Winning NIH Grants:
Swimming with Sharks

Rosemarie Hunziker, PhD
Program Director
Tissue Engineering/Regenerative Medicine
and Biomaterials
NIBIB/NIH
301-451-1609 hunzikerr@mail.nih.gov

TODAY'S AGENDA:
THE DEEP DIVE INTO NIH GRANTS

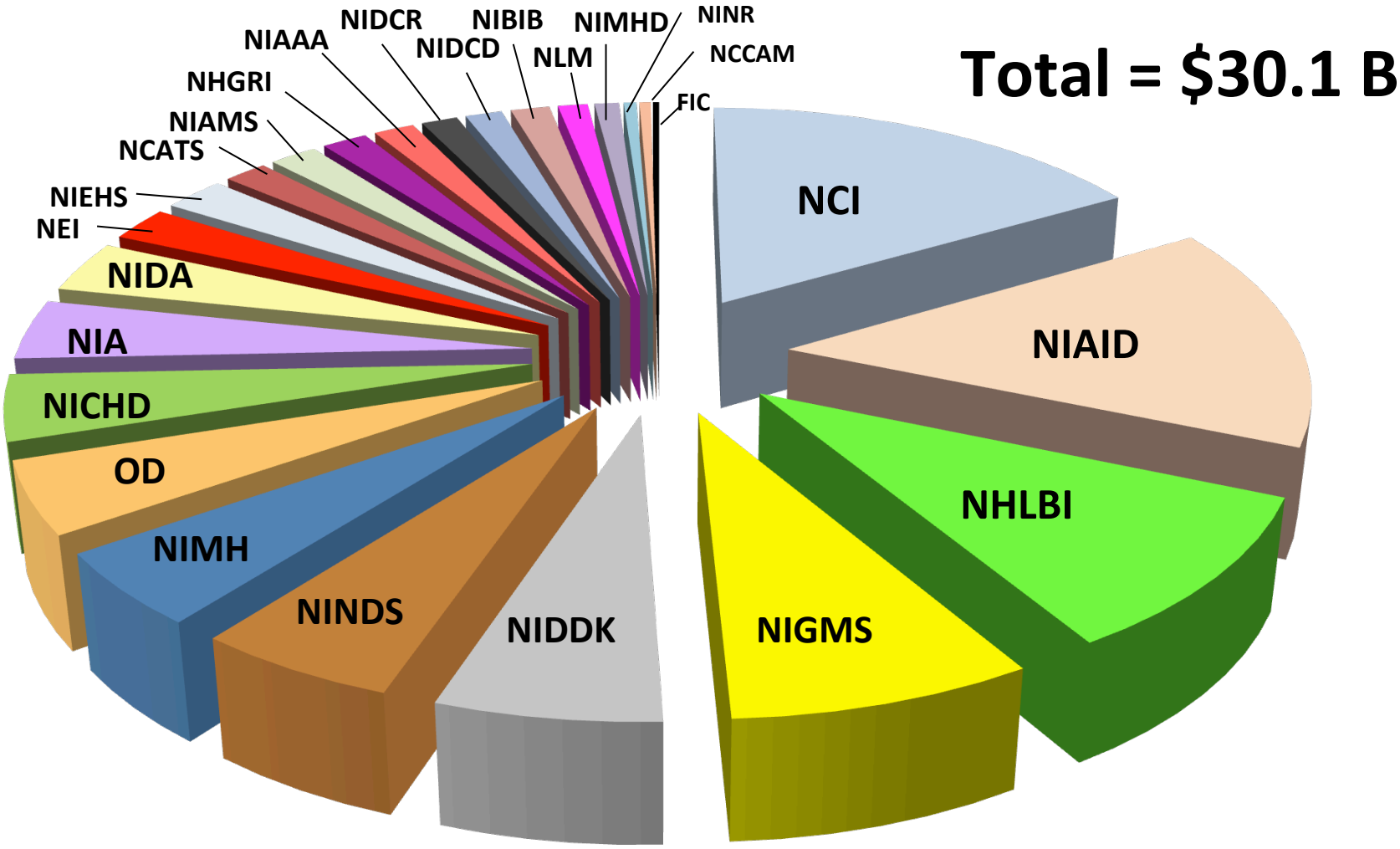
- **Plan Ahead, Get Prepared**
  - Get Help from the Inside
  - Discover NIH's Footprint in Your Area
  - Organize Your Team
  - Match Your Application to Mechanism and Institute
- **Elements of the Grant Application**
  - Specific Aims: your key to success
  - Research Strategy
  - Other Considerations
  - Funding Emerging Science, Technology Development
- **Just Send It**
- **Now it's our turn: The Review Process**
  - Find the Best Review Committee
  - Understand the Assessment
  - Respond to the Evaluation

Plan Ahead, Get Prepared

- Get Help from the Inside
- Discover NIH's Footprint in Your Area
- Organize Your Team
- Match Your Application to Mechanism and Institute

NIH FY14 Budget

NIH Divides most of its investment according to the interests of the component parts (i.e. Institutes or Centers), with <4%) allocated to trans-NIH initiatives.



About 85% distributed via Extramural grants, contracts, cooperative agreements

Need Help with Your Proposal… Who Ya' Gonna' Call?

✓ **about the scientific and technical aspects of your application…**

- Find them on the solicitation
- See also the IC's programmatic descriptions (http://www.nih.gov/icd/index.html).

✓ **for questions during the review…**

- Listed on the eRA Commons link to your submitted proposal
- See also the review group rosters at the CSR web site

✓ **for help with the business aspects of a proposal…**

- Listed on the eRA Commons link to your submitted proposal
- See also the IC's programmatic descriptions (http://www.nih.gov/icd/index.html).

Program Director

Scientific Review Officer

Grants Specialist

NIH Program Officials: your primary contact

Pre-Application

- Assess the "fit" to the IC, Program(s)
- Start the conversation early: develop your ideas together
- Choose the right activity/mechanism
- Brief on Review Issues: Dos/Don'ts

Post Review

- Analyze the Summary Statement: deeper insights from the Review
- Understand the rating and assess the likelihood of funding
- BEWARE! Nothing is certain until you have it in writing

During the Award

- Discuss problems in execution (rebudeting, rescoping, extensions…)
- Find an administrator to address unusual issues
- Brag about important discoveries

Anytime

- Arrange introductions so you can serve on advisory boards workshop panels, etc. to help set the research agenda
- Discover what's New and Coming Soon in Funding Opportunities

Application → Review → Award

NIH Institute/Center Web Sites

www.nih.gov/icd/

Each NIH Institute/ Center *has a HOME PAGE*

Model: http://www.xxxxx.nih.gov

http://www.nibib.nih.gov/

NIBIB National Institute of Biomedical Imaging and Bioengineering
National Institutes of Health
ENGINEERING & IMAGING FOR THE FUTURE

En Español | Quick Links

HOME | ABOUT NIBIB | RESEARCH | FUNDING | TRAINING & CAREERS | NEWS & EV

Research

+ Labs At NIBIB (Intramural)

Scientific Program Areas (Extramural)

Biotechnology Resource Centers

Quantum Grants

Resources for Researchers

SIGN UP FOR OUR LISTSERV

Biomaterials Program Area

Staff Contact

Rosemarie Hunziker, Ph.D.

Description

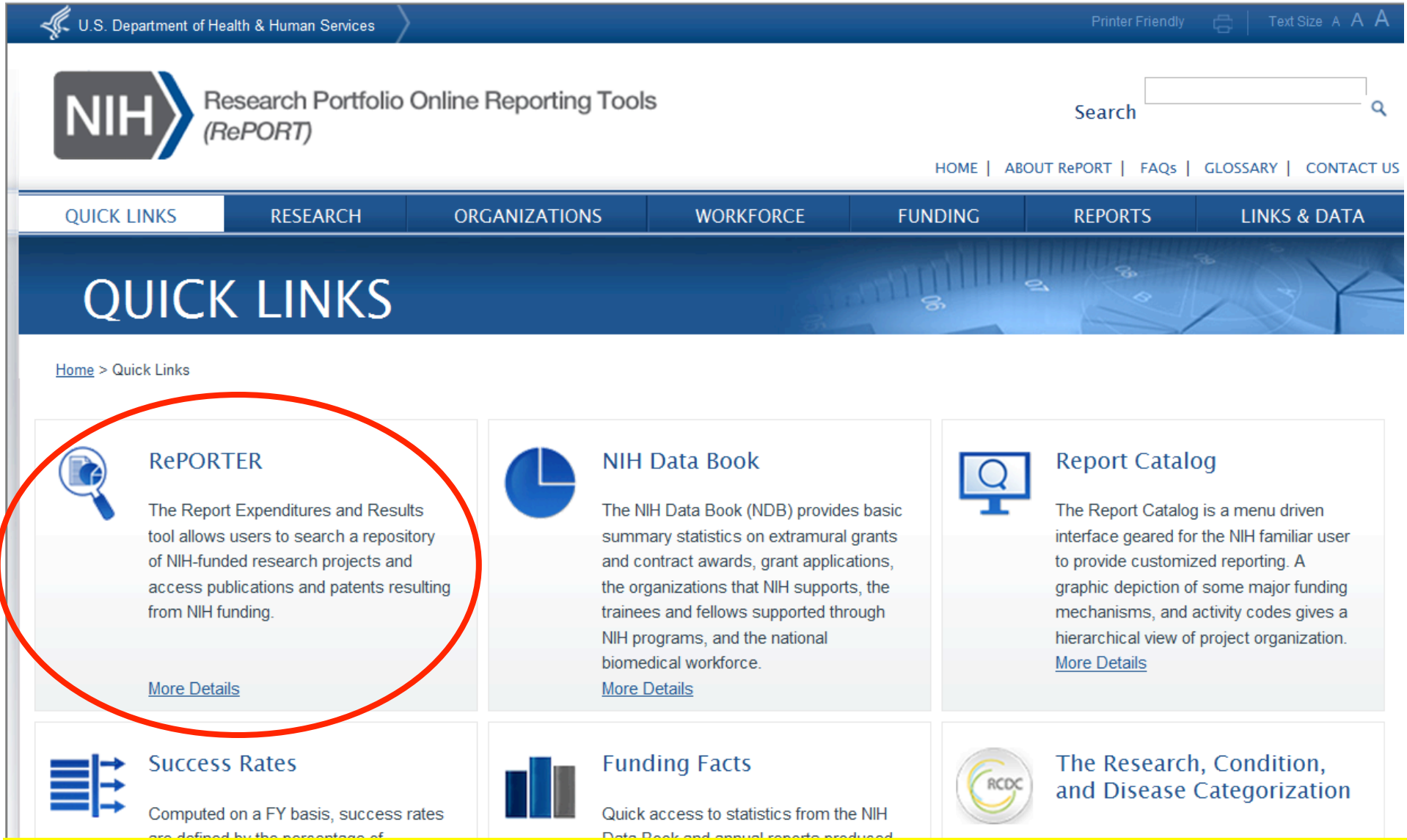
This program supports the research and development of new or novel biomaterials that can be us for a broad spectrum of biomedical applications such as implantable devices; tissue engineering; imaging agents; and biosensors and actuators.

Research that is supported includes the design, synthesis, characterization, processing and manufacturing of these materials as well as the design and development of devices constructed o these materials and their clinical performance.

Relevant Study Sections

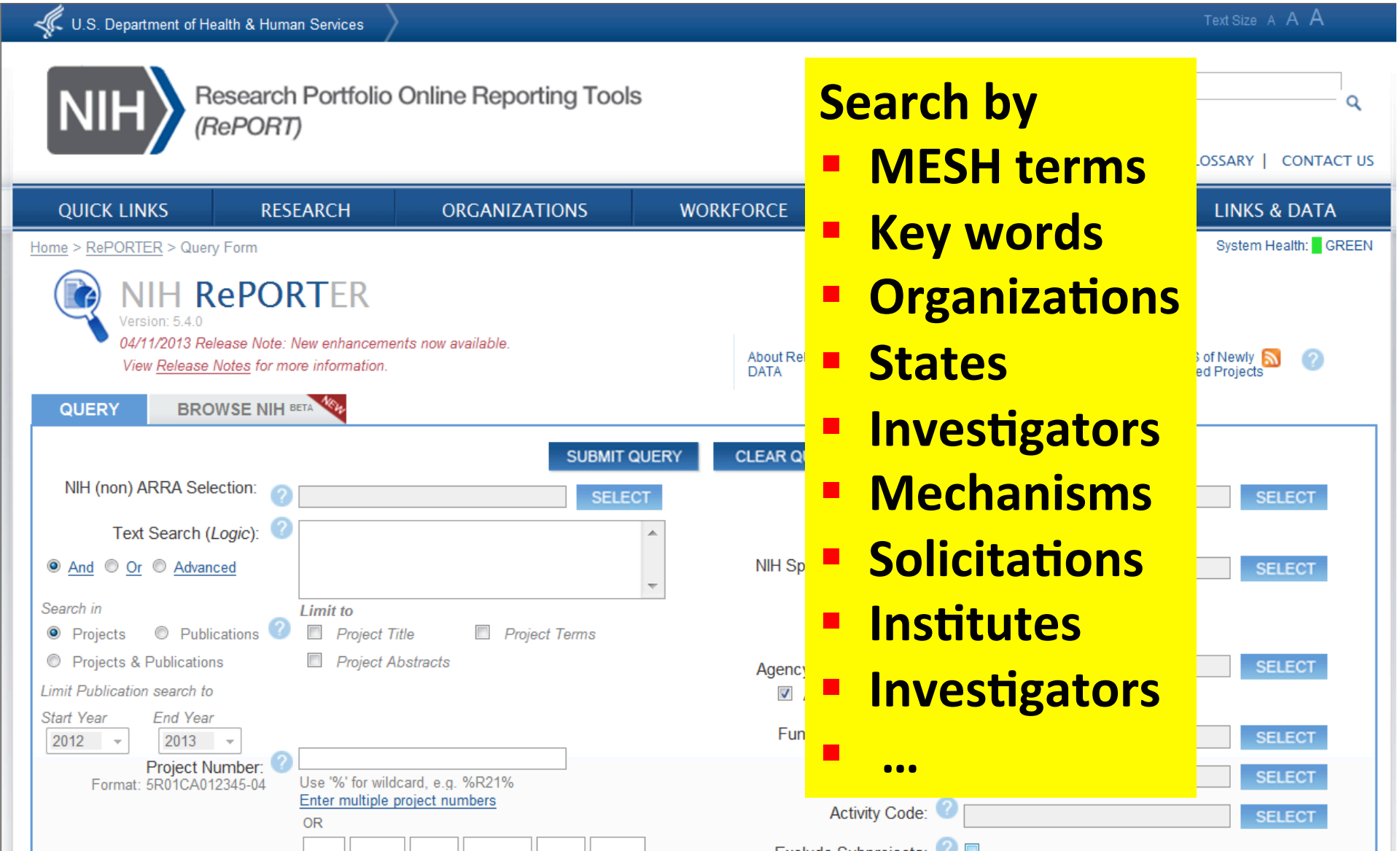
Biomaterials and Biointerfaces (BMBI)

Does NIH Already Support My Interest Area?



http://report.nih.gov/quicklinks.aspx

NIH Searchable Databases Contain Abstracts of All Funded Projects



RePORTer Delivers a Treasure Trove…

There were **10** results matching your search criteria. Show/Hide Search Criteria

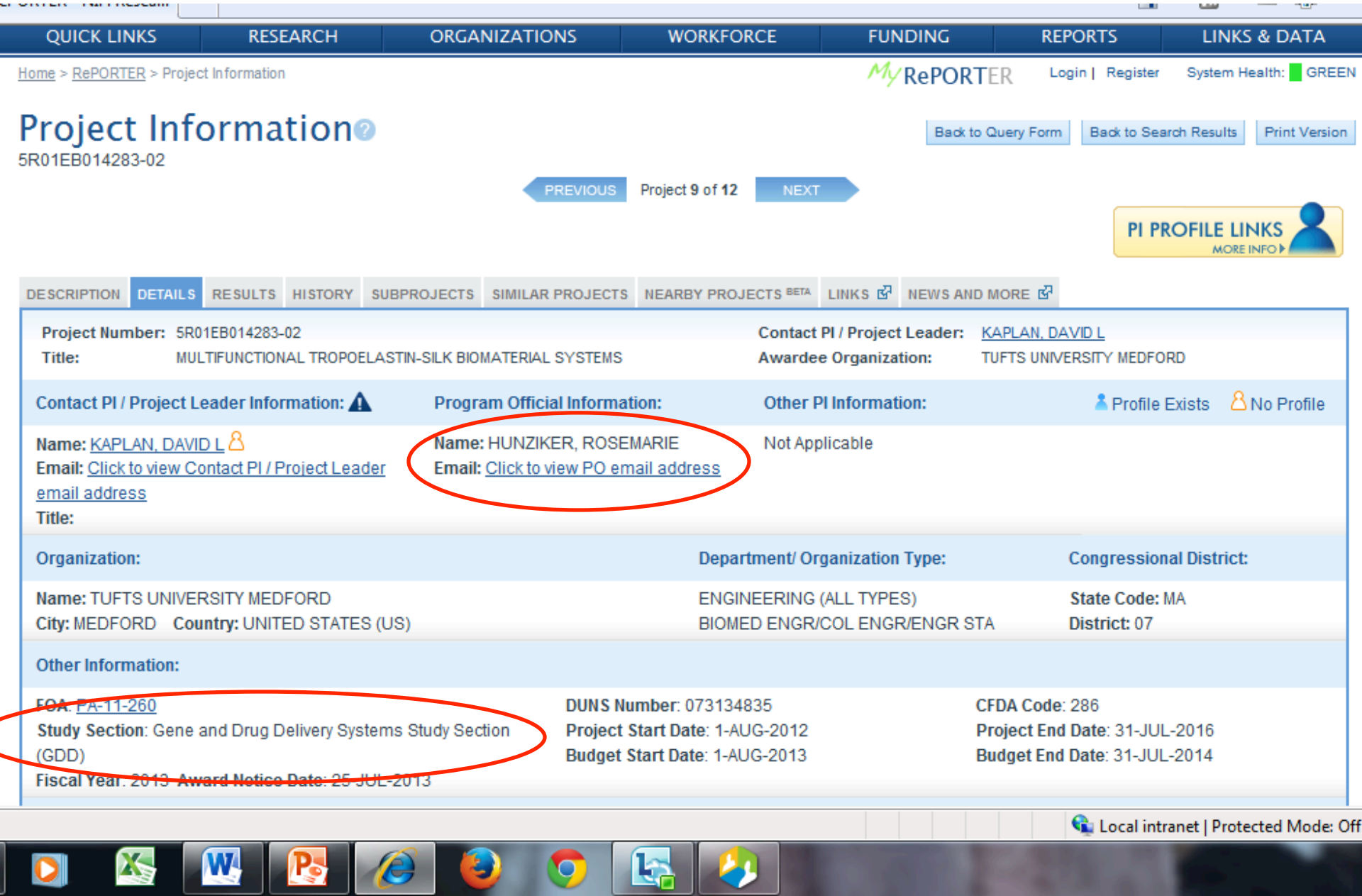
Click on the column header to sort the results

T: Application Type; Act: Activity Code; Project: Admin IC,Serial No.; Year: Support Year/Supplement/Amendment

T	Act	Project	Year	Sub #	Project Title	Contact PI/ Project Leader	Organization	FY	Admin IC	Funding IC	FY Total Cost by IC	Similar Projects
1	R01	CA166111	01A1		TUMOR ANTIGEN-SPECIFIC T-CELLS AND HEPATOCELLULAR CARCINOMA	KAPLAN, DAVID E	UNIVERSITY OF PENNSYLVANIA	2013	NCI	NCI	$249,000	
5	R01	AR055993	03		TISSUE REGENERATION BY BIOPHYSICAL SIGNALING	KAPLAN, DAVID L et al.	TUFTS UNIVERSITY MEDFORD	2012	NIAMS	NIAMS	$323,395	
5	R01	AR061988	02		ELECTROTHERAPEUTIC STRATEGIES FOR CONNECTIVE TISSUE REPAIR	KAPLAN, DAVID L et al.	TUFTS UNIVERSITY MEDFORD	2012	NIAMS	NIAMS	$645,728	
3	P41	EB002520	09S1		TISSUE ENGINEERING RESOURCE CENTER	KAPLAN, DAVID L	TUFTS UNIVERSITY MEDFORD	2013	NIBIB	NIBIB	$40,625	
5	P41	EB002520	09		TISSUE ENGINEERING RESOURCE CENTER	KAPLAN, DAVID L	[illegible]ERSITY	2012	NIBIB	NIBIB	$1,152,600	
5	R01	EB011620	03		BIOMATERIAL APPLICATIONS OF RECOMBINANT BACTERIAL COLLAGENS	KAPLAN, DA[illegible] et al.	[illegible]ERSITY MEDFORD	2012	NIBIB	NIBIB	$324,245	
1	R01	EB014283	01A1		MULTIFUNCTIONAL TROPOELASTIN-SILK BIOMATERIAL SYSTEMS	KAPLAN, DAVID L	TUFTS UNIVERSITY MEDFORD	2012	NIBIB	NIBIB	$305,288	
1	U01	EB014976	01		MODELS TO PREDICT PROTEIN BIOMATERIAL PERFORMANCE	KAPLAN, DAVID L et al.	TUFTS UNIVERSITY MEDFORD	2012	NIBIB	NIBIB	$646,995	
1	R01	EB016041	01		IN VITRO BIOREACTOR SYS FOR PLATELET FORMATION	KAPLAN, DAVID L	TUFTS UNIVERSITY MEDFORD	2012	NIBIB	NIBIB	$337,137	
5	R01	EY020856	03		TISSUE ENGINEERING CORNEA REPLACEMENTS	KAPLAN, DAVID L	TUFTS UNIVERSITY MEDFORD	2012	NEI	NEI	$369,557	

Click for Abstract

… of Useful Information.



QUICK LINKS | RESEARCH | ORGANIZATIONS | WORKFORCE | FUNDING | REPORTS | LINKS & DATA

Home > RePORTER > Project Information

MyRePORTER Login | Register System Health: GREEN

Project Information

5R01EB014283-02

Back to Query Form | Back to Search Results | Print Version

PREVIOUS Project 9 of 12 NEXT

PI PROFILE LINKS MORE INFO

DESCRIPTION | DETAILS | RESULTS | HISTORY | SUBPROJECTS | SIMILAR PROJECTS | NEARBY PROJECTS BETA | LINKS | NEWS AND MORE

Project Number: 5R01EB014283-02
Title: MULTIFUNCTIONAL TROPOELASTIN-SILK BIOMATERIAL SYSTEMS

Contact PI / Project Leader: KAPLAN, DAVID L
Awardee Organization: TUFTS UNIVERSITY MEDFORD

Contact PI / Project Leader Information:
Name: KAPLAN, DAVID L
Email: Click to view Contact PI / Project Leader email address
Title:

Program Official Information:
Name: HUNZIKER, ROSEMARIE
Email: Click to view PO email address

Other PI Information:
Not Applicable

Profile Exists No Profile

Organization:
Name: TUFTS UNIVERSITY MEDFORD
City: MEDFORD **Country:** UNITED STATES (US)

Department/ Organization Type:
ENGINEERING (ALL TYPES)
BIOMED ENGR/COL ENGR/ENGR STA

Congressional District:
State Code: MA
District: 07

Other Information:

FOA: PA-11-260
Study Section: Gene and Drug Delivery Systems Study Section (GDD)
Fiscal Year: 2013 **Award Notice Date:** 25-JUL-2013

DUNS Number: 073134835
Project Start Date: 1-AUG-2012
Budget Start Date: 1-AUG-2013

CFDA Code: 286
Project End Date: 31-JUL-2016
Budget End Date: 31-JUL-2014

Local intranet | Protected Mode: Off

NIGMS Feedback Loop Blog

A catalyst for interaction with the scientific community

NIGMS Feedback Loop Blog- A catalyst for interaction with the scientific community

How to Use RePORTER When Preparing New Grant Applications

Posted by **James Onken** on **Monday, Dec 3, 2012 1:58 PM EST**
Post a Comment | View Comments (0)

NIH offers two tools that can help you search for projects similar to the one you're thinking about. In this post, I'll take you on a quick tour of the NIH RePORTER tool, a repository of information about NIH-funded research projects, and show you how to find information that may be useful to know before you start writing a grant application. A future *Feedback Loop* post will cover the thesaurus-based search tool called Like This.

Main Query Form

From RePORTER's Main Query Form, you can search by principal investigator name, project number, organization, text term(s) and many other criteria.

NIH RePORTER

Bookmark & Share

Twitter | Facebook

Suggest a Blog Post

Subscribe

- E-Mail Updates
- Posts (RSS)
- Comments (RSS)

Info

- Feedback Loop Blog Home
- About This Site
- Contributors
- Comment Policy
- Other Policies
- NIGMS Web Site
- NIGMS Funding Announcements

https://loop.nigms.nih.gov/index.php/2012/12/03/how-to-use-reporter-when-preparing-new-grant-applications/

Grants: A to Z

http://grants.nih.gov/grants/about_grants.htm

Get the Team Organized!

Plan Ahead…
Seriously!

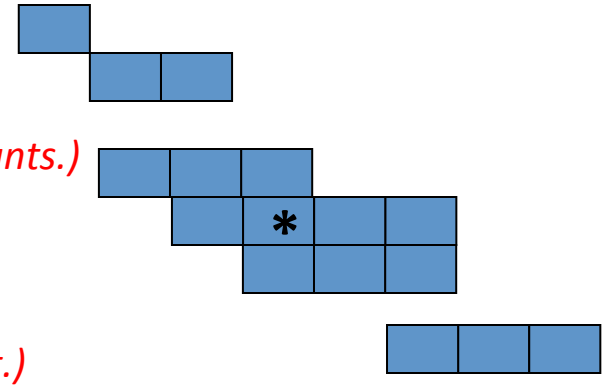
Planning Meeting Output: Blueprint for Successful Research

Project Title: *really a quick summary*
Principal Investigator(s) and Key Personnel: *defines role, commitment*
Overall goal: *resolve an important issue in a timely manner*
Specific goal: *best stated as a hypothesis (a boastful claim, substantiated by data)*
Impact: *2-3 sentences, define success, distill innovation and significance*

RESEARCH Responsibilities, Costs, Milestones and Timeline

Overseer Cost Q1 Q2 Q3 Q4 Q5 Q6 Q7 Q8

1. **Validate the …** ***(THIS AIM MUST WORK****—i.e. no/low risk here!)*
   - 1a. Compare… confirm…
   - 1b. Optimize the dose/time course…
2. **Elucidate the mechanism…** *(May omit for high risk (e.g. R21) grants.)*
   - 2a.
   - 2b.
   - 2c.
3. **Assess the biocompatibility of … in a …** *(Transition to next grant.)*



* *High-risk element. Propose and discuss alternatives. Decision point.*

Two roads diverged in a wood, and I—
I took the one less traveled by,
And that has made all the difference.

- Robert Frost

R21 ($275K spread over 2 yrs, non-renewable)

- High(er) risk and reward
- Little/no supporting data

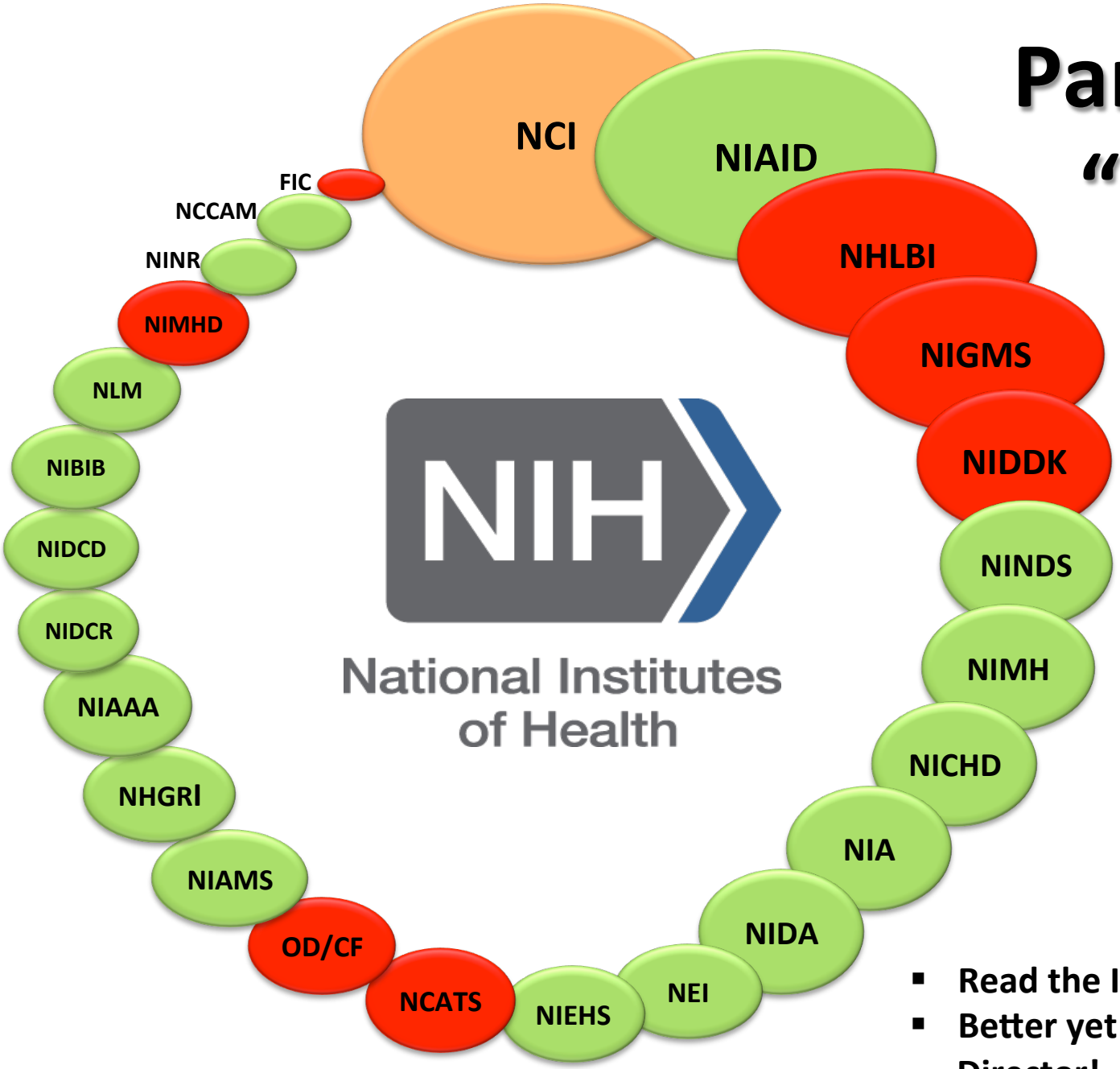
R03 (2 yrs, $50K per year, non-renewal)

- Little/no supporting data
- succinct task(s)

R01 (4-5 yrs, $250 - 400K+, renewable, a “real” grant)

- Convincing preliminary data for each aim
- Longer term questions
- Multiple complexities

Parent R21 "Players"



- Read the IC Mission Statement
- Better yet: contact the Program Director!

Elements of the Grant Application

- Specific Aims: your key to success
- Research Strategy
- Other Considerations
- Funding Emerging Science, Technology Development

Your Grant Application should reflect your best thinking.

NIH Applications

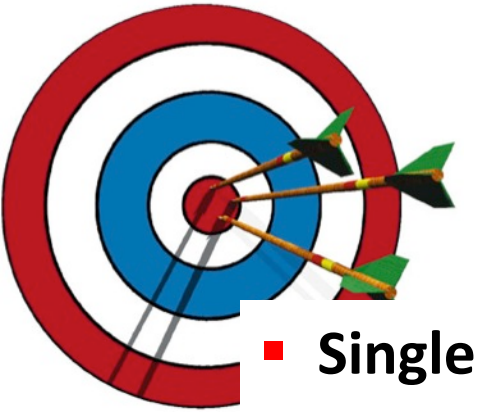
Key Elements

- Cover Letter and Title Pages
- Abstract (1 page synopsis)
- Budget with Justifications
- Biosketches of Investigators
- Resources and Facilities
- Introduction (resubmissions/revisions only!)
- Specific Aims (1 page)
- Research Strategy (6 or 12 pages)
  - Significance
  - Innovation
  - Approach
    - Preliminary Studies/Progress Report
    - Experimental Design and Methods
- Bibliography and References
- Human Subjects
- Other (animals, consortium, multi-PI, select agents, other support, resource sharing)
- Commercialization Plan (Phase II SBIR/STTR only!)

Review Criteria

- Significance
- Investigator(s)
- Innovation
- Approach
- Environment

- Human/Animal Studies
- Commercialization Plan Quality (SBIR/STTR Phase II)



SPECIFIC AIMS:
What do you intend to do?

- **Single and most important page of application**
- **Introductory paragraph should**
  - Capture the vision with a broad goal justifying the research question
  - Describe your unique and innovative solution
  - Engage the reader with
    - strong, solid, testable hypotheses, or
    - discrete, finite technology development goal
  - Summarize relevance and feasibility of the approach(es)
- **Succinctly state each research objective in a topic phrase or sentence**
  - Aims independent yet related to overall goal
  - Add sub-aims as needed: experiments support aims, aims test hypotheses
  - Avoid dense text and acronym overload
- **End with impact: define success and point to the future**

Conversation at the Study Section's Mid-Morning Break



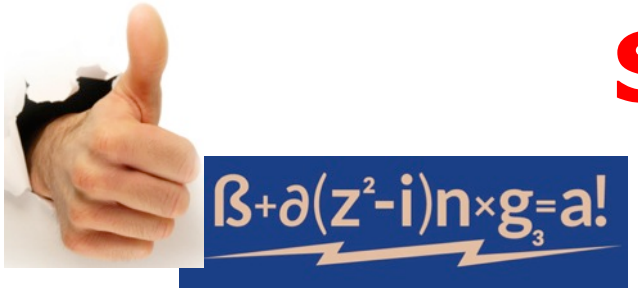



Me: I think I have this figured out. You guys have pretty much decided on an impact score by the time you finish reading the Specific Aims page, right?

Reviewer #1 (hesitantly): Well… yes, that's right.

Me: And the rest is filling in the details, looking for confirmation of your opinion, scanning for fatal flaws…

Reviewer #2: That about sums it up, yes.



SPECIFIC AIMS Page: Formula for Success

Tell your story in five compelling, concise, plain-language paragraphs!

1. **Outline an important medical problem and your timely, innovative solution.** Describe the big picture quantitatively. How can science/ engineering help? Does this push the edge of the possible in a new way?

2. **Define the challenge for this application.** What is your specific target and hypothesis? How will you get there? How do you know?

3. **State each of your (three) Specific Aims in a single sentence in bold face.** Then, identify strategies, methods, assays to be used, and data expected.

4. **Overview the competencies of the team and the resources.** Why is this the right group at the right place and time? Outline your specific skill sets.

5. **What happens when you succeed? What are the next steps?** How will paradigms shift or treatment change, and what will this project contribute?

Significance – Innovation – Investigator(s) – Approach – Environment

Research Strategy
- A Deeper Dive

- Significance
- Innovation
- Approach
  - Preliminary Studies/Progress Report
  - Experimental Design and Methods

RESEARCH STRATEGY - Significance: Why is this important?

- Amplify initial paragraph of the Specific Aims.
- Explain the incidence, standard of care, outcome, and costs associated with the important health related issue of the effort? How do you know?
- Define existing knowledge base via evaluating relevant and current literature. Where are the gaps?
- Will my solution matter? Assuming success, quantify and qualify the impact on:
  - Scientific knowledge
  - Technical capacity
  - Clinical practice
- A picture (figure or graph) is worth a thousand words, but be selective to emphasize (not divert from) the point.

Significance is About CONTEXT

Joshua Bell, in performance
Tickets: $50 -$250 each

Joshua Bell, in the DC Metro
Total receipts: $32

- **Reviewers will not hunt for the value in your application**
- **Stand out in your ideas and execution plans, not in your presentation style**
- **Do your homework and know your audience: find and target the best Study Section**

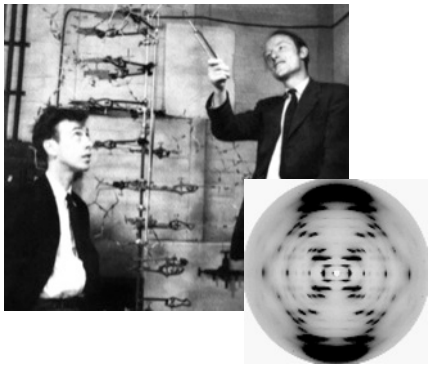
RESEARCH STRETEGY – Innovation:

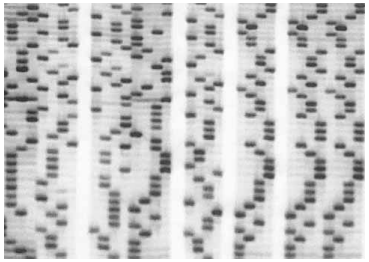
How is this game changing?

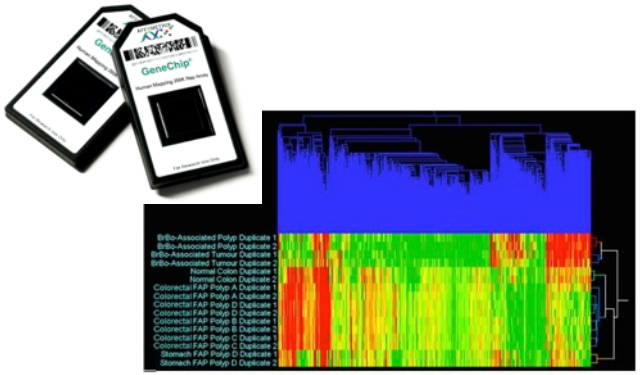
- How will this effort shift current research or clinical practice paradigms?
- Is the proposed work new? Creative? Describe any novel theoretical concepts, approaches or methodologies, instrumentation or interventions(s) to be developed.
- How will the results direct/inform future research?
- How will it be disseminated?
- Will success improve the “State-of-the-art”, or establish new research directions?

Novelty Can Be Difficult to Define

- Innovative aspects must be obvious
- Succinct analysis of the literature is key
- Moving from Invention to Innovation is a good strategy: balance feasibility with bold research







Inspiration → **Invention** → **Innovation**

RESEARCH STRATEGY – Approach:

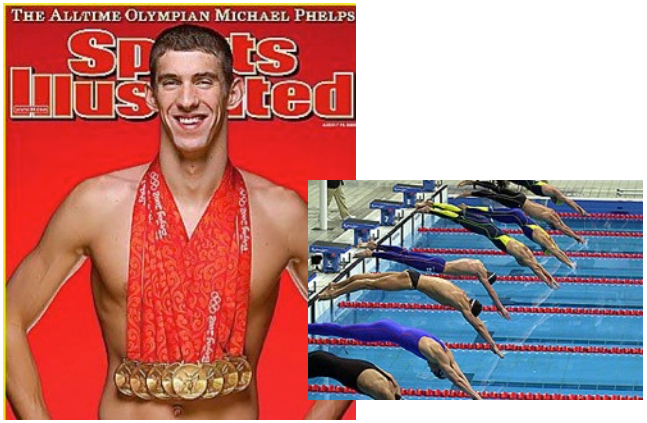
Prior Work: What has already been done?

- **Data must lead to the current proposal, supporting the feasibility of the proposed work**
- **Demonstrate that the investigator has:**
  - mastery of (and/or access to) the required techniques
  - ability to manage and work with collaborators/partners
  - sufficient attention to important details (i.e. accurate, carefully assembled figures, tables, graphs)
- **Reviewers will NOT look anything up! Provide sufficient, *relevant* details for an informed judgment**

RESEARCH STRATEGY - Approach:
Methods: How will it be done?

- **Do tasks relate to the Specific Aims?**
  - Provide an overview and conceptual framework. Connect all the dots.
- **Are the experiments logical, grounded, and well-integrated?**
  - Why are the proposed methods the best way to go? Be sure this study is not "a technology looking for a problem"
  - Less detail needed for established techniques
  - Alternatives for high risk elements add to the feasibility
  - Biohazards identified here, then fully discussed in a subsequent section
- **Are end-points/milestones clearly defined, with appropriate benchmarks? Is there a sensible timeline?**
- **Is the appropriate statistical analysis included?**

Be OUTSTANDING in your field…



- **Cite *relevant* data, especially yours!**
- **Integrate observations from other fields: be disruptive BUT…**
- **Connect the dots**
- **Propose alternatives for the riskier aspects**

… not OUT STANDING in your field.

- **Avoid jargon and uncommon usage**
- **Repeat and reinforce concepts, not language**
- **Follow the format**
- **Be concise yet clear**

Human and Animal Subjects

Important considerations in overall application scoring (feasibility of the work) and as pre-award administrative issues.

- ✓ **Safeguarding the rights and welfare of individuals as subjects in research based on DHHS regulations and established, internationally recognized ethical principles.**

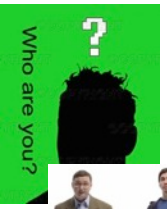
OHRP
Office of Human Research Protections

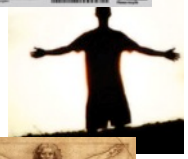
www.hhs.gov/ohrp

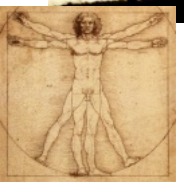
- ✓ **Grantees are responsible for the humane care and treatment of animals under NIH-supported activities.**

Office of Laboratory Animal Welfare
OLAW

grants.nih.gov/grants/olaw







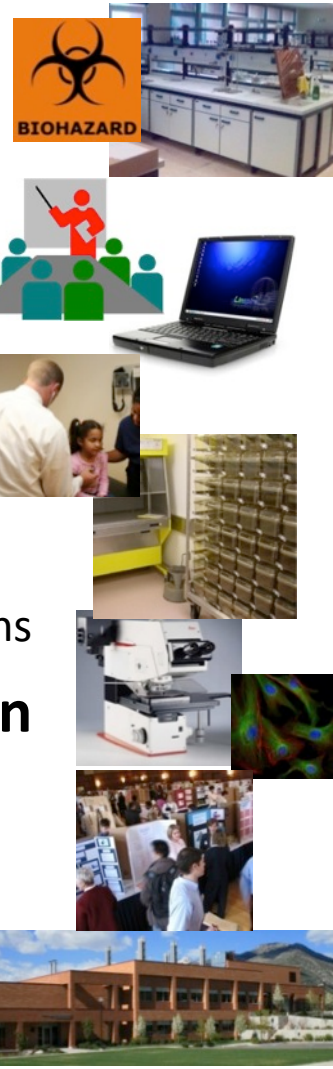
Biosketches

- **Required for all investigators**
- **List degrees, positions, honors (with dates)**
  - Early Stage or New Investigators must have appropriate training, experience
- **Personal statement: why your experience and qualifications are needed for *this* project**
  - Established investigators must demonstrate ongoing accomplishments
- **Each participant in a Multiple-PI application must show complementary and integrated expertise**
- **Publications**
  - Up to 15 peer-reviewed articles or manuscripts in press (NOT in preparation!)
  - Selections based on recency, importance, relevance to *this* application
- **Other Support: overview and distinguish from work proposed**
  - Projects completed over past three years
  - Ongoing work
  - ther pending applications

Resources and Facilities

Identify and justify

- **Facilities**
  - Laboratory and offices, clinical sites, animal housing/handling, mach electronics shops - if applicable
- **Multiple performance sites, as applicable**
- **Equipment** (especially if unusual)
- **How the environment will contribute to success**
  - institutional support, intellectual rapport, access to subject populations
- **For Early Stage Investigators: institutional investment in your success**
  - classes, training, collegial support, mentorship programs, logistical support, protected time for research with salary support, etc.
- **Handling of biohazards**
  - Consider safety of research personnel and/or environment



Budgetary Issues

U.S.Department of Health & Human Services www.hhs.gov

Office of Extramural Research
National Institutes of Health

Contact Us | Print Version
Search: Go
Advanced Search | Site Map

Home | About Grants | Funding | Forms & Deadlines | Grants Policy | News & Events | About OER | NIH Home

Grants Process & Data
- Grant Application Basics
- Grants Process Overview
- Types of Grant Programs
- How to Apply
- Peer Review Process
- Award Management
- Foreign Grants Information
- NIH Financial Operations
- Award Information & Data

Electronic Grants
- Electronic Research Administration (eRA)
- eRA Commons
- Applying Electronically

Global OER Resources
- Glossary & Acronyms

Developing Your Budget

On This Page:

- Cost Considerations
- Budgets: Getting Started
- Allowable direct vs. allowable F&A costs
- Modular vs. Detailed Budgets
- Modular Budgets
- Detailed Budget: Personnel (Sec A & B)
- Detailed Budget: Equipment, Travel, and Trainee Costs (Sec C, D, and E)
- Detailed Budget: Other Direct Costs (Sec F)
- Consortiums/Subawards
- Understanding the Out Years
- Other resources

As you begin to develop a budget for your research grant application and put all of the relevant costs down on paper, many questions may arise. Your best resources for answering these questions are the grants or sponsored programs office within your own institution, your departmental administrative officials, and your peers. They can answer questions such as:

- What should be considered a direct cost or indirect cost?
- What is the fringe benefit rate?
- What is the graduate student stipend rate?
- What Facilities and Administrative (F&A) costs rate should I use?

Below are some additional tips and reminders we have found to be helpful for preparing a research grant

http://grants.nih.gov/grants/developing_budget.htm

Getting Funded in an Emerging Field

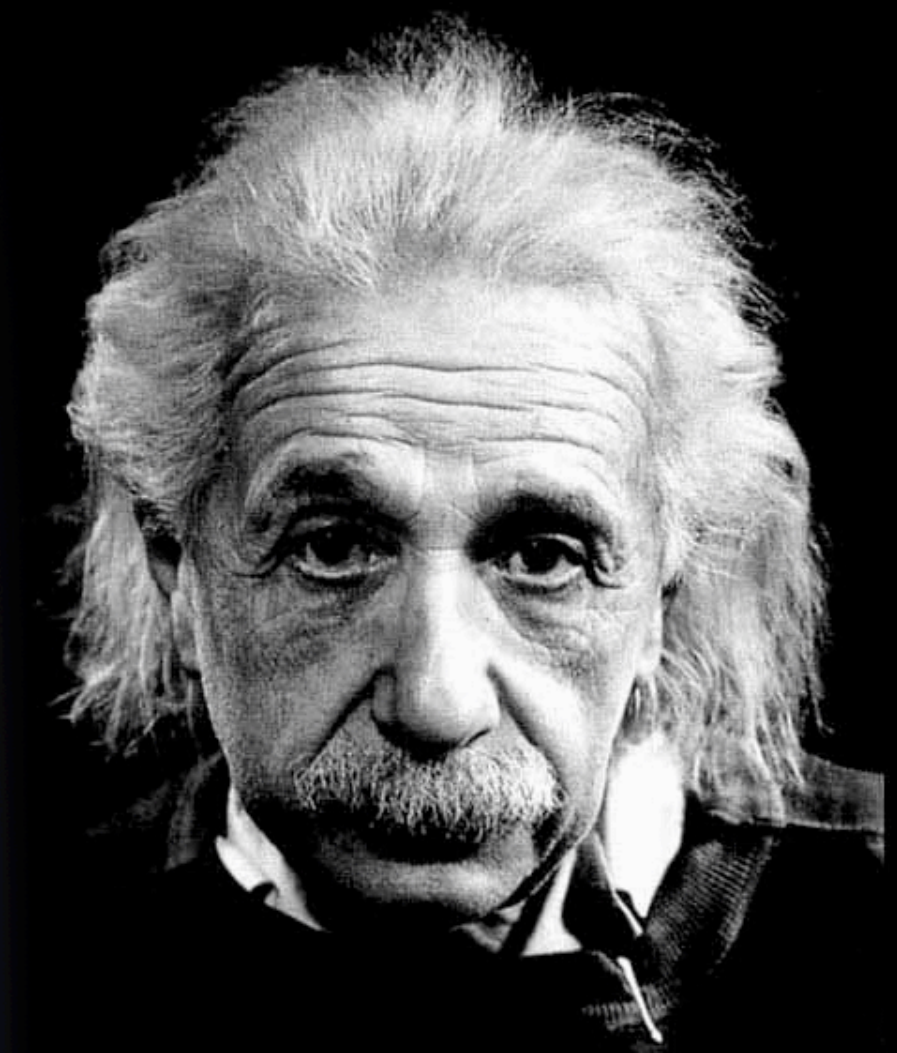
NIH funds high risk/high reward research if there is

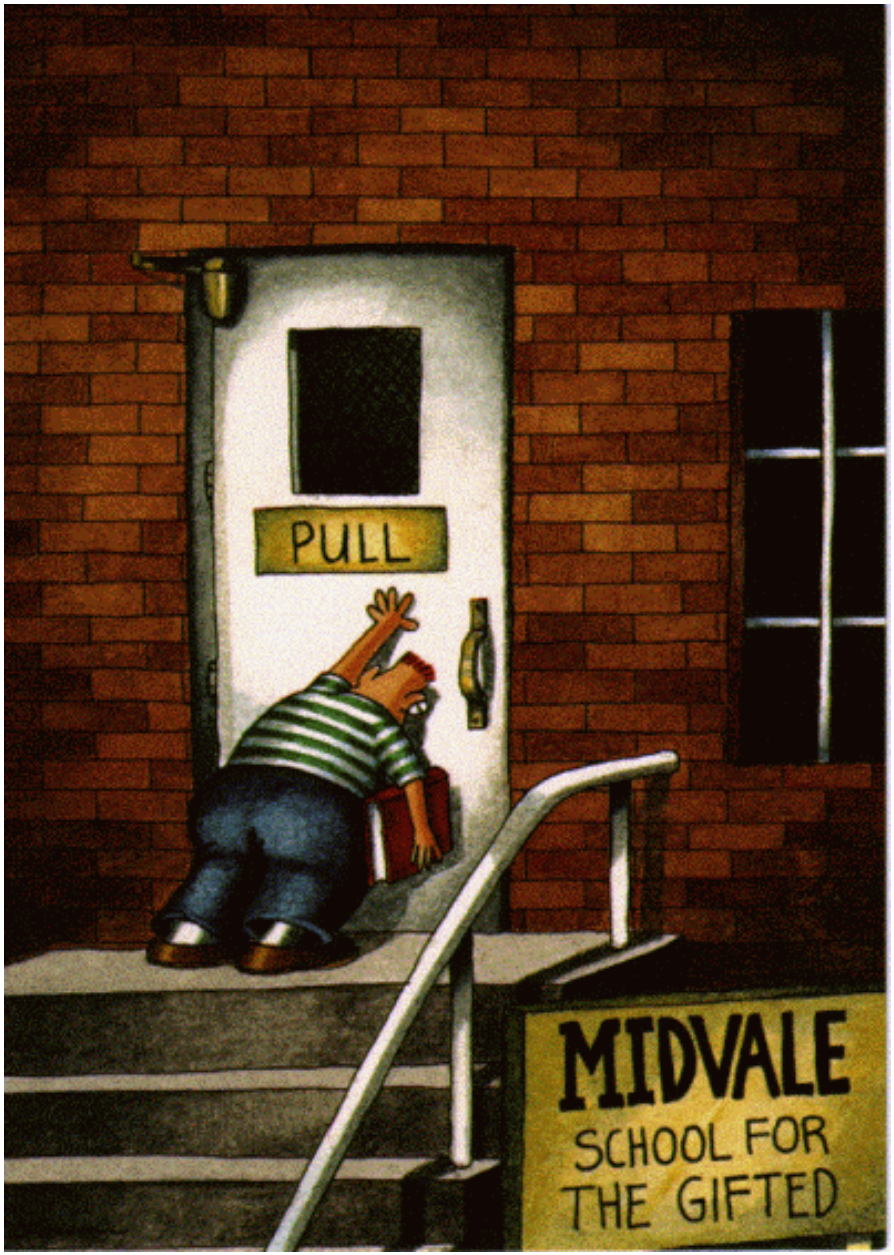
- Potential for high impact
- Novel approach, not necessarily a new idea (a fundamental publication builds credibility)
- Deep expertise in the general area on the team (confidence in capability is key)
- A compelling research plan—anticipate obstacles and propose alternatives
- BONUS POINTS: reviewer familiarity with the basics

"Simple can be harder than complex. You have to work hard to get your thinking clean to make it simple. But it's worth it in the end, because once you get there, you can move mountains."

“Everything should be made as simple as possible, but not simpler.”

Albert Einstein





Know the difference between regulations and guidelines, and follow the instructions EXACTLY!

Do I Contact NIH *Before* Applying?

Mandatory:

- Application with budget ≥$500,000 direct costs for any single year
- R13 Conference Grants

Optional:

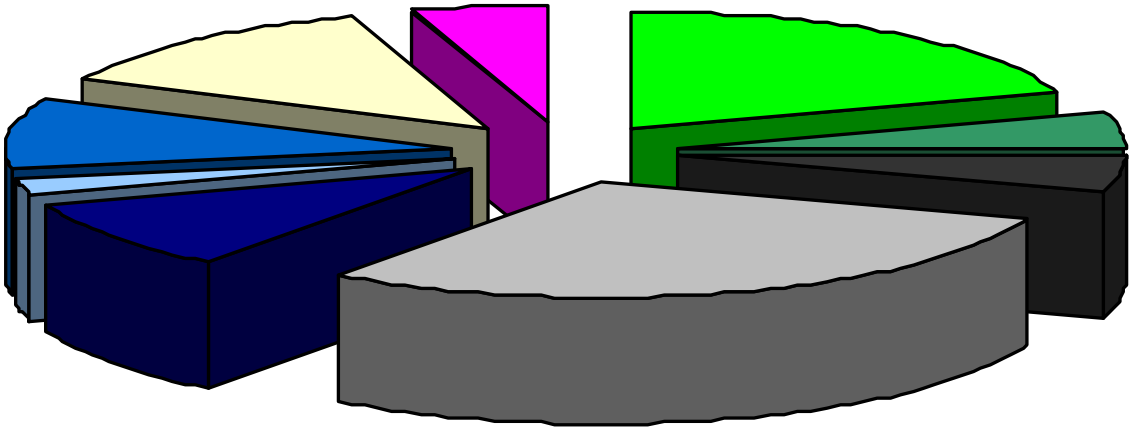
- When RFA's request a Letter of Intent

Recommended:

- When you think about applying for *any* grant

NIH Grant Application?

Read your completed draft with a reviewers eye!



- "Significance"
- Actual Significance
- Axe Grinding
- Quality Science
- "Translation"
- Actual Translation
- Bragging
- Handwaving
- Begging for Spare Change

Realistically revise.

The Application is Complete…You're Done!

Well, actually, now you are ready to start the submission process.

- Grants.gov is the portal for NIH applications
- eRA Commons is the doorway to the NIH system

Just Send it

Submit Through grants.gov…

Key Take-Aways:

- Only the Authorized Organizational Representative (AOR) has the authority to submit applications.
- You are responsible for verifying that the application is viewable in the eRA Commons. If you cannot view the application in the Commons, we can't review it.
- You must correct all errors before the eRA system will assemble an application image.
- If you experience a system issue that you believe threatens your ability to submit on time, carefully follow these guidelines to document your problems and continue working to resolve your issues.

Now It's Our Turn: The Review Process

- Find the Best Review Committee
- Understand the Assessment
- Responding to the Evaluation

Once You've Successfully Submitted…

Receipt and Referral,

Center for Scientific Review (CSR)

Electronic SF424 R&R submitted through grant.gov and the eRA Commons

Error free, warnings addressed

CSR Referral Office assigns the application…

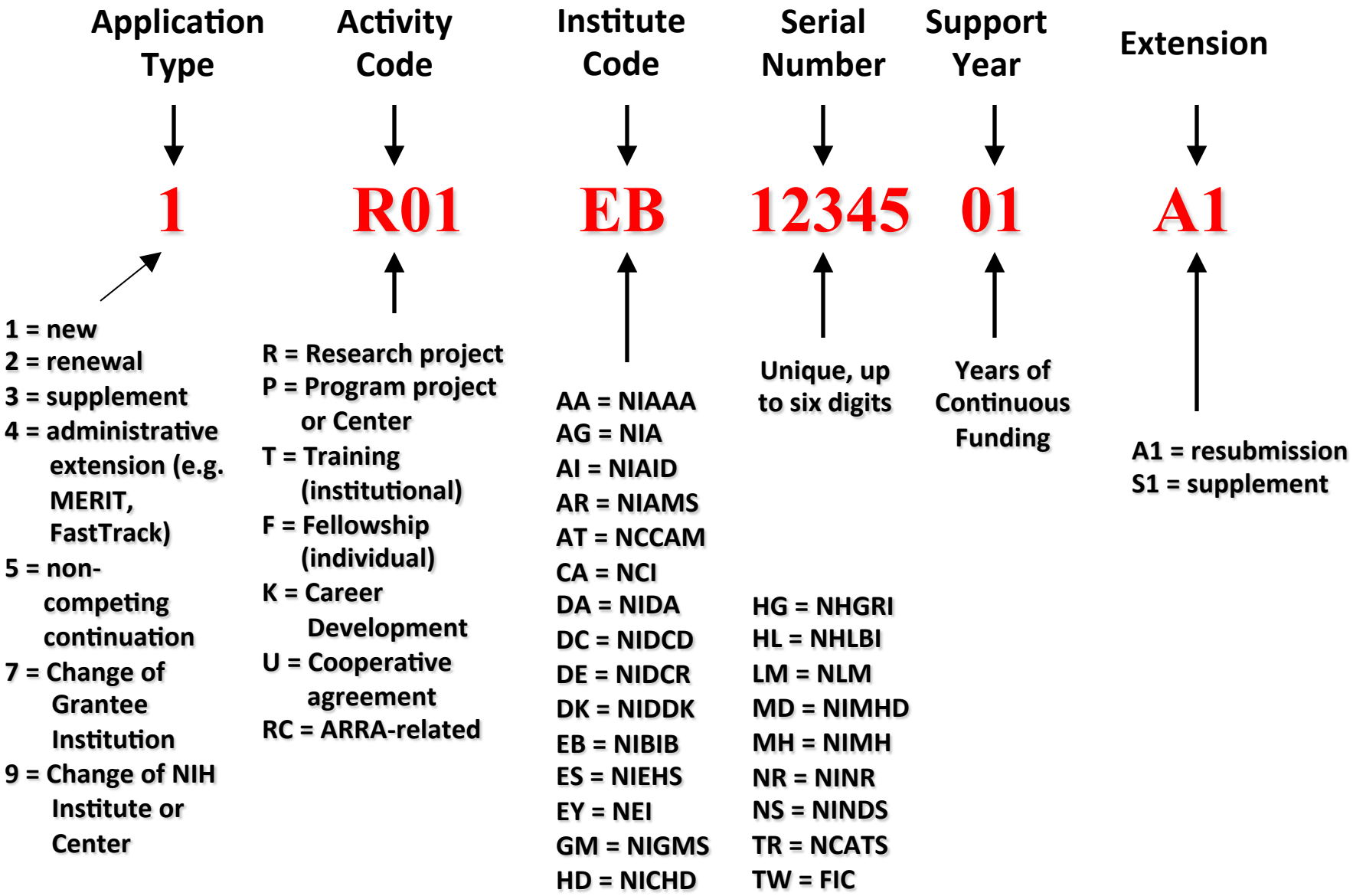
Application assessed for completeness & eligibility

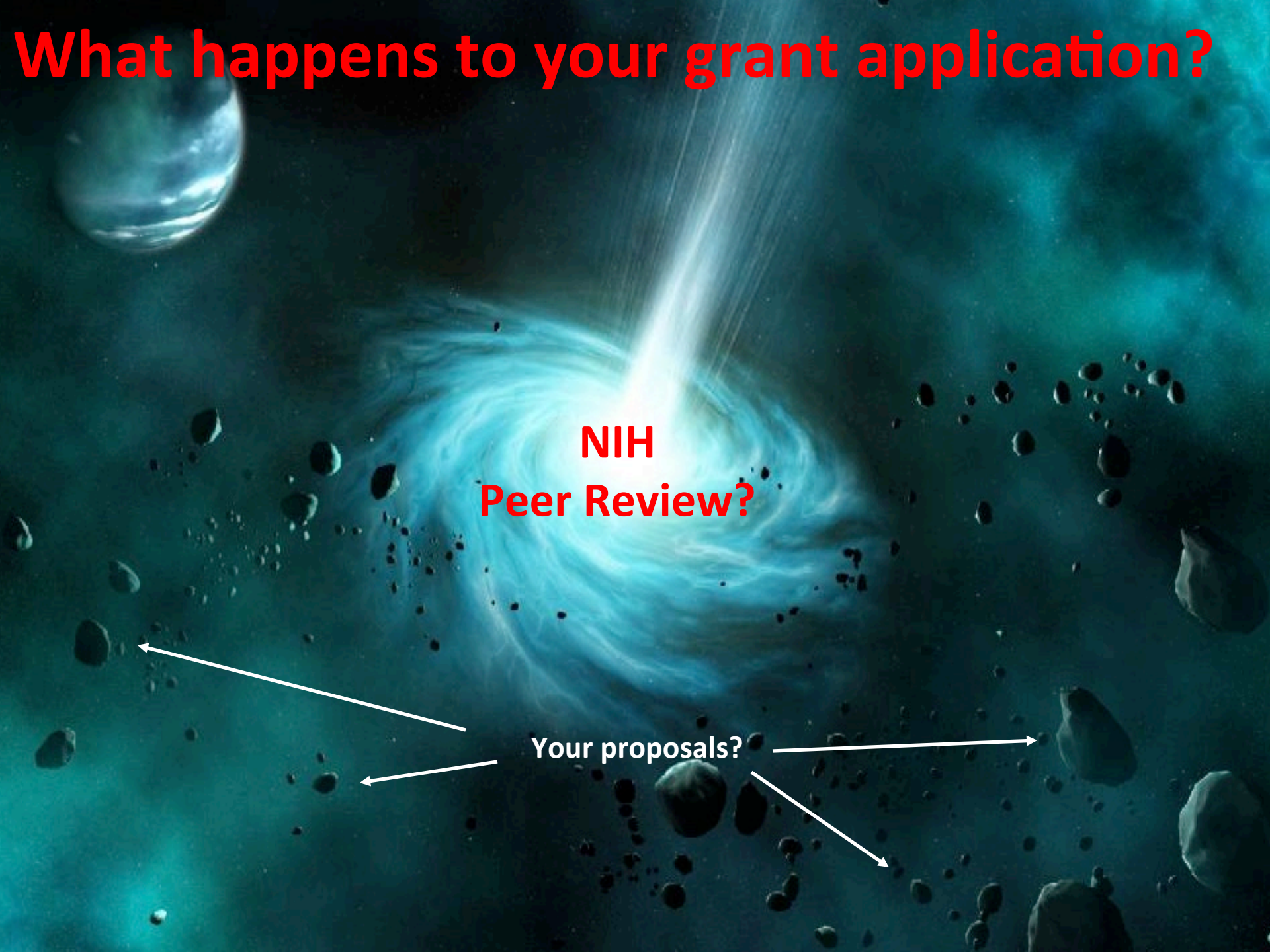
- **to an NIH Institute (IC)**
- **to Integrated Review Group (IRG) and then a study section (SRG)**
- **a unique identifier (application number)**

Notice of assignment available in eRA Commons in 4 weeks.

Check your eRA Commons account for updates!

Decoding Your NIH Grant Number




What happens to your grant application?
NIH
Peer Review?
Your proposals?

It's an orderly universe.
Your application is reviewed by either …

- Chartered (Standing) Scientific Review Group (SRG), or "Study Section"
- Special Emphasis Panel (SEP)
  - organized by the Center for Scientific Review (CSR)
    - Conflicts on the panel (e.g. reviewer is a PI on the grant application)
    - Special review for a unique solicitation (e.g. PAR)
  - convened within a home IC of a highly specific initiative (e.g. RFA)

Peer Review and You

U.S.Department of Health & Human Services www.hhs.gov

Office of Extramural Research
National Institutes of Health

Contact Us | Print Version
Search:
Advanced Search | Site Ma

Home | About Grants | Funding | Forms & Deadlines | Grants Policy | News & Events | About OER | NIH Home

Grants Policy
- Policy & Guidance
- Compliance & Oversight
- Research Involving Human Subjects
- Office of Laboratory Animal Welfare (OLAW)
- Animals in Research
- Peer Review Policies & Practices
- Intellectual Property Policy
- Invention Reporting (iEdison)
- NIH Public Access
- Research Integrity

Global OER Resources
- Glossary & Acronyms
- Frequently Used Links
- Frequently Asked Questions

Peer Review Policies & Practices

On This Page:
- What's New in Peer Review
- Information for Reviewers
- Peer Review Practices and Policies
- Peer Review Archive

Overview of Peer Review Process

- This page provides detailed information about Peer Review Policies and Practices. For an overview of general information about Peer Review, visit Peer Review Process.

What's New in Peer Review

- NOT-OD-11-101 Resubmission of Applications with Pending Appeals of NIH Initial Peer Review
- NOT-OD-11-064 Appeals of NIH Initial Peer Review
- NOT-OD-11-047 Notice of Change in Policy on the Submission of Reference Forms for Kirschstein-NRSA Fellowships
- NOT-OD-11-035 NIH Policy on Late Submission of Grant Applications
- NOT-OD-11-023 Reminder of Policies Affecting Submission of NIH Grant Applications

Related Resources

Related Archives
- NIH Peer Review Policie and Practices (NIH Staf Only)
- Rosters of NIH Scientific Review Groups
- Office of Federal Advisory Committee Policy
  - Meeting Schedule fo all Advisory Councils
  - More Information about each Council available on IC websites
- Enhancing Peer Review
- Peer Review Advisory Council (PRAC)
- Peer Review Notes

http://grants.nih.gov/grants/peer/peer.htm

Your application may be reviewed by one of:

Bioengineering Sciences and Technology (BST)
BDMA, BMBI, GDD, ISD, MABS, NANO

Vascular and Hematology (VH)
AICS, ELB, HM, HP, MCH, VCMB

Molecular, Cellular and Developmental Neuroscience (MDCN)
BPNS, CMBG, CMND, DDNS, MNPS, NCF, NDPR, NOMD, NTRC, SYN

AIDS and AIDS Related Research (AARR)
ACE, ADDT, AIP, AMCB, AOIC, BSCH, BSPH, NAED, VACC

Behavior and Behavioral Processes (BBBP)
APDA, BRLE, CP, CPDD, LCOM, MESH, MFSR

Healthcare Delivery and Methodologies (HDM)
BCHI, BMRD, CIHB, CLHP, DIRH, HDEP, HSOD, NRCS, SEIR

Cell Biology (CB)
BVS, NCSD, CMAD, CSRS, DEV1/2, ICI, MBPP, MIST

Cardiovascular and Respiratory Sciences (CVRS)
CCHF, CDD, CICS, ESTA, LCMI, LIRR, MIM, RIBT, F10A/B

>200 Standing Scientific Review Groups (SRGs or Study Sections) housed in 24 Integrated Review Groups at CSR

Surgical Sciences and Biomedical Imaging and Bioengineering (SBIB)
BMIT-A/B, BTSS, CMIP, MEDI, SAT, F15, various SEPs

Brain Disorders and Clinical Neuroscience (BDCN)
ANIE, ASG, BINP, CDIN, CNBT, CNN, CNNT, DBD, DPVS, NPAS, PMDA

Endocrinology, Metabolism, Nutrition and Reproductive Systems (EMNR)
MCE, ICER, CMIR, PN, CADO, IPOD, CIDO, INMP

Biological Chemistry and Molecular Biophysics (BCMB)
BBM, MSFA/B/D/C/E, SBCA/B

Immunology (IMM)
CMIA/B, HAI, IHD, III, IMM-M, TTT, VMD

Musculoskeletal Oral and Skin Diseases (MOSS)
ACTS, MRS, MTE, ODCS, SBDD, SBSR, SMEP

Risk Prevention and Health Behavior (RPHB)
BMIO, PDRP, PRDP, RPIA, SPIP

Genes, Genomes and Genetics (GGG)
MGA/B, GCAT, GVE, GHS, PCMB, TAG

Interdisciplinary Medical Sciences and Training (IMST)
various SEP and training, EBIT

Infectious Diseases and Microbiology (IDM)
BACP, CRFS, DDR, HIBP, PTHE, PTHE, VB, VIRA/B

Digestive, Kidney and Urological Systems (DKUS)
CIMG, KMBD, GMPB, HBPP, KMBD, PBKD, XNDA, UGPP

Oncology 1 – Basic Translational (OBT)
CAMP, CE, CG, MONC, TCB, TME, TPM

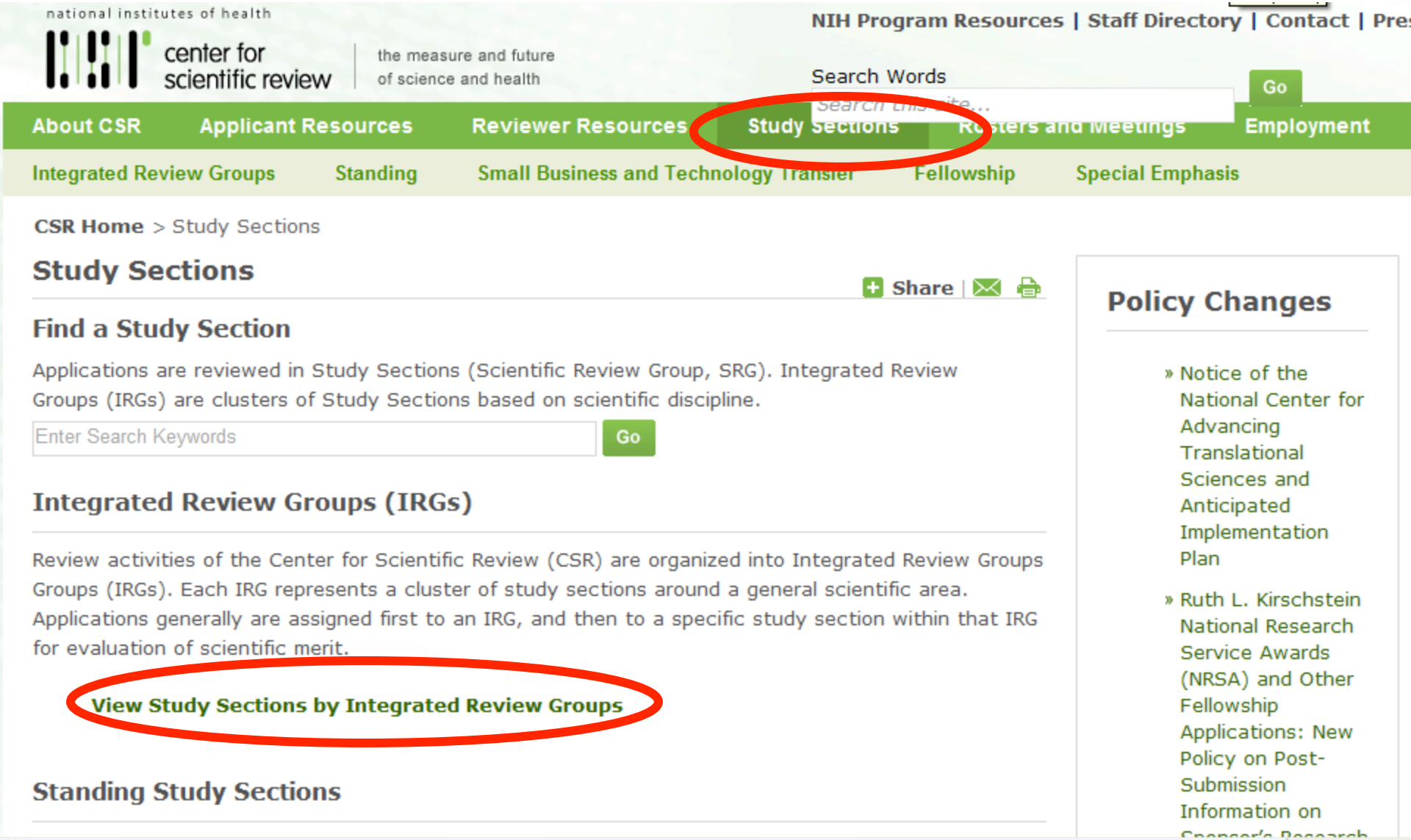
Emerging Technologies and Training in Neuroscience (ETTN)
MNG, NT, F01/2/3, several SEPs

Integrative, Functional and Cognitive Neuroscience (IFCN)
AUD, CFS, LAM, NAL, NMB, NNRS, SCS, SMI, SPC

Population Science and Epidemiology (PSE)
BGES, CASE, EPIC, IRAP, KNOD, NAME, SSPS

Oncology 2 – Translational and Clinical (OTC)
BMCT, CBSS, CDP, CII, CONC, DMP, DT, RTB, various SEPs

How to Identify the Best Study Section



http://public.csr.nih.gov/StudySections/Pages/default.aspx

Integrated Review Groups

Review Groups
Applicat
IRG for
A list of
IRG and
descript
groups)
the revi
the NIH

Click on
Scientif
http://

The stu
few Res

CSR Integrated Review Groups

AIDS and Related Research IRG [AARR]
Biobehavioral and Behavioral Processes IRG [BBBP]
Biological Chemistry and Macromolecular Biophysics IRG [BCMB]
Biology of Development and Aging IRG [BDA]
Brain Disorders and Clinical Neuroscience IRG [BDCN]
Bioengineering Sciences and Technologies IRG [BST]
Cell Biology IRG [CB]
Cardiovascular and Respiratory Sciences IRG [CVRS]
Digestive, Kidney and Urological Systems IRG [DKUS]
Emerging Technologies and Training Neurosciences IRG [ETTN]
Endocrinology, Metabolism, Nutrition and Reproductive Sciences IRG [EMNR]
Genes, Genomes, and Genetics IRG [GGG]
Healthcare Delivery and Methodologies IRG [HDM]
Infectious Diseases and Microbiology IRG [IDM]
Integrative, Functional and Cognitive Neuroscience IRG [IFCN]
Immunology IRG [IMM]
Interdisciplinary Molecular Sciences and Training IRG [IMST]

» NIH Researc
Involving
Chimpanzee
» New Dates
Investigato
R01 Applica
Submitted f
Standard Da
» More ...

FAQ's

» For Applica
» For Reviewe
» More ...

Scientific Areas of Integrated Review Groups (IRGs)

For a listing of the Scientific Review Officer and membership roster for each study section, click on the study section roster under the study section name within an IRG listed below or go to the study section index (study sections listed alphabetically) and click on the specified roster next to the name of the study section.

Bioengineering Sciences and Technologies IRG [BST]

Printer Friendly (Complete IRG)

The Bioengineering Sciences and Technologies [BST] IRG reviews grant applications that focus on fundamental aspects of bioengineering and technology development in the following areas: gene and drug delivery systems, imaging principles for molecules and cells, modeling of biological systems, bioinformatics and computer science, statistics and data management, instrumentation, chips and microarrays, biosensors, and biomaterials. Biological context is important in bioengineering, and a central premise in organization of this IRG is the need for effective review of bioengineering and technology development in early stages before specific practical uses are proven.

Research grants (R01, R21, R15, etc.), Program Project and Center Grants (P01, P41 etc.), and Cooperative Agreements (U01, U54 etc.) are reviewed in the BST IRG.

The following study sections are included within the BST IRG:

- Instrumentation and Systems Development Study Section [ISD]
- Gene and Drug Delivery Systems Study Section [GDD]
- Biomaterials and Biointerfaces Study Section [BMBI]

national institutes of health

center for scientific review

Biomaterials and Biointerfaces Study Section [BMBI]

Review Group Description: What is the science focus?

[BMBI Membership Roster] [BMBI Meeting Rosters]

printer friendly

The Biomaterials and Biointerfaces Study Section (BMBI) reviews applications concerned with biologically relevant research in materials science and the interaction of materials surfaces with biological systems. Applications driven by bioengineering principles are typical. Areas of interest include the theory, principles, design and synthesis of biomaterials as well as characterization of new or existing materials. BMBI has related interests in the interactions of biomaterials with proteins, membranes, cells, and tissues.
Specific areas covered by BMBI are:

- Development and characterization of biomaterials; Self-assembled materials; Design principles, material processing, and combinatorial approaches to the synthesis of new biomaterials; Biocompatibility, toxicity, structure/property relationships, and biodurability.
- New biomaterials and fabrication techniques for tissue engineering, transport and perfusion aspects of tissue engineering, and bioreactors.
- Molecular/cellular interfacial interactions; Non-fouling and bioactive surfaces; Improved understanding of the biology-biomaterials interface; Biosurface characterization and techno… characterization at the nano-scale.
- Chip- and micro-array-based microtechnologies and biosensors, w… biocompatibility, nonfouling surfaces, and fouling mechanisms; Incl… systems), lithographic and microfluidic elements.
- Drug and gene delivery systems and nanoparticles, with a focus on the ca… …erial, fabrication, biocompatibility, and toxicity.

Science Focus of "nearest neighbor" study sections

Study sections with most closely related areas of similar science listed in rank order are:

Gene and Drug Delivery Systems (GDD)
Nanotechnology (NANO)
Bioengineering, Technology, and Surgical Sciences (BTSS)
Enabling Bioanalytical and Biophysical Technologies (EBT)
Instrumentation and Systems Development (ISD)

Revised 12/6/2010

Cover Letters Help Target Your Review

Applicants can suggest

- **Review Group assignment**
- **Expertise necessary for a full and fair review**
- **Primary (and secondary) Institute or Center (IC) assignment**
- **Reviewers with potential conflicts**
- **Do not suggest possible reviewers, they will be disqualified.**

Other Important Information

- Reasons for a late submission
- Note eligibility for continuous submission
- Highlight this application as one of a set, if applicable
- Acknowledge NIH approval for acceptance of
  - A budget >$500K/yr
  - Conference grant

Suggested format and other information at

http://cms.csr.nih.gov/ResourcesforApplicants/CoverLet.htm

YouTube NIH Peer Review Revealed…

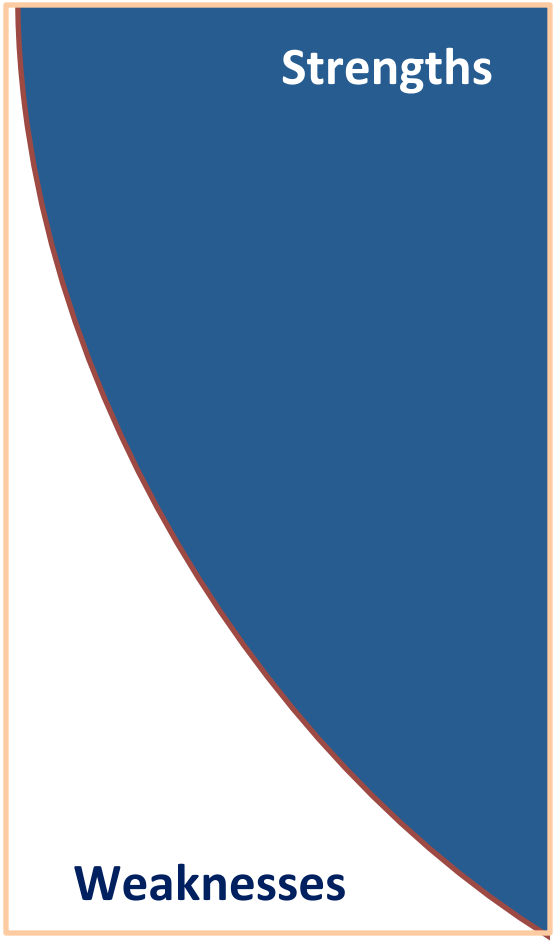
national institutes of health

center for scientific review

http://cms.csr.nih.gov/ResourcesforApplicants/InsidetheNIHGrantReviewProcessVideo.htm

NIH Scoring System

Impact	Full Description	Score	Descriptor
High	Exceptionally strong with essentially no weaknesses	1	Exceptional
	Extremely strong with negligible weaknesses	2	Outstanding
	Very strong with only some minor weaknesses	3	Excellent
Medium	Strong but with numerous minor weaknesses	4	Very Good
	Strong but with at least one moderate weakness	5	Good
	Some strengths but also some moderate weaknesses	6	Satisfactory
Low	Some strength but with at least one major weaknesses	7	Fair
	A few strengths and a few major weaknesses	8	Marginal
	Very few strengths and numerous major weaknesses	9	Poor



Minor weakness: Easily addressable weakness that does not substantially lessen impact.
Moderate Weakness: Impact lessened.
Major Weakness: Impact severely limited.

overall impact score = panel average x 10.
Most scores are then percentiled for comparison across review groups.

What Goes Into the Impact Score?

Evaluation Criteria

- ✓Significance
- ✓Investigator(s)
- ✓Innovation
- ✓Approach
- ✓Environment

Each gets a score.
The overall Impact Score is NOT AN AVERAGE OF THESE, because reviewers rate criteria differently.

Impact = likelihood of a sustained, powerful influence on the field

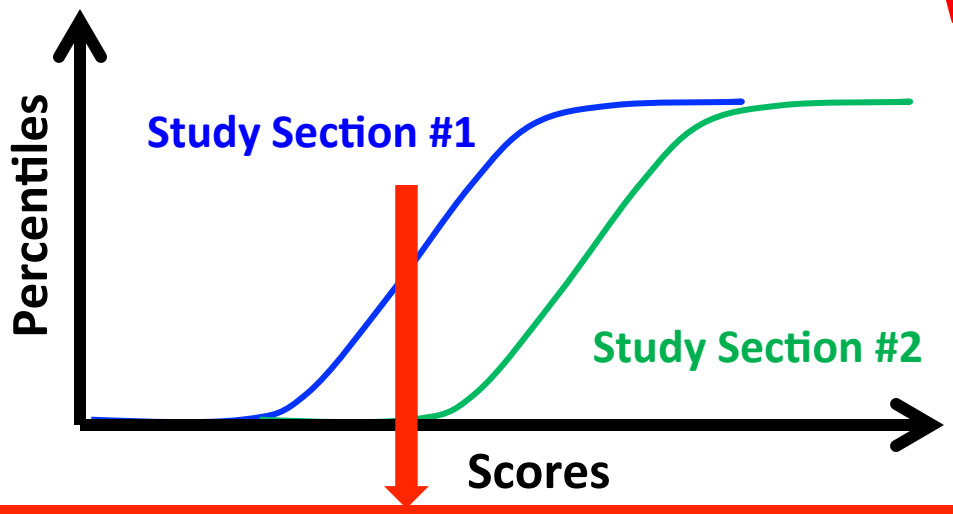
Other Elements Affecting Score

- ✓Human/Animal Subjects Protections
- ✓Biohazards

Administrative Concerns (not scorable)

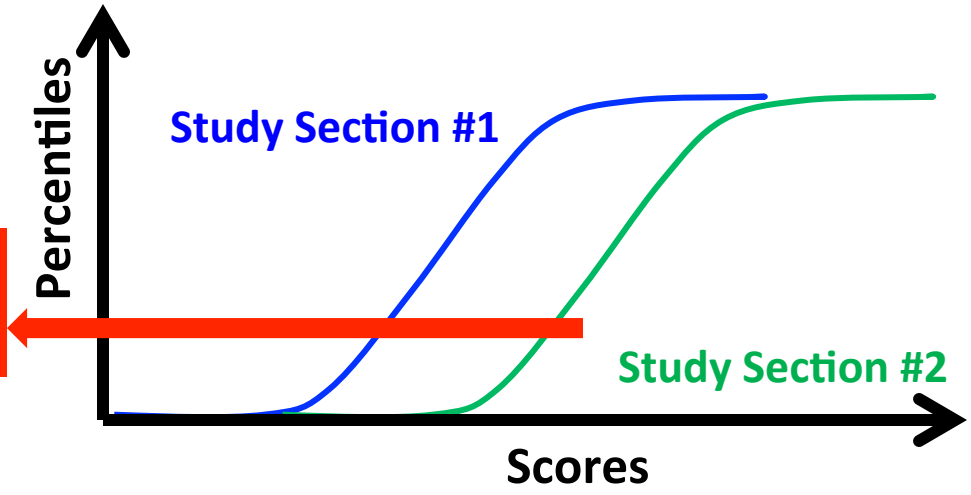
- ✓Time and Budget
- ✓Commitment/Technical Overlap
- ✓Resource Sharing
- ✓Other?

Why Percentiles?



Discrimination by score favors Study Section #1

Discrimination by percentile shows no favor



NIH's Review System for Grants

Scientific Review Group (SRG)

- Independent outside review
- Evaluate scientific merit, significance
- Recommend length and level of funding

1st level

Output: Priority Score and Summary Statement

3 - 7 months

Advisory Council

- assess quality of SRG process
- offers recommendation to Institute Staff
- evaluates program priorities and relevance
- advises on policy

2nd level

Output: Funding Recommendations

1 - 3 months

Institute Director

- makes final decision based on Council input, programmatic priorities
- Must also Pass Administrative Review

Output: Awards or Resubmission

Who Makes Actual Funding Decisions?

The Institute Director!

Factors Considered:

- Scientific Merit
- Contribution to Institute Mission
- Program Balance
- Availability of Funds

Paylines vary.
Funding Strategies vary.

Close, but no cigar?

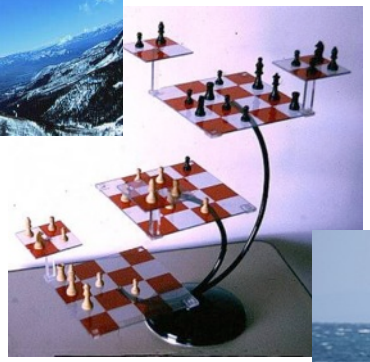
You get one more try.

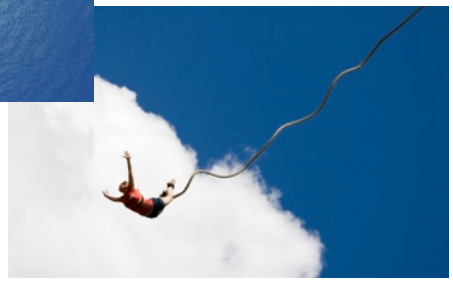
- Revise and Resubmit
- It's not personal
- Absorb the critiques
  - make suggested changes
  - provide additional justification for your original approach
- Explain the changes in a one page "Introduction"

If at first you don't succeed,

redefine SUCCESS

… or, Submit a NEW APPLICATION





The Program Official can help you plow new ground.

Common Problems

- Low/No significance
  - Unimportant problem limits significance
  - Unconvincing case limits impact; feasibility questionable
  - Irrelevant, inconsistent, or insufficient reference to published work
- Weak PI/Research team: Insufficient experience with essential methodologies
- Lack of innovation: evolutionary not revolutionary
- Questionable reasoning in experimental approach
  - Errors in design = FATAL FLAW
  - Failure to consider potential pitfalls and alternatives
- Diffuse, superficial, or unfocused research plan
  - Lack of critical experimental detail
  - Unrealistically large amount of work proposed
  - No clear milestones, decision points
- Poor environment: weakly documented institutional support
- Serious/unresolvable human/animal subjects or biohazard concerns

See also: http://www.principalinvestigators.org/article.php


Do science because you can't imagine doing anything else, and enjoy the ride. No one said it would be easy, only wild.
- Doug Green

Are you ready to run with the big dogs?

Rosemarie Hunziker, PhD

Program Director, Tissue Engineering/Regenerative Medicine, Biomaterials and Medical Devices
National Institute of Biomedical Imaging and Bioengineering (NIBIB)
National Institutes of Health (NIH)

301-451-1609
Rosemarie.Hunziker@nih.gov
www.nibib.nih.gov