- William J. Middleton Memorial VA Hospital

NIH and Federal Grant Links

- Grants.gov
- National Institutes of Health
  - eRA Commons (NH)
    - eRA Commons Login
    - NIH Guide Funding Opportunities and Notices
    - NIH Guide to Grants and Contracts
      - SF424 Instructions (Electronic)
      - R01 forms and Instructions-new grant application (Paper)
      - R21 forms and Instructions-for progress reports (Paper and Electronic)
  - NIH Office of Extramural Support
  - NIH Frequently used links
  - CSR Study Section Roster
  - DMB Circular A-21
- National Science Foundation FastLane
- Centers for Disease Control
- Veteran’s Administration Office of Research (William J. Middleton VA office: 260-7007)
- REPORTER (REPORT Expenditures and Results)
### Researcher: Alan Attie

Molecular genetics of diabetes and insulin resistance  
Mechanisms by which B-cells sense glucose and trigger insulin secretion  
A novel gene responsible for biogenesis of insulin containing vesicles  
Tomosyn-2, a protein involved in insulin exocytosis  
Causal networks linking specific genes with diabetes phenotypes  
Mapping gene loci that contribute to diabetes and obesity  
Molecular biology of β-cell proliferation  
Cell biology of lipoprotein assembly  
Cholesterol trafficking

### Web Site  
[Alan Attie's University Web Page](#)

### Curriculum Vitae (CV)  
[Alan Attie's CV](#)

### Current/Active Funding  
- NIH, 2014-2019, The collaborative cross project of diabetes  
- Juvenile Diabetes Research Foundation, 2014-2015, Role of histone chaperone ASF1B in pancreatic beta-cell proliferation  
- WARF, 2014-2014, Accelerator Attie.DPP-4
https://www.rsp.wisc.edu/
## Frequently Needed Data

**University of Wisconsin-Madison Institutional Information**

<table>
<thead>
<tr>
<th><strong>Legal Name of Applicant</strong></th>
<th>The Board of Regents of the University of Wisconsin</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type of Institution</strong></td>
<td>The University of Wisconsin-Madison is a public, exempt under Section 170(c)1 of the IRS code.</td>
</tr>
<tr>
<td><strong>Institutional Address and Contact</strong></td>
<td>University of Wisconsin-Madison Research and Sponsored Programs 21 N. Park Street, Suite 6401 Madison, WI 53715-1218 608-262-3822 (Fax) 608-262-5111</td>
</tr>
<tr>
<td><strong>Employer Identification Number (EIN) and Federal Tax ID Number</strong></td>
<td>396006492</td>
</tr>
<tr>
<td><strong>Data Universal Numbering System (DUNS) Number</strong></td>
<td>161202122 - <a href="#">Copy of SAM Registration Validation</a></td>
</tr>
</tbody>
</table>

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## Signature Authority

| **Institutional Signature Authority Memo** | Kim Moreland  
Director of Research & Sponsored Programs  
608-262-3822 (Fax) 608-262-5111 |
| **Postaward Matters** | Signatures required for Financial Reports, Budget Revisions, No-Cost Extensions and otherwise provided by the terms and conditions of the award - [See FDP Information](#) |
| **Proposals** | - nih@rsp.wisc.edu  
- proposals - nsf@rsp.wisc.edu  
- other proposals - preaward@rsp.wisc.edu |
| **Other** |  
Jack Medina  
Associate Director Preaward Services  
dina@rsp.wisc.edu  
890-2539 / (Fax) 608-262-5111 |
| | Robert AndreSEN  
Associate Director Postaward Services  
randresen@rsp.wisc.edu  
608-262-2896 / (Fax) 608-262-5111 |
| | Bonniejean Zitske  
Assistant Director Postaward Services  
bzitske@rsp.wisc.edu  
608-262-9727 / (Fax) 608-262-5111 |
To get started:
Review the Competition

Thoroughly search the literature

Use reference databases (e.g. World of Knowledge, Science Citations Index, PubMed and Highwire, etc) Even Google!

List key words and individuals who have been important contributors to the science during the past 10 years.

http://highwire.stanford.edu/
How do I get grant funding?

More searching....

• For the Junior faculty:
  As I begin my road to independence where do I look for my first funding?
  ➢ Search Internally or VA funding
  ➢ Search Agencies or Foundations
  ➢ Search NIH (K awards, R03, R21 or new EIA)
  

Funding for your idea

• International Funding Agencies
• Federal Funding Agencies
• State funding Agencies
• National Organizations
• Local Organizations
• Foundations
• Commercial Sources (Industry)
Find the Agency that fits your Idea

- Funding your proposal should help the agency achieve its mission
- Know what the agency wants to fund.
- Your goals should be inline with the agency goals
- (NIH) Talk to the Program Officer (PO) early

Internal - Pilot funding

- DOM has an application process for $50,000 pilot funding to faculty
  http://www.medicine.wisc.edu/research/researchprivate
- PERC pilot-(once a year)- Next slides
- ICTR pilots- (twice a year)
  - Type 1 translational
  - Type 2 translational
  https://ictr.wisc.edu/FundingOpportunities
### SMPh - Wisconsin Partnership Program

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Community-Academic Partnership Fund</strong></td>
<td>Goal: To improve the health of communities through initiatives to plan and implement health policies, practices and interventions. Promotes exchange of expertise between community and academic partners to design, implement and evaluate community programs.</td>
</tr>
<tr>
<td><strong>Lifecourse Initiative for Health Families</strong></td>
<td>Goal: To eliminate disparities in birth outcomes among Wisconsin’s African Americans. Expands access to care, strengthens support networks and addresses social and economic inequities through collaboratives in Beloit, Kenosha, Milwaukee and Racine.</td>
</tr>
<tr>
<td><strong>Health Wisconsin Leadership Institute</strong></td>
<td>Goal: To build public and community health skills and leadership capacity throughout Wisconsin. Provides continuing education in leadership and the practical skills needed to lead community health improvement efforts.</td>
</tr>
<tr>
<td><strong>Wisconsin Population Health Service Fellowship</strong></td>
<td>Goal: To develop the next generation of public health practitioners skilled in planning, implementation and evaluation of public health programs. Places new public health professionals with community and academic partners to address public health challenges.</td>
</tr>
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</table>

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<tr>
<td><strong>New Investigator Program</strong></td>
<td>Goal: To support innovative research and/or educational approaches that address Wisconsin’s public health issues. Funds innovative proposals from new faculty, which may be leveraged for external funding.</td>
</tr>
<tr>
<td><strong>Collaborative Health Sciences Program</strong></td>
<td>Goal: To support novel ideas and new approaches to research and education. Funds collaborative projects that cross traditional boundaries of basic science, clinical science, social science, education, population health science and/or community practice.</td>
</tr>
<tr>
<td><strong>Targeted Education and Research Program</strong></td>
<td>Goal: To craft new approaches to health and health care issues in response to recognized or emerging needs. Makes major investments in research and education to address the state’s public health challenges.</td>
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## UW Graduate School

<table>
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<tr>
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<tr>
<td>Fall Competition</td>
<td>Available to faculty members and permanent principal investigators. Research committee priorities are assisting junior faculty in strengthening research programs, provide insurance against applications for extramural funding, particularly those involving support for graduate students, support creative research and scholarship on campus, open new research areas, foster innovative interdisciplinary research that integrates information, data, techniques, tools, perspectives, concepts, and/or theories from two or more disciplines or bodies of specialized knowledge.</td>
</tr>
<tr>
<td>Vilas Associate</td>
<td>Open to tenure-track and tenured faculty. Recognizes new and on-going research of the highest quality and significance. Winners receive up to two-ninths of research salary support (including the associated fringe costs) for both summers 2014 and 2015, as well as a $12,500 flexible research fund in each of the two fiscal years.</td>
</tr>
<tr>
<td>WARF Named Professorship</td>
<td>Provides recognition for distinguished research contributions of the UW-Madison faculty. The awards are intended to honor those faculty who have made major contributions to the advancement of knowledge.</td>
</tr>
<tr>
<td>Kellett Mid-Career</td>
<td>Comparable in amount and competitiveness to the Romnes Faculty Fellowships and the WARF Professorships, but intended to recognize and support mid-career faculty, 7 to 20 yrs past their first promotion to a tenured position. The Mid-Career award was created to provide needed support and encouragement to faculty at a critical stage of their careers.</td>
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<tr>
<td>Romnes Faculty</td>
<td>Funded by WARF in recognition of the leadership of the late WARF Trustee President H. I. Romnes, is designed to bridge the gap between the Research Committee’s initial research support for new faculty and the Mid-Career Award for Faculty Research. This award is intended to recognize and support faculty up to SIX years past their first promotion to a tenured position.</td>
</tr>
<tr>
<td>Conference Travel</td>
<td>Available only to tenured or tenure track UW-Madison faculty and academic staff with permanent PI status. It is not the Committee's intent to provide 100% of the expenses but rather to assist by defraying part of the cost of attending.</td>
</tr>
<tr>
<td>Robert Draper</td>
<td>Faculty members or academic staff eligible. Provides a mechanism to support the additional research often necessary to bring new concepts and inventions to the patent and licensing stage. The program goal is the eventual introduction of new products and processes into the market place for the public good. Funds can be used to support efforts to enhance the scope or patentability of inventions and assist with their potential licensing to the commercial sector. Examples of research activities include prototype development, preparation of samples for evaluation, and application testing.</td>
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[http://www.grad.wisc.edu/research/researchfunding/index.html](http://www.grad.wisc.edu/research/researchfunding/index.html)
UW-Madison Vilas Life Cycle Professorships

- Applications processed through the Women in Science & Engineering Leadership Institute (WISELI) and the Office of the Provost.
- Provide funds to faculty and non-emeritus permanent PIs at the University of Wisconsin-Madison who are at critical junctures in their professional careers and whose research productivity has been directly affected by personal life events (e.g., illness of a dependent, parent, spouse/partner, or oneself; complications from childbirth; combination of major life events).
- Awards capped at $30K.
- Bi-annual submission of applications.
- For more information: http://wiseli.engr.wisc.edu/vilas.php

UW-Madison WARF

- The WARF Accelerator Program is an information and funding program for high potential technologies assigned to WARF that need specific development to enhance licensing.
  - http://www.warf.org/home/for-uw-inventors/accelerator-program/accelerator-program.cmsx
  - There is no application process nor funding cycle. WARF proactively identify projects, and anyone is welcome to ask to meet with their licensing person about an idea they have for Accelerator Funding.
- WARF also assists with the Grad School with Robert Draper Technology Innovation Fund (TIF) grants.
  - http://www.grad.wisc.edu/research/researchfunding/tif.html
  - The Draper Technology Innovation Fund (TIF) provides a mechanism to support the additional research often necessary to bring new concepts and inventions to the patent and licensing stage. The program goal is the eventual introduction of new products and processes into the market place for the public good. Deadlines in 2013-14: July 29, 2013; October 28, 2013; January 27, 2014; April 28, 2014
- In general, WARF funds faculty research in many more ways through the Grad School.
UW2020: WARF Discovery Initiative

The goal of UW2020 is to stimulate and support highly innovative and groundbreaking research at the University of Wisconsin-Madison over the next five years. This initiative seeks to fund research projects that have the potential to fundamentally transform a field of study as well as projects that require significant development prior to the submission of applications for external funding. This initiative seeks to support research projects that are high-risk, high-impact, and transformative as well as those that require the acquisition of shared instruments or equipment that will open new avenues for innovative and significant research.

- Application instructions
- Deadlines for submission
- Criteria used to evaluate proposals
- Criteria for evaluating UW2020 equipment and instrumentation proposals
- Review process for UW2020 proposals

Internal links to Searching Tools

- Links on DOM Website
  http://www2.medicine.wisc.edu/home/research/grantresources

- Link to CALS tools
  https://research.cals.wisc.edu/funding-opportunities/funding-search-tools/

- Links on RSP Website
  http://www.rsp.wisc.edu/preaward/index.html

**What is important is finding a program/agency that wants to fund what you want to do!!**
Finding Funding
Updated: December 22nd, 2015

It is up to the individual researcher to identify any restrictions, determine eligibility, etc. before submitting a proposal.

UW-Madison subscribes to these resources for locating funding:

<table>
<thead>
<tr>
<th>Resource</th>
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<tbody>
<tr>
<td>GrantForward (Formerly Illinois Research Information Services (IRIS))</td>
<td>The GrantForward Funding Opportunities database contains records for over 9,000 federal and non-federal funding opportunities in the sciences, social sciences, arts and humanities</td>
</tr>
<tr>
<td>InfoEd/SPIN</td>
<td>InfoEd/SPIN is a database of over 40,000 funding opportunities from more than 10,000 global sponsors</td>
</tr>
<tr>
<td>PIVOT (Formerly Community of Science (COS))</td>
<td>PIVOT provides global and local connections that strengthen research by exploring new avenues for funding and collaboration</td>
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</table>

UW Funding Sources:

<table>
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<tr>
<td>CALS Research Division Opportunities</td>
<td>CALS maintains a database of over 600 funding opportunities</td>
</tr>
<tr>
<td>ICTR</td>
<td>UW Institute for Clinical and Translational Research</td>
</tr>
<tr>
<td>UW-Madison Memorial Library Grants Information Center</td>
<td>An easy to use, comprehensive website for funding opportunities</td>
</tr>
<tr>
<td>UW-Madison VORGE</td>
<td>Programs with limited UW submission</td>
</tr>
<tr>
<td>UW-Madison School of Medicine</td>
<td>Active in all aspects of basic, clinical, translational and public health</td>
</tr>
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</table>

Funding Opportunities

Funding Search Tools

- UW-Madison Opportunities
- Non-Federal Opportunities
- Federal Opportunities
- Other Search Tools

UW-Madison Opportunities

- CALS Funding Opportunities
- List of fellowships and grants typically offered annually by the College of Agriculture and Life Sciences
- UW-Madison Graduate School
Weekly NIH Funding Opportunities and Notices
NIH Guide for Grants and Contracts
October 10, 2015

Table of Contents (TOC)

Notices
- OMB Clarifies Guidance on the Dual Role of Student and Postdoctoral Researchers
  (NOT-OD-15-007) Office of the Director, NIH
- Request for Information (RFI): Physician-Scientist Specific Grant Program to Facilitate the Transition From Training to Independence
  (NOT-OD-15-008) Office of the Director, NIH

Requests for Applications
- Vascular Dysfunction in the Pathogenesis of Severe Malaria (R01)
  (RFA-HL-15-023) National Heart, Lung, and Blood Institute
  Application Receipt Date(s): February 13, 2015
- System-Level Health Services and Policy Research on Health Disparities (R01)
  (RFA-MD-15-001) National Institute on Minority Health and Health Disparities
  Application Receipt Date(s): January 20, 2015

Program Announcements
- Administrative Supplement for the NIBIB Research Education Programs for Residents and Clinical Fellows (Admin Supp)
  (PA-15-005) National Institute of Biomedical Imaging and Bioengineering
  Application Receipt/Submission Date(s): March 16, 2015; March 15, 2016; March 15,

To Subscribe to the NIH Guide LISTSERV, send an e-mail to listserv@list.nih.gov
with the following text in the message body (not the ‘Subject’ line):

  subscribe NIHTOC-L your name
Example: subscribe NIHTOC-L Bill Jones

Additional databases

Search databases for existing grants:

Federal agencies have specific search engines (RePorter)

Other engines can search all federal agencies:
enGrant Scientific
http://www. engrant.com/index.html

Science Accelerator
http://www.osti.gov/federal
Where can I get help?

- **Divisions** - Division Administrator, first line of contact
- **Department** - Betty Weiss for Research/grant needs in particular pre-award issues, Kelly Richie for compliance and Dana Coshenet for post award problems
- **School Level** - Debbie Meltzer or Christy Schultz
- **Others** - Special services: ICTR (CTSA grant), CRU, OCT, IRB, RARC etc.
- **VA** - Nasia Safdar and her staff at the Research Office at: 280-7007

Searching Summary

- Before you start planning any grant do a complete literature search for what is already published on your topic.

- Do some homework to find out what is the level of interest by other foundations, agencies or NIH institutes on your topic.

- Match up your interests with the mission of the agency.
Federal Grants

15 Executive Departments

- Department of Agriculture (USDA)
- Department of Commerce (DOC)
- Department of Defense (DOD)
- Department of Education (ED)
- Department of Energy (DOE)
- Department of Health and Human Services (DHHS)
- Department of Homeland Security (DHS)
- Department of Housing and Urban Development (HUD)
- Department of Justice (DOI)
- Department of Labor (DOL)
- Department of State (DOS)
- Department of the Interior (DOI)
- Department of the Treasury
- Department of Transportation (DOT)
- Department of Veterans Affairs (VA)
NIH in 2016

One agency of 11 within U.S. Department of Health and Human Services (DHHS)

Comprises 27 Institutes and Centers (IC)

National Institutes of Health

Mission: NIH seeks 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.
NIH Organizational Structure

Office of the Director (OD)

National Institute on Aging
National Institute on Drug Abuse
National Institute of Arthritis and Musculoskeletal and Skin Diseases
National Institute of Dental and Craniofacial Research
National Institute of General Medical Sciences
National Center on Minority Health and Health Disparities
National Institute on Deafness and Other Communication Disorders
National Heart, Lung, and Blood Institute
National Human Genome Research Institute
National Center for Complementary and Alternative Medicine
Fogarty International Center
National Institute of Neurological Disorders and Stroke
National Institute of Mental Health
National Library of Medicine
National Institute of Allergy and Infectious Diseases
National Institute of Diabetes and Digestive and Kidney Diseases
National Institute of Child Health and Human Development
National Institute of Environmental Health Sciences
National Eye Institute
No funding authority

NIH Clinical Center
Center for Information Technology
Center for Scientific Review

NIH Supports 300,000 scientists and research staff at 2,500 Institutions
NIH Grant Statistics
Fiscal Year 2015

- 62,736 grant applications reviewed (research project grants) (10K less than 2014)
- 9,540 new grant applications funded (~600 less)
- 18.3% overall success rate (down from 20%)
- Total Funding: $4.3 Billion dollars
NIH OFFICES

NIH Office of the Director (OD)
The Office of the Director is the central office at NIH for its 27 Institutes and Centers. The OD is responsible for setting policy for NIH and for planning, managing, and coordinating the programs and activities of all the NIH components. OD’s program offices include the Office of Aids Research and the Office of Research on Women's Health, among others. More about the OD.

NIH INSTITUTES

National Cancer Institute (NCI) - Est. 1937
NCI leads the national effort to eliminate the suffering and death due to cancer. Through basic and clinical biomedical research and training, NCI conducts and supports research that will lead to a future in which we can prevent cancer before it starts, identify cancers that develop at the earliest stage, eliminate cancers through innovative treatment interventions, and biologically control those cancers that we cannot eliminate or that become manageable, chronic diseases. More about NCI.

National Institute of Allergy and Infectious Diseases
Leading research to understand, treat, and prevent infectious, immunologic, and allergic diseases.

Get the Drift
NIAID animation explains the ever-changing nature of influenza viruses.

Health and Research Topics A to Z
- Antiviral (Drug) Resistance
- Bioterrorism and Related Programs
- Foot and Mouth
- Global Research
- HIV/AIDS
- Influenza (Flu)
- Immune System
- Malaria
- Sexually Transmitted Diseases
- Tuberculosis

News & Events
NIH-Funded Study to Test Pneumococcal Vaccine in Older Adults—Oct 15, 2012
Media Availability: In Heterosexuals, Transmitted HIV Strains Often Resemble Original Infecting Virus—Sept 30, 2012
The Mission

About NIDA

Mission

NIDA's mission is to lead the Nation in bringing the power of science to bear on drug abuse and addiction. This charge has two critical components: the first is the strategic support and conduct of research across a broad range of disciplines. The second is ensuring the rapid and effective dissemination and use of the results of that research to significantly improve prevention, treatment and policy as it relates to drug abuse and addiction.

Overview

- Milestones
- Director's Page
- Getting to NIDA
- Donations to NIDA

Organization

- Office, Divisions, Programs, Centers
- Office of the Director
- AIDS Research Program
- International Program
- Special Populations

Budget, Planning, and Legislative Activities

- Congressional Justification
- Strategic Plan

Advisory Boards and Groups

- National Advisory Council on Drug Abuse
- Initial Review Group (IRG)

Working at NIDA

- Employment Opportunities

Ongoing Initiatives:

- Roadmap for Research
- NIH Blueprint

See Also:

- NIDA’s Publication Series:
  - InfoFacts
  - fact sheets on drugs
  - Research Reports

Research:

- Research Information
- Clinical Trials
- Data and Resources

Under his leadership, Dr. Varmus will guide the National Cancer Institute in leveraging its unique role in the National Cancer Program toward the following shared ambitions:

- Provocative Questions — The Provocative Questions Initiative seeks to answer some of the 24 intriguing questions posed in the Initiative RFA by stimulating the research community to use laboratory, clinical, and population sciences in especially effective and imaginative ways that harness recent scientific advances and an increased understanding of the bases of cancer.

- Molecularly-Informed Cancer Control — Incorporating molecular understanding of cancer into cancer control is seen as an opportunity to see a profound revolution in epidemiology by defining cancers by genetic subsets, and the NCI will work to incorporate this understanding broadly.

- Global Health — The Institute seeks to more fully integrate research on cancer into this country's global health initiatives, meaning not simply treating more people in poor countries for cancer, but also improving the traditional epidemiology by which researchers determine which cancers are most common in which countries, broadening the strategies for prevention in developing countries, and identifying opportunities and the means for affordable treatment.

- Precision Medicine — Cancer constitutes a complex set of diseases, and providing the best available care for individual patients requires access to a great deal of information about each patient and the specific variation of cancer with which they are diagnosed. By funding and conducting research that leads to a more thorough understanding of the underlying mechanisms of disease and how these mechanisms function in a wide range of situations, NCI’s partners working in clinical settings will have access to an even greater amount of information that they can begin to apply to clinical care.

- Clinical Trials — The Institute is engaged in many efforts to improve the speed and efficiency of the design, launch, and conduct of clinical trials, incorporate innovative science and trial design into cancer clinical trials, improve prioritization, selection, support, and completion of clinical trials; and

I'd like to think we could improve the perception of the culture of science, by emphasizing some of the things we do at the NCI that reflect a strong commitment to collaboration. — by enforcing the idea that we are sharing our data and our resources and promoting open access to published work.

— Harold E. Varmus, MD — July 27, 2011
NIH-Funding Opportunities

Types of Funding Opportunity Announcements (FOA)

- Parent Announcements
- IC-Specific Program Announcements (PA)
- Requests for Applications (RFA)

Summary of NIH Terms

The following chart may help you identify the type of funding opportunity announcement that is right for your research. Scroll down for tips from the Experts.

<table>
<thead>
<tr>
<th>Type of Funding Opportunity Announcement</th>
<th>Receipt Date</th>
<th>Money Set Aside</th>
<th>Peer Review</th>
<th>Specificity of Topic</th>
<th>Advantage to Applicant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parent Announcements</td>
<td>Standard receipt dates, usually open for three years</td>
<td>None</td>
<td>In Center for Scientific Review (CSR) or in an IC, by one of many review committees</td>
<td>Non-specific, investigator-initiated &quot;unsolicited&quot; research. Not all ICs participate in all parent FOAs.</td>
<td>May submit any topic within the bounds of the NIH mission. Competition tied mainly to an IC's overall payline</td>
</tr>
<tr>
<td>IC-Specific Program Announcements (PA)</td>
<td>Standard receipt dates, usually open for three years</td>
<td>No set asides (unless PAS); high-priority applications may be funded beyond the payline</td>
<td>In CSR or in an IC, by one of many review committees (unless PAS)</td>
<td>Often broadly defined or a reminder of a scientific need; investigator-initiated &quot;unsolicited&quot; research</td>
<td>Competition tied mainly to the IC's overall payline</td>
</tr>
<tr>
<td>Request for Applications (RFA)</td>
<td>Single</td>
<td>Specifies funds and targets number of awards</td>
<td>Usually in IC, but sometimes in CSR. Same review committee for all applications. Usually reviewed by a Scientific Review Group, called a Special Emphasis Panel (SEP).</td>
<td>NIH-Requested Research; Well-defined scientific area</td>
<td>Competition depends on number of applicants and deliberated set aside</td>
</tr>
</tbody>
</table>
### Overview Information

<table>
<thead>
<tr>
<th>Funding Organization(s)</th>
<th>National Institutes of Health (NIH)</th>
</tr>
</thead>
</table>
| Institutions of Participating Institutions | National Cancer Institute (NCI)  
National Eye Institute (NEI)  
National Heart, Lung, and Blood Institute (NHLBI)  
National Institute on Aging (NIA)  
National Institute of Alcohol Abuse and Alcoholism (NIAAA)  
National Institute of Allergy and Infectious Diseases (NIAID)  
National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS)  
National Institute of Biomedical Imaging and Bioengineering (NIBIB)  
Nirce Kennedy Shriver National Institute of Child Health and Human Development (NICHD)  
National Institute of Dental and Craniofacial Research (NIDCR)  
National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK)  
National Institute of Drug Abuse (NIDA)  
National Institute of Environmental Health Sciences (NIEHS)  
National Institute of General Medical Sciences (NIGMS)  
National Institute of Mental Health (NIMH)  
National Institute of Neurological Disorders and Stroke (NINDS)  
National Center for Complementary and Alternative Medicine (NCCAM)  
Office of Dietary Supplements (ODS) |

**Special Note:** Applicants are reminded that not all NIH Institutes and Centers (IC) participate in this program, and that a liberal IC staff to IC staff level of program administration is encouraged. The participating ICs have different emphasis requirements for this program. Therefore, a prospective applicant is urged to consult the Table of IC Specific Information and Staff Contacts to determine whether the planned research and training falls within the mission of one of the participating ICs.

### Opportunity Title

<table>
<thead>
<tr>
<th>Mentor Type</th>
<th>Mentored Clinical Scientist Research Career Development Award (Parent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Code</td>
<td>USB Clinical Investigator Award (CA)</td>
</tr>
<tr>
<td>Years Involved</td>
<td>Review of 9/15/99</td>
</tr>
</tbody>
</table>
### Application Activity Org Serial
<table>
<thead>
<tr>
<th>Type Code</th>
<th>Code</th>
<th>Number</th>
<th>Grant Year</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>R01</td>
<td>CA</td>
<td>12921(9)</td>
<td>-04</td>
</tr>
</tbody>
</table>

- **Application Type Code** - A single-digit code identifying the type of application received and processed. In the example above, the “3” indicates this is a supplement. (“1”=New, “5”=non-competing continuation)
- **Activity Code** (Also referred to as an Instrument Code) - A three-digit code identifying a specific category of extramural activity (R=Research).
- **Organizational Code** (Also referred to as an IC Code) - A two-letter code identifying the first major-level subdivision. In the example above, “CA” refers to the National Cancer Institute.
- **Serial Number** - A five-digit number generally assigned sequentially to a series within an Institute, Center, or Division. Currently the National Cancer Institute is the only IC using the six-digit serial number.
- **Suffixes** - A field composed of the following components:
  - **GRANT YEAR** - A two-digit number indicates the actual segment or budget period of a project. The grant year number (01, 02, etc.)
  - **SUPPLEMENT** - The letter "S" and related number identify a particular supplemental record; e.g., S1, S2.
  - **AMENDMENT** (Resubmission = New field name in Grants.gov) - The letter "A" and related number identify each amended application e.g., A1.

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**Vocabulary**

NIH/Research has its own acronyms and technical terms—see:

- **CALS website:**
  [http://research.cals.wisc.edu/resources-training/acronyms/](http://research.cals.wisc.edu/resources-training/acronyms/)

- **NIH website:**
Sponsored projects are research, training, instructional, or outreach/public service projects involving funds, materials, other forms of compensation, or exchanges of in-kind efforts from sources external to UW under awards or agreements.

Ex: Grants, Research Contracts, Cooperative Agreements, MTAs, Confidentiality (Non-disclosure) Agreements, etc.
Glossary: “Principal Investigator”

An individual designated to direct the project or activity being supported by the grant.

He or she is responsible and accountable to the university and the sponsor for the proper conduct of the project or activity.

Faculty automatically have PI status.

Glossary: “Key Personnel”

The PI and other individuals (Co-Investigators = Collaborators) who contribute to the scientific development or execution of a project in a substantive, measurable way, whether or not they receive salaries or compensation under the grant.

2 PI’s on same grant are referred to as multiple PI’s.

Consultants (are from other universities) also may be considered key personnel if they meet this definition or OSC (Other Significant Contributor) internally.
Register with NIH via eRA Commons

- eRA Commons is an online interface where grant applicants, grantees and federal staff at NIH and grantor agencies can access and share administrative information relating to research grants.
- eRA Commons users, based on their role, can conduct a variety of business in Commons, including:
  - Track the status of their grant applications through the submission process, view errors and/or warnings and check the assembled grant image.
  - View summary statements and score letters following the initial review of their applications.
  - View notice of award and other key documents.
  - Submit Just-in-Time information (SO only) requested by the grantor agency prior to a final award decision.
  - Submit the required documentation, including the Financial Status Report and final progress report, to close out the grant.
  - Submit a No-Cost Extension notification (SO only) that the grantee has exercised its one-time authority to extend without funds the final budget period of a project period of a grant.
  - Submit a streamlined annual progress report electronically, using the RPPR process.

- To request a Commons ID contact: Debbie Meltzer at: dmeltzer@wisc.edu
# Types of Grants

## Know which kind of grant is right for you!

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>R01</strong></td>
<td>Individual Res Project</td>
<td><strong>F series</strong>- Ind Fellowships</td>
<td></td>
</tr>
<tr>
<td><strong>R03</strong></td>
<td>Small research Grant (100K)</td>
<td><strong>K series</strong>- Research Career Development</td>
<td></td>
</tr>
<tr>
<td><strong>R13</strong></td>
<td>Conferences</td>
<td><strong>K99/R00</strong> – Pathway to Independence Award</td>
<td></td>
</tr>
<tr>
<td><strong>R21</strong></td>
<td>Development Awards (275K/2 years)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>R43</strong></td>
<td>Small Business Innov Res 1</td>
<td><strong>P01 or P50</strong> – Program Project Grant (PRG)</td>
<td></td>
</tr>
<tr>
<td><strong>R44</strong></td>
<td>Small Business Innov Res II</td>
<td><strong>U series</strong> - contracts</td>
<td></td>
</tr>
</tbody>
</table>

To search for all types of grant programs: [http://grants.nih.gov/grants/funding/funding_program.htm](http://grants.nih.gov/grants/funding/funding_program.htm)
Research grants

NIH Research Project Grant Program (R01)
- Used to support a discrete, specified, circumscribed research project
- NIH’s most commonly used grant program
- No specific dollar limit unless specified in FOA
- Advance permission required for $500K or more (direct costs) in any year
- Generally awarded for 3–5 years
- All ICs utilize
- See parent FOA: PA-16-160

NIH Small Grant Program (R03):
- Provides limited funding for a short period of time to support a variety of types of projects, including: pilot or feasibility studies, collection of preliminary data, secondary analysis of existing data, small, self-contained research projects, development of new research technology, etc.
- Limited to two years of funding
- Direct costs generally up to $50,000 per year
- Not renewable
- Utilized by more than half of the NIH ICs
- See parent FOA: PA-16-162

NIH Support for Conferences and Scientific Meetings (R13 and U13)
- Support for high quality conferences/scientific meetings that are relevant to NIH’s scientific mission and to the public health
- Requires advance permission from the funding IC
- Foreign institutions are not eligible to apply
- Award amounts vary and limits are set by individual ICs
- Support for up to 5 years may be possible
- See parent FOA: PA-16-204

NIH Clinical Trial Planning Grant (R34) Program
- Designed to permit early peer review of the rationale for the proposed clinical trial and support development of essential elements of a clinical trial
- Usually project period of one year, sometimes up to 3
- Usually, a budget of up to $100,000 direct costs, sometimes up to $450,000
- Used only by select ICs; no parent FOA
Research grants

NIH High Priority, Short-Term Project Award (R56)
- Will fund, for one or two years, high-priority new or competing renewal R01 applications with priority scores or percentiles that fall just outside the funding limits of participating NIH Institutes and Centers (IC). Investigators may not apply for R56 grants.

Research Project Cooperative Agreement
- Supports discrete, specified, circumscribed projects to be performed by investigator(s) in an area representing their specific interests and competencies
- Used when substantial programmatic involvement is anticipated between the awarding Institute and Center
- One of many types of cooperative agreements
- No specific dollar limit unless specified in FOA

NIH Pathway to Independence (PI) Award (K99/R00)
- Also see, New Investigators Program web page
- Provides up to five years of support consisting of two phases
  - I - will provide 1-2 years of mentored support for highly promising, postdoctoral research scientists
  - II - up to 3 years of independent support contingent on securing an independent research position
- Award recipients will be expected to compete successfully for independent R01 support from the NIH during the career transition award period
- Eligible Principal Investigators include outstanding postdoctoral candidates who have terminal clinical or research doctorates who have no more than 5 years of postdoctoral research training
- Foreign institutions are not eligible to apply
- PI does not have to be a U.S. citizen
- See parent FOA: PA-16-193
Program grants

Research Program Project Grant

- Support for integrated, multi-project research projects involving a number of independent investigators who share knowledge and common resources
- Each project contributes or is directly related to the common theme of the total research effort, thus forming a system of research activities and projects directed toward a well-defined research program goal
- Specific dollar limit unless specified in FOA

Specialized Center

- To support any part of the full range of research and development from very basic to clinical
- May involve ancillary supportive activities such as protracted patient care necessary to the primary research or R&D effort.
- The spectrum of activities comprises a multidisciplinary attack on a specific disease entity or biomedical problem area.
- Receive continuous attention from staff funding IC.
- Centers may serve as regional or national resources for special research purposes.

Research Training and Career Awards

- Training Grants – T32
  - Institutional
  - Predoctoral and Postdoctoral
  - K awards – K08, K23 and KL2
- Fellowships – F
  - Individual
    - Predoctoral – F31
    - Postdoctoral – F32
Purpose of NIH (K) Career Development Programs

To help ensure that a diverse pool of highly trained scientists are available in adequate numbers and in the appropriate research areas to address the Nation's biomedical, behavioral, and clinical research needs.

Mentored K Awards: Which One?
K01: Research Scientist Award (PhD)

- Provides an intensive, mentored research experience
- Candidates normally must have a research or health professional doctorate & postdoctoral experience
- Not an extension of postdoctoral training
- Varied and limited NIH IC participation
  - Some ICs use for re-entry
  - Some ICs use to pursue new research area
- Requires plan for independence
K08: Clinical Scientist Award

- Supervised research experience for individuals with health professional degree who are committed to a career in laboratory or field-based research
- Phased award period
  - “hands-on” research experience
- Can support non-patient-oriented research

K23: Patient-Oriented Research

- 3-5 yrs supervised study & research for clinically trained professionals with a commitment to focus research on patient-oriented research (POR)
- POR is defined as research conducted with human subjects (or material of human origin such as tissues, specimens)
- Requires clinical doctorate or equivalent
- Must have completed clinical training, (including sub-specialty if applicable) prior to award
K12: Institutional research Scientist Award (now KL2-CTSA)

- Enhance research career development for individuals, selected by the institution, who are training for careers in specified research areas
- Provides institutions with a greater capacity for mentoring junior investigators
- Not transferable to another institution
- Usually solicited by a Funding Opportunity Announcement (FOA)

NIH Training and Career Development Timetable

**Approx. Stage of Research Training and Development**

**Activity Codes**

- Predoctoral Institutional Training Grant (T32)
- Predoctoral Individual NRSA (F31)
- Predoctoral Individual MD/PhD NRSA (F30)
- Postdoctoral Institutional Training Grant (T32)
- Postdoctoral Individual NRSA (F32)
- NIH Pathway to Independence (PI) Award (K99/R00)
- Mentored Research Scientist Development Award (K01)
- Mentored Clinical Scientist Development Award (K08)
- Mentored Patient-Oriented RCDA (K23)
- Mentored Quantitative RCDA (K25)
- Independent Scientist Award (K02)
- Midcareer Investigator Award in Patient-Oriented Research (K24)
- Senior Scientist Award (K05)
When Preparing an Application

- Read instructions
- Clearly state rationale and design of proposed investigation
- Provide sufficient detail so reviewers will know what you mean
- Refer to pertinent literature
- Include well-designed tables and figures
- Present an organized, lucid write-up
- Obtain pre-review from faculty at your institution

NIH Grant Writing Tips
http://grants.nih.gov/grants/grant_tips.htm

Who Makes Actual Funding Decisions?

**The Institute Director**
(aka Program Officer)!

**Email him/her early and often to learn what they are willing to fund!**

Factors Considered:
- Scientific Merit
- Contribution to Institute Mission
- Program Balance
- Availability of Funds
Take home message

- Review the literature
- Know what’s funded in your area
- Learn the mission of the agency you want to submit to
- Know your audience
- Know your reviewers

Thank you!