Preparing a Realistic Budget

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Budget = proposed work

Both overbudgeting or underbudgeting are usually obvious and detract from your credibility as a PI (particularly crucial for a new investigator)

Reviewers ask themselves:

Is budget/work overambitious?

Is budget/work underambitious?

Is there a mismatch? e.g.

- more analyses in work plan than budgeted or reasonable to accomplish in the time frame.
- too few staff to possibly conduct the research
- why is this budget more/less than mine for similar work plan

Mechanics of preparing a budget – *ball park estimations*

- Find out total available from granting agency
- Figure out what you can get for that:
  - 1 Research Asst (100% 46K *with 33% Fringe*) - or 1 Post Doc / graduate student-tuition (35K or more)
  - Your salary (at least 20-40% + with fringe) 16 – 32 K ?
  - Lab Supplies for 2 FTE (includes you)
    - ~ 30K
  - Animal or human subject cost (variable)
  - Travel ($1500 + publication costs $1000K (color?))
  - Equipment?? 20K
  - other?
    - Don't forget about what you may take for granted in your former life:
      - Patient costs? Confocal time? Animal purchase and housing, etc

We are already at 125K, or easily 150 K and we only have hired one person. So if add a a post-doc we are up to 200K.

Other considerations/common mistakes

- Read the rules and follow
- (e.g. Modular budgets; still need to justify)

- Yearly inflation (4%?) [allowed?, not at NIH]

- Itemize non-recurring costs (e.g. equipment … put in the right year, not every year)

- Subcontracts (their indirects in your direct costs if < 25K)

- check out your institutions web site for current fringe rates for each category of employee

- Is it cheaper to let a Core Facility do measurements or do it yourself? (add in tech time and supplies)

Agency: NIH

Year 1	Annual Salary	Monthly Salary	Type Appt. # Mos.	Effort % Time	Person Mos.	Salary	Fringes	NIH Totals
A. Personnel with fringes								
	0	0		0	0	0	0	0
	0				0	0	0	0
	0	0			0	0	0	0
	0	0			0	0	0	0
	0	0			0	0	0	0
Personnel without fringes							0	
	0				0	0	0	0
	0				0	0	0	0
	0				0	0	0	0
	0				0	0	0	0
Subtotal						0	0	0
B. Consultant Costs								
Subtotal								0
C. Equipment								
Subtotal								0
D. Supplies								
Subtotal								0
E. Travel								
Subtotal								0
F. Other								
Subtotal								0
Subtotal Direct Costs for Initial Budget Period:								0
G. Consortium costs								
1. Direct costs								
2. F & A costs								
Subtotal								0
H. Total Direct Costs, Year 1								0

Do it in time to get approval from ORD… let them check before your proposal is done

They want a detailed budget even if NIH doesn't

BUDGET JUSTIFICATION PAGE MODULAR RESEARCH GRANT APPLICATION				
Initial Budget Period	**Second Year of Support**	**Third Year of Support**	**Fourth Year of Support**	**Fifth Year of Support**
$ 150,000	**$ 150,000**	**$ 150,000**	**$ 150,000**	**$ 150,000**
Total Direct Costs Requested for Entire Project Period				**$ 750,000**

Personnel

Sandy Smith, M.D., Principal Investigator, (30% effort) will be responsible for morphological and immunohistochemical characterization of eye, brain, and other tumors arising in transgenic retinoblastomas and uveal melanomas as well as the study of cell death in the HPV E6 and E7 models.

Alan Jones, Ph.D., Co-investigator, (10% effort) will develop the HPV E6 and E7 models of transgenic retinoblastoma mice and will determine the cellular genes responsible for the retinoblastoma in animal models.

Steven Johnson, Ph.D., Statistician, (5% effort) will assist with experimental design by performing sample size calculations. He will analyze data on new models of transgenic mice as well as data from Vitamin D and virus treatment studies.

Ms. Rachel Lato, M.S., Research Assistant, (100% effort) is responsible for the Lh-Tag mouse colony under the direction of the PI. She will maintain a breeding program to ensure adequate numbers of transgene-bearing animals. She will perform DNA extractions and PCR.

Ms. Stephanie Wilson, Technician, (50% effort) is responsible for laboratory animal preparation and some of the biochemical analyses.

Estimating per scientist supply cost

- Sit down and calculate it for usual assays:
  - Include everything:
    - Pipette tips, assay kits, reagents, plasticware
      - (e.g. cost per gene for Taqman analysis including RNA extraction, cDNA synthesis kit, primer purchase, etc)
      - (e.g. cost of doing Taqman on 20 candidate genes on 20 subjects at 2 times points works out to $8000 K at least - - so do not propose to do 50 genes on 50 subjects unless you can justify it (including power calculations) and can afford
      - Cross check your estimates with your monthy/yearly expenses for similar work over the past year

Budget Justification

- In enough detail for a colleague to understand why the budget is high, low or average… This could mean:
  - calculating the number of assays/tests needed for the number of animals/cultures proposed points and writing it out (particularly if an unusual cost
    - » $50/test x 50 subjects = $5000
    - » Plasticware, tissue culture medium, etc - $5000/yr
    - » RNA extraction and cDNA synthesis kits - $5000/yr

- if something is free (i.e special arrangement for facilities, assays, MDs time etc), describe in the budget or else it will be called unrealistic
  - E.g. Effort of 0.5 FTE Research Asst is covered by department

BUDGET JUSTIFICATION PAGE should include the following information (for samples see http://grants.nih.gov/grants/funding/modular/modular.htm):

- Total direct costs for the entire period of support should be at the top of the page.

- Total direct costs requested for each year should be listed next. Routine escalation for future years is no longer permitted. Typically, the number of modules requested will remain constant through the entire budget period.

- Personnel: the role of ALL personnel should be described by position, role, and level of effort. This includes consultants and any "to be appointed" positions; however, individual salary information should not be given.

- Consortium and Contractual Costs should be provided with an estimate of Total Costs (Direct plus F&A) rounded to the nearest $1,000. For each key individual/organization listed, the role and percent effort should be provided. Whether each collaborating Institution is foreign or domestic should be indicated. The total consortium/contractual costs should be included in the overall requested modular direct cost amount.

- Variation in the number of modules requested in different years should be described and justified, without providing additional budget information. For example, purchase of equipment in year 1 may result in a greater number of modules being requested in year 1 than in subsequent years.

Review of Modular Budgets

As part of the modular application initiative, NIH has changed the focus of budget review from an examination of annual categorical budgets to an evaluation of the total resources needed to complete the project. Reviewers should consider the entire proposed research project and the total direct costs needed to complete the project in the recommended period. Based upon the reviewer's understanding of the research proposed and the costs and services associated with such research, the annual recommended budgets should be in modules of $25,000. In addition:

- Budget adjustments must be made in modules. If in the judgment of the reviewers, the amount requested is too large for the work proposed, the number of modules should be reduced. These reductions do not have to be based on reductions of specific items, but rather can be made generally based on overall funds requested

Do a good job of Justifying 'unusual' costs:

- Why do you need:
  - An average of 2 modules per year for supplies?
  - An extra module in year 3 (I.e. an 10K for expanding and testing transgenic lines plus 15K for ELISA kits to test phenotypes)
  - service contract costs (or your % of) requiring an extra module

Monitor your spending monthly

- Best way to estimate real costs
- If a project starts slowly, see if you can carry over budget into the next year
- Seek a 2nd small grant if overspending consistently.. Or stop doing new experiments and analyze your data!

ASK a MENTOR

- Show different people your budget early in process of proposal writing
- Use administrative staff to help… often have templates, know about issues specific to your institution and can point you toward resources (e.g. web pages of ORD) that have budget templates
- Find out average budget of grants in different study sections for new investigators doing similar work to your own.

Good REFERENCE:

Preparing and Managing Your First Lab Budget: Finance 101 for New Investigators

MEGAN T. BROWN

22 OCTOBER 1999
Science NEXT WAVE online

"If your budget is not realistic or in line with other current grants, you could run into serious stumbling blocks during the grant review process".