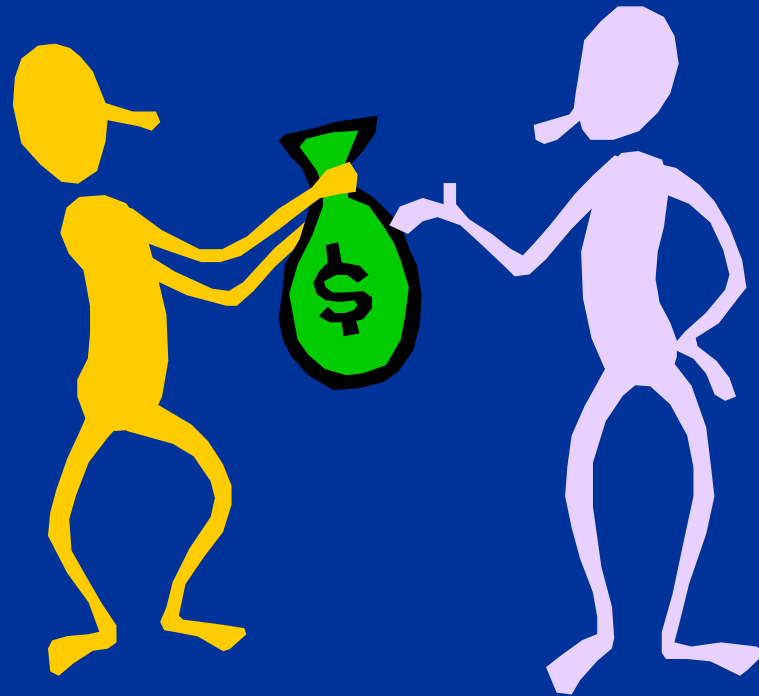


Grantspersonship



Beth A. Fischer
Survival Skills and Ethics Program
University of Pittsburgh
Pittsburgh, Pennsylvania, U.S.A.

Survival Skills & Ethics Program

Acknowledgments

- Michael Zigmond
- Odgen & Goldberg
 - *Research Proposals: A Guide to Success*
- many program officers

Program funding

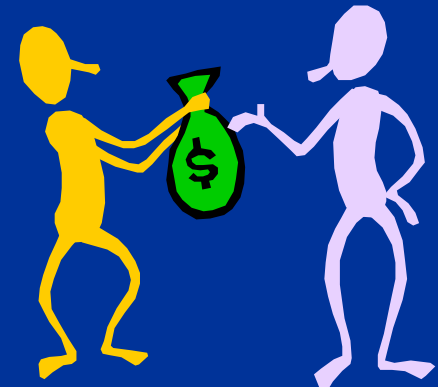
- U.S. National Institutes of Health
- University of Pittsburgh



www-survival.pitt.edu

Workshop outline

- introduction to grant writing
- process of obtaining a grant
- components of an application
- a sample grant



Types of grants

objective

- training/career
 - fellowship
 - career award
- research 
- conference
- equipment

Types of grants

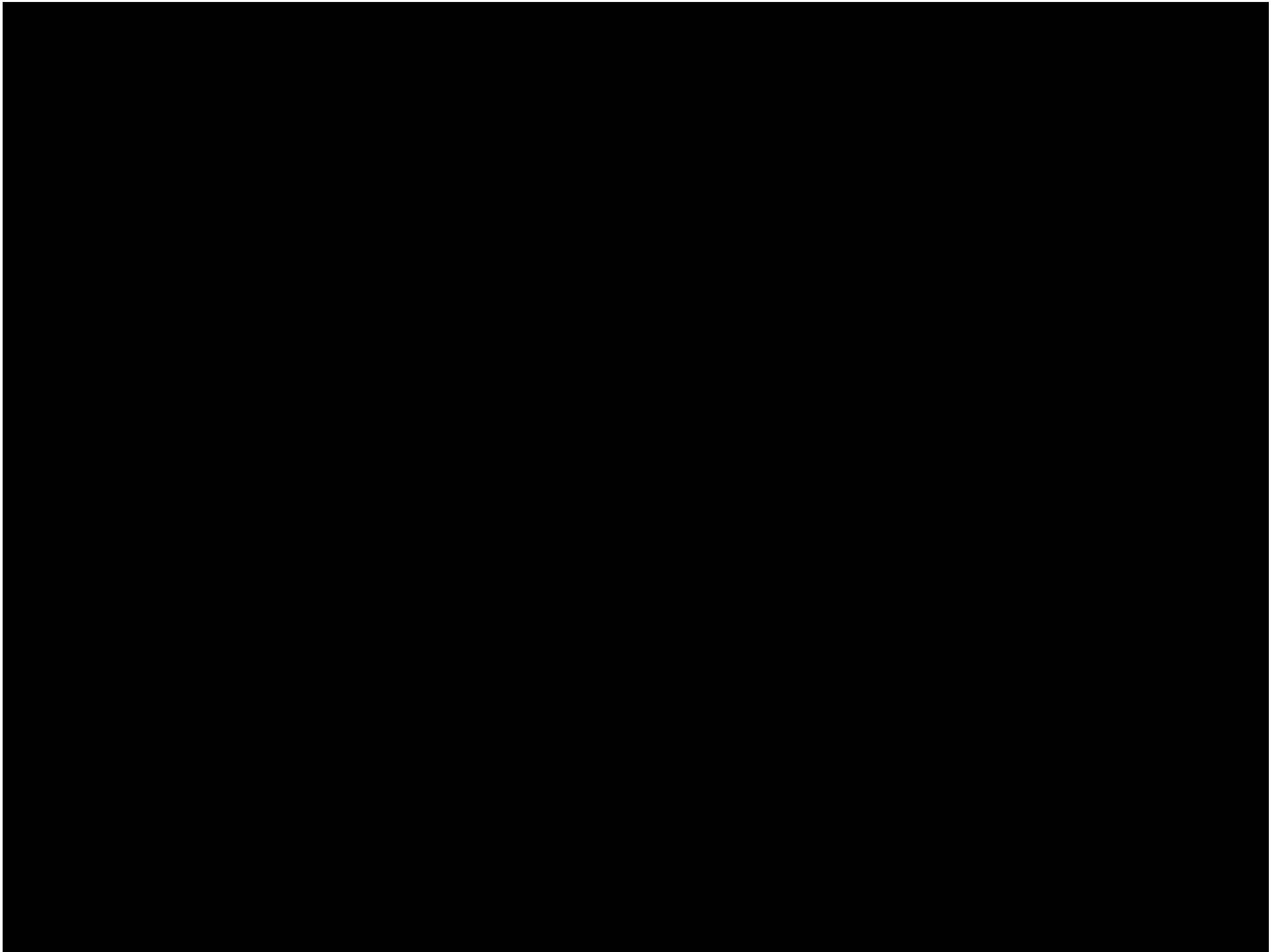
- investigator-initiated response to “program announcement” (PA)
 - individual
 - group
- “set-aside” grants
 - “request for applications” (RFA)
 - “request for proposals” (RFP)

Why don't people
get funded?



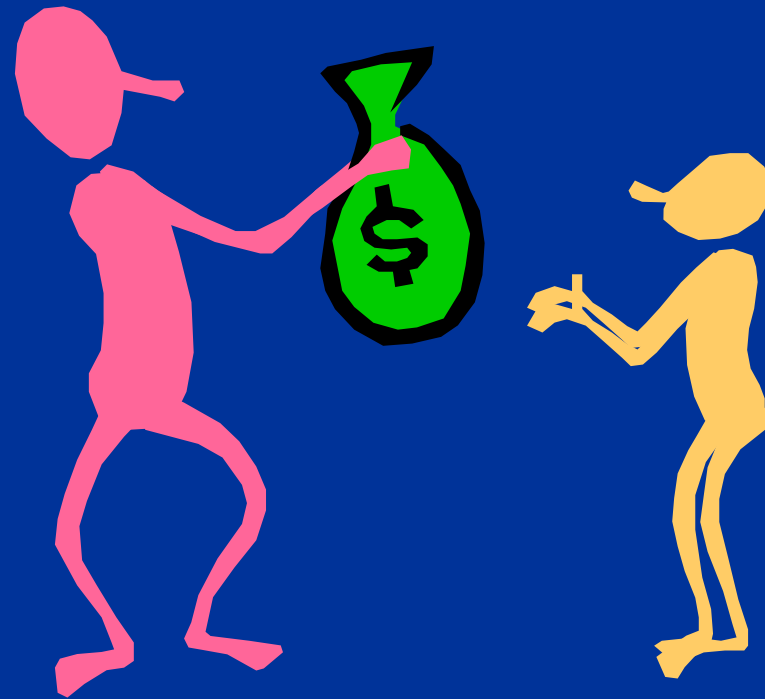
Why people don't get funded

- ~~because it is too hard?~~
- inadequate concept
- poor understanding of process
- poor presentation
- lack of persistence



Part I:

The process of getting a grant



The process

Preparing

1. establish frame of mind
2. develop concept
3. identify funding source
4. inform your institution
5. refine concept

Writing

6. stock the sections
7. outline, write, edit
8. get feedback & revise

Submitting

9. get approvals
10. obtain assignment
11. submit application
12. provide add'l material
13. ensure receipt

Responding

14. await review
15. study report
16. respond to report

The process

Preparing

1. establish frame of mind
2. develop concept
3. identify funding source
4. inform your institution
5. refine concept

Writing

6. think like a reviewer
7. outline, write, edit
8. get feedback & revise

Submitting

9. get approvals
10. obtain assignment
11. submit application
12. provide add'l material
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Responding

14. await review
15. study report
16. respond to report

Think ahead and plan backwards

The process

Preparing

>3 m

1. establish frame of mind
2. develop concept
3. identify funding source
4. inform your institution
5. refine concept

Writing

2 m

6. think like a reviewer
7. outline, write, edit
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Submitting

9. get approvals
10. obtain assignment
11. submit application
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2-? d

0 d

Responding

14. await review
15. study report
16. respond to report

Think ahead and plan backwards

Phase I: Preparing

- 1. establish frame of mind**
2. develop concept
3. identify funding source
4. inform your institution
5. refine concept



2. Develop a concept

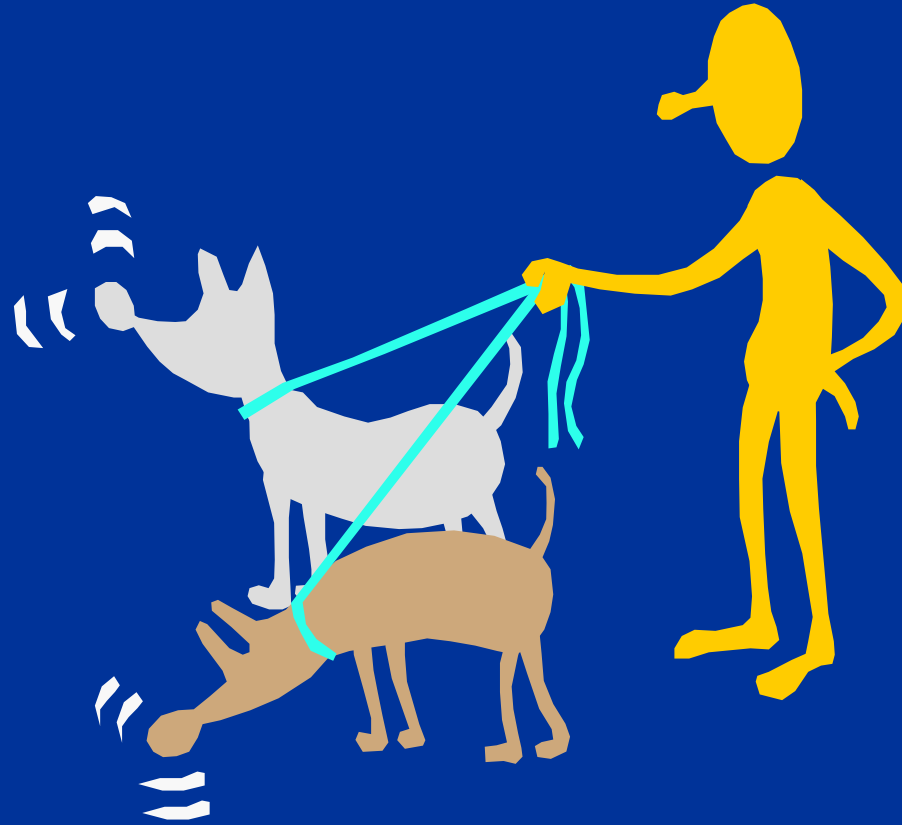


That FITS

2. Develop a concept that FITS

- **F**ills a gap in knowledge
- **I**mportant to
 - you
 - the field
 - funding agency
- **T**ests a hypothesis
- **S**hort-term investment in long-term goals

3. Identify funding source



3. Identify funding source

- select agency

How?

Getting information on agencies that fund research

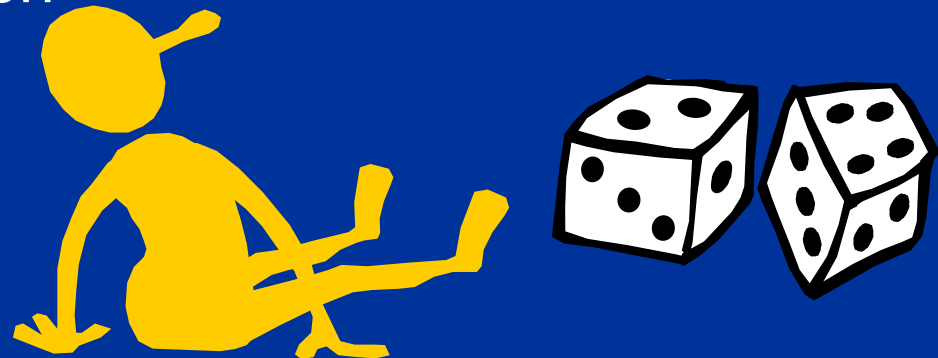
- internet
- colleagues
- acknowledgements on papers
- administrators at your institution

Sources of grants

- **Government**
 - National
 - International
- **Non-governmental organizations**
 - WHO
 - UNESCO
- **Private foundations**
 - Wellcome Trust
 - Bill & Melinda Gates Foundation
- **“Health voluntaries”**
 - Epilepsy Foundation
 - Muscular Dystrophy Foundation
- **Corporations**

3. Identify funding source

- improve odds: match objectives
 - research interests
 - personal characteristics
 - career phase
 - gender, ethnicity
 - developing nation



3. Identify funding source

- communicate with program staff

Information to collect

- is concept relevant
- current instructions
- funding
 - success rate
 - level (amount, years)
- who reviews
- what are criteria

Contacting program staff

- in their offices
 - phone
 - email
 - letter
 - in person (by appointment)
- at professional meetings

4. Inform those involved



4. Inform those involved

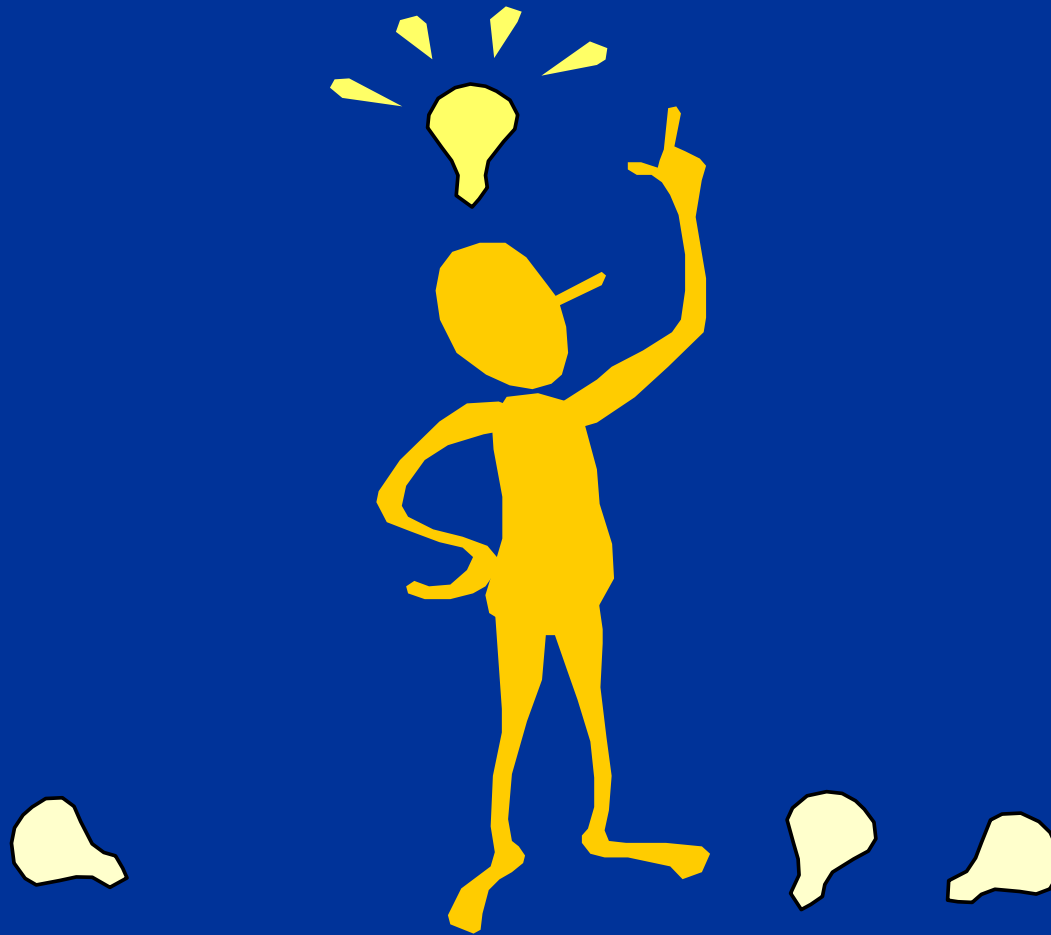
- funding agency: letter of intent
 - required
 - optional
- individuals at your institution
 - department chairperson
 - grants manager
 - secretarial and fiscal assistants
- people to give feedback

Develop Concept



Refine

~~5. Develop Concept~~



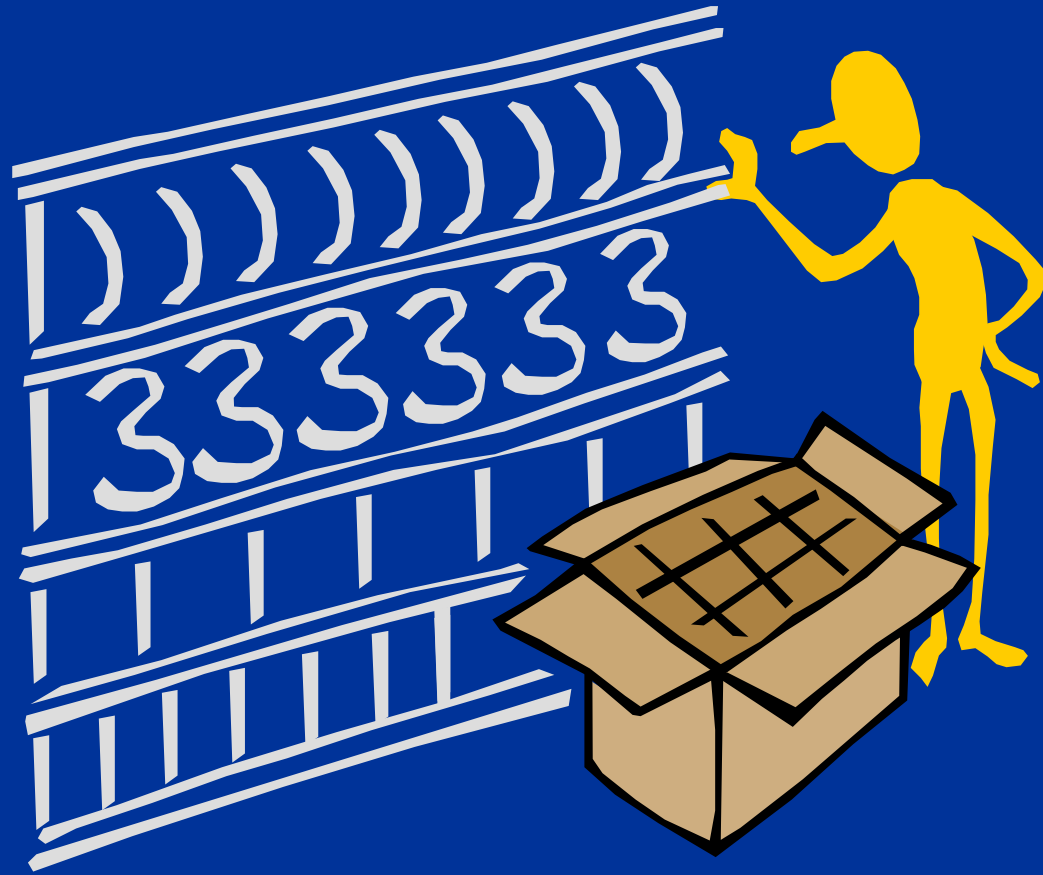
5. Refine your concept

- review current literature
- talk with colleagues
- think hard
- **think harder**

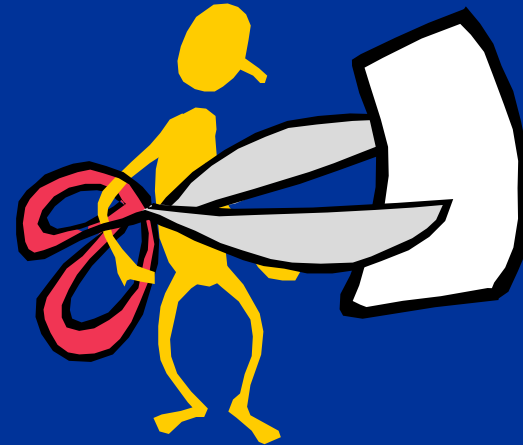
Phase II: Writing the proposal

6. stock the sections
7. outline, write, edit
8. get feedback & revise

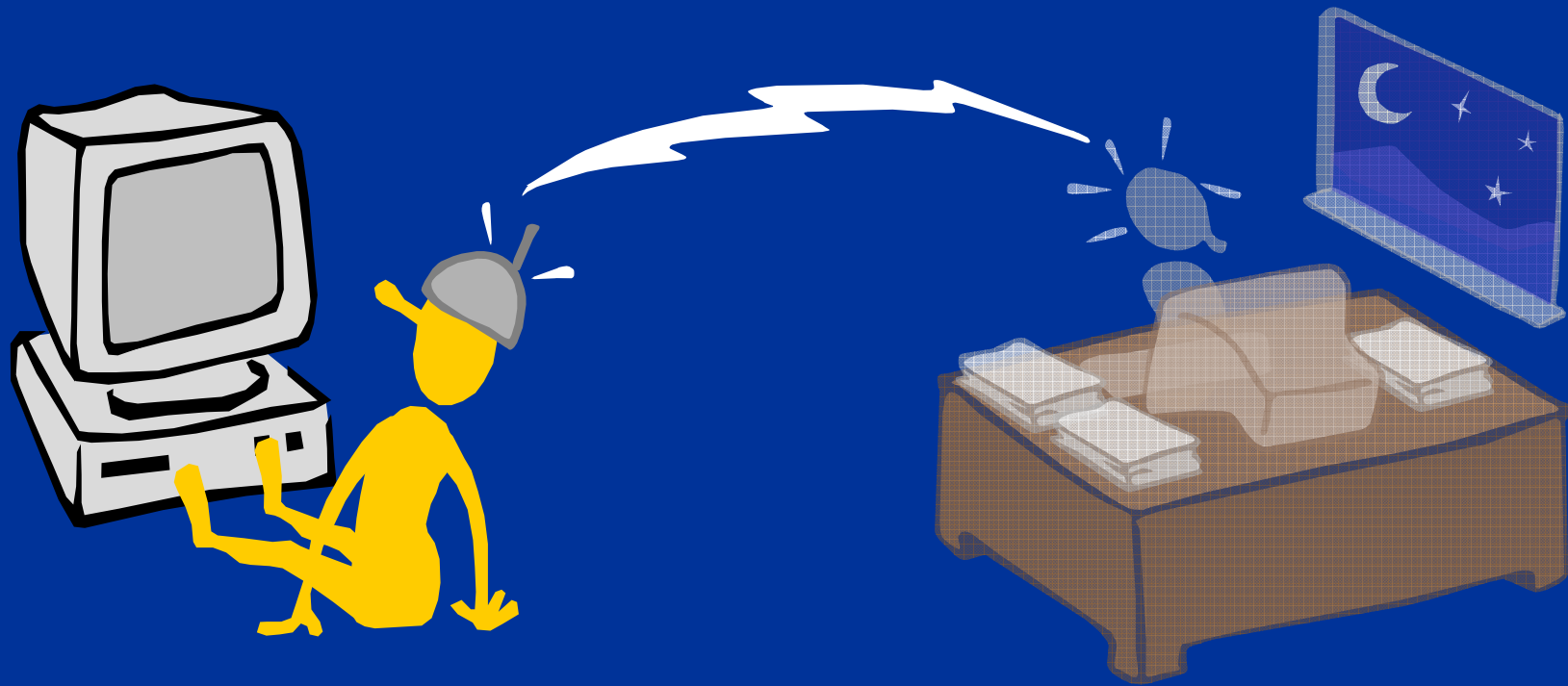
6. Stock the sections of the application



7. Outline, Write, and Edit



Remember to
think like a reviewer





Time spent reading proposal

- primary reviewer 7-8 hr
- secondary reviewer 1 hr
- discussion at study section 20 min

Informal survey of reviewers of
NIH R01 proposals (by J Rasey)

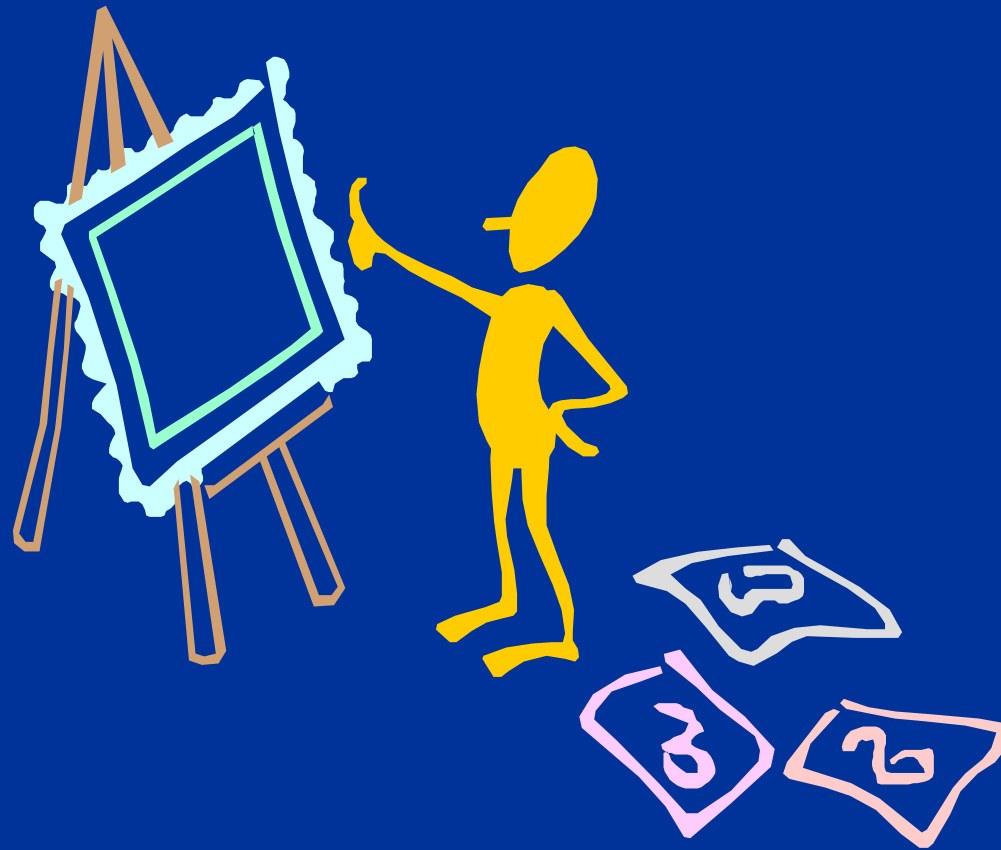
Implications

- anticipate questions, provide answers
- know and use the **review criteria**
 - significance
 - innovation
 - approach
 - investigator
 - environment
 - also: ethical conduct of research

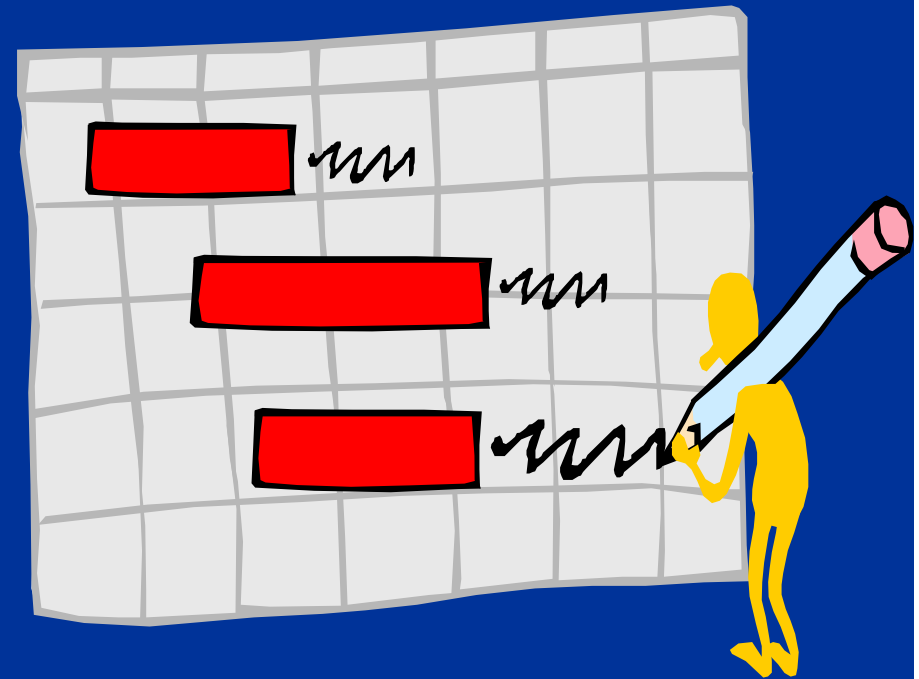


NIH

Appearance



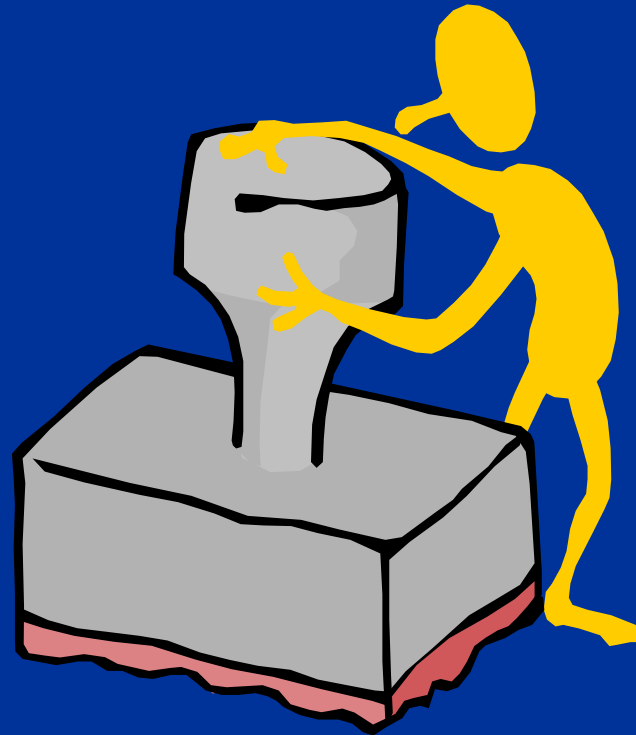
8. Get Feedback and Revise



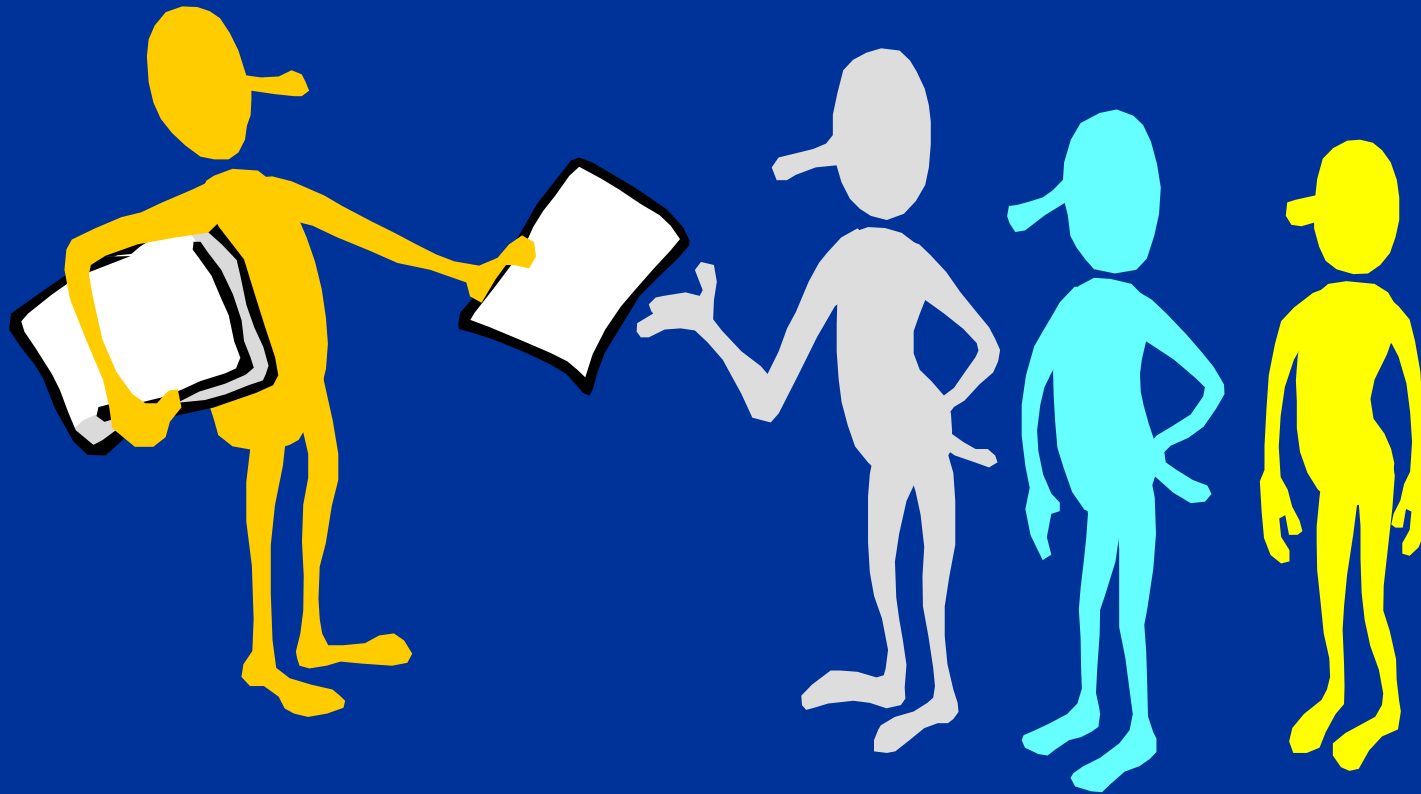
Phase III: Submitting

9. get approvals
10. obtain assignment
11. submit application
12. provide additional material
13. ensure receipt

9. Get approvals



10. Obtain assignment (if relevant)



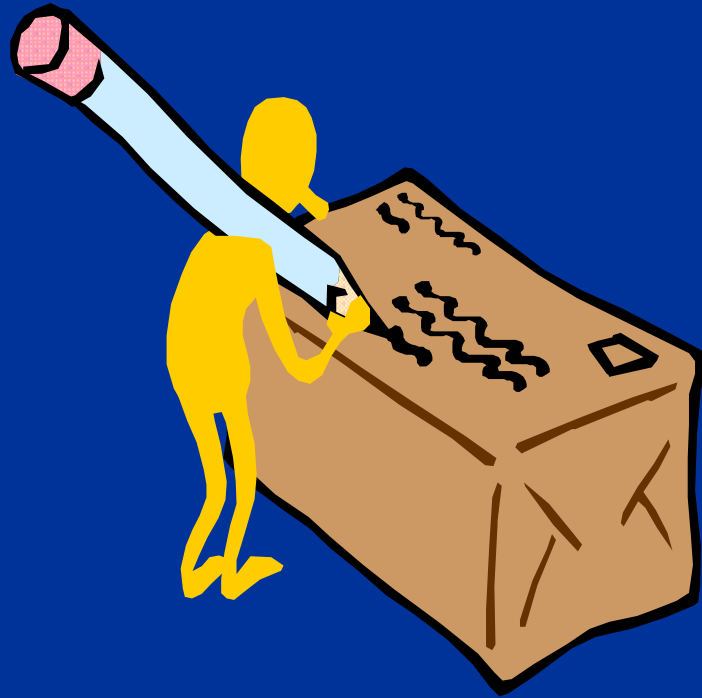
11. Submit application



12. Ensure receipt



13. Provide additional material (if permitted)



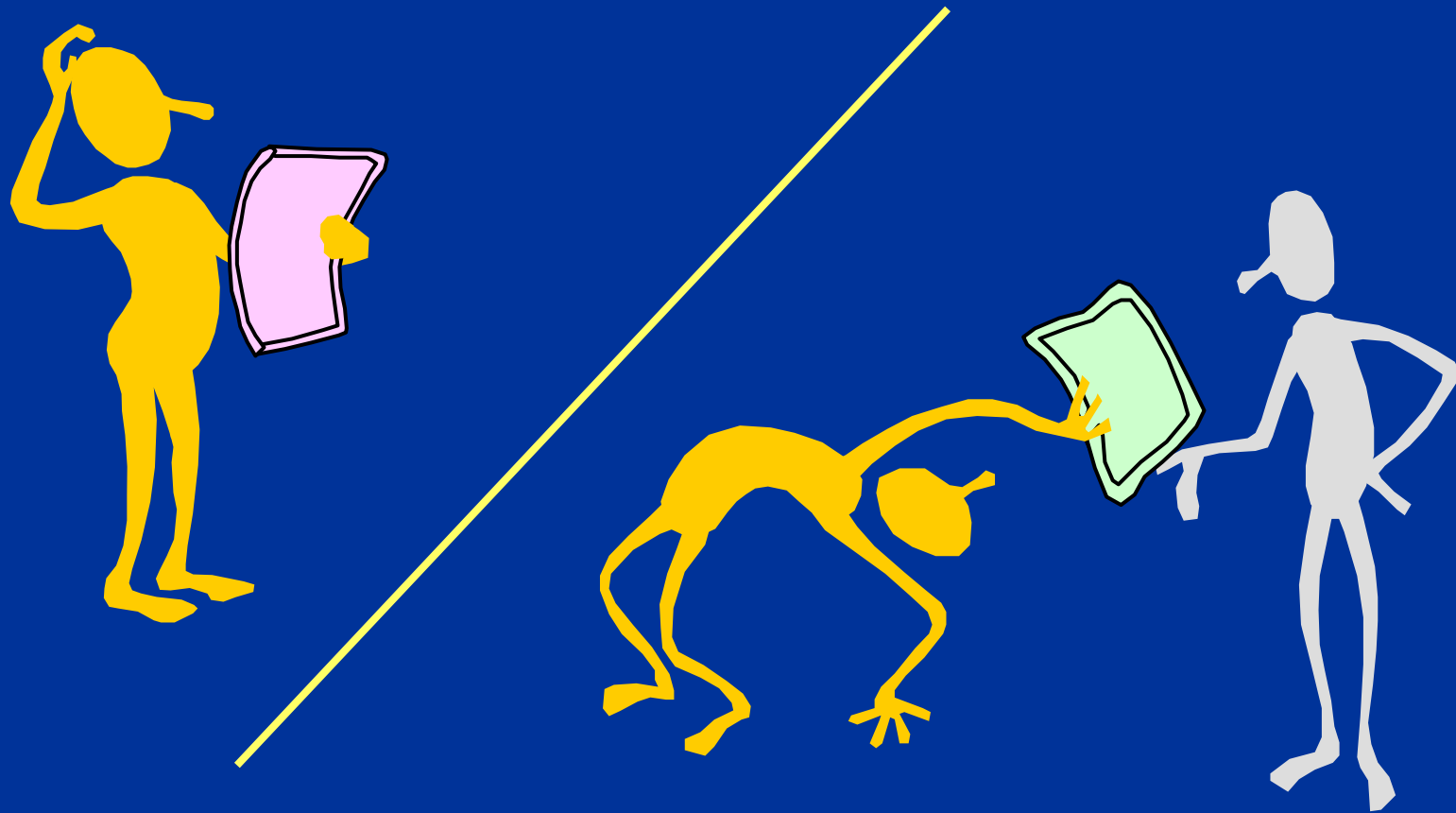
Phase IV: Responding

14. await review
15. study report
16. respond to report

14. Await review



15. Study report and respond



Possible outcomes

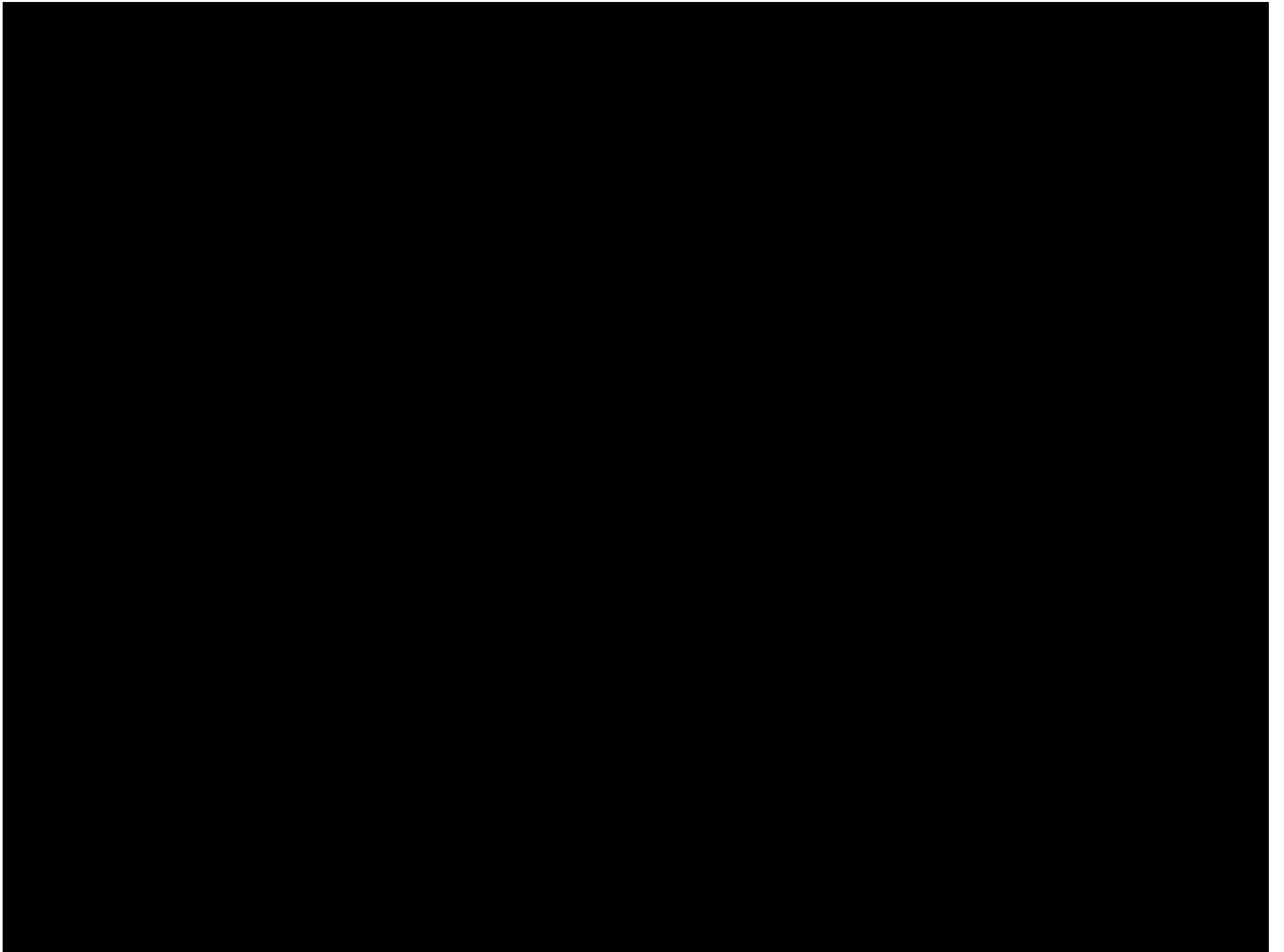
- scored
 - high
 - “gray area”
 - low
- rejected (or triaged)

If not funded

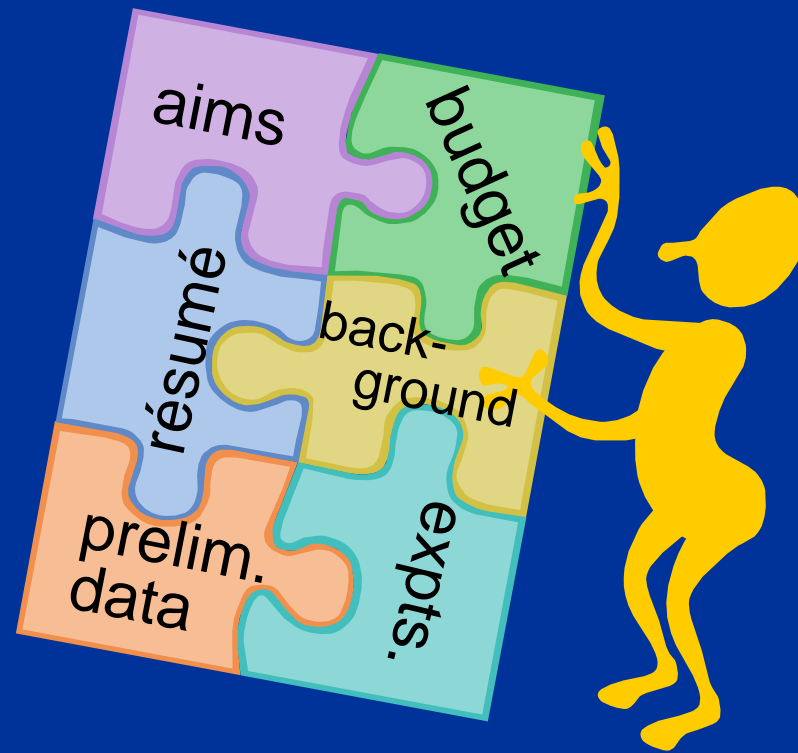
- ~~quit~~
- revised application
 - some changes
 - some rebuttal

Revised application

- introduction to revision
- address each concern
 - agree
 - disagree (politely!) & provide rationale
- do not argue

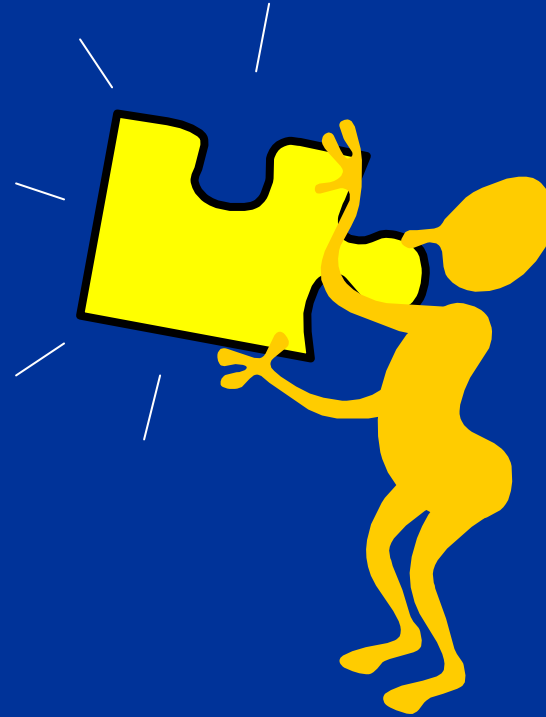


Part II: Components of an Application



Research plan

- A. Specific Aims
(or “objectives”)
- B. Background &
Significance
- C. Preliminary Studies
- D. Research Design &
Methods



Research plan

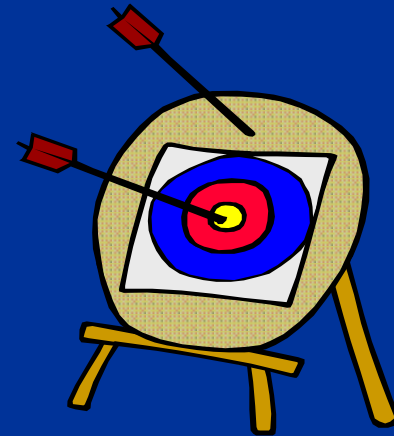
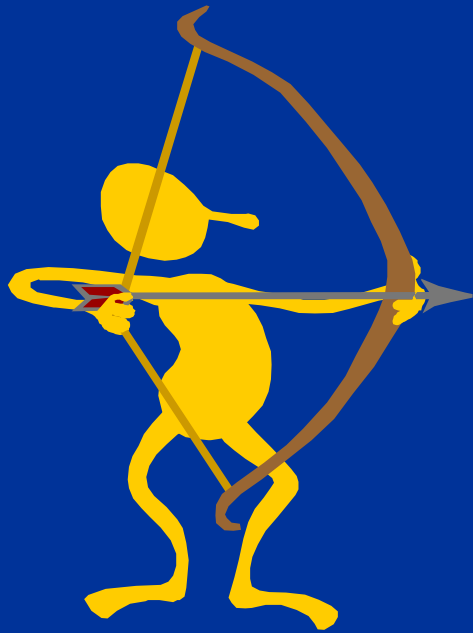
Sections

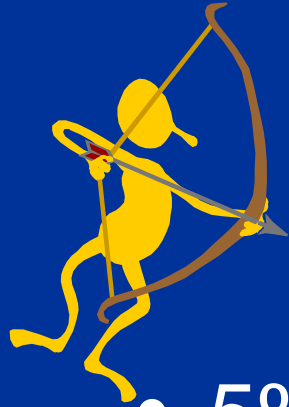
- Specific Aims (or “objectives”)
- Background & Significance
- Preliminary data
- Research Design & Methods
(experiments)

Focus

- What?
- Why?
- Feasible?
- How?

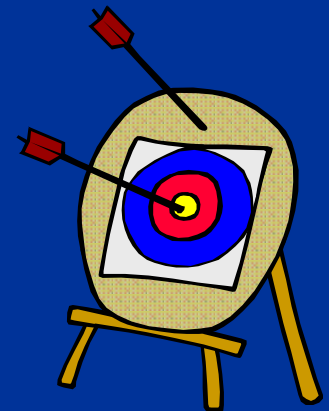
A. Specific Aims

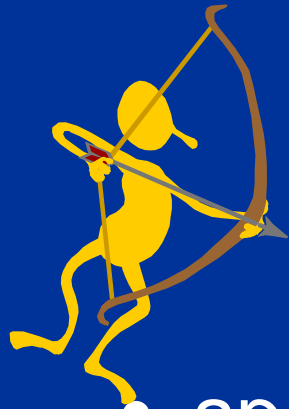




A. Specific Aims

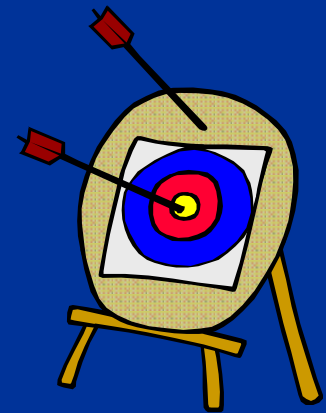
- 5% of proposal (~1 page for NIH)
- small number of aims (~3-5)

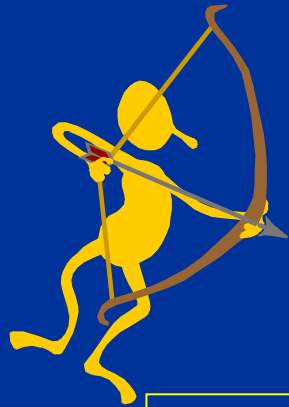




A. Specific Aims

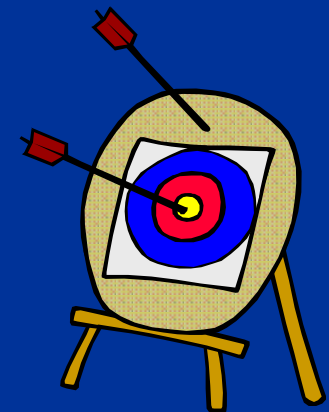
- specific
- single, positive statements
- telegraphic style
- lead to hypothesis-driven expts
- diagrams can be helpful
- integrated with each other





A. Specific Aims

1. specific
2. hypothesis-driven
3. integrated focus

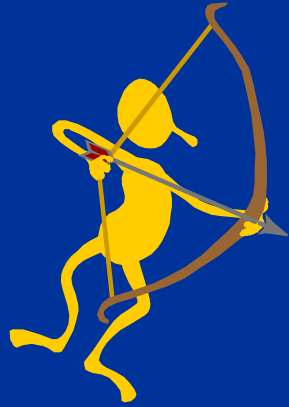


Specific Aims

1. I will explore the effects of drugs on feeding.

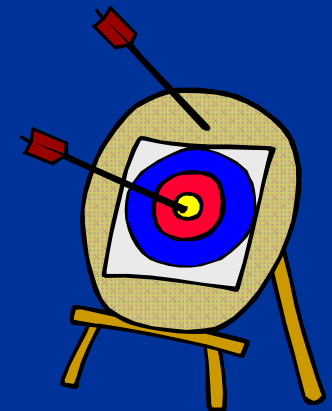
Specific Aims

1. I will explore the effects of drugs on feeding.
1. Determine effects of intravenous amphetamine on food intake in adult male rats.
 - a) as function of drug concentration
 - b) as function of days of treatment



A. Specific Aims

1. specific
2. hypothesis-driven
3. integrated focus



A. Specific Aims

①

Introductory paragraph with long-term goals

②

Hypothesis

③

Numbered list of interrelated “specific aims”

1.

2.

3.

Impact of Ritalin Rx for middle school students

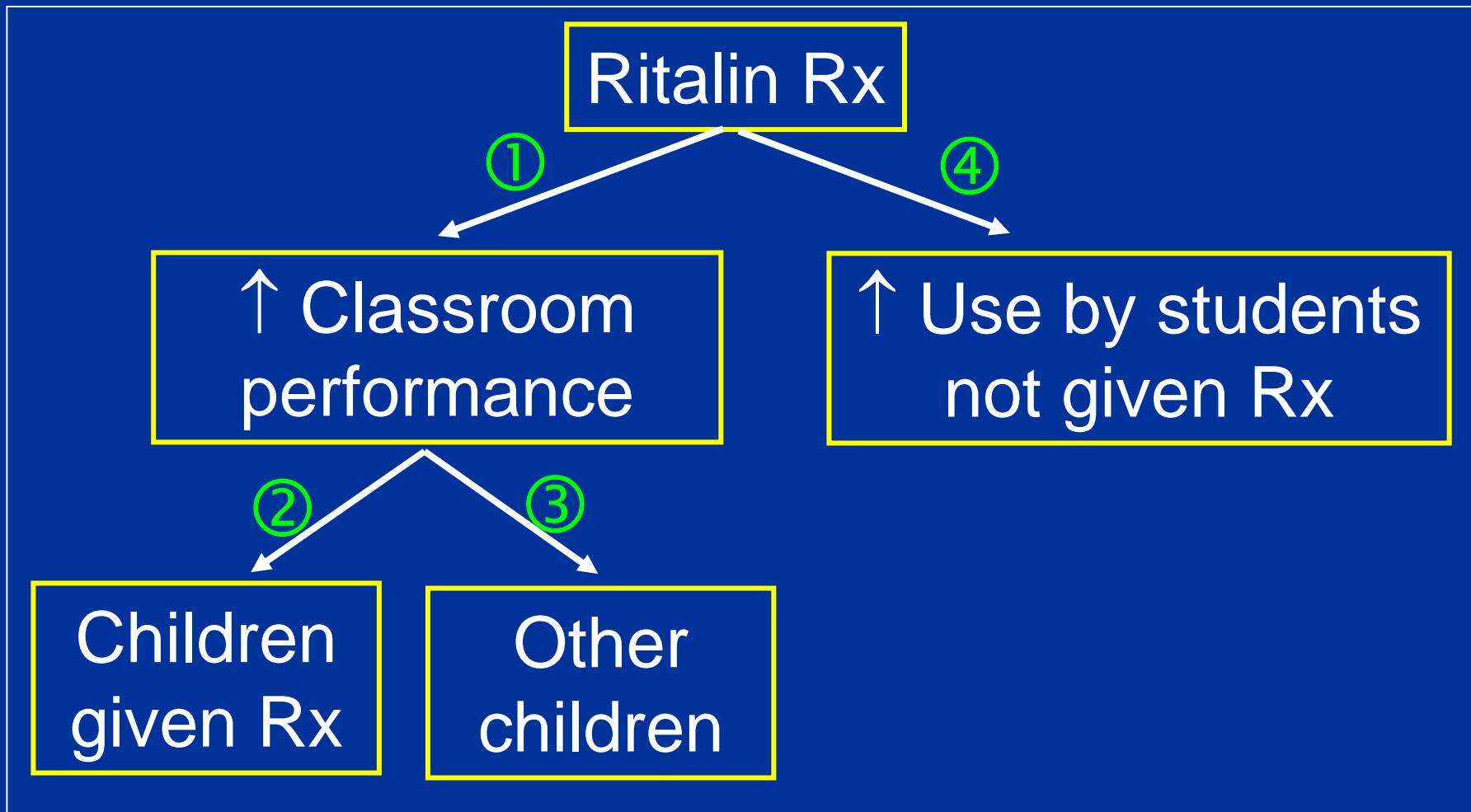
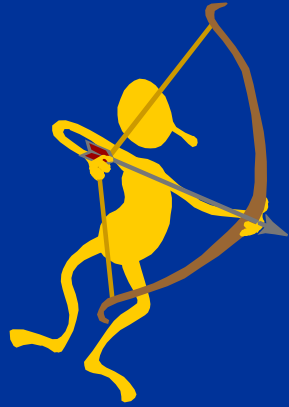
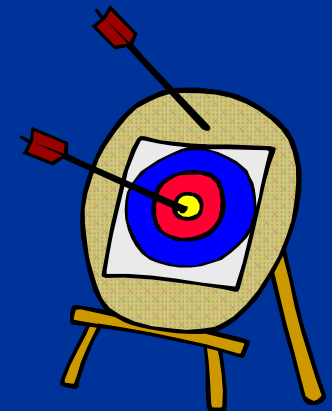


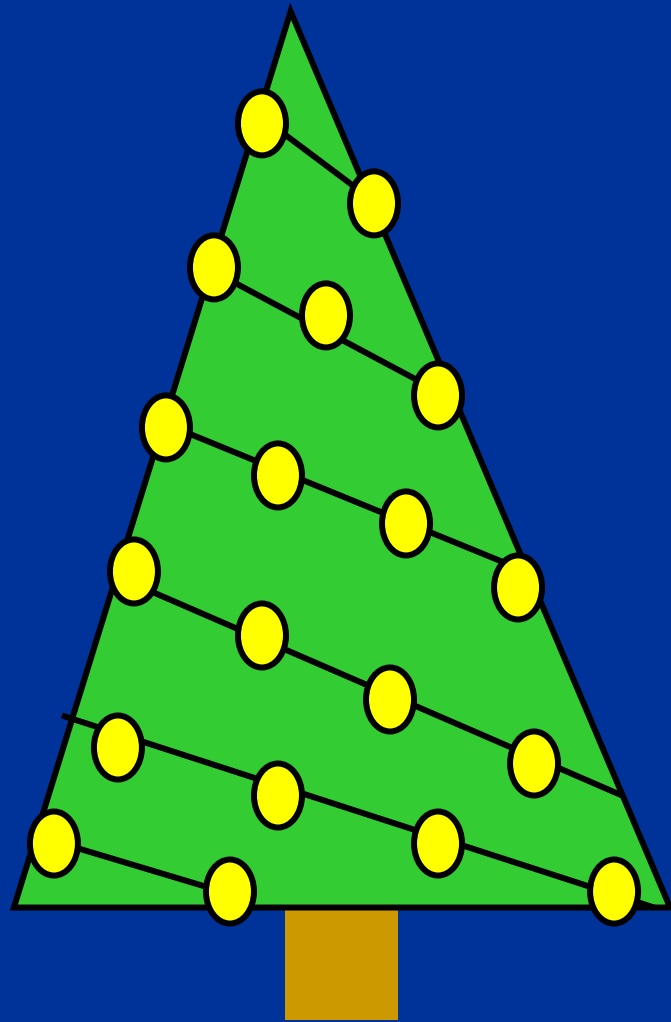
Fig. 1: Specific objectives of proposal

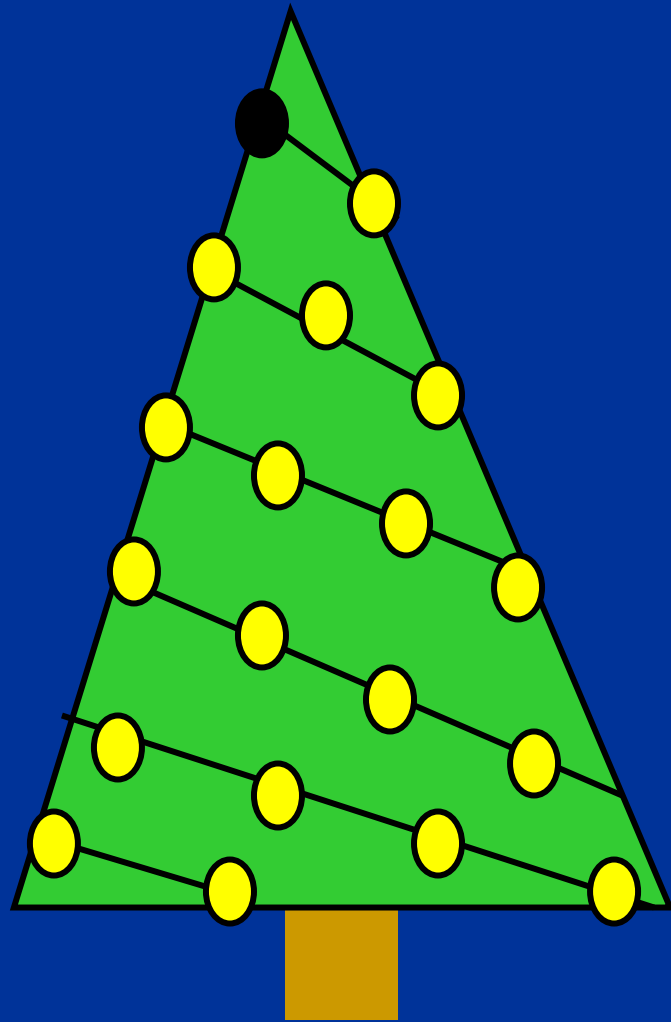


A. Specific Aims

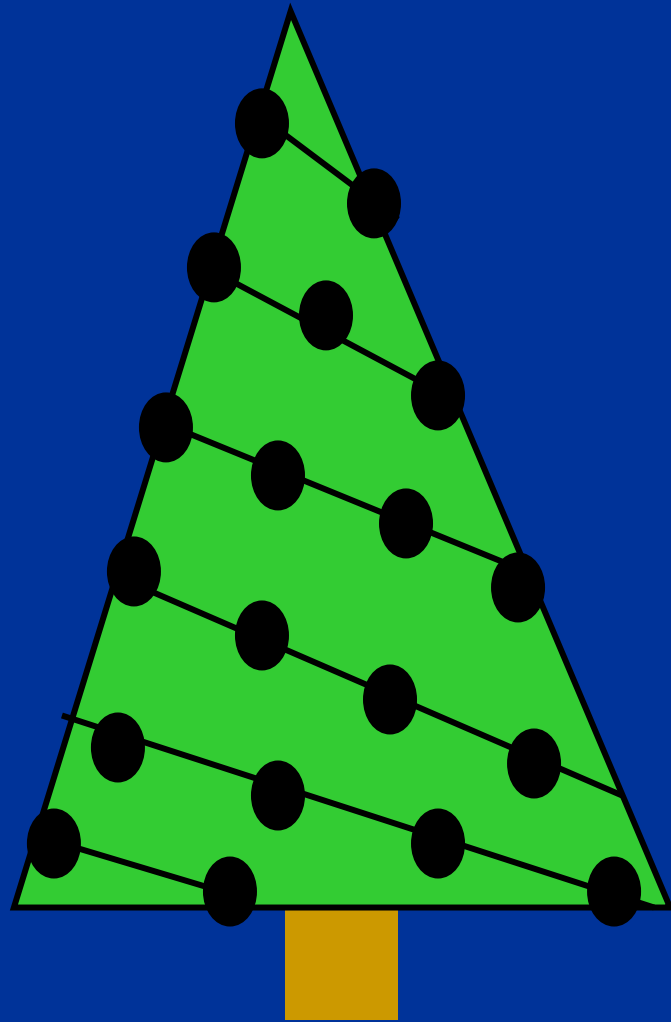
1. specific
2. hypothesis-driven
3. integrated focus



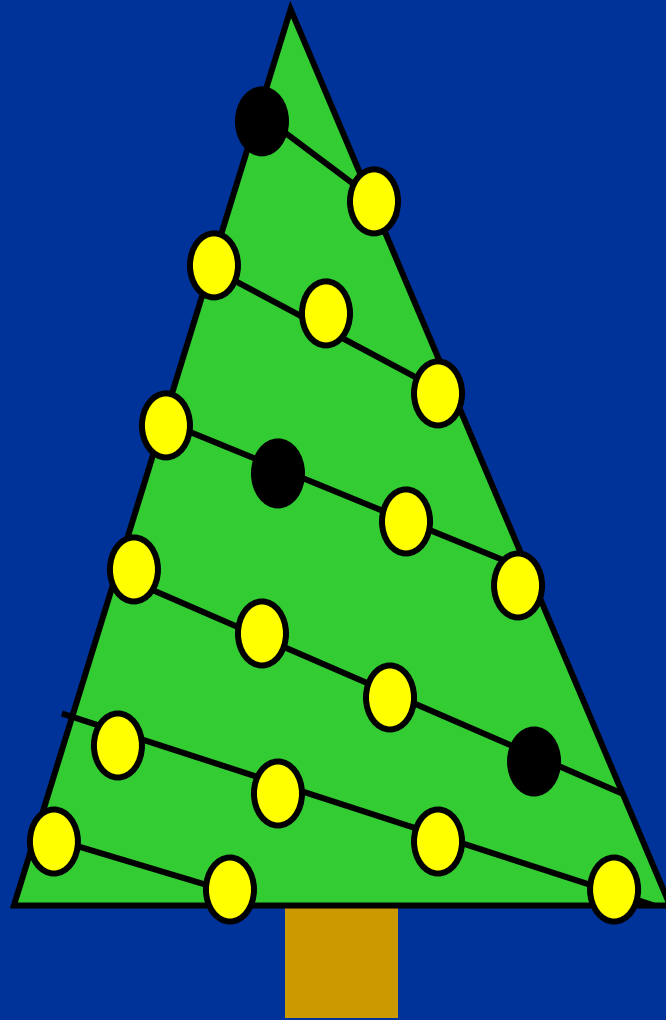




No!

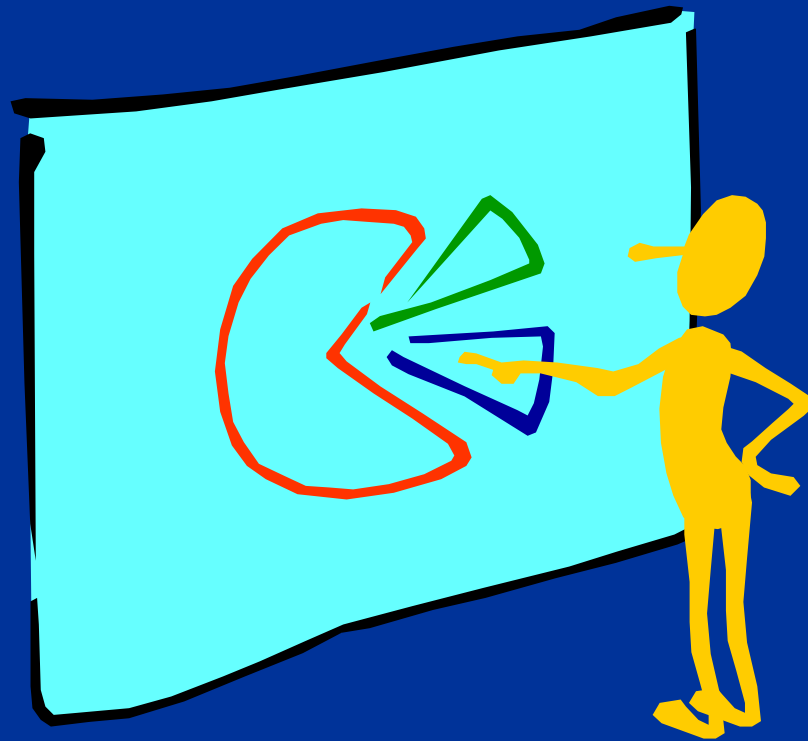


Yes!



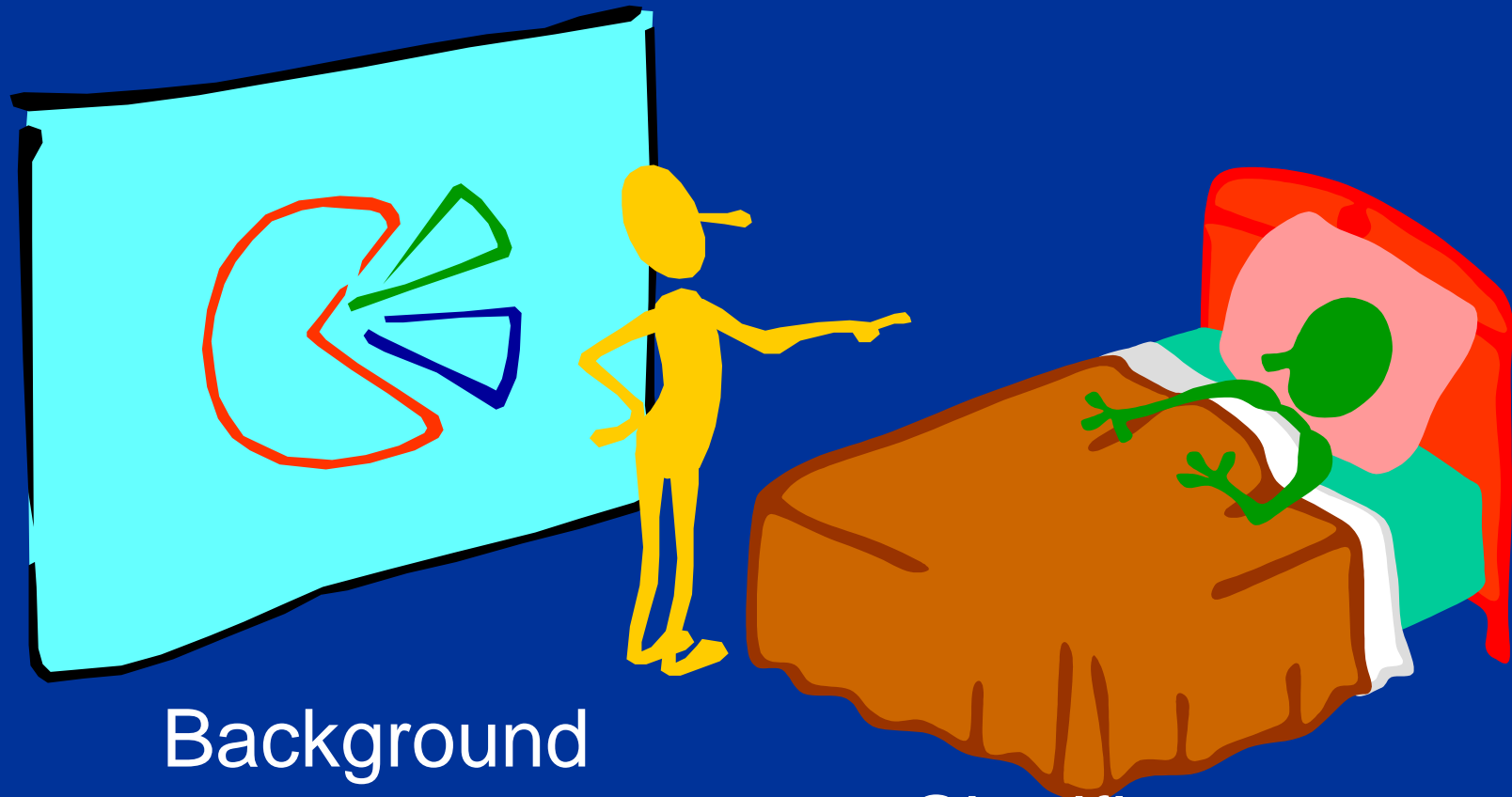
Best if aims are **interrelated...**
but **not dependent** on each other

B. Background & Significance



Background

B. Background & Significance



Background

Significance

B. Background & Significance

Background

- provide literature review
 - *be selective* (~50 references)
 - deal with contradictions
 - include your own work
 - anticipate reviewer; include their work

B. Background & Significance

Background

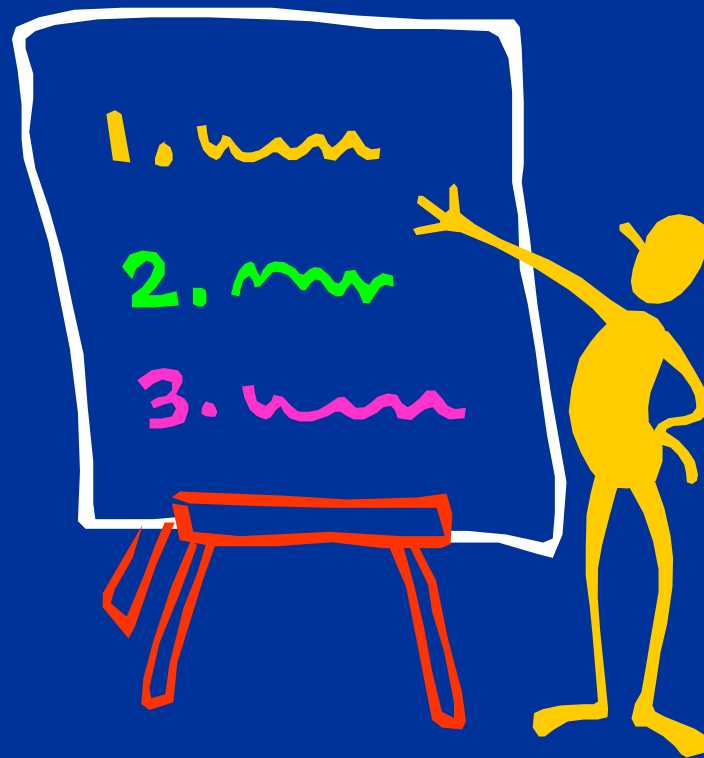
- indicate rationale
 - gap in knowledge, or
 - contradiction to be resolved
- diagrams can help

B. Background & Significance

Significance

- be brief
- relate to
 - field of inquiry
 - mission of funding agency
 - specific request for applications (if relevant)

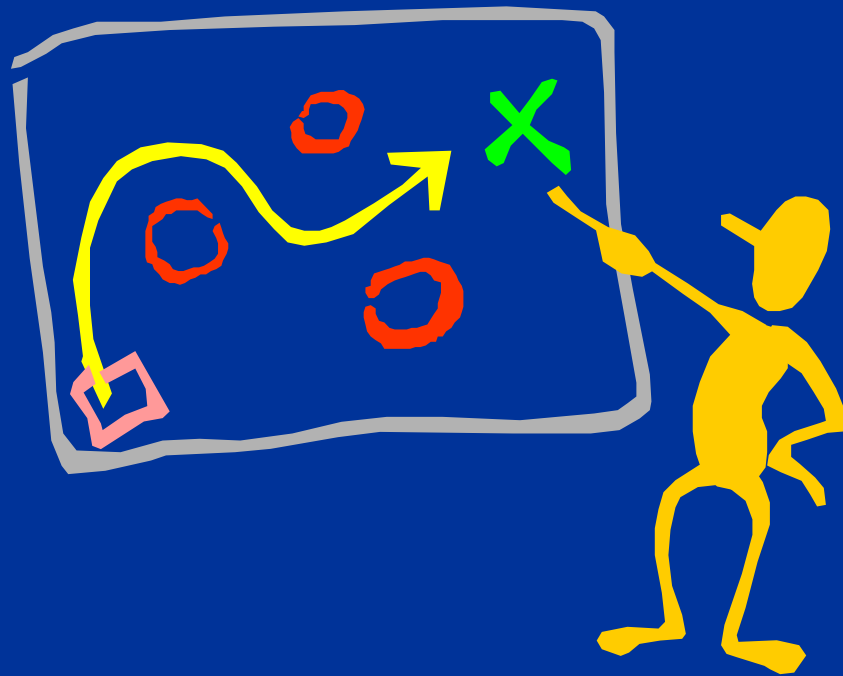
C. Preliminary Studies (Progress Report)



C. Preliminary Studies

- about 25% of proposal (~ 6-8 of 25 pages)
- two goals:
 - show feasibility of methods
 - provide support for hypotheses

D. Research Design & Methods

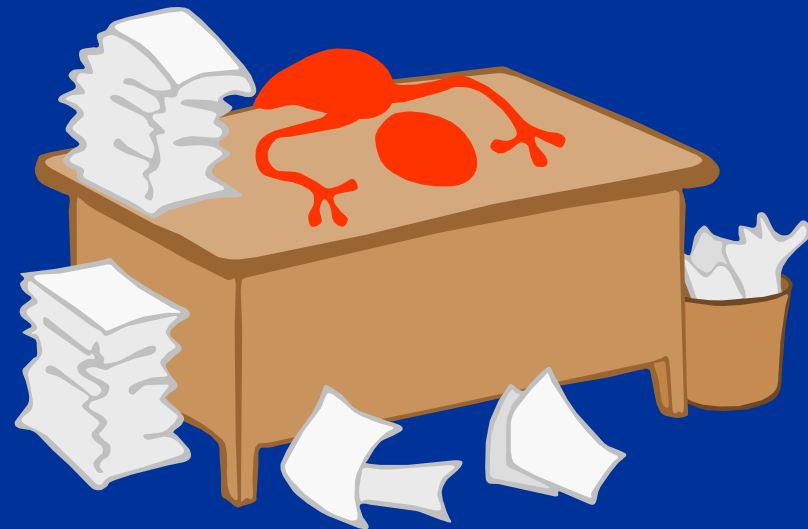


D. Research Design & Methods

- about 60% of proposal (~13-16 of 25 pp)
- organization parallel to Specific Aims
- hypothesis-driven (if possible)
- practical
 - methods and equipment
 - time and resources

Experimental design

- be realistic in the amount of work you propose



D. Research Design & Methods

- why your method is best
- provide all necessary details
 - methodology
 - controls
 - instruments to be used
 - information to be collected: value & limitations
 - precision of data
 - procedures for data analysis
 - interpretation

D. Research Design & Methods

- include contingency plans
 - potential problems
 - how you will overcome them
 - alternative method, if yours fails

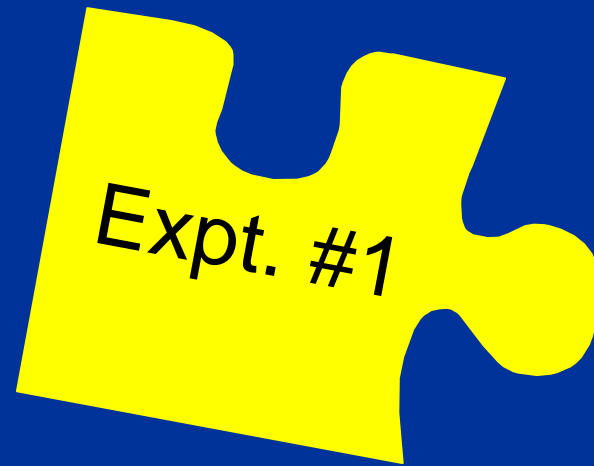
Recognize the difference between
anticipating reviewer concerns and
providing concerns.

D. Research Design & Methods

emphasize your “secret weapon”



Presentation of an individual experiment



Presentation of an individual experiment

Expt 1: Studies of..

title

- parallel to
specific aim

Presentation of an individual experiment

Expt 1: Studies of..

hypoth.: *A will
correlate with B*

hypothesis

- What you will
test (not *prove*)

Presentation of an individual experiment

Expt 1: Studies of..

hypoth.: *A will
correlate with B*

1. rationale

rationale

- Why you propose to do this experiment

Presentation of an individual experiment

Expt 1: Studies of..

hypoth.: *A will
correlate with B*

1. rationale

2. experimental
design

design

- what you will do
- assay method
 - availability
 - sensitivity
 - specificity
- # of replicates
- data analysis

Presentation of an individual experiment

Expt 1: Studies of..

hypoth.: *A will
correlate with B*

1. rationale

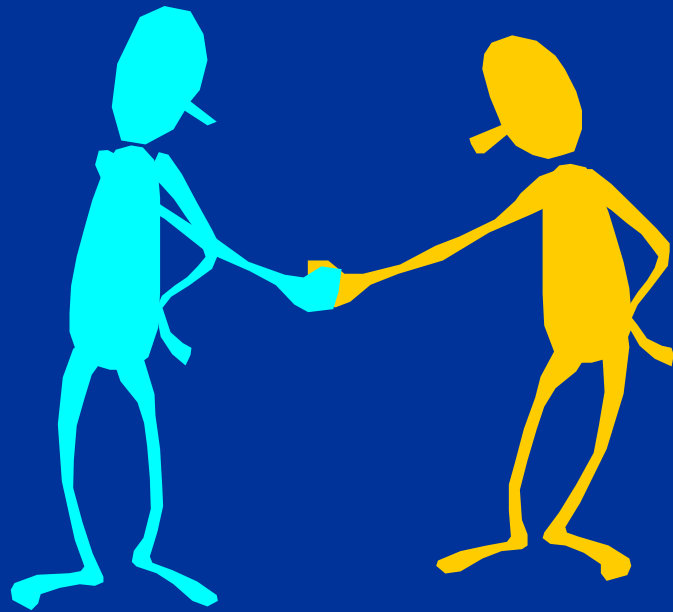
2. experimental
design

3. comments

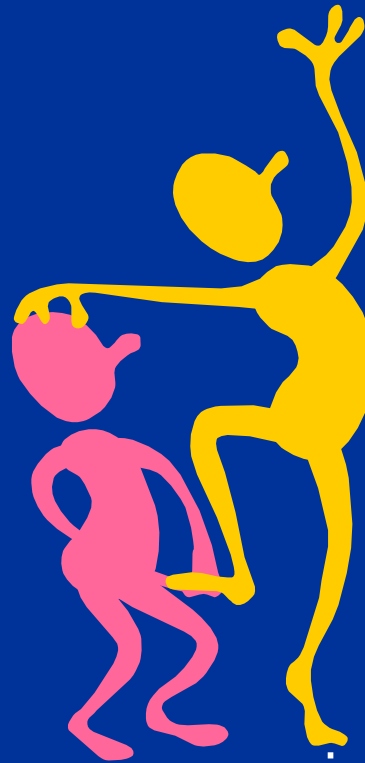
comments

- expectations
- problems?
 - measurement
 - interpretation
- contingencies

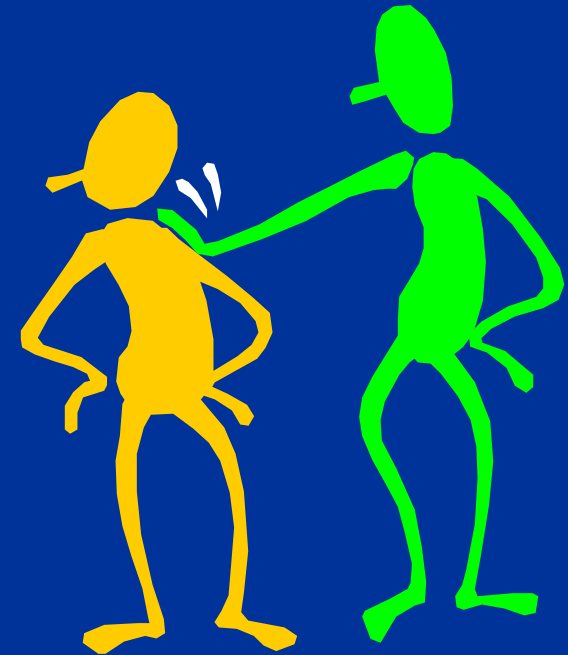
Collaborators & consultants



shared effort



increased skills



credibility,
recommendation

Collaborators & consultants

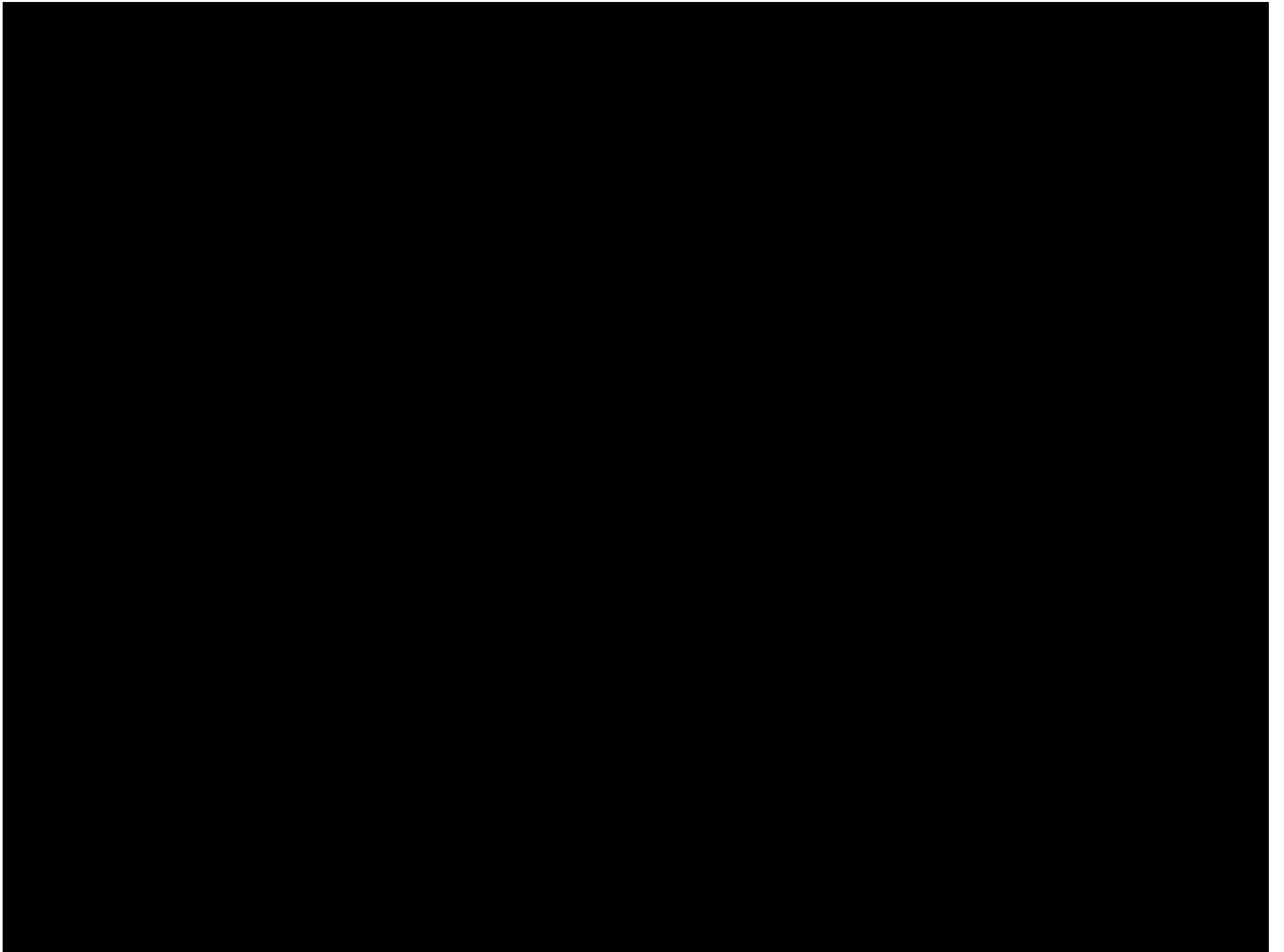
- person-power
 - skills, expertise
 - credibility
 - recommendation
- “I agree to perform anatomical analyses.”

Collaborators & consultants

- person-power
 - skills, expertise
 - credibility
 - recommendation
- “I agree to perform anatomical analyses.”
 - “I have enjoyed our stimulating interactions...exciting proposal...very pleased to participate in this worthwhile endeavor.

Best wishes,

John



Summary

- there is money available
- getting it takes
 - a good idea
 - a proper match
 - good grantspersonship
 - persistence
- it is hard work
- it is absolutely worth it!



