Non-NIH Funding, FINDing Grants, and Aligning Your Research Interests with Organizations’ Funding Priorities

PANEL PRESENTATION
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The Foundation Grant Proposal & Tips for Success

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Ever feel like finding funding for your research is more work than actually doing the research??
Foundation Awards: Things to Consider

- Often focused on advancing research into a particular disease
- Very interested in supporting young investigators
- Looking for *Impact* and *Return on Investment*
- Opportunity to forge a long-term relationship
- Many foundation awards carry prestige and can enhance recognition in your field
Tips for Proposals to Foundations

*Do your Research*

&

*Play by the rules*

- Write to the mission of the foundation; review past funding
- Research your reviewer audience
- Contact the foundation ahead of time to discuss your proposal
- Cultivate a relationship with an expert in your field as a reference
- Read directions carefully, verify eligibility
- Keep an eye on deadlines, LOIs
Tips for Proposals to Foundations

*Sell your idea*

&

*Stand out among others*

- Explain how the funding will impact your field of interest
- Highlight how the award will impact your future development
- Don’t take “training opportunities” for granted
- Remember to cite support in your manuscripts and posters
- Write a thank you letter
Where Can I find Funding Opportunities?

- **Community of Science**: [www.cos.com](http://www.cos.com)
- **Research Research**: [www.researchresearch.com](http://www.researchresearch.com)
  - Institutional subscription
  - Funding for all disciplines
  - Federal, corporate and foundation funding
  - National and international opportunities
  - Customized “push”
- **FIND grants**: [www.mc.vanderbilt.edu/findgrants](http://www.mc.vanderbilt.edu/findgrants)
  - In-house built and maintained
  - Tailored to biomedical research at VUMC
  - No federal opportunities
  - Minimum award: $35K
  - Email alerts available
Thank you!

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Basic science funding opportunities from the American Heart Association

AHA ‘vision statement’:
The AHA will be the premier cardiovascular and stroke influencing agent for developing and funding early career investigators…the association will endorse and support multidisciplinary and collaborative models; undertake high-risk, high-reward research; actively balance basic, clinical, population and translational research…

AHA funding programs of interest:
- Predoctoral fellowship ($25k/yr for 2 yr)  Graduate student
- Postdoctoral fellowship ($42k/yr for 2 yr)
- Scientist development grant ($77k/yr for 4 yr)
- Grant-in-aid ($83k/yr for 2 yr)  PI

AHA currently funds about 2,100 scientists around the United States

AHA is second only to the federal government in funding cardiovascular and stroke research

Applications compete on a national-level, but are funded through regional affiliates (we are in the Greater Southeast Affiliate)
The Tyska Laboratory

Multi-scale investigations of the actin cytoskeleton and its associated motor proteins
The brush border

Our biological context: the small intestine!

The brush border is one of the most elaborate actin arrays observed in nature.
Our biological context: the small intestine!

The gut epithelium has two principle functions:
(1) Nutrient processing/transport
(2) Barrier function
Discovering a novel aspect of gut function…

The brush border releases small vesicles enriched in host defense enzymes into the gut lumen…these enzymes *detoxify* bacterial compounds such as LPS.

Shifrin et al., *submitted to Curr Biol*, 2011
Is this appropriate material for an AHA grant application?

One afternoon on PubMed reveals a link between bacterial toxins in the gut and the pathophysiology of chronic heart failure...

The emerging role of the gut in chronic heart failure
Anja Sandek, Mathias Rauchhaus, Stefan D. Anker and Stephan von Haehling

Is this appropriate material for an AHA grant application?

Is there any connection? 

Yes!

The effort to make a connection with cardiovascular disease pays off:

**Tyska lab AHA funding track record**

- **2008**
  - 2 Predoctoral fellowships (McConnell, Benesh)
  - 1 Postdoctoral fellowship (Nambiar)

- **2009**
  - 1 Grant-in-aid (Tyska)

- **2010**
  - 1 Predoctoral fellowship (Shifrin)

- **2011**
  - 1 Predoctoral fellowship (Mazerik)
  - 1 Postdoctoral fellowship (Crawley)
UNCF-Merck, diversity awards, pilot funding

Dr. AJ Baucum
Diversity Fellowships and Awards

• Goal = improve the diversity of the research workforce
• Eligibility varies (read the Program Announcement!)
• Usually includes individuals from underrepresented (in science) racial/ethnic groups, individuals with disabilities, and individuals from disadvantaged backgrounds
• Examples
  – predoctoral: some F31 NRSAs, Ford Foundation, UNCF-Merck
  – postdoctoral: UNCF-Merck, NSF Minority Postdoctoral Research Fellowships, Ford Foundation
  – Career Development: some NIH K01/K22 awards
  – All levels: diversity supplements for NIH research awards
    • May require at least 18 months left on the PIs R01
  – Travel awards: Carl Storm Gordon Conference, AACR, SACNAS
UNCF Merck Fellowship

• Usually about 2 pages long (short)
• Want to know how you will be a good fit for the fellowship program
• Paired with a MERCK mentor who can help you during the fellowship and after
  – Don’t have to be interested in a career in industry
  – In my case was a person doing proteomics who I occasionally ask for advice and have gone to a short course led by him
• Increasing the community of African American/Black scientists
Pilot Funds/Transition Awards

• Not Necessarily Minority Based
• NARSAD – Brain & Behavior Research Foundation
• Internal Funding
  – Hobbs discovery grant (Kennedy Center)
  – Pilot Funding (Digestive Disease Research Center)
  – [http://vanderbilt.edu/oor/funding/internal-research-grants/](http://vanderbilt.edu/oor/funding/internal-research-grants/)
  – Vanderbilt Institute for Clinical and Translational Research (VICTR)
    • [https://starbrite.vanderbilt.edu/funding/fundingcriteria.html](https://starbrite.vanderbilt.edu/funding/fundingcriteria.html)
National Science Foundation
Human Frontier Science Program

Dr. M. Shane Hutson
NSF Vision:
Advancing discovery, innovation, and education beyond the frontiers of current knowledge, and empowering future generations in science and engineering.

NSF in a Nutshell

- Independent Agency
- Supports basic research & education
- Uses grant mechanism
- Low overhead; highly automated

- Discipline-based structure
- Cross-disciplinary mechanisms
- Use of Rotators/IPAs
- National Science Board

www.nsf.gov
BIO is one directorate among many at NSF.
Biological research funded by NSF is explicitly non-medical.
Within the BIO directorate . . .

**Division of Biological Infrastructure (DBI)**

Empowering biological discovery

**Division of Environmental Biology (DEB)**

Populations, species, communities and ecosystems

**Integrative Organismal Systems (IOS)**

Integrative understanding of organisms’ structure and function

**Molecular & Cellular Biosciences (MCB)**

Life processes at the molecular, subcellular and cellular levels
Doctoral Dissertation Enhancement Grants
• funds research related costs only (up to $15k); can be used for travel to meetings
• must pass candidacy by deadline
• only available for projects within scope of DEB or Behavioral Sciences Cluster of IOS

Postdoctoral Research Fellowships in Biology (PRFB)
• only available in selected areas supported by BIO and with special goals for human resource development in biology
• selected areas for FY2012 (these can change annually) . . .
  1. Broadening Participation in Biology;
  2. Intersections of Biology and Mathematical and Physical Sciences; and
  3. National Plant Genome Initiative Postdoctoral Research Fellowships.

Faculty Early Career Development (CAREER) Awards
• special funding for early career researchers (must be in independent position)
• strong emphasis on integration of teaching and research
• highly competitive
The Human Frontier Science Program is unique, supporting international collaboration to undertake innovative, risky, basic research at the frontiers of the life sciences. Special emphasis is given to the support and training of independent young investigators, beginning at the postdoctoral level.

HFSP member countries as of 2011.

www.hfsp.org
HFSP postdoctoral fellowships encourage early career scientists to broaden their research skills by moving into new areas of study while working in a new country.

- Long-Term Fellowships (LTF): PhDs moving from one area of biological science to another (11% success rate in 2010)
- Cross-Disciplinary Fellowships (CDF): for PhDs from outside the life sciences (e.g. physics, math, chemistry or engineering) who want to move into biological research (14% success rate in 2010)

HFSP fellows may choose to stay for up to three years in the host country or use the last year of their fellowship to return to their home country and start their own laboratory. Career Development Awards are available for former HFSP fellows.
Q. What characterizes an outstanding HFSP fellowship application?

A:

• The successful completion of the previous research project as evident by at least one first (co-) author publication in an international peer-reviewed journal to which the candidate has made a significant contribution (the reference letters should elaborate on this aspect).

• Supportive reference letters by the host supervisor(s) and two referees.

• The research plan is feasible and described in sufficient detail.

• A successful project...
  • is an original study that marks a departure from the previous research (change in research direction),
  • exposes the applicant to new theory (literature) and methodology,
  • contains new elements (e.g. developing or learning new methods) that open a completely new approach to the research problem even if risky,
  • is deemed to make a major contribution to the research field.
Research Grants are awarded for innovative research projects involving extensive collaboration among teams of independent scientists working in different countries and in different disciplines.

- Young Investigator grants: all team members in first 5 years of independent position (and within first 10 years of PhD).

- Program grants: team members at any career stage

Funding rate for both is ~5%, but Letter Of Intent is required and only ~13% of LOI writers are asked to submit full proposals (so almost 40% of full proposals are funded).
NSF and HFSP both fund basic or fundamental biological research.

Missions are very different from NIH – explicitly non-medical!

This does not mean that your proposal cannot have any relevance to human health, but the emphasis must be on the underlying biology.
U.S. Department of Veterans Affairs

Dr. Don Rubin
Career Development Deadlines

- A Letter of Intent is required.
  - CSR&D and BLR&D Due Jun 15\textsuperscript{th} and Dec 15\textsuperscript{th}
  - HSR&D Due Apr 15\textsuperscript{th} and Oct 15\textsuperscript{th}
  - RR&D Due May 1\textsuperscript{st} and Nov 1\textsuperscript{st}
  - Must have a VA mentor.

- Research Funding Announcement (RFA) are available through the Research Office.
Career Development Deadlines

- **Career Development Proposals**
  - HSR&D and RR&D Finals are Due Jun 15\(^{th}\) and Dec 15\(^{th}\).
  - BLR&D and CSR&D Due Mar 15\(^{th}\) and Sept 15\(^{th}\)
  - Contact the Research Service for local deadlines.
  - Drafts must be submitted to the Research Office 30-days prior to final submission deadlines for R&D Committee review/approval.
Career Development

- Career Development Program is comprised of
  - CDA-2 Career Development Award-2
Career Development

- CDA-2 Career Development Award – 2
  - Provides salary and/or project funds to support for 3-5 years
  - Non-Clinicians need to be no more than 5 years beyond completion of PhD or doctoral equivalent.
  - Clinician nominees need to be no more than 5 years beyond clinical training.
Career Development

- **CDA-2 Career Development Award – 2**
  - Nominees must not have been principal investigator or co-investigator on a peer-reviewed independent research project supported by national public or private organization *in excess of $50,000 a year*.
  - Nominees need to have at least one first-authored research publication pertinent to the general proposed research area.
FY09 DOD PRORP and SCIRP Funding Opportunities

The US Army Medical Research and Materiel Command (USAMRMC)

a Peer Reviewed Orthopedic Research Program (PRORP) and Spinal Cord Injury Research Program (SCIRP). Both programs will be managed utilizing CDMRP's two-tier review process, recommended by the Institute of Medicine.

Peer Reviewed Orthopedic Research Program

Appropriations in the amount of $61 Million for PRORP will be managed specifically to address research and treatment of orthopedic injuries as they relate to U.S. military casualties.

Appropriations in the amount of $35 Million for SCIRP will be managed to address spinal cord injury and treatment research.
Biomedical Laboratory Research and Development (BLR&D) supports research exploring biological or physiological principles in humans or animals. For example, BLR&D research includes pre-clinical models and investigations of tissues, blood or other biologic specimens from humans.

- * Merit Review Program
- * Career Development Program
- * Centers and Research Enhancement Award Programs (REAP)
- * Off-site Research
- * Shared Equipment Evaluation Program (ShEEP)
- * Special Solicitations
- * Contacts
- * Research Awards Program
Health Services Research and Development Service (HSR&D)

Overview

- The Health Services Research and Development Service (HSR&D)
  - the interface of health care systems, patients and health care outcomes.
  - HSR&D underscores all aspects of VA health care; specifically quality, access, patient outcomes and health care costs.

- Mission
  - advance knowledge and promote innovations that improve the health and care of veterans and the nation.
  - new technologies, explore strategies for improving health outcomes, and evaluate the cost-effectiveness of services and therapies.

Peer Review grants and Centers of Excellence

- There are thirteen HSR&D Centers of Excellence (COE) and three Resource Centers located throughout the US. In addition, HSR&D's Research Enhancement Award Program (REAP) support the development of other research centers across the country.
Overview of RR&D

- technology that gives veterans back functional independence
- an intramural program for improving the quality of life of impaired and disabled veterans
- approved rehabilitation research projects
- through evaluation and technology transfer to final clinical application.

Rehabilitation Research & Development’s Centers of Excellence and Peer Review Grants
Women’s Health

- **Women’s Health and VA**
  - 14% of active military
  - 20% of recruits
  - 2 million veterans

- **Special JGIM Supplement: VA Research on Women’s Health**
Scientists are people of very dissimilar temperaments doing different things in very different ways. Among scientists are collectors, classifiers and compulsive tidiers; many are detectives by temperament and many are explorer, some are artists and others artisans. There are poet-scientists and philosopher-scientists and even a few mystics.

The office of the Congressionally Directed Medical Research Programs (CDMRP) manages Congressional Special Interest Medical Research Programs (CSI) encompassing breast, prostate, and ovarian cancers, neurofibromatosis, military health, and other specified areas. Since fiscal year 1992, the CDMRP has managed approximately over $6.0 billion in Congressional appropriations for peer-reviewed research aimed to prevent, control, and cure disease. Through fiscal year 2009, approximately 9,934 awards have been made to advance health care solutions via extramural grants, contracts, and cooperative agreements.

Currently Funded Research Programs

- Amyotrophic Lateral Sclerosis
- Autism
- Bone Marrow Failure
- Breast Cancer
People with DOD Funding in the Chen Lab

Guanglei Zhuang
David Vaught
Krishna
Wei Bin Fang

Meghana Rao
Yoonha
Dana Brantley-Sieders
Charlene
Jin Chen

Wenqiang

Guanglei Zhuang
Wei Bin Fang
Program Announcements and Forms

General Application Instructions

Current Funding Opportunities

Program Announcements

Autism Research Program (ARP) 2011
Breast Cancer Research Program (BCRP) 2011
Defense Medical Research and Development Program (DMRDP) 2011
Duchenne Muscular Dystrophy Research Program (DMDRP) 2011
Lung Cancer Research Program (LCRP) 2011
Peer Reviewed Cancer Research Program (PRCRP) 2011
Peer Reviewed Orthopaedic Research Program (PRORP) 2011
Psychological Health and Traumatic Brain Injury Research Program (PH-TBI) 2011
Spinal Cord Injury Research Program (SCIRP) 2011

Click to view Award Mechanisms
<table>
<thead>
<tr>
<th>Award Mechanism</th>
<th>Eligibility</th>
<th>Key Mechanism Elements</th>
<th>Funding</th>
<th>Submission Deadline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discovery Award</td>
<td>• All investigators</td>
<td>• Research must be in one or more of the FY11 PRCRP Topic Areas</td>
<td>• Maximum funding for the entire period of performance is $200,000 for direct costs (plus indirect costs)</td>
<td>Pre-application: October 13, 2011 5:00 p.m. Eastern time (ET)</td>
</tr>
<tr>
<td></td>
<td>• Postdoctoral fellows and early career independent investigators are encouraged to apply</td>
<td>• Supports the exploration of a highly innovative, untested, high-risk/potentially high-reward concepts, theories, paradigms, and/or methods</td>
<td>• Maximum period of performance is 2 years</td>
<td>Application: October 27, 2011 11:59 p.m. ET</td>
</tr>
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Grants.gov Funding Opportunity Number: W81XWH-11-PRCRP-DA
Program Announcements and Forms

Lung Cancer Research Program (LCRP)

- Synopsis of LCRP Award Mechanisms
- General Application Instructions

Award Mechanism

- Concept Award
- Early Investigator Synergistic Idea Award
- Investigator - Initiated Translational Research Award
- Promising Clinician Research Award

Documents and Forms

- Program Announcement
- Early Investigator Synergistic Idea Award Eligibility Statement
- Program Announcement
- Program Announcement
- Promising Clinician Research Award Eligibility Statement

Show All Current Funding Opportunities

NOTE: Award mechanism-specific forms shown above supercede the generic documents below. If the form is not listed with the award mechanism, please use the generic version of the form below.
Kim’s Questions

1. What research areas and types of awards are funded by the agency? (PhD/postdoc fellowships, career dev awards, small research grants, clinical research awards)
2. Who is eligible? (PhDs, MDs, non-citizens?)
3. Key websites, listservs, and resources
4. How is the application and review process different from the NIH?
5. How are funds allocated and distributed?
6. Key people who help with the grant application and review process (i.e. like program officers at the NIH)
7. Success rates
8. Advice for applying for funding from that agency
Thank you for your attention! Any questions?