
Read the following subsections:
• Equipment
• Personnel Costs
• Sample budget justification
• Underrecovery

Class activity on budget: Work in pairs

1. Calculate the cost per year of employing a graduate student at MIT

2. Calculate the cost per year of employing a postdoctoral associate with an annual salary of $55K assuming one month of vacation (20 days)

Current MIT rates

- **F&A: 55%** *(not applied to grad tuition)*
- **Employee benefits: 25%** *(not applied to grad students)*
- **Vacation accrual: 8.1%** *(not applied to grad students)*
- **Graduate student tuition:** fall $25,760, spring $25,760; summer $17,155 *(MIT waives tuition for summer and applies a 50% subsidy)*
- **Graduate student doctoral RA stipend:** $37,128
Class activity on budget: Work in pairs

1. Calculate the cost per year of employing a graduate student at MIT
   \[25,760 + 37,128 \times 1.55 = 83K\]

2. Calculate the cost per year of employing a postdoctoral associate with an annual salary of $55K assuming one month of vacation (20 days)
   \[55K \times \left(\frac{11}{12}\right) \times 1.55 \times 1.25 \times 1.081 = 106K\]

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- Graduate student tuition: fall $25,760, spring $25,760; summer $17,155 \textit{(MIT waives tuition for summer and applies a 50\% subsidy)}
- Graduate student doctoral RA stipend: $37,128
Other important components of an NSF grant: Background, Summary and Title
Background section (part of 15-page project description)

1. Review of relevant literature
   • Purpose is to justify the need for what you propose
   • Not comprehensive literature review (that would be too unfocused, and not possible given effective space constraint of 1.5-2 pages)

2. Results from prior NSF support
   • Include this in the background if relevant to the proposal
   • Cannot exceed 5 pages long

3. Preliminary studies
   • Helps establish that you can do what you propose
   • Put methodological details in captions to figures and tables where possible (rather than the main text)
Project summary: “Written last but not at last minute”

1. Overview (copy and paste from Overview and Objectives section: gap in knowledge, overall objective, hypothesis, rationale, well qualified, specific aims, why creative and original)

2. Intellectual Merit (distill from Intellectual Merit section)

3. Broader Impacts (distill from Broader Impacts section)
Title

- The title of the project must be brief, scientifically or technically valid, and suitable for use in the public press (NSF PAPG)

- Title should emphasize the *payoff* of the research rather than the process

- No word limit, but aim is for the title to be brief and clear

- Career grants should include integrated education component in the title

Source: Grant Application Writer's Handbook
Suggested approach to writing the title

1. Look at call or program description and try to include key words or phrases from it in the title

2. Review your project description and look for key words and phrases that convey important information, novelty and impact

3. Create many titles and wording variants and then narrow down to 10 (3?)

4. Get feedback from knowledgeable colleagues and lay people

Source: Grant Application Writer's Handbook
Class activity: Come up with a title for your proposal

• Come up with a title for your grant

• Read your neighbor’s title and critique (*positives and negatives*)

• Write your title up on the board, followed by class discussion of all titles
Postdoctoral fellowship applications
(NSF AGS as an example)

• Rules generally follow the normal NSF proposal rules (e.g., same merit review criteria including broader impacts)

• 10 page limit for project description (as opposed to 15 normally)

• Project description must also include:
  - justification for the choice of the host institution(s) and sponsoring scientist(s)
  - description of the applicant's long-term career goals and the role of this postdoctoral experience in achieving them
Career exploration: writeup and schedule for presentations

• Write up (~2 pages per interview) due in last class (Dec 6th)

• Present outcome to the class (5-10 mins + 5 mins for questions)

- Nov 29th: Rohini, Tom, Ali, Jonathan, Ziwei
- Dec 6th: Julia, Tristan, Mukund, Brindha, Catherine