

Developing Scientific Research
Proposals (Grant Writing)

2003 Epidemiology and Biostatistics Summer Session



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Session 8

Abstract, Budget, and
Peer-Review Strategies

Abstract

- Purpose
- Importance
- Participants
- Intervention
- Assessments
- Analyses
- Specific Aims
- Implications

And...it all fits into a tiny box!

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Why is the Abstract Important?

- Used to assign to study section
- Stimulates interest in primary reviewer
- Background for questions from secondary reviewers
- Published on WWW

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Writing the Abstract

- Do it last
- Copy sentences from body of grant
- Smooth out edges and make sure it is comprehensible to non-specialists

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Budget Justification

Components

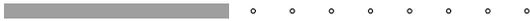
- Personnel
- Consultants
- Equipment
- Supplies
- Travel
- Other (Printing, mailing, etc.)

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Budget Justification

- Draft budget early, as part of study design
- Modify design if necessary to keep costs appropriate for hypothesis and environment
- Make sure of funding institution support
- Call project officer to discuss hypotheses and budget





Budget Justification - Personnel

- Clearly describe responsibilities of all personnel and justify their time commitment.
- Be specific
- If you don't justify it, it will be cut!





Personnel Guidelines

Principal Investigator: 20-50% FTE

How complex is the study

Does the PI have real work to do?

Co-Principal/ Co-Investigators: 5-40% FTE

Bring unique skills



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Personnel Guidelines

Biostatistician: 10-20% FTE

Include in study design, protocol, data management, and analysis

Project Director: 50-100% FTE

Day to day operations



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Personnel Guidelines

Data Manager/Analyst: 10-50% FTE

Masters level biostatistician, systems analysts, database managers

Administrative Support

FTE determined by agency rules - obtain guidelines from your institutional grants office.
Make tasks specific to project



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Budget Extras

Consultants

Critical to include if expertise missing from your study team

Examples include: *laboratory techniques, software development, dietary assessment, intervention design, drug delivery, specialized statistical methods....*



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Budget Extras

Computers and Equipment

Justify in term of needs for specific project

Don't Forget the Extras

Mailing, questionnaire design and printing,
drugs, intervention materials, interviewers, etc.

The costs of these items adds up.



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Budget Strategies

- The first year is most closely scrutinized by reviewers. Shift costs to subsequent years as feasible.
- Match your proposal to your level of experience. New investigators rarely are funded for multi-million dollar, complex projects, regardless of the quality of the proposal.



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Budget Strategies

- Minimize total scientific FTE's. Remember that 5% of a senior scientist in the grant can be transferred (with permission) to cover 15% of a junior scientist (who does all the work anyway).
- Minimize subcontracts. Total subcontracts (direct plus indirect) show up in your direct costs and can raise eyebrows.



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Strategies for Peer Review

- The Specific Aims must be perfect.
- Write clearly and with precision. If you do not write well, get help and take a class. Good writing is like any other skill, it is difficult and it takes practice.
- Stay organized so reviewers can find sections they are interested in quickly.

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Strategies for Peer Review

- Show enthusiasm.
- Use the “we” word!
- Stay focused.
- Propose only the work that supports the specific aims and is included in the budget.

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Strategies for Peer Review

- You will probably not be funded the first time!
- No tears allowed.
- Pay attention to the pink sheets. Answer thoughtfully and carefully.

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NIH Study Section

Congratulations!

You are now appointed as a member of our NIH study section!

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NIH Study Section

Why Were You Nominated?

- Based on areas of expertise and University rank
- Proven track record
- Geographic location
- Racial/Ethnic/Gender diversity
- Willingness to serve

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NIH Study Section

Who Is on a Study Section?

- ~20 professional with staggered terms
- Nominated from active and productive researchers
- Combined knowledge span diverse subject matter
- Demographic profile
- Health profile
- Ego profile

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NIH Study Section

What Are Reviewer Responsibilities?

- Review 8-12 applications 3 times/year
- Prepare written reviews in advance of meetings
- Give applicants a fair review
- Contribute to discussions

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NIH Study Section

What Do Reviewers Want To Know About Applicants?

- What is proposed and is this worth doing?
- Can the applicant do it and how will they do it?
- Where will it lead and how much will it cost?

Please don't make them work too hard to figure this out!

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NIH Study Section

Study Section Procedure for Application Review

- Initial level of enthusiasm from assigned reviewers
- Description and critique from first reviewer
- Critiques from other reviewers
- Discussion
- Final "level of enthusiasm"
- Vote conscience
- No silent killers/saviors

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NIH Study Section

Scoring a Grant

- Criteria are not equally weighted
- Members scores are recorded on voting sheet
- Numerical ratings range from 1.0 (outstanding) to 5.0 (acceptable) in increments of 0.1

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NIH Study Section

May:

- **NRF - Not Recommended for Further Consideration**
- Defer
- Site Visit

Factors NOT included in priority score:

Budget

Other administrative issues

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NIH Study Section

After Scoring Session Discusses

- Budget
- Administrative issues (e.g., overlap)
- Human subjects issues (minority/children)

Most administrative issue left to Administrator/
Institute.

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NIH Study Section

Following Study Session

- Administrator averages reviewers' ratings and multiplies by 100 for a three digit rating = priority score.
- Assign a percentile – represents the relative position of each priority score (along a 100.0 percentile band) among the scores assigned by the review group for this and the previous two study section rounds.

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NIH Study Section

Following Study Session

- In ~2 weeks scores mailed to the applicant.
- In 6 to 8 weeks summary statements returned to investigators with a priority score and, where applicable, a percentile.

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NIH Study Section

Following Study Session

- If your priority score is very good – it still may be some time until you are notified re funding (depends on time of year, whether Congress passed the budget, available funds, agency priorities).

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NIH Study Section

Pink Sheets

- Executive Secretary synthesizes points from written reviews and group discussion

Humbling? *Yes!*

Take it personally? *No!*

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NIH Study Section

Pink Sheets

- Read carefully and make some notes
- Set them aside for a day
- Respond point by point – take advice seriously
- Don't take on reviewers
- Have colleagues read your responses

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NIH Study Section

Pink Sheets

Remember:

- Competition is stiff
- 8/10 are not glowing – focus on problems
- Suggestions usually result in a better study
- Two resubmissions allowed
- The pain is eased with drugs, alcohol and time

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NIH Study Section

Resubmission Check List

Does the revised application.....

- Maintain a positive professional tone?
- Indicate in an introduction of 3 pages or less, how the revised proposal responds to reviewers' concerns?

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NIH Study Section

Resubmission Check List (Continued)

Does the revised application.....

- Highlight significant changes in the text (use of *italics* or brackets)?
- Provide relevant new pilot data and information on additional publications?

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Summary

Your Charge as a Grantwriter

- Good (or clever) idea – interesting presentation
- 1-3 focused specific aims (hypothesis driven)
- Write for an expert – but provide enough general information to be reviewed by an intelligent non-expert

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Summary

- Provide preliminary data on techniques, questionnaires, recruitment
- Research plan – organize by specific aim (if it fits)
- Use best science available (e.g., no convenience sample, etc.)
- State limitations
- Good aesthetics

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Summary

General Advice

- Start early
- Don't be overly ambitious
- Plan the sections of your grant
- Recruit colleagues for critical feedback at different times in the process

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Summary

- Don't try to load too much into the 25 pages for your technical proposal
- Prepare a cover letter for your proposal indicating your preferred review group so the Center for Scientific Review will have your intent as a guide
- If you don't get the standard postcard back in 6 weeks – call and follow-up

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Summary

Does your proposal tell the reviewer who you are, what you do, why your research is worth doing, how you will do it, where it will lead and how much it will cost?

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Summary

Time Involved to Write a PHS 398 Grant*	
Time to research, synthesize and write scientific portion of proposal	120 hours
Time to complete PHS application (excluding Human Subjects)	40 hours
Human Subjects, local agency reviews	20 hours
Total	180 hours

Source: J. Rasey – UW Research Funding Service

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Summary

Time Involved to Review a PHS 398 Grant*	
Time for peer reviewer #1 to review	7 hours
Time for other study section reviewers	55 min
Time for study section discussion	23 min
Total	8 hrs 18 min

Source: J. Rasey – UW Research Funding Service

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Summary

Your Time Frame

If you are new to grant writing, the rule of 2's applies to you!

Rule of 2's

It takes twice as long as you think to write a grant

It costs twice as much money as you anticipate

It will produce half of what you intended

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