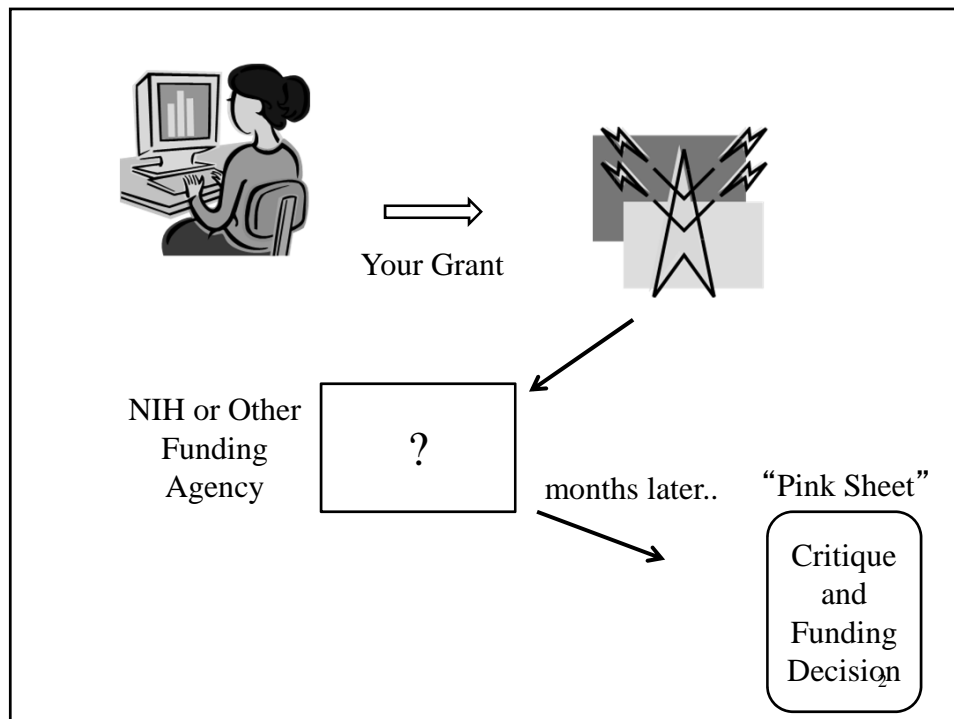
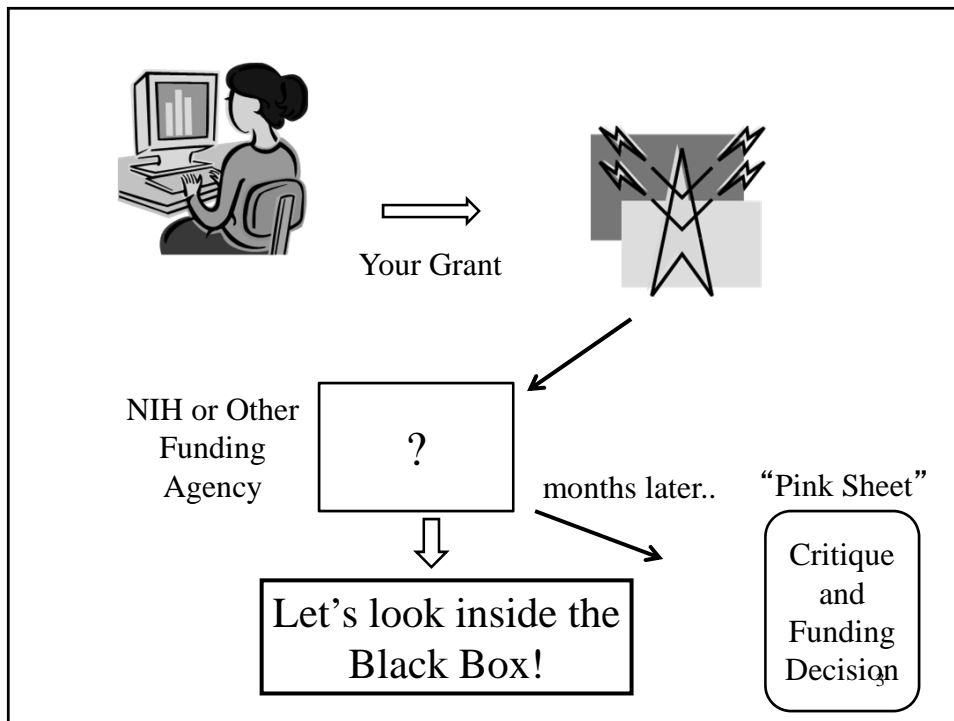


“The Grant Proposal Pathway”

- **Hypothesis**: Understanding what happens to a proposal between the time it is submitted and a funding decision is made will improve the chance of funding success.
- **Specific Aims**: Identify –
 - 1) How a grant is reviewed
 - 2) Who are the reviewers
 - 3) What are the reviewers looking for

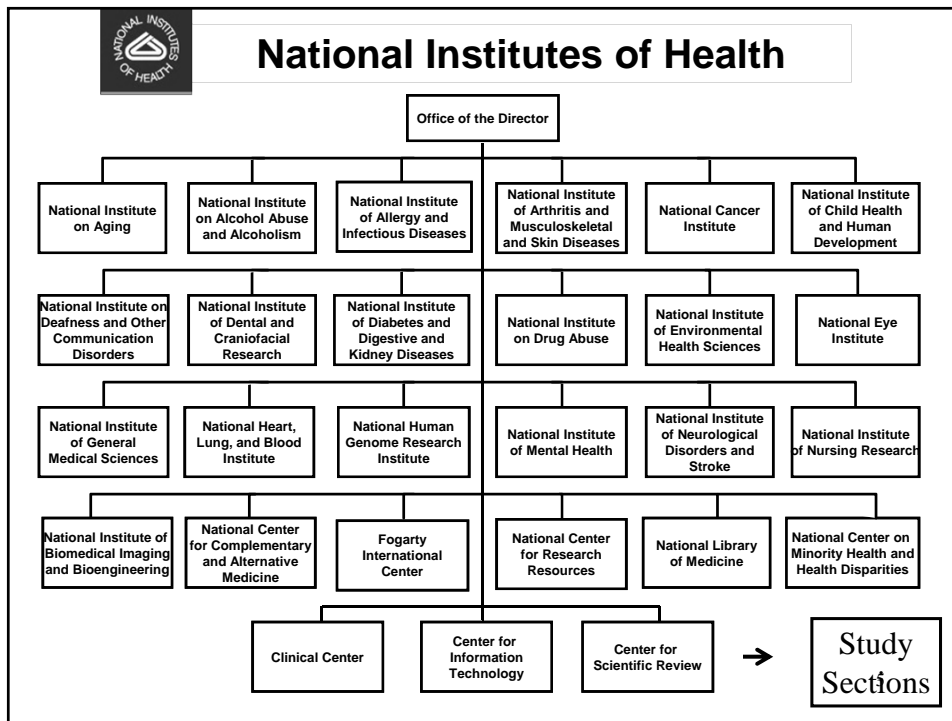
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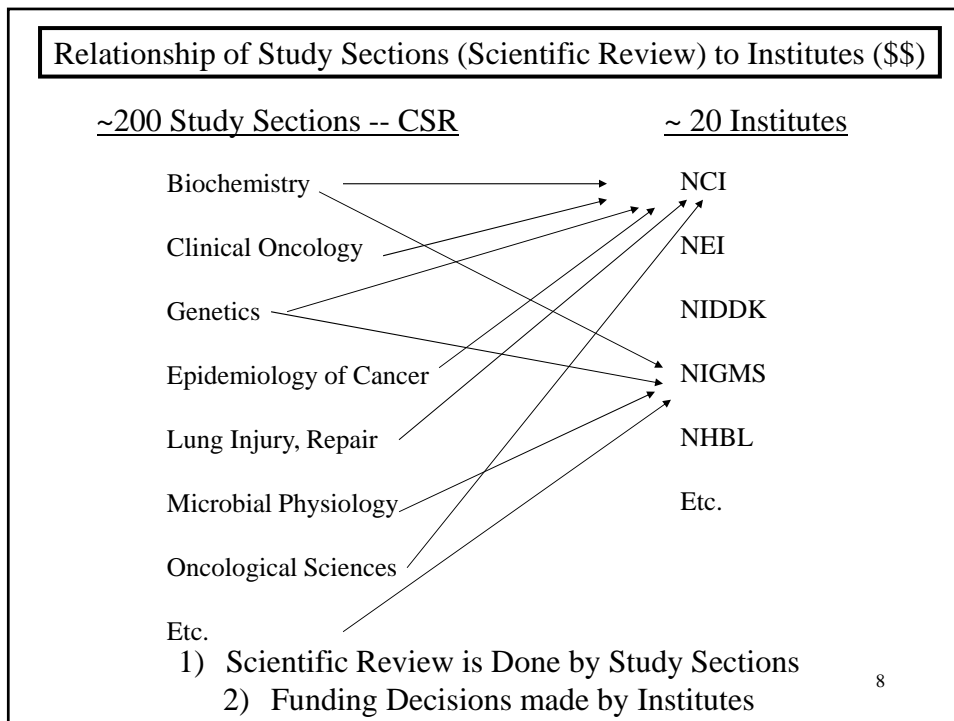
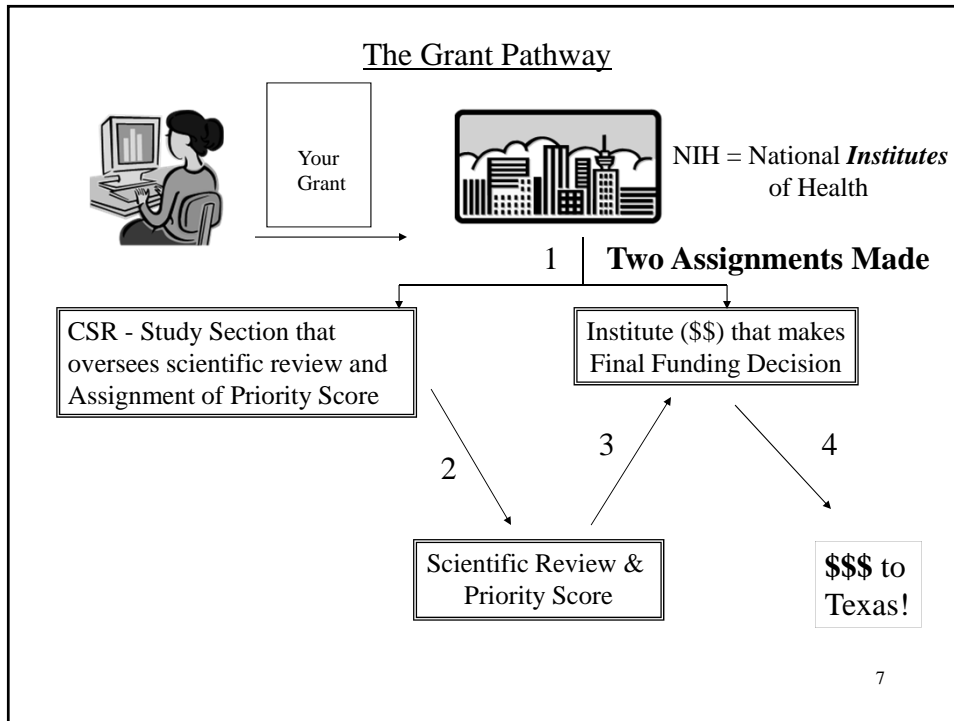
How is NIH Organized?

- Director's Office – sets policies, represents NIH to Congress, public, has modest discretionary \$, etc.
- Institutes and Centers (I/C' s) – (Congress puts \$\$\$ Here)
 - Each has focus, e.g., NCI, NIGMS, NEI, NHBLI, etc.
 - Develop Specific Programs and Priorities
 - Award Grants
- Center for Scientific Review (CSR) – *special function to review grants via study sections* (sometimes call Scientific Review Groups or SRG' s) directed by Scientific Review Officers (SRO' s). No grant \$\$ to distribute



CSR has Many Study Sections, e.g.

- Arthritis, Connective Tissue, and Skin
- Auditory System
- Membrane Biochem. & Biophysics
- Biomaterials
- Cancer Genetics
- Cellular Signaling & Regulatory Systems



How does the Study Section Operate?

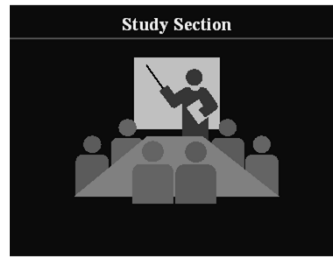
- A study section has 15-25 members selected for their expertise in the area the study section reviews
- Scientific Review Officers receive applications from CSR main office and assign *primary & secondary reviewers*
- Primary & Secondary Reviewers prepare written reviews and post in advance on NIH website with a recommended score then 'present' your proposal at the study section meeting
- All study section members meet to review grants and all members vote a score on every grant
- Study Sections are far more diverse than one might anticipate

9

Cellular Signaling and Regulatory Systems Study Section

- The Cellular Signaling and Regulatory Systems (CSRS) study section reviews applications that focus on the initiation and execution of programs that control cellular homeostasis and physiology. A distinguishing characteristic of these applications is an emphasis on signaling networks and the coordination of processes related to cell proliferation, survival, and growth.
- Cell cycle regulation, mitosis, meiosis, checkpoint controls, regulation by ubiquitination
- Proteolytic mechanisms associated with cell cycle, senescence and death
- Programmed cell death and apoptosis, particularly their regulation in the context of stress, growth, and transformation.
- Proliferation & growth control by the nucleus; pathways regulating transcription
- Integrative cell physiology, e.g., stress, clocks, cellular modeling; cell differentiation and transformation
- Basic studies of cytokine signaling
- Application of state-of-the-art technologies such as imaging and computational modeling of cellular signaling networks

10



The primary and secondary reviewers will:

- 1) Read your entire proposal
- 2) Prepare a written summary and evaluation in advance
- 3) Recommend a priority score
- 4) Explain it AND justify their evaluation to the study section,

They present to the full study section (~15-20 people) most of whom will ***not*** have read the complete grant. **After discussion, every member gets an equal vote.**

50-100 grants in 2 days –
You must be clear and to the point!! ¹¹

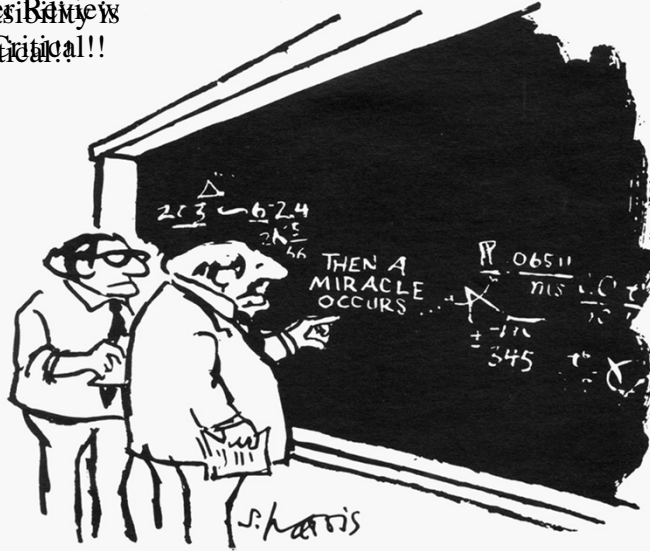
(1) Get peer review from critical colleagues:

EARLY and OFTEN!!

(2) Write different sections of the grant for 'different' reviewers

(3) Grant must be crystal clear and explicit!
Page limits make this critically important.
(How long should one plan to write?)

Fear: Reviews
Is Critical!!



"I think you should be more explicit here in step two."

13

Study Section Scores assigned

	Overall Impact Score		Guidance on weighing strengths and weaknesses
High Impact	1	Exceptional	Strengths
	2	Outstanding	
	3	Excellent	
Moderate Impact	4	Very Good	Weaknesses
	5	Good	
	6	Satisfactory	
Low Impact	7	Fair	
	8	Marginal	
	9	Poor	

Non-numeric score options: NR = Not Recommended for Further Consideration, DF = Deferred, AB = Abstinence, CF = Conflict, NP = Not Present.

14

Priority Scores and Percentile Rank

- Priority Scores assigned by Study Sections based on average of all reviewers scores
- Percentile Rank assigned afterwards to *normalize* scoring across study sections and over time
- Funding determined by percentile rank

15

1) Study Section Review

Approved Applications Receive Percentile Scores

1st John Doe (Biochem. SS)
2nd Your Grant (Oncology SS)
13th Stancel (Genetics SS)
27th Jane Doe (Micro. SS)

Etc.

Etc.

“Streamlined”
Not Recommended for Further
Consideration

2) Institute Funding Decision



National Cancer Institute (Budget from Congress)

	1) Your Grant	\$
	2) John Doe	\$
	3) Stancel	\$
Payline	4) Jane Doe	-
	Etc.	-
	Etc.	-
	Etc.	-

16

The Institute's Council may make some changes in the rankings based upon their particular goals and needs.



It's Great Science, BUT will it really help us find a cure for the plague?

17

Grant Contacts, Interactions, and Information in Various Phases

- Pre Submission: *Institute* Program Officials
 - Assess Institute's Interest in Your Proposal
 - Provide Advice & Potential SS Assignment
- Submission – Review : *CSR's* Scientific Review Officers (SRO's) who oversee study sections
 - Questions about application
 - Submitting additional information
- Post Award : Assigned Program Officer at Funding *Institute*
- **NEVER CONTACT A STUDY SECTION MEMBER ABOUT YOUR GRANT!!!**

18

Help your proposal be assigned appropriately

– You can Recommend Assignments

- Call Institute staff (be respectful) – they want to help
- Study section rosters are public information (‘regular’ members)



Remember – The agency does not care about supporting you as an individual. They only want to fund you if the research you propose helps them achieve one of their objectives.

19

Important Sources of Information

- NIH Website –
 - general information about types of Grants
 - ‘standard’ information, e.g., general instructions, receipt dates, etc.
- NIH Guide – weekly information about program changes, Request for Applications (RFA’ s)
- Institute Home Pages
 - Information about areas of interest
 - Names and Contact information for Program Officers
- Center for Scientific Review Website
 - Detailed information about preparing applications
 - Names and Contact information for Scientific Review Officers
 - Study Section Descriptions and Rosters
 - ***Instructions for Reviewers!!!***

20

Your Job as Principal Investigator (PI)

- 1) *Help your proposal be assigned to*
 - a) The appropriate study section
 - b) The appropriate institute

- 2) *Make the primary & secondary reviewers' jobs easy – they'll appreciate it and become your advocates.*
 - a) Give the proposal a focus that helps them understand it
 - b) Make it easy for them to read
 - c) Make it easy for them to explain it to the study section
 - d) Make it easy for them to justify a good evaluation

- 3) *Help the other members of the study section who do not read the entire grant.*

NEVER OVERESTIMATE THE REVIEWERS!!!

HELP THE REVIEWERS – When you Write the Grant!

- 1) Read and follow instructions

- 2) Give the proposal a focus (a hypothesis or scientific question), and have colleagues help you evaluate it (write a novel, not a collection of short stories)

- 3) Build the application around your focus (the hypothesis or scientific question being addressed)

- 4) Help the reviewer prepare his/her critique and presentation to the study section (know what he/she is looking for and write it for them - Explicitly!)

- 5) Get rigorous, critical review at each step in the writing
 - a) from “experts”
 - b) from well rounded “generalists”

22

What will reviewers look for in your grant?

Core Review Criteria (in instructions to reviewers
on NIH website)

Significance
Investigators
Innovation
Approach
Environment

23

Innovation

- **Innovation.** Does the application challenge and seek to shift current research or clinical practice paradigms by utilizing novel theoretical concepts, approaches or methodologies, instrumentation, or interventions? Are the concepts, approaches or methodologies, instrumentation, or interventions novel to one field of research or novel in a broad sense? Is a refinement, improvement, or new application of theoretical concepts, approaches or methodologies, instrumentation, or interventions proposed?

24

REMEMBER - Reviewers are just like everyone else,



EXCEPT, they have to review your grant in
Addition to all their normal work!

Don' t overestimate them, and be
certain to help them out!

25

Don' t Forget.....

- You must be registered in *eRA Commons* to submit applications electronically
- Individuals do NOT submit or receive grants – institutions do
 - Consult the Office of Sponsored Projects Administration (SPA) well in advance of agency submission dates
 - Remember you *may* need information and approvals (e.g., animal welfare, human subjects, conflict of interest, biohazards, chemical safety, etc.) to submit – ask SPA staff well in advance

26

And Don't Ever Forget.....

1) Talk to People at the Funding Agency

2) Get peer review from critical colleagues:
Do It EARLY and OFTEN!!

3) Never Overestimate the Reviewers

27



GOOD LUCK!

And Remember you can get help from

- Sponsored Projects Administration (SPA),
- Academic and Research Affairs (ARA) units,
- New Investigator Development Program (NIDP),
and
- Colleagues

So Don't Hesitate to Ask



28