

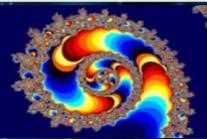
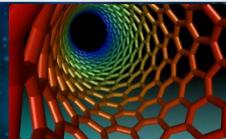
NSF/BIO Research Support

Henry L. Gholz, Program Director

Division of Environmental Biology
National Science Foundation

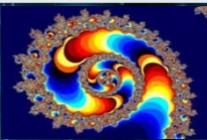
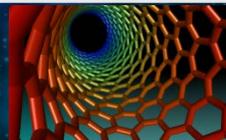
Denver, CO
June 23-24, 2014

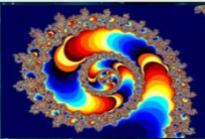
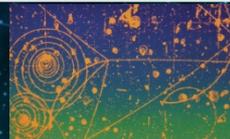
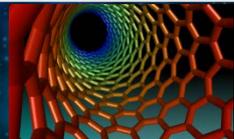
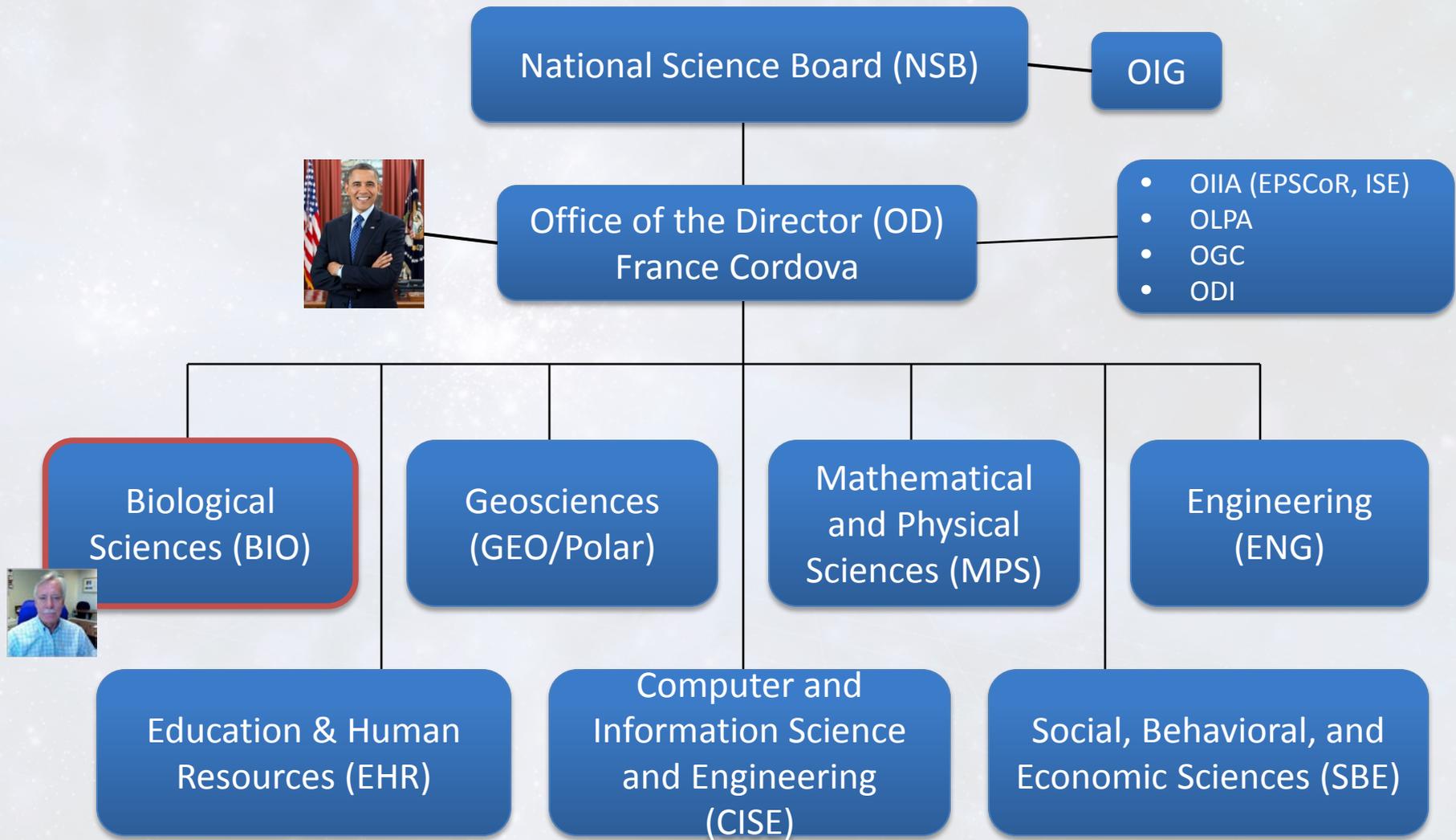
One **NSF**



Outline

- BIO organization, Divisions
- Some big issues
- Pre/Full proposal process in DEB & IOS
- Writing for success
- Program considerations
- Q&A



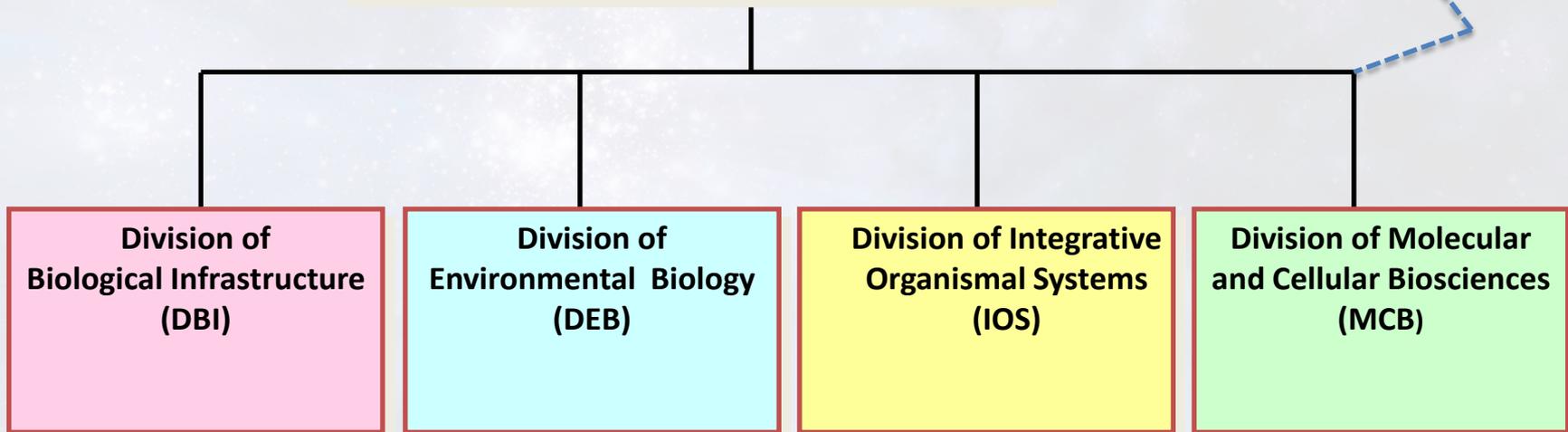




John Wingfield
Asst. Director BIO

**Directorate for Biological Sciences
(BIO)**

Emerging Frontiers (EF)
NEON, MSB, DoB, OA



Division of Biological Infrastructure (DBI)

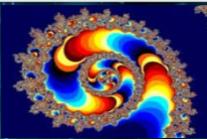
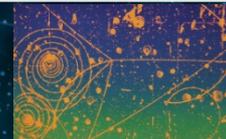
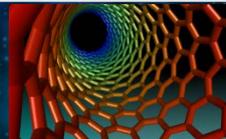
Supports resources needed to empower biological discovery.

– Research Resources

- Advances in Biological Informatics
- Improvements at Field Stations and Marine Labs
- Instrument Development
- Synthesis Centers (SESynC, iPLANT, etc.)

– Human Resources

- Postdoctoral Research Fellowships
- Research Experiences for Undergraduates - Sites

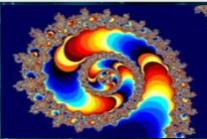
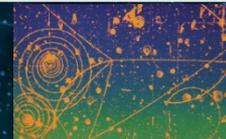
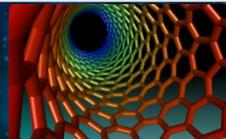


Division of Environmental Biology (DEB)

Supports fundamental research on populations, species, communities, and ecosystems.

- Evolutionary Processes (see also Dimensions of Biodiversity)
- Ecosystems Science (see also MacroSystems Biology)
- Population and Community Ecology
- Systematics and Biodiversity

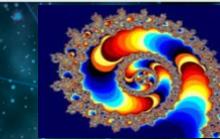
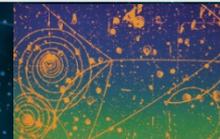
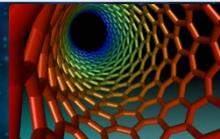
- LTER



Division of Integrative Organismal Systems (IOS)

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

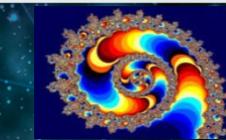
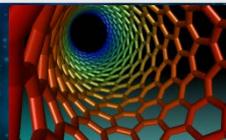
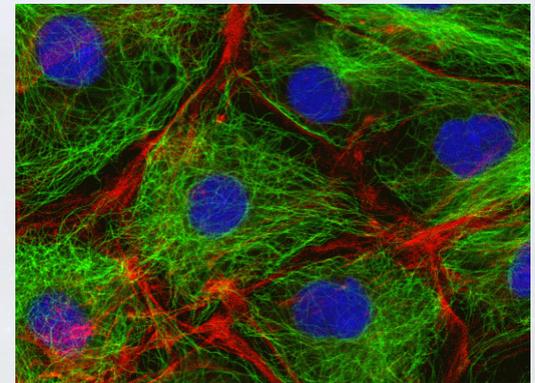
- Behavior
- Development
- Neurobiology (incl. Brain)
- Physiology
- Structure and Function
- Plant Genome Research Program



Division of Molecular and Cellular Biosciences (MCB)

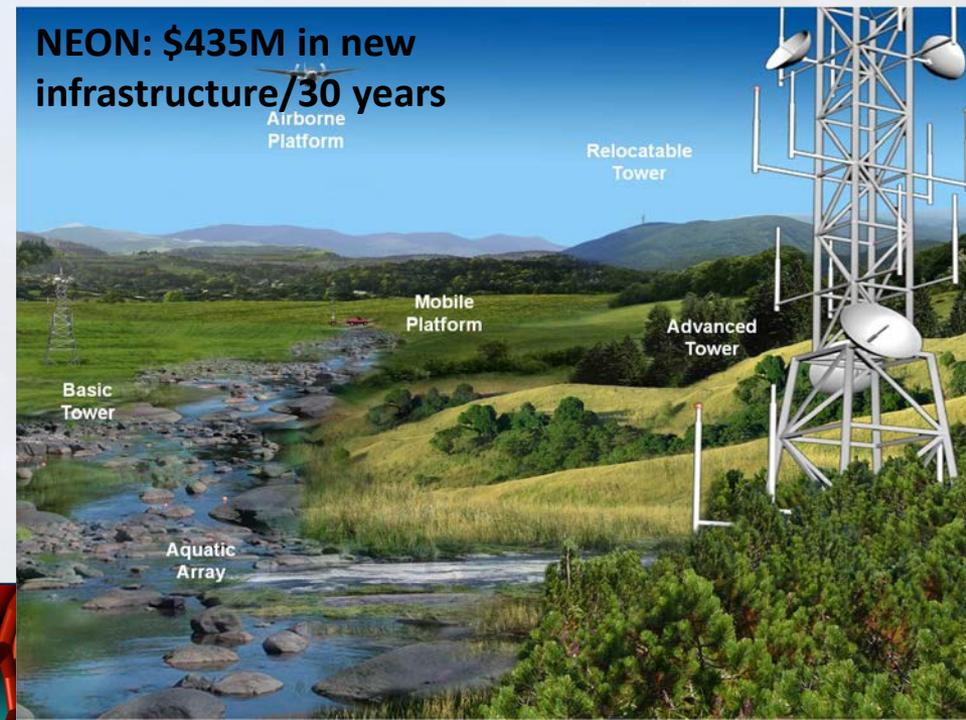
Supports research aimed at understanding life processes at the molecular, sub-cellular and cellular levels.

- Cellular biology and biochemistry
- Molecular genetics and genomics
- Molecular biophysics
- Networks and regulation
- System and synthetic biology



Division of Emerging Frontiers (EF)

- National Ecological Observatory Network (NEON), M&O
- Dimensions of Biodiversity
- MacroSystems Biology
- Other

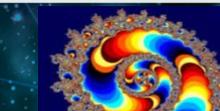
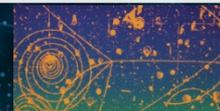
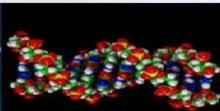


“Infrastructure Dilemma”?

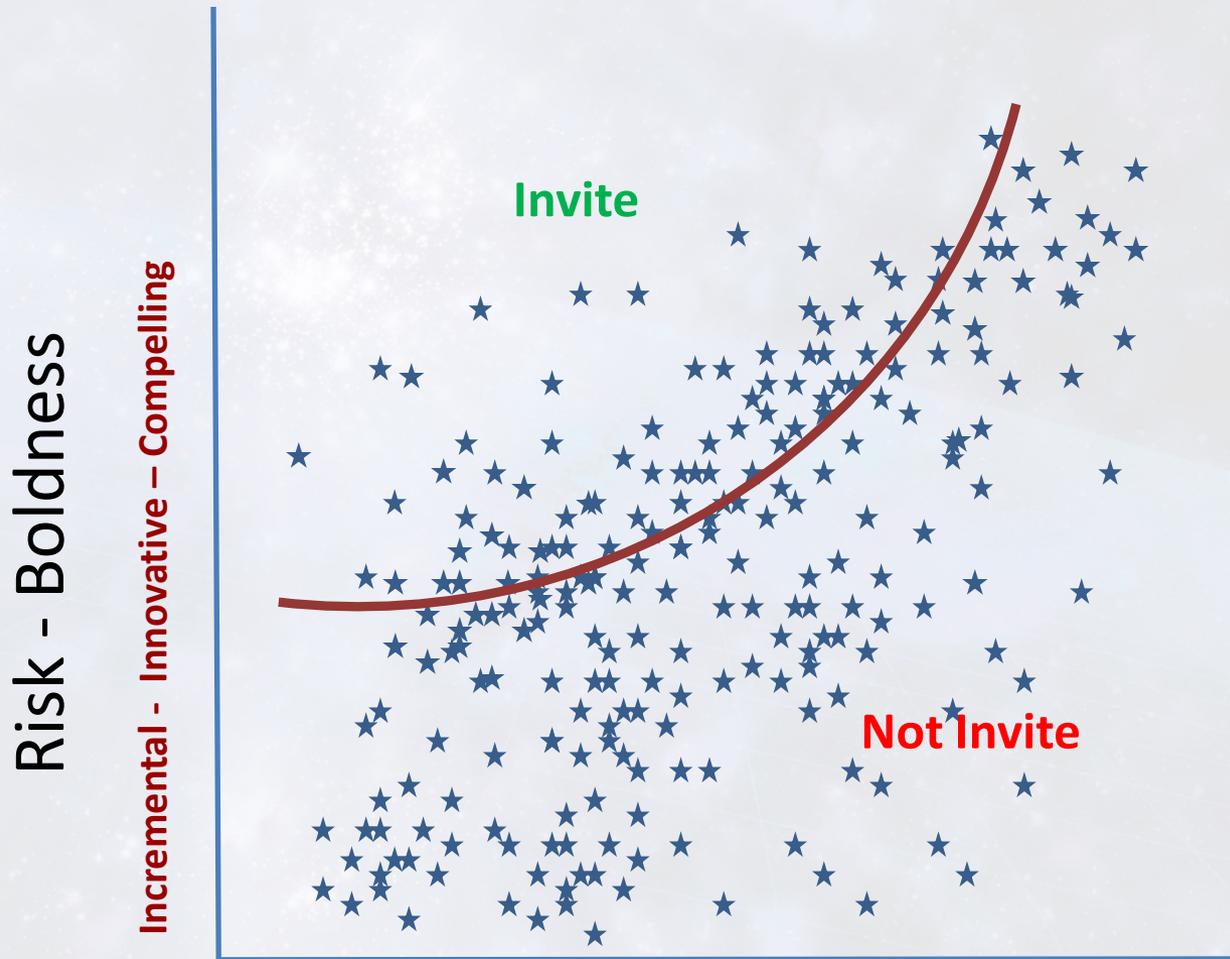
Infrastructure = low risk
Transformative research = high risk

How do you lead with ideas (high risk), while trying to leverage existing investments in major infrastructure (low risk)?

(applies to EPSCoR, NEON, LTER, other facilities)



Proposal review - 2 axes of Risk

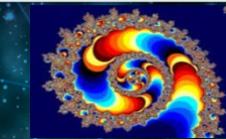
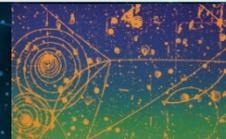
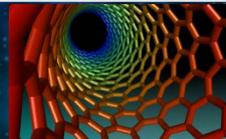


Solid - Technical quibbles - Design flaws - Not feasible

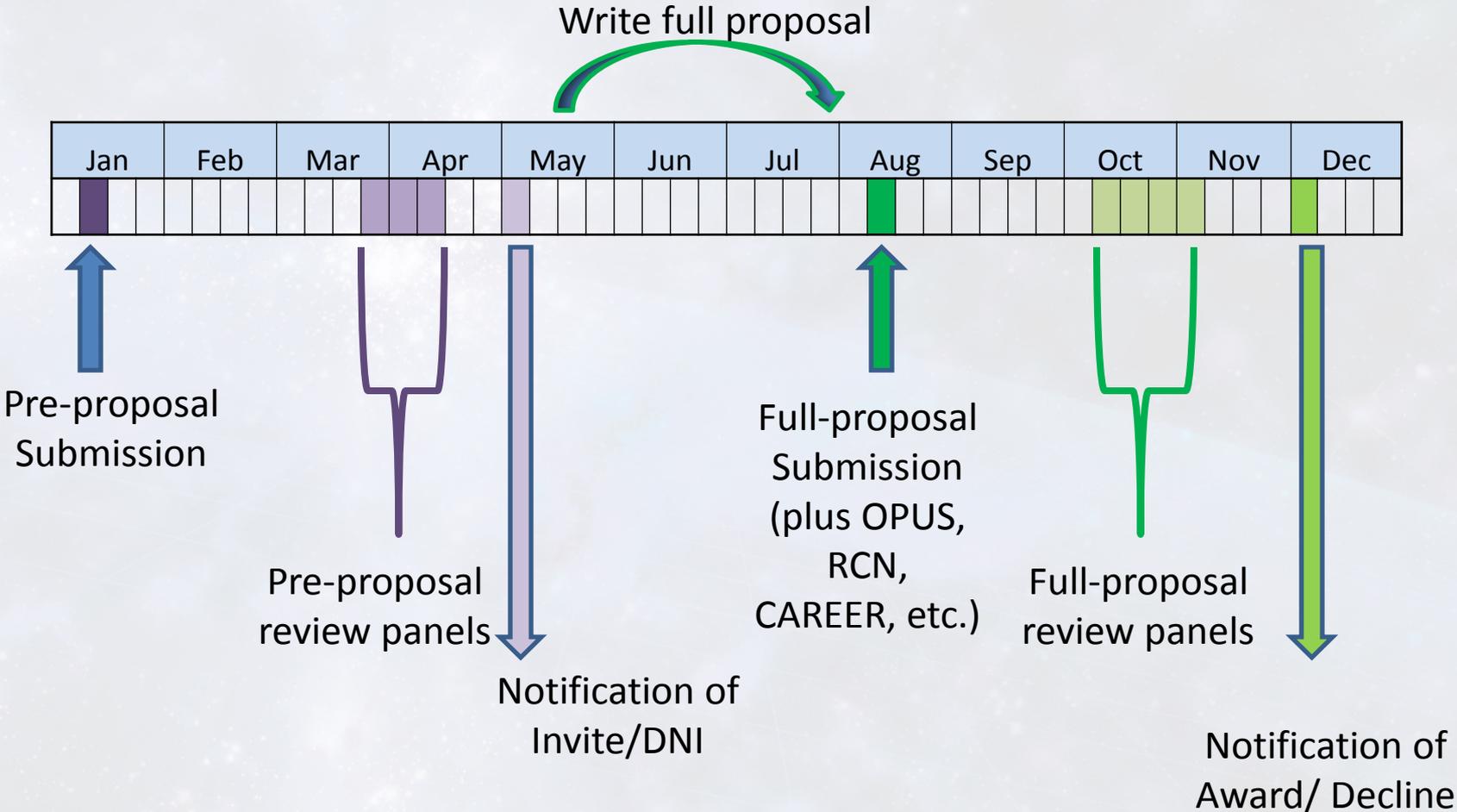


DEB and IOS changed core programs (2012)

- Dropped full proposals @ 2x/yr
- Adopted pre-proposals @ 1x/yr (with limit of 2/PI/division); invited full proposals @ 1x/yr
- Currently considering impacts and potential changes
 - DEB blog: monitored/react
 - NSF/BIO/DEB homepages: DCLs, solicitation changes, etc.
 - We need your feedback!



Annual Cycle of Review and Recommendation



<http://nsfdeb.wordpress.com>

Home	DEB Resources and Links	About	Blog Policies
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JULY 23, 2013 BY DEB SCIENCE STAFF

DEB Numbers: Award Size and Duration

This installment of DEB Numbers looks at the DEB Core Programs' regular research project portfolio through the lens of award size and duration.

Introduction

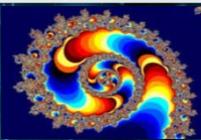
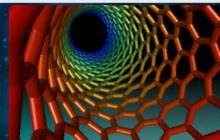
This post was inspired by some of the reaction we heard to our earlier DEB Numbers posts on collaboration. (We also will take the serendipitous bounce off these recent findings about award size from north of the border and subsequent discussion [here](#).)



Featured Posts

[Introductory Post](#)

[Blog Policies](#)

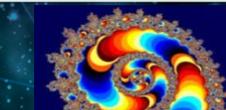
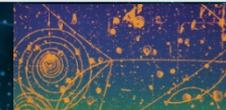
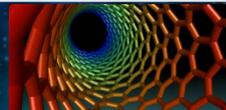
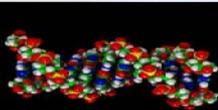


Writing proposals for NSF (general)

- Lead with best ideas for moving forward the frontiers of science.
- Everything else must logically follow.

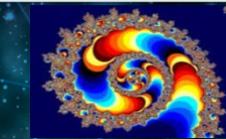
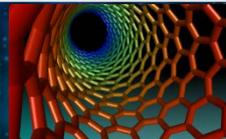
This is the greatest contrast with all other agencies.

(do not start proposals stating where you would like to work, which species/ecosystem you want to study, the newest techniques you will use, what societal problem you are going to solve, what you can leverage...)



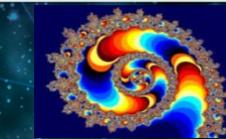
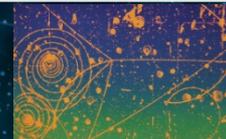
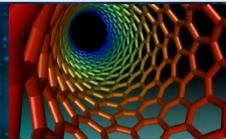
Writing Successful Pre-proposals

- In a compelling pre-proposal, the logical flow and significance of the proposed line of investigation must be articulated clearly and the broader impacts of the work apparent.
- Pre-proposals are reviewed by panelists only, so should be developed with a generalist, scientist reviewer in mind.



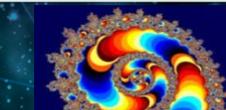
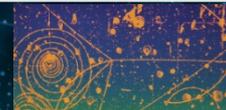
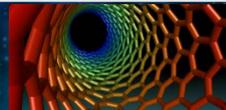
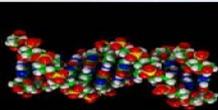
Writing Successful Pre-proposals

- Ideas new and novel, potentially transformative, conceptually well-grounded
- Potential impact of the science clear
- Experimental approaches and design feasible, logically linked to central ideas
- PIs well qualified and sufficiently experienced to effectively conduct the research
- Risks recognized and evaluated
- Convincing and significant effort made towards broader impacts (incl. required resources, leveraging)



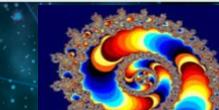
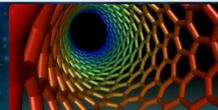
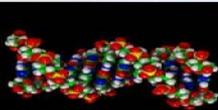
Writing Successful Full Proposals

- Start with the big picture (conceptual framework), the fundamental question/science issue
- Make your science compelling and relevant to fundamental issues (generalizable)
- Experimental plan well-matched to hypotheses
- Preliminary data consistent with hypotheses
- New methods usually require preliminary data or demonstration they work
- Methods and design are best to test the hypotheses
- Alternative experimental outcomes considered



Other (program) considerations

- Likely scientific impact
- PI career point (encourage beginning PIs)
- Program's scientific portfolio balance
- Other grant support for the PI (*varies*)
- Institution or state (encourage PUI, EPSCoR)
- Special programmatic considerations (CAREER, RUI, RCN, LTREB, OPUS, Small Grants, etc.)
- Other diversity issues
- Likely educational impact



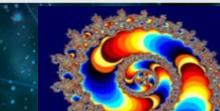
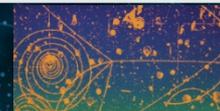
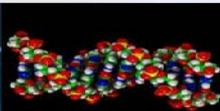
Highly uncertain times demand solid science

Societal trust in science is high

Problems are urgent, so we need more than
marginal science and advancements

Resources are limited and competition is strong

Must be aggressive and creative

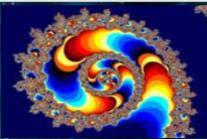
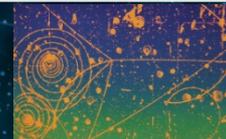
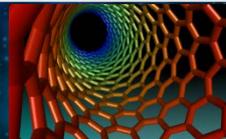


Questions?

Henry Gholz

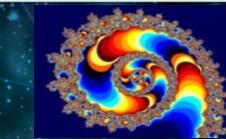
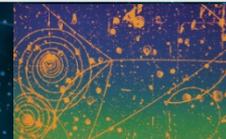
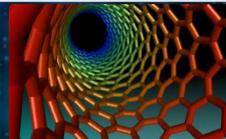
hgholz@nsf.gov

<www.nsf.gov/BIO/DEB>



Submission deadlines changed

- DBI – Various (see individual solicitations)
- DEB & IOS (2014)
 - Pre-proposals: January 16 (DEB), 17 (IOS)
 - Full proposals: August 4 (DEB), 1 (IOS)
- MCB
 - November 15, 2013



IOS and DEB: New Core Proposal Solicitations

- Preliminary proposal deadline in January
 - Limit of 2 pre-proposals per division per PI
- Binding Invite/Do Not Invite decision in May and full proposal deadline in August
 - 2-3 months for full proposal preparation with reviewer input
 - 6-7 months for preliminary proposal resubmission with reviewer input
- Full proposal decisions in November
 - 6-8 weeks for preliminary proposal resubmission

