Preparing a Proposal Budget: Lab

Class Workbook

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# Sponsor Budget Guidelines (NSF 18-581)

III. AWARD INFORMATION

**Award size:** Under this solicitation, the maximum total (for all years) award size is $2.5 million, including indirect costs. US-UK Collaborative Projects can request additional funding for the UK component of the project. The minimum award size is $1.5 million total project costs for all years, or $1.0 million for the US component of US-UK, US-Israel and US-China Collaborative Projects. For US-Israel Collaborative Projects, the maximum award size for the Israeli portion is $70,000/year. For US-China Collaborative Projects, the maximum award size for the Chinese portion is ¥4.5M total project costs for all years.

**Award duration:**The maximum award duration is five years.

**RCN proposals**: The maximum award size for RCN proposals is $500,000 as per the RCN solicitation. For US-UK Collaborative RCN proposals, the maximum award size for the US component is $500,000.

V. B. Budgetary Information

**Cost Sharing:**

Inclusion of voluntary committed cost sharing is prohibited.

**Other Budgetary Limitations:**

EEID projects must have a minimum budget of $1,500,000 in total project costs for all years; US-UK Collaborative, US-Israel, and US-China Collaborative projects must have a minimum budget of $1,000,000 in total project costs for all years. Research that falls within the scope of the EEID initiative but with project aims that do not require budgets of this magnitude should be directed to the appropriate core program.

**Budget Preparation Instructions:**

**Subawards**

In accordance with the applicable award terms and conditions, proposers are reminded of their responsibilities with regard to subawardees. Should an award be made, the primary awardee is responsible for ensuring compliance with the appropriate terms and conditions to, as well as the management and oversight of, any subawardees on the project, including any foreign subawardees.

## **Activity 1**: Interpret Sponsor Budget Guidelines/Requirements

|  |  |
| --- | --- |
| Question | Answer |
| 1. What is the maximum award duration? | Click or tap here to enter text. |
| 2. Is cost sharing allowed and/or required? | Click or tap here to enter text. |
| 3. What is the maximum budget size? | Click or tap here to enter text. |
| 4. What is the minimum award size? | 1. Total project costs for all years: Click or tap here to enter text. 2. US Component of US-UK Collaborative Projects: Click or tap here to enter text. 3. US Component of the US-Israel Collaborative Projects: Click or tap here to enter text. |

# **Budget Scenario**: Malaria Project with UK

Professor L.B. “Jeff” Jeffries from Chemistry has asked you to draft three-year budget for a proposal to the National Science Foundation (NSF) Ecology and Evolution of Infectious Disease (EEID) Program. The proposal is due to NSF on November 20, 2024.

Professor Jeffries has provided the following information.

* The purpose of the project is to conduct basic research on malaria with collaborators in the UK. All of the work will be conducted on campus.
* The projected start date will be October 1, 2025, and the projected end date is September 30, 2028.
* Professor Jeffries will be the PI and will commit 20% effort on the proposed project during the academic year and 10% effort during the summer. He is paid $131,000 per year and has an approved 2% merit increase effective December 1, 2024.
  + Professor Jeffries has a 9-month academic year appointment, and is an Academic Senate faculty member. He can work 3 months during the summer.
  + Escalate his salary by 3% each FY.
* Theresa Doyle, a post-doctoral researcher (post doc) will commit 50% effort on the proposed project and her current annual salary is $53,184.
  + Post-docs work on a calendar year schedule.
  + Escalate her salary by 3% each FY.
* A non-resident graduate student researcher (GSR) III will be hired and will begin working on the start date of the project. The GSR III will be attending classes full time during Winter, Spring, and Fall Quarters. The GSR will contribute 50% effort during the academic year on this project. The GSR will not be attending Summer Session, and will instead work on this project full-time. Current annual salary for a GSR III is $48,144.
  + Student fees should be escalated by 10% per FY.
* Fishers Scientific Bio-Tek Precision 2000 Automated Microplate Pipetting System (Catalog list price of $16,000) to be purchased in the first PY.
  + You have obtained a quote from Fisher Scientific (CA Company). For the purposes of this exercise, calculate an additional 20% of the catalog list price for shipping, handling and sales tax.
* DNA Sorting Machine (Catalog list price of $25,000) in the second PY.
  + You have obtained a quote from Fisher Scientific (CA Company). For the purposes of this exercise, calculate an additional 20% of the catalog list price for shipping, handling and sales tax.
* Professor Jeffries’ will travel to meet with his collaborators in the UK twice each project year for an estimated total of $2,500 per trip.
  + Theresa Doyle will also attend one trip per year; same estimate total.
* Professor Jeffries’ will also attend a scientific conference in year 2 and again in year 3 to present on the research results. The conference will be in D.C. and his estimated trip cost is $1,500.
* Materials and Supplies:
  + Laboratory supplies: $1,500 each year
  + Computer dedicated to lab analysis for this project: $3,000 in year one
  + Purchase of a specific strain of malaria in year one: $2,000
  + Cattle supplies: $3,000 in year 1, $2000 in year 2 and $5,000 in year 3
* Publication Costs
  + $800 in years 2 and 3.
* Consultant: Charlie Apple is renowned cattle rancher and will serve as a consultant regarding the care and behavior of the cows to be studied. She will charge us $5,000 in each of the 3 years.
* The project will include a subaward to Stanford University in all years. Stanford University will receive $30,000 in Year 1, $45,000 in Year 2, and $40,000 in Year 3.
* We will also use the services of the Genome Center to perform data analysis on the genomes of non-infected and of infected cows. This will cost us $30,000 in each of the 3 years.

## **Activity 2**: Interpret PI Instructions/Information

1. Identify the following:
2. Project Start Date: Click or tap here to enter text.
3. Project End Date: Click or tap here to enter text.
4. Where the research will be performed: Click or tap here to enter text.
5. NIH or non-NIH sponsor: Click or tap here to enter text.
6. Categorize the budget line items into the appropriate Budget Categories below.

|  |  |
| --- | --- |
| Budget Category | Line Items |
| Click or tap here to enter text. | Salary  Dr. Jeffries  Theresa Doyle  GSR TBD  Benefits  Dr. Jeffries  Theresa Doyle  GSR TBD |
| Click or tap here to enter text. | Bio-Tek Precision 2000 Automated Pipetting System  DNA Sorting Machine (including taxes, shipping, handling) |
| Click or tap here to enter text. | Meeting with collaborators in UK (twice each year)  Scientific conference in D.C. |
| Click or tap here to enter text. | Laboratory supplies  Computer for lab  Malaria  Cattle supplies |
| Click or tap here to enter text. | Publication Costs |
| Click or tap here to enter text. | Charlie Apple |
| Click or tap here to enter text. | Stanford University |
| Click or tap here to enter text. | Graduate Student Researcher (GSR) TBD |
| Click or tap here to enter text. | Genome Center Costs |

1. Check the box next to correct the F&A Rate and Base below as of the start of the first year of the project.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Category | Effective Period | On-Campus | Off-Campus | Base |
| Organized Research | 07/01/**23** – 06/30/**24** | 60% | 26% | MTDC |
| 07/01/**24** – 06/30/**28** | 61% | 26% | MTDC |
| Other Sponsored Activities | 07/01/**23** – 06/30/**28** | 42.5% | 26% | MTDC |
| Instruction | 07/01/**23** – 06/30/**28** | 50% | 26% | MTDC |
| Primate Center | 07/01/**23** – 06/30/**28** | Core Grant  25.2% | Non-Core Fed  57.8% | MTDC |
| State of California | 07/01/**23** – 06/30/**25** | 35% | 25% | MTDC |
| 07/01/**25** and beyond | 40% | 25% | MTDC |
| Clinical Trials  (industry sponsored) | 02/01/**06** and beyond | 32% | 32% | TDC |

# **Activity 3**: Preparing the Budget

You may want to refer to the previous activity for the appropriate lines items to place in budget section below. Some people start by adding the line items and then going back and entering the budget figures.

## A. Header Information

Open the **Budget Spreadsheet** for the class activity and enter the information from Activity 2 above (Project Start Date; Project End Date; NIH or non-NIH).

## B. Personnel Section

### 1. Annualized Salary

Professor Jeffries is paid $131,000 per year and will receive a 2% merit increase before the project start date. He has a 9-month academic year appointment, and is an Academic Senate faculty member. He can work 3 months during the summer.

1. Calculate his new salary, factoring in the 2% merit increase.

$131,000 x 1.02 = $\_\_\_\_\_\_\_\_\_\_\_\_\_ *(you can click and enter information on these lines)*

1. Calculate his monthly salary

$$\_\_\_\_\_\_\_\_\_\_\_ ÷ \_\_\_\_\_\_\_\_\_\_\_\_\_ = $\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Calculate his annualized salary.

$\_\_\_\_\_\_\_\_\_\_\_\_\_ x 12 = $\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Calculate his base salary.

$\_\_\_\_\_\_\_\_\_\_\_\_\_ ×\_\_\_\_\_\_\_\_\_\_\_\_\_ = $\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Calculate his summer salary.

$\_\_\_\_\_\_\_\_\_\_\_\_\_ ×\_\_\_\_\_\_\_\_\_\_\_\_\_ = $\_\_\_\_\_\_\_\_\_\_\_\_\_

1. **On the Budget Spreadsheet**, enter the following information for all personnel (details in the Budget Scenario on pages 3).
   1. Name and role (note: enter two lines for the PI only)
   2. Base Salary
   3. Summer Salary

### 2. Salary to Charge to the Grant (Effort Commitment)

Professor Jeffries will be the PI and will commit 20% effort on the proposed project during the academic year and 10% effort during the summer. He has as a 9-month academic year appointment, and is an Academic Senate faculty member. He can work 3 months during the summer. What is his total **Annualized Effort** commitment for this project?

1. Calculate his total months worked.

\_\_\_\_\_\_\_\_\_\_\_\_\_+ \_\_\_\_\_\_\_\_\_\_\_\_\_= \_\_\_\_\_\_\_\_\_\_\_\_\_

1. Calculate his academic year effort.

(\_\_\_\_\_\_\_\_\_\_\_\_\_ ×\_\_\_\_\_\_\_\_\_\_\_\_\_%) ÷ 12 = \_\_\_\_\_\_\_\_\_\_\_\_\_%

1. Calculate her summer months’ effort.

(\_\_\_\_\_\_\_\_\_\_\_\_\_ ×\_\_\_\_\_\_\_\_\_\_\_\_\_%) ÷ 12 = \_\_\_\_\_\_\_\_\_\_\_\_\_%

1. **On the Budget Spreadsheet**:
   1. Enter the Academic Months/Year and Summer Months effort commitment for the Principal Investigator in each project year/budget period.
   2. Indicate the escalation type and percentage (at top right section).
   3. Select the Salary Basis/Type.
2. Convert his annual effort to Person-Months format.

12 × 15% = \_\_\_\_\_\_\_\_\_\_\_\_\_ Person-Months in the Academic Months

12 × 2.5% = \_\_\_\_\_\_\_\_\_\_\_\_\_ Person-Months in the Summer Months

\_\_\_\_\_\_\_\_\_\_\_\_\_ + \_\_\_\_\_\_\_\_\_\_\_\_\_ = \_\_\_\_\_\_\_\_\_\_\_\_\_ Person-Months (annual)

1. **On the Budget Spreadsheet**, complete the Effort information for each person on the budget:
   1. Effort Commitment % for each project year/budget period.
   2. Indicate the escalation type and percentage (at top right section).
   3. Select the Salary Basis/Type.

### 3. Benefits

**On the Budget Spreadsheet**, select the correct Benefit Group for each person. Assume that the correct rate for Professor Jeffries’ summer salary is Faculty Summer – A.

|  |  |  |  |
| --- | --- | --- | --- |
| **CBR Group** | **Personnel Category** | **FY 23/24 Rates** | **FY 24/25 Proposed Rates** |
| HCOMP Faculty & SMG | SOM faculty and Senior Management | 26.8% | 26.9% |
| Nurses and Physicians | Nurses, Nurse Practitioners and Non-SOM Physicians | 34.1% | 35.1% |
| Faculty, Acad, MSP, Safety | Non-SOM faculty; Other Academic appointment such as project scientists and specialists; MSP positions such as directors; and safety services such as Fire and Police officers. | 39.6% | 40.7% |
| Faculty Summer Salary | Faculty Summer Salary | 8.8% | 9.9% |
| All Other Staff | Staff including analysts, SRAs, programmers | 51.6% | 51.4% |
| Service Staff | E.g., Janitors | 53.9% | 58.6% |
| Postdoc Employees | Postdocs | 22.1% | 25.0% |
| Grad and Undergrad | GSRs and Undergrads | 2.2% | 1.9% |
| Limited Benefits | Employees not eligible for full benefits (e.g., FTE % is too low) | 9.4% | 11.3% |
| No Benefit Eligibility | E.g., not eligible based on appointment type | 4.6% | 4.1% |

<https://afs.ucdavis.edu/finance/costing-policy-analysis/comp-benefits/calculate>

## Let’s Practice! *Calculate F&A Costs with Split Rates*

You are working on a budget for research project with a start date of September 1, 2022 and end date of August 31, 2023. The appropriate F&A Rate is 59.5% for FY 2022-23 and 60% for FY 2023-2024 with an MTDC Base. The MTDC is $300,000. **What are the F&A Costs?**

1. Determine the months at the first rate. How many months occur before 6/30/2023?

Click or tap here to enter text.

1. Calculate the F&A Costs at Rate 1.

($\_\_\_\_\_\_\_\_\_\_\_\_\_ ÷ 12) × \_\_\_\_\_\_\_\_\_\_\_\_\_ × \_\_\_\_\_\_\_\_\_\_\_\_\_ = $\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Determine number of month to charge at second rate. How many months occur on/after 7/1/2023?

Click or tap here to enter text.

1. Calculate the F&A Costs at Rate 2.

($\_\_\_\_\_\_\_\_\_\_\_\_\_ ÷ 12) × \_\_\_\_\_\_\_\_\_\_\_\_\_ × \_\_\_\_\_\_\_\_\_\_\_\_\_ = $\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Calculate the F&A costs at both rates.

$\_\_\_\_\_\_\_\_\_\_\_\_\_ + $\_\_\_\_\_\_\_\_\_\_\_\_\_= $\_\_\_\_\_\_\_\_\_\_\_\_\_

## C. Equipment Section

Based on the Budget Scenario provided by Professor Jeffries and the information we discussed earlier regarding classifying items as equipment:

1. Determine if any equipment should be included in the budget.
2. If so, add the appropriate line item(s) to the **Budget Spreadsheet**.

## D. Travel Section

Based on the Budget Scenario provided by Professor Jeffries:

1. Determine if any travel should be included in the budget.
2. If so, add the appropriate line item(s) to the **Budget Spreadsheet**.

## E. Other Direct Costs Section

Based on the Budget Scenario provided by Professor Jeffries, determine for each of the following sections whether items should be included, add them on the appropriate line in the **Budget Spreadsheet**, and add each of the costs, as appropriate:

* Materials and Supplies
* Publication Costs
* Consultant Services
* Subawards
* GSR Tuition/Fees (*Note: If a graduate student is listed as personnel, include their GSR tuition and fees in the budget.*)
* Other Expenses

## F. Indirect/F&A Costs Section

**On the Budget Spreadsheet**:

Select the Indirect Cost Rate Type (refer to your selection in Activity 2).

## Activity 4:Match the Budget and Budget Justification

Read the sample budget on the next page and the three budget justifications that follow it.

Select the matching budget justification below.

* Budget Justification 1
* Budget Justification 2
* Budget Justification 3

# Sample Budget

## 

## Budget Justification 1

**Senior Personnel**

**Margarat Jonas, PI** (3.0 calendar months’ effort)

Dr. Jonas will serve as PI for the project, providing oversight, administration, and management of the project.

**Sarah McMurphy, Co-PI** (6.0 calendar months’ effort)

Dr. McMurphy will assist Dr. Jonas with oversight, administration, and management of the project. She will serve as the main coordination hub for the project in both logistical planning and intellectual organization. Her responsibilities will include organizing meetings and trainings, leading recruiting efforts, oversee communication and development of web materials, and liaising with evaluator. She will also take part in curriculum development and teaching of the curriculum.

**Timothy Chan, Co-PI** (0.5 summer months’ effort)

Dr. Chan will take part in curriculum development and teaching the curriculum. He will assist in identifying, recruiting, and training additional faculty to teach the curriculum and take part in the Advisory Board and leadership team.

**Susan Garcia, Academic Coordinator** (3.0 calendar months’ effort)

Dr. Garcia will chair the Advisory Board and coordinate the involvement of faculty from STEM disciplines. She will provide feedback on curriculum design and delivery, as well as assisting the evaluator in collecting feedback from STEM faculty.

**Fringe Benefits**

Fringe benefits are calculated using UC Davis’s federally approved rates developed by UC Davis Costing and Policy, which are adjusted annually and calculated by title code and fiscal year.

**Equipment**

A dedicated server will be purchased in year 1 to store project data and the program’s website. A dedicated service is necessary for data security and to ensure all features of the website are functional for collaboration. Costs for the server are estimated at $6,200 based on web quotations from the university’s approved vendor.

**Travel**

**Conference Travel:** $1,500 is budgeted in years 2 through 5 to allow the PI or Co-PI to attend a relevant professional conference to disseminate information on the program and to collaborate.

**Other Direct Costs**

**Materials and Supplies:**

**Supplies for trainers —** $3,000 per year is budgeted for supplies for trainers. Supplies will include mathematical design software licenses for modeling at $2,500 per year, and $500 per year for data storage and presentation materials.

**Trainee research supplies** - $6,500 in years 2 through 5 is budgeted for trainee research supplies to enable groups of trainees to undertake small research projects as a capstone to quarterly and year-long trainings.

## Budget Justification 2

**Senior Personnel**

**Margarat Jonas, PI** (1.5 academic months’ effort; 1.0 summer months’ effort)

Dr. Jonas will serve as PI for the project, providing oversight, administration, and management of the project. She will lead curriculum development, teach the curriculum, head the leadership team, and cooperate with evaluation. She will also lead efforts to coordinate among faculty on the advisory board and train additional faculty in curriculum implementation.

**Sarah McMurphy, Co-PI** (6.0 calendar months’ effort)

Dr. McMurphy will assist Dr. Jonas with oversight, administration, and management of the project. She will serve as the main coordination hub for the project in both logistical planning and intellectual organization. Her responsibilities will include organizing meetings and trainings, leading recruiting efforts, oversee communication and development of web materials, and liaising with evaluator. She will also take part in curriculum development and teaching of the curriculum.

**Timothy Chan, Co-PI** (0.5 summer months’ effort)

Dr. Chan will take part in curriculum development and teaching the curriculum. He will assist in identifying, recruiting, and training additional faculty to teach the curriculum and take part in the Advisory Board and leadership team.

**Susan Garcia, Academic Coordinator** (3.0 calendar months’ effort)

Dr. Garcia will chair the Advisory Board and coordinate the involvement of faculty from STEM disciplines. She will provide feedback on curriculum design and delivery, as well as assisting the evaluator in collecting feedback from STEM faculty.

**Postdoctoral Researcher** (9.0 calendar months’ effort)

A postdoctoral researcher will work on the evaluation plan, create and administer surveys, and analyze the results and contribute to reporting.

**Fringe Benefits**

Fringe benefits are calculated using UC Davis’s federally approved rates developed by UC Davis Costing and Policy, which are adjusted annually and calculated by title code and fiscal year.

**Equipment**

A dedicated server will be purchased in year 1 to store project data and the program’s website. A dedicated service is necessary for data security and to ensure all features of the website are functional for collaboration. Costs for the server are estimated at $6,200 based on web quotations from the university’s approved vendor.

**Travel**

**Conference Travel:** $1,500 is budgeted in years 2 through 5 to allow the PI or Co-PI to attend a relevant professional conference to disseminate information on the program and to collaborate.

**Other Direct Costs**

**Materials and Supplies:**

**Supplies for trainers —** $3,000 per year is budgeted for supplies for trainers. Supplies will include mathematical design software licenses for modeling at $2,500 per year, and $500 per year for data storage and presentation materials.

**Trainee research supplies:** $6,500 in years 2 through 5 is budgeted for trainee research supplies to enable groups of trainees to undertake small research projects as a capstone to quarterly and year-long trainings.

**Other:**

**MediaWorks Recharges for creation of online resources—** $3,000 in year 1 and $1,000 in years 2 and 3 is budgeted for MediaWorks recharges ($91/hour) to create a website and online resources in support of the program.

**Recruitment expenses—** $600 in year 1 and $300 in years 2-5 is budgeted for trainee recruitment expenses including the creation and printing of recruitment flyers and meeting costs such as room rental, agenda creation, and online streaming fees.

**Indirect Costs**

Indirect Costs are calculated at UC Davis’s federally negotiated rate for instruction rate- 50% of Modified Total Direct Costs (MTDC). Per NSF policy, participant support costs are excluded from the indirect cost base.

## Budget Justification 3

**Senior Personnel**

**Margarat Jonas, PI** (1.5 academic months’ effort; 1.0 summer months’ effort)

Dr. Jonas will serve as PI for the project, providing oversight, administration, and management of the project. She will lead curriculum development, teach the curriculum, head the leadership team, and cooperate with evaluation. She will also lead efforts to coordinate among faculty on the advisory board and train additional faculty in curriculum implementation.

**Sarah McMurphy, Co-PI** (6.0 calendar months’ effort)

Dr. McMurphy will assist Dr. Jonas with oversight, administration, and management of the project. She will serve as the main coordination hub for the project in both logistical planning and intellectual organization. Her responsibilities will include organizing meetings and trainings, leading recruiting efforts, oversee communication and development of web materials, and liaising with evaluator. She will also take part in curriculum development and teaching of the curriculum.

**Timothy Chan, Co-PI** (0.5 summer months’ effort)

Dr. Chan will take part in curriculum development and teaching the curriculum. He will assist in identifying, recruiting, and training additional faculty to teach the curriculum and take part in the Advisory Board and leadership team.

**Susan Garcia, Academic Coordinator** (3.0 calendar months’ effort)

Dr. Garcia will chair the Advisory Board and coordinate the involvement of faculty from STEM disciplines. She will provide feedback on curriculum design and delivery, as well as assisting the evaluator in collecting feedback from STEM faculty.

**Postdoctoral Researcher** (9.0 calendar months’ effort)

A postdoctoral researcher will work on the evaluation plan, create and administer surveys, and analyze the results and contribute to reporting.

**Fringe Benefits**

Fringe benefits are calculated using UC Davis’s federally approved rates developed by UC Davis Costing and Policy, which are adjusted annually and calculated by title code and fiscal year.

**Travel**

**Conference Travel:** $1,500 is budgeted in years 2 through 5 to allow the PI or Co-PI to attend a relevant professional conference to disseminate information on the program and to collaborate.

**Other Direct Costs**

**Materials and Supplies:**

**Server –** A dedicated server will be purchased in year 1 to store project data and the program’s website. A dedicated service is necessary for data security and to ensure all features of the website are functional for collaboration. Costs for the server are estimated at $6,200 based on web quotations from the university’s approved vendor

**Supplies for trainers —** $3,000 per year is budgeted for supplies for trainers. Supplies will include mathematical design software licenses for modeling at $2,500 per year, and $500 per year for data storage and presentation materials.

**Trainee research supplies:** $6,500 in years 2 through 5 is budgeted for trainee research supplies to enable groups of trainees to undertake small research projects as a capstone to quarterly and year-long trainings.

**Other:**

**Assessment/Evaluation Costs —** $22,490 total over the 3 years of the project is budgeted for assessment and evaluation services. Pricing is based on current quotations and includes focus group sessions, interviews, qualitative analysis and summaries, meeting attendance, and reports.

**MediaWorks Recharges for creation of online resources—** $3,000 in year 1 and $1,000 in years 2 and 3 is budgeted for MediaWorks recharges ($91/hour) to create a website and online resources in support of the program.

**Recruitment expenses—** $600 in year 1 and $300 in years 2-5 is budgeted for trainee recruitment expenses including the creation and printing of recruitment flyers and meeting costs such as room rental, agenda creation, and online streaming fees.

**Indirect Costs**

Indirect Costs are calculated at UC Davis’s federally negotiated rate for instruction rate- 50% of Modified Total Direct Costs (MTDC). Per NSF policy, participant support costs are excluded from the indirect cost base.