Grants and Budgets

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Robotics Seminar

DARC Lab
Why grants?

So I robbed the stupid bank - I needed money to fund my research!
Lab needs funding to do work
Research requires money
Where does the money go?
Where does the money go?
THE GRANT CYCLE

HOW IT'S SUPPOSED TO WORK:

WRITE GRANT → GET $ → DO RESEARCH → PUBLISH RESULTS

(REPEAT)

HOW IT REALLY WORKS:

DO RESEARCH → GET RESULTS BUT DON'T PUBLISH THEM YET. CALL THEM "PRELIMINARY RESULTS" → WRITE GRANT TO DO WHAT YOU ALREADY DID → GET $ → USE $ TO PAY FOR AN UNRELATED NEW PROJECT → OK, NOW YOU CAN PUBLISH RESULTS

WWW.PHDCOMICS.COM
Where can you find money?

- Federal agencies (NSF, DOE, DoD, NIH, NASA, etc.)
  - Fundamental research
  - Applied research
  - Development projects
  - Industry-university collaborative projects
  - Etc.
- State funds (Gov. office, etc.)
- Internal funds (University)
- Industry sponsors (companies)
- Family and friends
- Others...?
Budgeting 101
(Grant example)

Where does the money go?
Breakdown

Grant $$

49% overhead

University

Other:
Travel, publication cost, tuition, etc.

Salaries (~50% of total)
(PI, grad students, post docs, undergrads, etc.)

Lab supplies, equipment
Flow of money

Standard

NSF/Company

UU

PI/Lab

Total

Total - Overhead

Collaborative

NSF/Company

UU

Total1

Total1 - Overhead1

PI/Lab

Collaborative as subaward

NSF/Company

UU

Total2

Total2 - Overhead2

UU2

Overhead on subaward

Total

Total1 - Overhead1

PI/Lab

Total2 - Overhead2

PI/Lab

Total1

Total2

Total

Total1 - Overhead1

Total2 - Overhead2

PI/Lab

PI/Lab

PI/Lab
Flow of money (STTR and SBIR grants)

Money goes to company, then university bills company

*Company applies for the grant and university becomes the partner

NSF → Total → Univ. bills company → Total - Overhead → PI/Lab
Major components of a budget

1. **Salaries:**
   - PI summer salary, grad students, ugrads, classified staff, admins, etc.
   - Fringe rate: Percentage of salary

2. **Equipment:**
   - Items > $5000 (No overhead charged)

3. **Participant support:**
   - Fellowship $$, cost to pay participants for studies (No overhead)

4. **In-kind Contributions/cost share**

   **Operating:**
   - Supplies, publication costs

   **Travel:**
   - Domestic/Int.

   **Subaward:**
   - (Usually taxes $25K of what goes out)

   **Tuition**

**Overhead (49%)**

**Total**
## Budget Example

<table>
<thead>
<tr>
<th></th>
<th>YEAR 1</th>
<th>YEAR 2</th>
<th>YEAR 3</th>
<th>FINAL</th>
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Budget justification

Refer to example in class.
Create a budget for a 2-year project to support the following needs:

- No summer salary – PI will be working for “free” (in-kind)
- 1 graduate student per year with a stipend of $20,000 per year
- 1 undergraduate part-time worker, paid $10/hr, working 10 hours/week and during Fall and Spring semester
- Fringe rate for #2 and #3 is 14%
- You will need $2000 per year for travel expenses
- You will need $5000 per year for operating supplies
- Assume that the overhead rate (F&A) is 49%, which applies to all items above!

Answer these questions and provide a table showing the breakdown of your budget by item and year:
- Determine the total cost before overhead is applied, broken down per year
- What is the overhead cost per year?
- What is the total cost for the project?
Questions?