

**National Science Foundation
Directorate of Biological Sciences
BIO**



Peter McCartney, Program Director

Division of Biological Infrastructure

NSF Grants Conference
Arlington November 2-3, 2015

Overview

1. Directorate of Biological Sciences

- BIO Science
- BIO Organization
- BIO Divisions/Programs

2. Preparing and submitting proposals

- Proposal Preparation
- Writing for Success

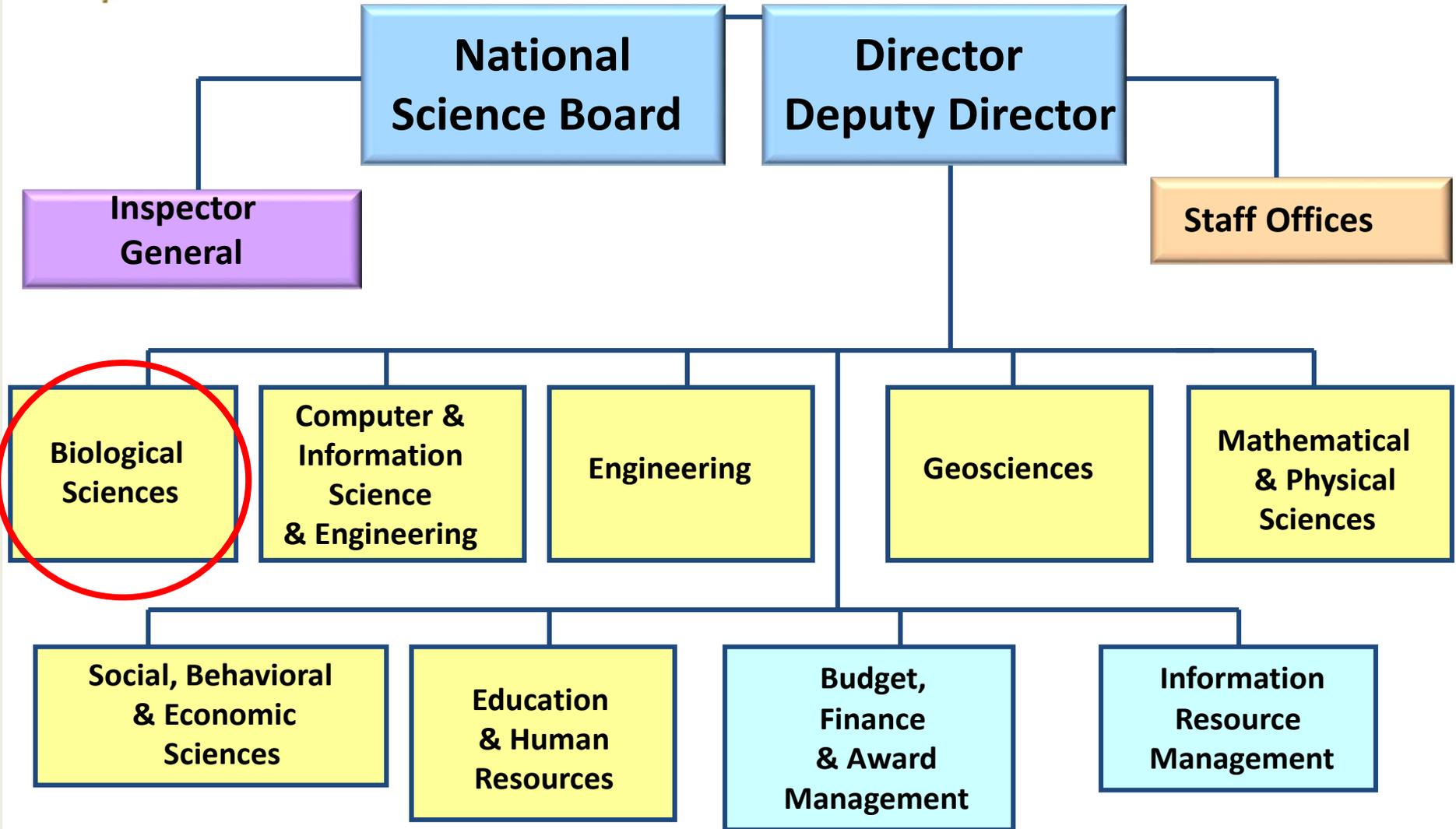
3. Questions and answers

Demystifying NSF & the BIO Directorate





National Science Foundation



Resources for Information

Sign up for BIO email alerts

Read the BIO blogs!

DEBrief

Blog of the Division of Environmental Biology, NSF



Follow NSF BIO tweets



Join



Pick up the phone!

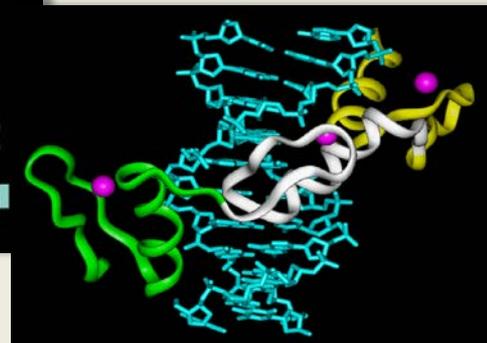


A screenshot of the NSF BIO website. The top navigation bar includes links for FUNDING, AWARDS, DISCOVERIES, NEWS, PUBLICATIONS, STATISTICS, ABOUT NSF, and FASTLANE. Below this is the NSF logo and the text 'National Science Foundation Directorate for Biological Sciences (BIO)'. A search bar is on the right. A secondary navigation bar lists BIO HOME, BIO FUNDING, BIO AWARDS, BIO DISCOVERIES, BIO NEWS, and ABOUT BIO. A large red arrow points from the 'Get BIO Updates by Email' link in the left sidebar to the 'Sign up for BIO email alerts' text. The main content area features a banner image of a bat and text: 'Promoting and advancing scientific progress in biology'. The left sidebar contains sections for BIO Organizations (listing DBI, DEB, EF, IOS, MCB), About BIO (with a link to an 'About BIO' page), and Proposals and Awards. The right sidebar includes 'Get BIO Updates by Email', 'Featured Programs' (listing Plant Genome Research Program, Research Coordination Networks), and 'Additional BIO Resources' (listing BRAIN Initiative, FY 2015 Budget Excerpts, Data Management Plans, Dear Colleague Letters, etc.).

<http://www.nsf.gov/dir/index.jsp?org=BIO>

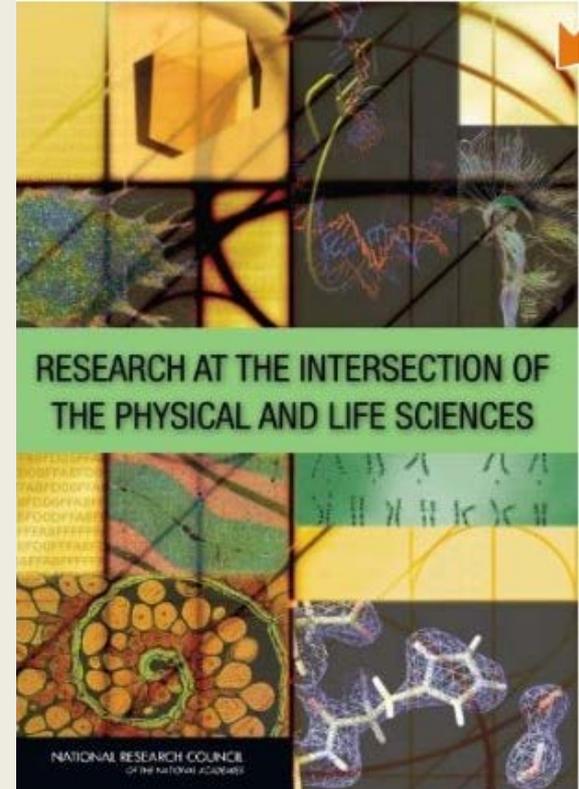
The BIO Mission

Enabling discoveries to understand life



BIO Priorities

1. **Strengthening** research that addresses *Grand Challenge questions*
2. **Coalescing** NSF-wide collaborations to advance research in *Cognitive Science and Neuroscience*
3. **Stimulating** *research at the interface* of the biological, mathematical and physical sciences, and engineering
4. **Supporting** *cyberinfrastructure*, including the National Ecological Observatory Network (NEON).

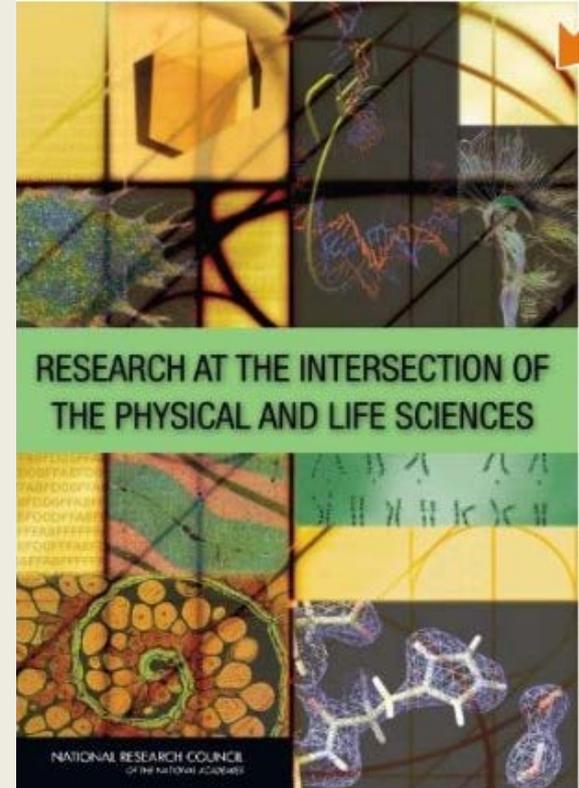


http://www.nap.edu/catalog.php?record_id=12809

http://www.nsf.gov/bio/budget/FY15/fy15_bio_final.pdf

Five Grand Challenges at Disciplinary Intersections

- Synthesizing life-like systems
- Understanding the brain
- Predicting traits from DNA (and DNA from traits)
- Deciphering interactions between earth and its climate and atmosphere
- Understanding biological diversity



http://www.nap.edu/catalog.php?record_id=12809

http://www.nsf.gov/bio/budget/FY15/fy15_bio_final.pdf



James Olds
Asst. Director BIO

Directorate for Biological Sciences (BIO)

Emerging Frontiers (EF)

Division of Biological Infrastructure (DBI)

Division of Environmental Biology (DEB)

Division of Integrative Organismal Systems (IOS)

Division of Molecular and Cellular Biosciences (MCB)





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Human Resources

Research Resources

Ecosystem Science

Evolutionary Processes

Population and Community Ecology

Systematics & Biodiversity Science

Behavioral Systems

Developmental Systems

Neural Systems

Physiological & Structural Systems

Plant Genome Research Program

Cellular Dynamics and Function

Genetic Mechanisms

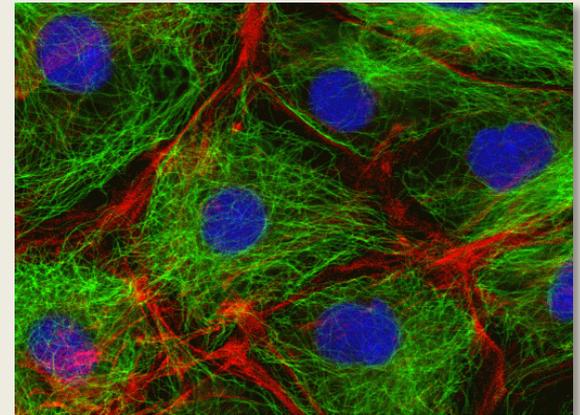
Molecular Biophysics

Systems and Synthetic Biology



Division of Molecular and Cellular Biosciences (MCB)

- Supports research aimed at understanding life processes at the molecular, subcellular and cellular levels.
 - Cellular Dynamics and Function
 - Genetic Mechanisms
 - Molecular Biophysics
 - Systems and Synthetic Biology
- Current solicitation: NSF 13-510
 - One deadline per year

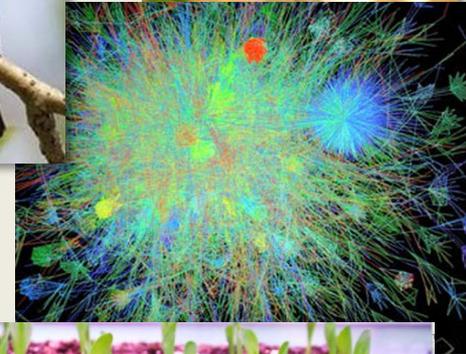


<http://www.nsf.gov/pubs/2013/nsf13510/nsf13510.htm>

Division of Integrative Organismal Systems (IOS)

- Supports research aimed at understanding the living organism -- plant, animal, microbe -- as a unit of biological organization.

- Behavioral Systems*
- Developmental Systems*
- Neural Systems*
- Physiological and Structural Systems*
- Plant Genome Research Program*



- Solicitations:

* IOS Pre and full proposals: NSF 13-600

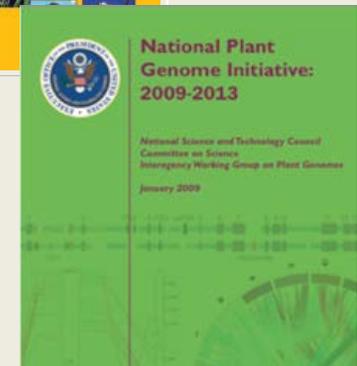
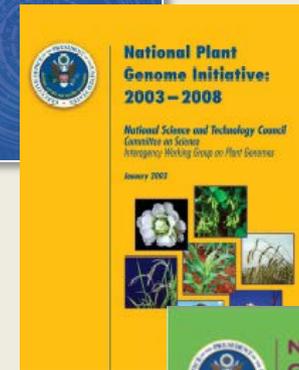
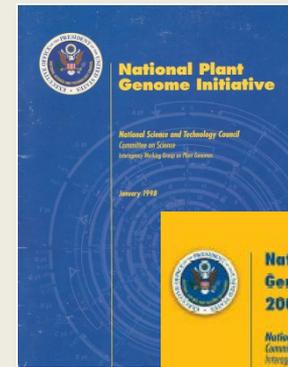
<http://www.nsf.gov/pubs/2013/nsf13600/nsf13600.htm>

* IOS/PGRP Full proposal only: NSF 15-548

<http://www.nsf.gov/pubs/2015/nsf15548/nsf15548.htm>

IOS: Plant Genome Research Program

- Part of the National Plant Genome Initiative (NPGI) in 1998
- Focus on **plants** and **processes of agricultural importance**
- Supports tools, resources, training and hypothesis-driven basic research on a **genome-wide** scale
- Rapid release and sharing of all data and tools has always been required



Division of Environmental Biology (DEB)

- Supports fundamental research on the origins, functions, relationships, interactions, and evolutionary history of populations, species, communities, and ecosystems.
 - Ecosystems Science
 - Evolutionary Processes
 - Population and Community Ecology
 - Systematics and Biodiversity Science
- Solicitation: NSF 15-500
 - Preliminary Proposals Required



Division of Biological Infrastructure (DBI)

- **Research Resources Cluster**
 - Advances in Biological Informatics
 - Collections in Support of Biological Research
 - Improvements in Facilities, Communications, and Equipment at Biological Field Stations and Marine Laboratories
 - Instrument Development for Biological Research
 - Major Research Instrumentation
- **Human Resources Cluster**
 - Postdoctoral Research Fellowships in Biology (PRFB)
 - Research Coordination Networks (RCN)
 - Research Experiences for Undergraduates (REU)
- **Centers**
 - Synthesis Centers
 - Science and Technology Centers



Division of Emerging Frontiers (EF)

- Multidisciplinary research and networking activities that arise from disciplinary research



- **Current Programs**

- Advancing Digitization of Biodiversity Collections
- Dimensions of Biodiversity
- MacroSystems Biology
- Ocean Acidification



- **Current Activities**

- Advancing Theory in Biology
- Cracking the Olfactory Code
- Innovations in Bio Imaging and Visualization
- Surpassing Evolution: Enhancing Photosynthetic Efficiency



Preparing and Submitting Proposals

- Know the system
- Pitch your ideas
- Take time and be on time



Plant Genome Research Program (PGRP)
FY 2015 Competition

PROGRAM SOLICITATION
NSF 15-548

REPLACES DOCUMENT(S):
NSF 14-533

 **National Science Foundation**
Directorate for Biological Sciences
Division of Integrative Organismal Systems

Full Proposal Target Date(s):
May 27, 2015

IMPORTANT INFORMATION AND REVISION NOTES

The Mid-Career Investigator Awards in Plant Genome Research (MCA-PGR) will continue to be available in FY 2015.

A new opportunity, **Early Career Investigator Awards in Plant Genome Research (ECA-PGR)**, will be available in FY 2015.

The Advancing Basic Research in Economically Important Crop Plants (ABR-PG) will not be offered in FY 2015.

Please note that proposals at all scales are welcome, from single investigator to multi-investigator consortium projects, commensurate with the scope and scale of the proposed research.

Letters of Collaboration: The use of a template form for submitting letters of collaboration is no longer required for preparation of letters of collaboration.

Conflict of Interest document: The provided template must be used to generate the Conflict of Interest document.

Important Information

Any proposal submitted in response to this solicitation should be submitted in accordance with the revised NSF Proposal & Award Policies & Procedures Guide (PAPPG) (NSF 15-1), which is effective for proposals submitted, or due, on or after December 26, 2014. The PAPPG is consistent with, and implements the new Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards (Uniform Guidance) (2 CFR § 200).

SUMMARY OF PROGRAM REQUIREMENTS

General Information

Program Title:
Plant Genome Research Program (PGRP)

Synopsis of Program:

HOW TO WRITE A SUCCESSFUL GRANT PROPOSAL: Quotes from 5,650,000 google entries

HOW TO WRITE A SUCCESSFUL GRANT PROPOSAL: Quotes from 5,650,000 google entries

"Grant writing is like playing the stock market; there is seldom a guarantee that your efforts will be rewarded, but the more you know about the process and the more you use this knowledge, the greater the probability for success."

"Good grant proposals begin with good research questions."

"By failing to prepare, you are preparing to fail."

"The goal is to build a better mousetrap."



"A successful grant proposal is one that is well-prepared, thoughtfully planned, and concisely packaged."

"The trick is to think like a reviewer"

"Grant writing is like playing the stock market; there is seldom a guarantee that your efforts will be rewarded, but **the more you know about the process and the more you use this knowledge, the greater the probability for success.**"

Preparation

- Explore the different programs and clusters
- Read about the process in the *current* GPG 15-1
- Find the solicitation for your program
- Read about prior awards
- Read the solicitation
- Call your Program Director
- Read the solicitation
- Read the solicitation
- Read the solicitation

Plant Genome Research Program (PGRP)
FY 2015 Competition

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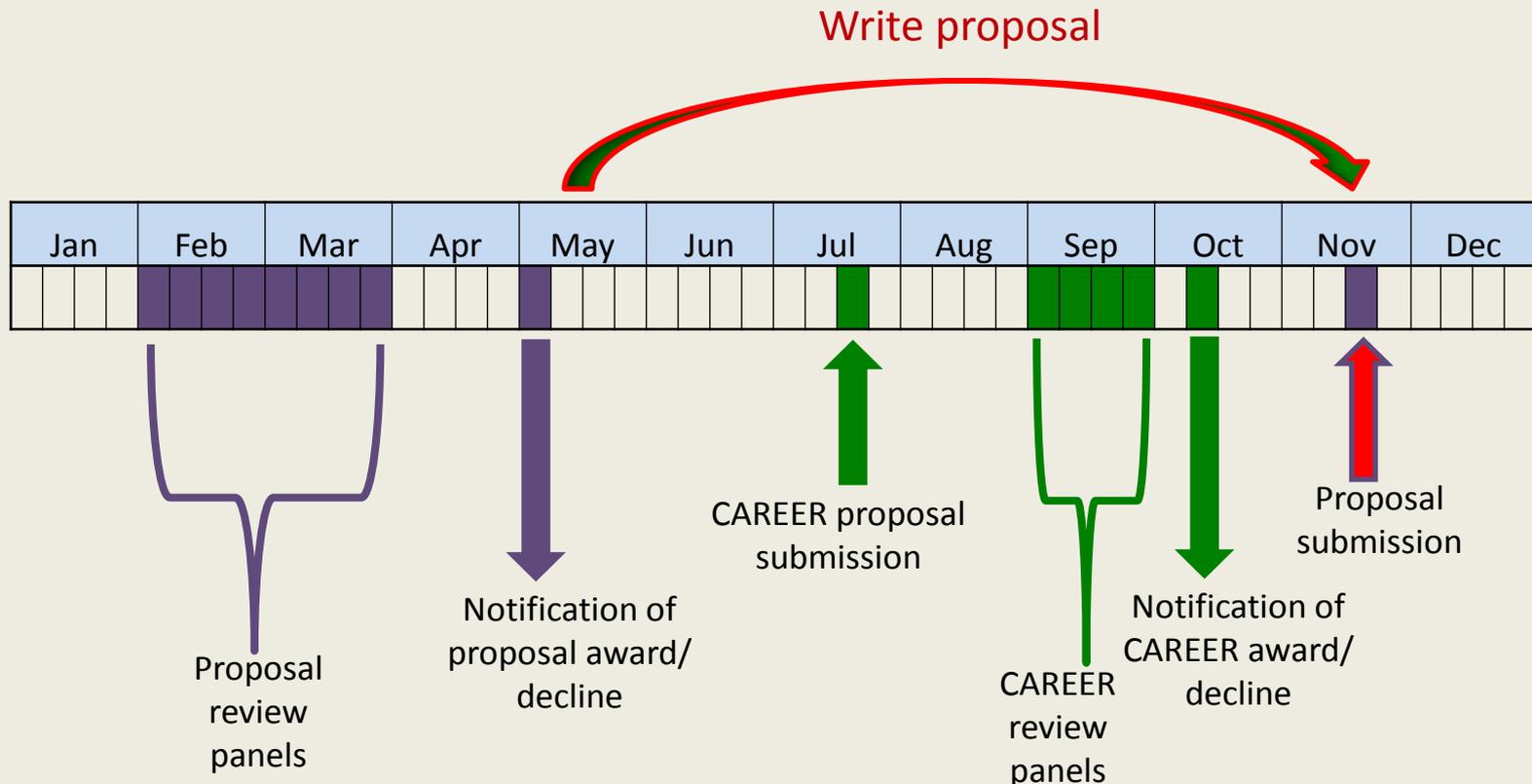
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Synopsis of Program:

Proposal Deadlines/Target Dates

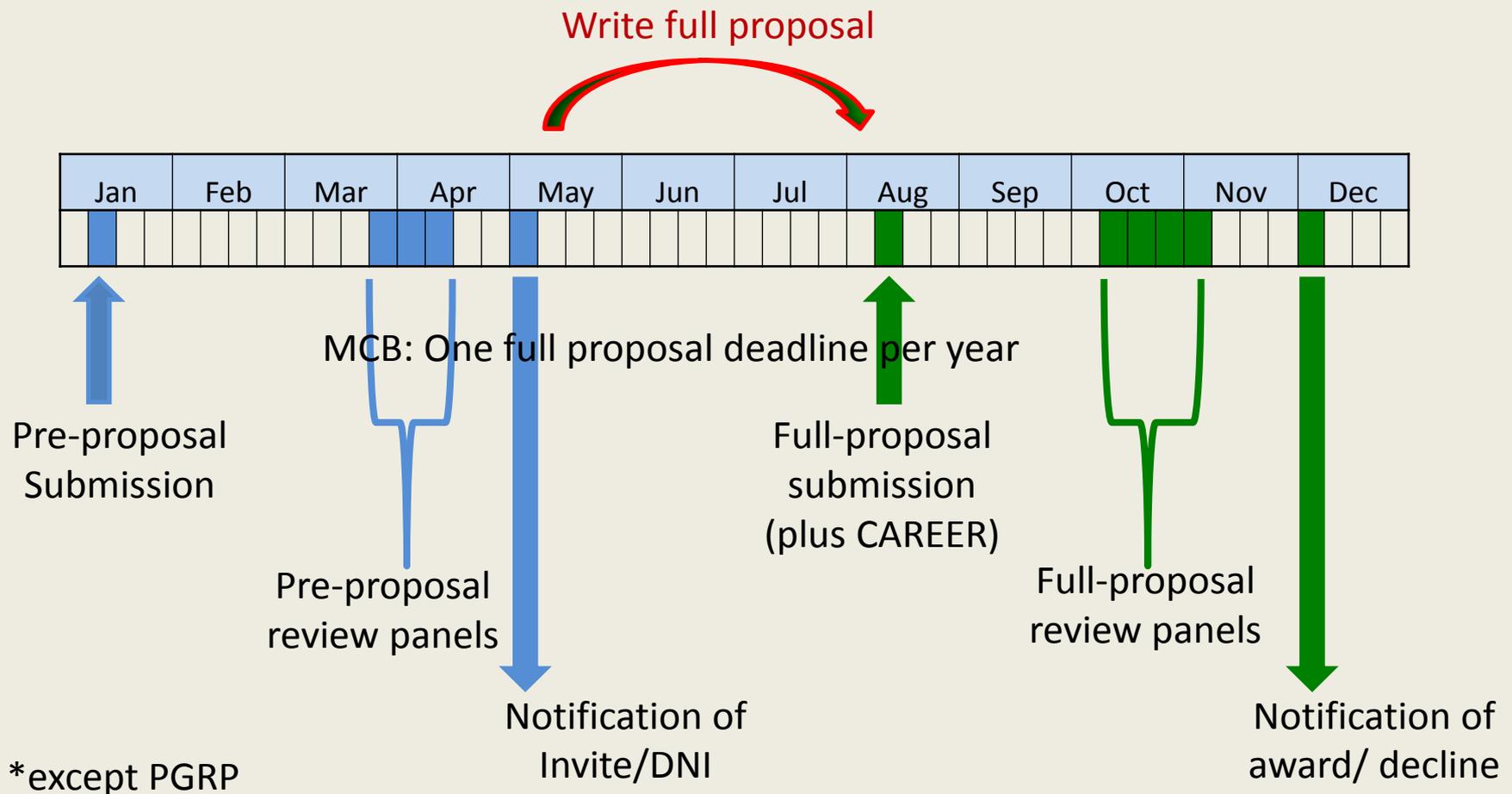
MCB: One full proposal deadline per year

DBI: Multiple full proposal deadline per year



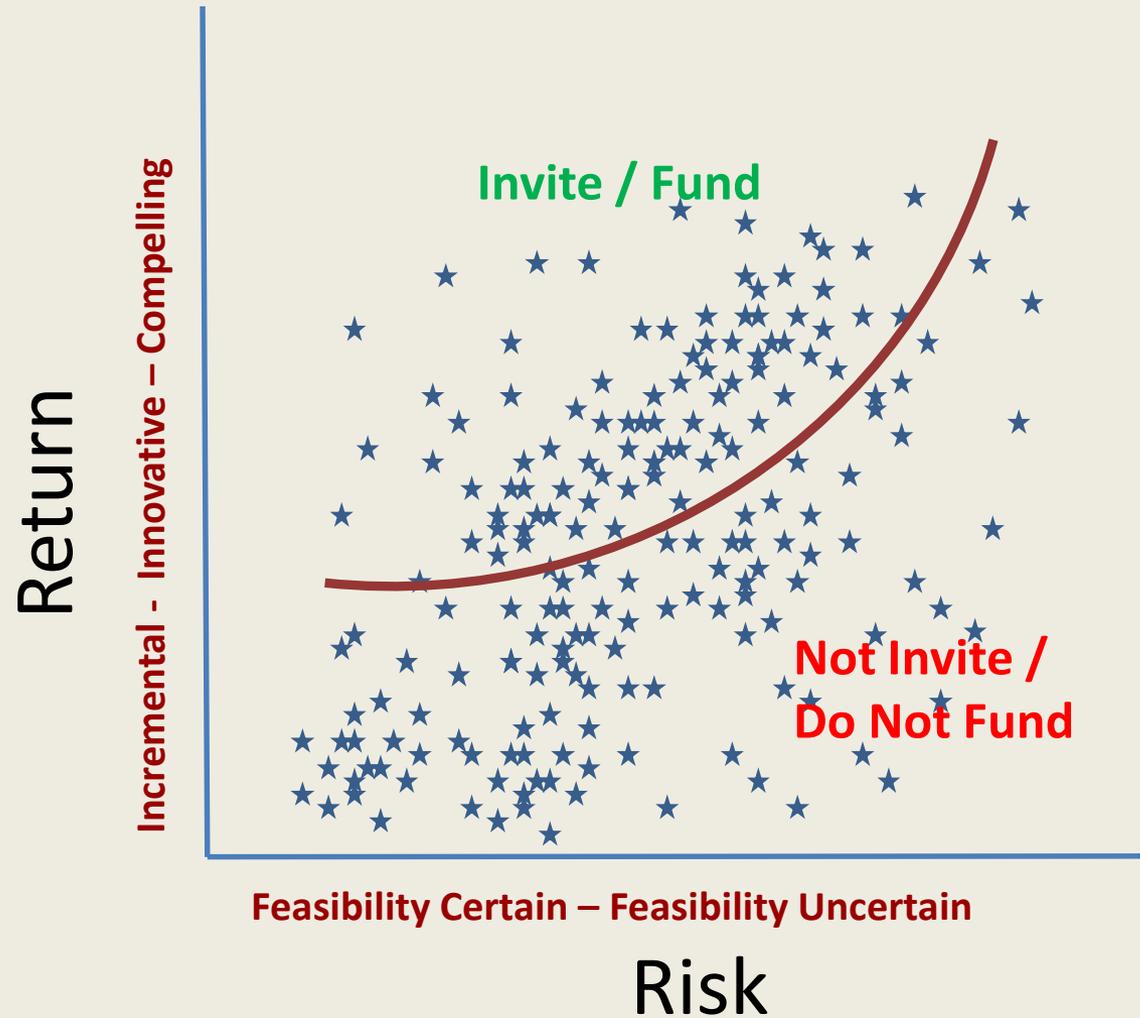
Proposal Deadlines/Target Dates

IOS* and DEB : One full proposal deadline per year



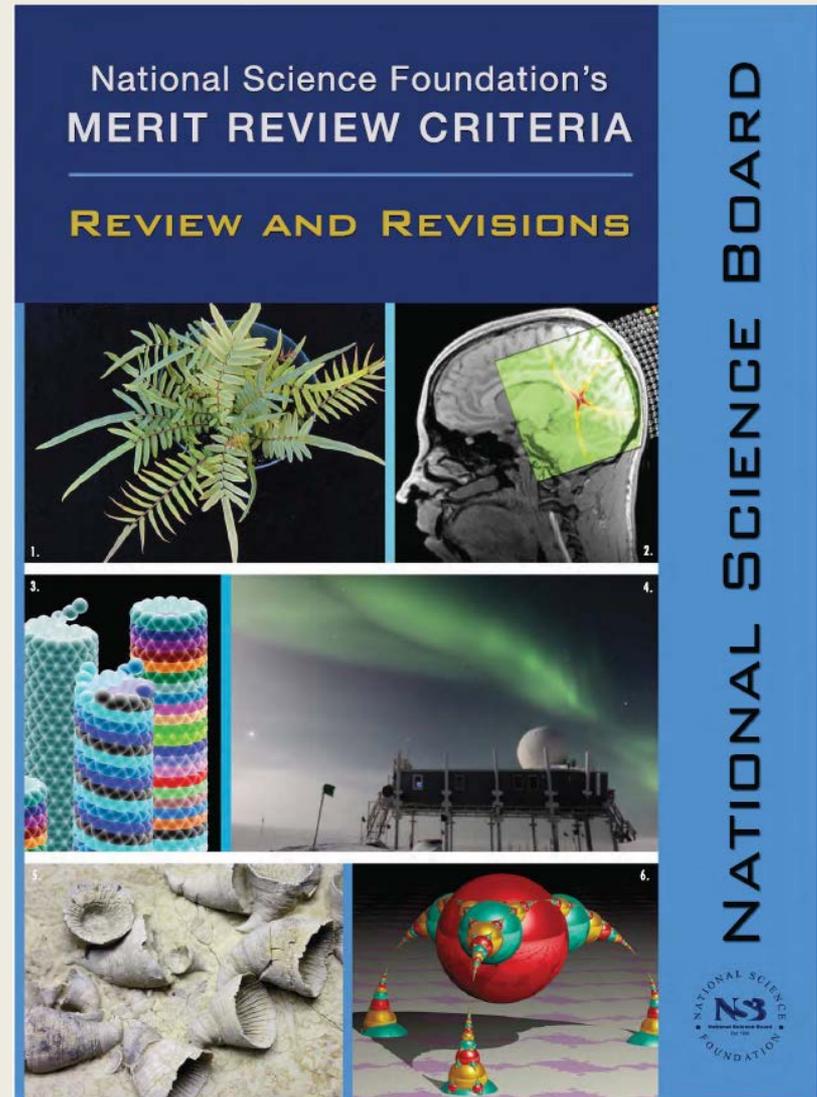
The Ellis mnemonic: C,C,C,C,C,C,C,C and B *the C8 & B Rule*

- Creative
- Concise
- Compelling
- Clear
- Convincing
- Corrected
- Complete
- Compliant
- Balance



Remember NSF Merit Review Criteria

- Intellectual Merit
- Broader Impacts



NSF Merit Review Criteria

INTELLECTUAL MERIT

- Potential for advancing knowledge in/across fields
- Qualifications of investigators
- Creativity & originality
- Organization
- Access to resources
- *Transformative Research*

NSF Merit Review Criteria

BROADER IMPACT

- Promoting teaching, training and education
- Enhancement of infrastructure for research and education
- Community resources
- Participation of underrepresented groups
- Benefits to society/Outreach activities

Think Like a Reviewer

Intellectual Merit

Applicants

- Present a NEW idea
- Explain the expected results and alternative plans
- What you will do
- Demonstrate your qualifications
 - Preliminary Data
 - Publications

Reviewers

- Is it a big or little step in science?
- Will the negative results be important too?
- Can the applicants do the project?

One of TWO merit criteria
(Required but not sufficient...)

Think Like a Reviewer

Broader Impacts

Applicants

- Present an integrated clear plan.
- Document a history of outreach/impact.
- Show who you will impact and how.
- Describe how you will know it works.

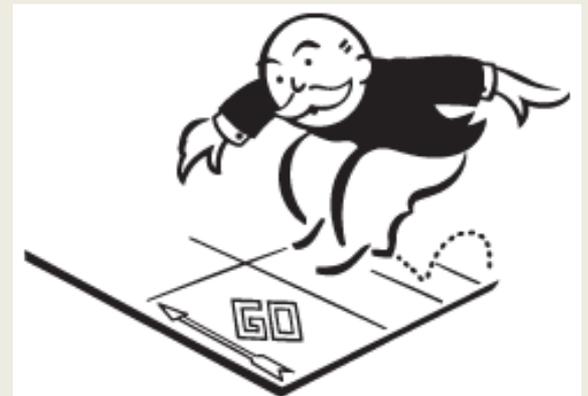
Reviewers

- Is it connected to the research?
- Can it be executed?
- Are they targeting an appropriate goal/group?
- Will it have an impact and how will the PI know?

One of TWO merit criteria
(Required but not sufficient...)

The News

- Now you have to do what you said
 - After celebrating, reread your proposal
 - *Then get started*
 - And keep in touch with your Program!
- OR..... Remember you are not alone
 - Give yourself 24 hrs
 - *Then get started*
 - Contact your Program Director



“Good grant proposals **begin** with good research questions.”



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