Proposal
Budgeting Basics
Training Workbook

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Contents
Learning Objectives ..............................................................................................................................................................................2
Common Budget Categories.................................................................................................................................................................2
  Personnel Line Items ........................................................................................................................................................................2
    Salary and Wages ..........................................................................................................................................................................2
    Fringe Benefits ..............................................................................................................................................................................6
  Equipment and Capital Asset Line Items ..........................................................................................................................................7
  Supply and Expense Line Items ........................................................................................................................................................7
  Participant Support Costs .................................................................................................................................................................7
  Subaward Line Items ........................................................................................................................................................................8
Other Basic Formulas............................................................................................................................................................................8
  Escalations ........................................................................................................................................................................................8
    Let’s Practice! Escalating Salary and Wages .................................................................................................................................8
  Split Rates .........................................................................................................................................................................................9
    Let’s Practice! Calculating with Spilt Rates ...................................................................................................................................9
Indirect/Facilities & Administrative (F&A) Costs ................................................................................................................................10
  Let’s Practice! Calculating F&A/Indirect Costs ...............................................................................................................................11
Resources ...........................................................................................................................................................................................12
  Common Acronyms ........................................................................................................................................................................12
  Websites and Online Documents ...................................................................................................................................................13
Learning Objectives

After completing this training session, attendees should:

- Know the common direct cost budget categories,
- Know the various indirect cost rates and bases used at UC Davis,
- Understand the different types of collaborators and
- Know the basic formulas for preparing a proposal budget.

Common Budget Categories

Personnel Line Items

The personnel section includes the salary/wages and benefits of all personnel that should be charged to the grant.

Salary and Wages

Step for calculating the salary/wages to charges to the grant.

1. Before calculating the salary to charge to the grant, work with the Principal Investigator (PI) to determine the personnel needs.
2. Determine the salary of each personnel member.
3. Calculate the effort commitment for each personnel member.
4. Calculate the salary to charge to the grant for each personnel member.

These steps are further explained below.

Determine Personnel Needs

<table>
<thead>
<tr>
<th>Role</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Lead) Principal Investigator/Project Director (PI/PD)</td>
<td>Required</td>
</tr>
<tr>
<td></td>
<td>Designs and conducts the project</td>
</tr>
<tr>
<td></td>
<td>Overall responsibility</td>
</tr>
<tr>
<td></td>
<td>May not be allowed by the sponsor</td>
</tr>
<tr>
<td></td>
<td>Often as equal administrative authority with the PI</td>
</tr>
<tr>
<td></td>
<td>Other senior personnel</td>
</tr>
<tr>
<td></td>
<td>“Brains and briefcase”</td>
</tr>
<tr>
<td></td>
<td>Should not include UC employees</td>
</tr>
<tr>
<td></td>
<td>Not responsible for completing the scope of work</td>
</tr>
<tr>
<td></td>
<td>May or may not be listed as senior personnel depending on role</td>
</tr>
<tr>
<td></td>
<td>May provide as needed advice or be integral to project</td>
</tr>
</tbody>
</table>

Additional Notes:
**Determine the Salary**

1. Identify the **actual** salary and wages if possible
   - If unknown, use the UC Davis salary scales to estimate.
   - UC Davis Staff Salary Scales: [http://www.hr.ucdavis.edu/Salaryscales](http://www.hr.ucdavis.edu/Salaryscales).

2. Determine **wage adjustments**, if any.
   - Identify any known wage adjustments, such as __________?
   - It may be appropriate to escalate wages to standardize projected wage increases.
     - The UC Davis standard escalation rates are _______ to _______%.

3. Determine the appointment type for each academic employee.
   - All staff employees have a _______ -month appointment.
   - Academic employees may have a 9-, _______ or 12 -month appointment.
   - Knowing the number of appointment months is important for annualizing salary and calculating __________ commitment.

Because UC Davis uses annualized effort, consider using the ______________ salary for accuracy.

1. The definition of annualized salary is: ________________________________.
2. Annualizing salary is beneficial because it:
   - ________________________________
   - ________________________________

3. Formula:
   - *Salary ÷ # of Appointment Months = One Month Salary*
   - *One Month Salary x total number of months worked annually=Annualized Salary*
     - If estimating or projecting, use 12 months as total months worked.

**Let's Practice! Determine Salary of Personnel**

**Professor Smith is paid $100,000 per year and has a 9-month appointment. She is allowed to work up to 3 summer months. What is her **Annualized Salary**?**

1. Calculate her monthly salary.
   - $___________ ÷ _____________ = $ _____________

2. Calculate her annualized salary.
   - $___________ x 12 = $___________

**Professor Jones is paid $100,000 per year and has a 11-month appointment. She is allowed to work up to 1 summer months. What is her **Annualized Salary**?**

1. Calculate her monthly salary.
   - $___________ ÷ _____________ = $ _____________

2. Calculate her annualized salary.
   - $___________ x 12 = $___________

**Additional Notes:**
**Calculate the Annualized Effort Commitment**
Effort is the amount of time an individual will commit to the grant, if funded. The PI is responsible for determine the amount of effort to commitment. ________________________________ is sufficient. ________________________________will require effort to be included either as a percent or number of person-months.

**Calculate Effort Commitment in % Format**
If the investigator will commit the same amount of effort for an entire project period, no calculation is necessary. The effort commitment is the percent given by the investigator. However, calculating the annual effort commitment is often more complex. For example, the PI may provide effort only during the Academic or Summer months or provide a different amount of effort in Academic than in Summer months (referred to as non-annualized effort). When using the OR Budget Template, enter separate lines for Academic and Summer months.

To convert non-annualized effort to annualized effort in percent format:

1. Convert Academic Effort to Annual Effort
   \[(\text{Academic Appointment Months} \times \text{AY Effort\%}) \div 12 = \text{AY Effort\%}\]

2. Convert Summer Effort to Annual Effort
   \[(\text{Summer Months} \times \text{Summer Effort\%}) \div 12 = \text{Summer Effort\%}\]

3. Determine Total Annual Effort
   \[\text{Effort\% for Academic Months} + \text{Effort\% for Summer Months} = \text{Total Annual Effort\%}\]

**Let’s Practice! Calculate Annualized % Effort Commitment**

Professor Smith has a 9-month appointment and can work up to 3 summer months annually. She will commit 3% effort during the academic months and 50% effort during the summer. What is her total Annualized Effort commitment for this project?

1. Calculate her effort commitment based on her academic year effort.
   \[\left(\frac{\text{________} \times \text{_______\%}}{12}\right) = \text{_______\%}\]

2. Calculate her effort commitment based on her summer-months effort.
   \[\left(\frac{\text{________} \times \text{_______\%}}{12}\right) = \text{_______\%}\]

3. Calculate her total annual effort commitment.
   \[\text{_______\%} + \text{_______\%} = \text{_______\%}\]

Professor Jones has a 9-month appointment and can work up to 3 summer months. She will commit 10% effort during the academic months and 20% effort during the summer. What is her Annualized Effort commitment for this project?

1. Calculate her effort commitment based on her academic year effort.
   \[\left(\frac{\text{________} \times \text{_______\%}}{12}\right) = \text{_______\%}\]

2. Calculate her effort commitment based on her summer-months effort.
   \[\left(\frac{\text{________} \times \text{_______\%}}{12}\right) = \text{_______\%}\]

3. Calculate her total annual effort commitment.
   \[\text{_______\%} + \text{_______\%} = \text{_______\%}\]

**Calculate the Salary to Charge to the Grant**
Once the salary has been annualized and the effort determined, the salary to charge to the grant can be calculated. The basic formula is:

\[\text{Annualized Salary} \times \text{Annualized Effort} = \text{Salary to Charge}\]

Note that before making this calculation the salary and effort must be annualized.
Let’s Practice: Calculate Salary to Charge Using Annualized Effort%.

Professor Smith has a 9-month appointment. She will commit 10% annual effort and her annualized salary is $133,333. **What amount should be charged to the grant for her salary?**

$_________ x_________% = $ __________

Professor Smith has a 9-month appointment and a base salary of $100,000. She will commit 10% academic year effort. **What amount should be charged to the grant for her salary?**

$_________ x_________% = $ __________

Calculate Effort Commitment in Person-Months Format

The sponsoring agency may require effort be reported in person-months format instead of as a percent. Federal sponsors always require effort be included in person-months format. To convert calculate effort in **person-months format**:

1. Determine the total number of months works. Use 12 to estimate.
   
   Appointment Months + Summer Months = Total Months Worked

2. Multiply the number of months worked by the % effort to calculate person-months effort.
   
   Total Months Worked × Effort% = Annual Committed Effort in Person Months

Let’s Practice! Calculate Effort Commitment in Person-Months Format.

Professor Smith has a 9-month appointment. She will commit 3% effort during the academic year. **What is her effort commitment in person months for this project?**

1. Determine the number of appointment months.
   
   ______

2. Calculate her effort commitment in person-months.
   
   ______x ______= ______Person-months effort

Professor Smith has a 9-month appointment. She will commit 10% annual effort. **What is her effort commitment in calendar/person months for this project?**

1. Using the shortcut formula, calculate her calendar/person months format.
   
   **Shortcut formula:** (Appointment Months + Summer Months) × Effort = Effort in Calendar/Person Months
   
   (______ +______) × ______ = ______calendar months effort

Professor Smith has a 9-month appointment. She will commit 10% effort during the academic months and 20% effort during the summer. **How many person months is she committing to the project?**

**Academic Year Effort:**

_______________ x ____________ = ____________

+ 

**Summer Months Effort:**

_______________ x ____________ + ____________

= 

**Total Annual Effort:**

_______________ x ____________ = ____________
Fringe Benefits

The amount of benefits to charge to a grant is based on the annual salary to charge and the benefit rate. Benefit rates are available at: [http://afs.ucdavis.edu/our_services/costing-policy-e-analysis/composite-benefit-rates/](http://afs.ucdavis.edu/our_services/costing-policy-e-analysis/composite-benefit-rates/).

The rates for Fiscal Year 19/20 and 20/21 are below.

<table>
<thead>
<tr>
<th>CBR Group</th>
<th>Personnel Category</th>
<th>FY 19/20 Rate</th>
<th>FY 20/21 Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>HCOMP Faculty &amp; SMG</td>
<td>SOM faculty and Senior Management</td>
<td>25.3%</td>
<td>26.1%</td>
</tr>
<tr>
<td>Nurses and Physicians</td>
<td>Nurses, Nurse Practitioners and Clinical Physicians</td>
<td>30.2%</td>
<td>31.1%</td>
</tr>
<tr>
<td>Faculty, Acad, MSP, Safety</td>
<td>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.</td>
<td>38.3%</td>
<td>39.4%</td>
</tr>
<tr>
<td>Faculty Summer Salary</td>
<td>Faculty Summer Salary</td>
<td>10.2%</td>
<td>10.5%</td>
</tr>
<tr>
<td>All Other Staff</td>
<td>Staff including analysts, SRAs, programmers</td>
<td>52.7%</td>
<td>54.3%</td>
</tr>
<tr>
<td>Service Staff</td>
<td>E.g., Janitors</td>
<td>65.4%</td>
<td>67.4%</td>
</tr>
<tr>
<td>Postdoc Employees</td>
<td>Postdocs</td>
<td>25.9%</td>
<td>26.7%</td>
</tr>
<tr>
<td>Grad and Undergrad</td>
<td>GSRs and Undergrads</td>
<td>1.9%</td>
<td>2%</td>
</tr>
<tr>
<td>Limited Benefits</td>
<td>Employees not eligible for full benefits (e.g., FTE % is too low)</td>
<td>17.2%</td>
<td>17.7%</td>
</tr>
<tr>
<td>No Benefit Eligibility</td>
<td>E.g., not eligible based on appointment type</td>
<td>3.6%</td>
<td>3.7%</td>
</tr>
</tbody>
</table>

To calculate the amount of benefits to charge annually:

1. Identify the benefit group and rate.
2. Calculate the fringe benefits to charge.
   \[ \text{Annualized Salary Charged} \times \text{Benefit Rate} = \text{Annual Benefits to Charge} \]

Additional Notes:
Correctly identifying equipment and capital assets is important because they are almost never subject to indirects. The OR Budget Template includes an Equipment section where these costs should be entered.

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Software</th>
<th>Renovations/Facility Improvements</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Capitalized and excluded from F&amp;A</td>
<td>• Capitalized and excluded from F&amp;A if:</td>
<td>• Capitalized and excluded from F&amp;A</td>
</tr>
<tr>
<td>• Non-expendable</td>
<td>o Software purchase price is $5,000 or more per copy</td>
<td>• Improvements or betterments</td>
</tr>
<tr>
<td>• Standalone</td>
<td>o Licenses where no period mentioned if the cost is more than $5,000 per license and useful life exceeds 1 year</td>
<td></td>
</tr>
<tr>
<td>• Normal useful life is 1 year or more</td>
<td>o Included as hardware costs</td>
<td></td>
</tr>
<tr>
<td>• Cost is more than $5,000</td>
<td>• Treated as supplies and subject to F&amp;A:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Annual license fees and maintenance costs</td>
<td></td>
</tr>
</tbody>
</table>

Correctly identifying costs as either supplies or expenses is also critical as they have different indirect cost treatment based on the category.

<table>
<thead>
<tr>
<th>Materials and Supplies</th>
<th>Expenses</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Tangible items</td>
<td>• Tuition and registration fees</td>
</tr>
<tr>
<td>• Laboratory</td>
<td>• Event registration fees</td>
</tr>
<tr>
<td>• Project</td>
<td>• Facility recharges</td>
</tr>
<tr>
<td>• Specialty</td>
<td>• Publication Fees</td>
</tr>
<tr>
<td></td>
<td>• Participant Support Costs</td>
</tr>
</tbody>
</table>

Participant Support Costs are costs paid to or on behalf of trainees/program participants who are not employees. Participants may be students, national scholars and scientists, private sector representatives, agency personnel, teachers, and others who attend and participate in the conference, workshop, or training activity supported by a particular award. University employees cannot be participants. Participants perform no work or services for the project or program other than for their own benefit. A participant is not involved in providing any deliverable to the University or a third party.

The following may not be participants:

1. ________________________________
2. ________________________________
3. ________________________________

Participant Support Costs are not subject to indirects and thus are ________________________________ from the indirect/F&A base.
Subaward Line Items

Proposals in which UC Davis is a Subawardee are submitted to Sponsored Programs the same as all other proposals. UC Davis treats incoming Subawards the same as Awards. However, outgoing Subawards are handled differently. Outgoing Subawards are those in which UC Davis is the Prime Applicant and will be issuing subaward to other institutions, if funded.

It is important to determine if the relationship is a Subaward or Procurement Contract. An (outgoing) subaward is one in which another organization is performing a portion of the project and:

1. There Scope of Work is intellectually significant and separable from the project’s programmatic effort,
2. They have programmatic ___________________________,
3. Their work could result in the development of ___________________________or ___________________________and/or
4. They will need ___________________________ approval.

Vendor agreements/procurement contracts are categorized on the proposal budget as __________________________and are subject to indirects (F&A costs) and may not be subject to all of the terms of the prime agreement, such as financial audits.

Terms of a subaward are influenced by the prime agreement. The first $25,000 of each Subaward is subject to indirects (F&A costs) if the Modified Total Direct Cost (MTDC) base is being used except when the Subawardee is another UC campus.

Other Basic Formulas

Escalations

Consider using escalations for costs that increase over time when allowed by the sponsor. Read the program and any other sponsor guidelines to determine if escalations are allowed. Costs may be escalated by Project Year/Period (PY) or Fiscal Year (FY) by ____ to ____% for most direct costs, including __________ and __________________. Tuition and fees may be escalated up to ____%. Do not include additional escalations in the prime budget for subawards as any appropriate escalations should be included in the Subaward budget.

Let’s Practice! Escalating Salary and Wages

Professor Smith has a 9-month appointment. She will commit 2.7% effort (previous calculation), and her annualized salary is $133,333. Based on the previous calculation, $3,600 is to be charged the grant annually.

1. $133,333 x 2.7% = $3,600
2. Now let’s factor a 3% increase.
   ($3,600 x _____%) + $3,600 = $_____________________

Additional Notes:
Split Rates

Split rates may need to be applied if a project period spans multiple Fiscal Years (FYs). The UC Davis FY is July 1 – June 30. To use calculate costs with split rates:

1. Determine one month of costs.
   \[ \text{Annual Costs} \div 12 = \text{One month of costs} \]

2. Determine the number of months at Rate 1.
   \[ \text{Months before end of the FY (before June 30th)} \]

3. Calculate the costs to charge at Rate 1.
   \[ \text{One month of costs} \times \text{Months at Rate 1} \times \text{Rate 1} = \text{Costs to charge at Rate 1} \]

4. Determine the number of months at Rate 2.
   \[ \text{Months after start of next FY (on or after July 1st)} \]

5. Calculate the costs to charge at Rate 2.
   \[ \text{One month of costs} \times \text{Months at Rate 2} \times \text{Rate 2} = \text{Costs to charge at Rate 2} \]

6. Calculate the total costs for the project period.
   \[ \text{Costs at Rate 1} + \text{Costs at Rate 2} = \text{Costs for PY} \]

Let’s Practice! Calculating with Split Rates

Professor Smith’s salary charged to the grant for the first period is $3,708. The first project period begins on September 1, 2018 and ends on August 31, 2019. Her fringe benefit rate for FY 2018-19 is 38.9% and for FY 2019-20 is 40.1%. **What is the total amount/cost for her fringe benefits for the first project period?**

1. Determine one month of costs.
   \[ \text{Salary} \div 12 = \text{One month of salary} \]

2. Determine the number of months at Rate 1.  

3. Calculate the costs to charge at Rate 1.
   \[ \text{Salary} \times 10 \times .389 = \text{Costs to charge at Rate 1} \]

4. Determine the number of months to charge at Rate 2.  

5. Calculate the costs to charge at Rate 2.
   \[ \text{Salary} \times 2 \times .401 = \text{Costs to charge at Rate 2} \]

6. Calculate the total costs for the project year.
   \[ \text{Costs at Rate 1} + \text{Costs at Rate 2} = \text{Total costs} \]
Indirect/Facilities & Administrative (F&A) Costs

Indirect costs, also referred to as Facilities and Administrative (F&A) costs, are applied to research awards. These are costs that are costs associated with the general operations of UC Davis and cannot be readily assigned to a specific project. However, they support the infrastructure needed to conduct the project.

Current F&A Rates are included in the OR Budget Templates, in Cayuse SP and can be found on the Sponsored Programs website at: https://research.ucdavis.edu/proposals-grants-contracts/helpful-links/indirect-cost-fringe-benefit-rates/fa-rates/. These rates are applicable to all sponsors. If a sponsor will not allow use of the F&A rate, provide the sponsor policy on indirect costs to your Sponsored Programs proposal analyst when submitting the proposal package for review. Sponsored Programs will submit the exception request to UCOP. The F&A Rate is determined by the type/category and location of the activity.

To select and apply the appropriate F&A rate:

1. Identify the activity category/type. Following are the activity categories.
   - Organized Research is all research and development activities of an institution that are separately budgeted and accounted for. This includes sponsored research, which is all research and development activities that are sponsored by Federal and non-Federal entities, including activities involving the training of individuals in research techniques where such activities utilize the same facilities as other research and development activities.
   - Other Sponsored Activities are programs and projects financed by Federal and non-Federal agencies and organizations that involve the performance of work other than instruction and organized research. This might be activities such as health service projects, like a community vaccination clinic, or community service projects, like literacy programs.
   - Clinical Trials (industry sponsored) should be used when a project is being funded by industry, including when such funding is flow-through.
   - Instruction includes all the teaching and training activities of an institution. This consists of departmental research, development and scholarly activities that are not separately budgeted and accounted for. It excludes research training, which is part of organized research.
   - Primate Center is a special rate to be used the California National Primate Research Center.

2. Determine the location of the sponsored activity.
   - On-Campus Rates: This is the most commonly used rate. Use this rate if the majority of the research team’s effort occurs in facilities owned or leased by the university. This is the most appropriate rate as these projects require resources to provide the infrastructure required for successful completion of research and other projects.
   - Off-Campus Rates: The off-campus rate applies to projects primarily conducted at facilities not owned, or leased by the University. However, if the project is conducted in leased space and the lease costs are directly charged to the project, the off-campus rate may be used. Projects with a subaward or with field work do not automatically count as off-campus, but rather the majority of the research has to be associated with off-campus locations and resources.

3. Identify the appropriate F&A Rate and base. The OR Budget Templates will calculate indirects using the appropriate rate and base once the activity category is selected.
   - The indirect bases are listed next to the F&A rate on the Sponsored Programs website. Additionally, some sponsors that do not use the negotiated F&A rates may specific the base that should be used.
   - The indirect bases are:
     i. Modified Total Direct Cost (MTDC): Excludes equipment, capital expenditures, charges for patient care, student tuition remission, rental costs of off-site facilities, scholarships and fellowships as well as the portion of each subgrant and subcontract in excess of $25,000.
     ii. Total Direct Cost (TDC): Includes all direct costs.
     iii. Total Cost (TC): Includes all costs.
4. Calculate the indirects using the appropriate rate and base. The OR Budget Templates will calculate indirects using the appropriate rate and base once the activity category is selected.
   
   - MTDC
     \[ MTDC \times F&A \text{ Rate} = \text{Indirect Costs} \]
   
   - TDC
     \[ TDC \times F&A \text{ Rate} = \text{Indirect Costs} \]
   
   - TC
     
     i. If the direct costs are known:
     \[ \frac{TDC}{1 - F&A \text{ Rate}} - TDC = \text{Indirect Costs} \]
     
     ii. If the direct costs are unknown:
     \[ TC - [TC \times (1 - F&A \text{ Rate})] = \text{Indirect Costs} \]

Let’s Practice! Calculating F&A/Indirect Costs

Calculate the indirect costs for the following budget. The F&A Rate is 57%, and the base is MTDC.

<table>
<thead>
<tr>
<th>Line Item</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>PI Salary, 10% Effort</td>
<td>$12,000</td>
</tr>
<tr>
<td>PI Benefits</td>
<td>$ 4,812</td>
</tr>
<tr>
<td>Microscope (equipment)</td>
<td>$10,000</td>
</tr>
<tr>
<td>Subaward to Stanford</td>
<td>$20,000</td>
</tr>
</tbody>
</table>

1. What costs should NOT be subject to F&A using the MTDC base?
   ____________________________

2. Sum the other line items to determine the Total Direct Costs (TDC). What is that amount?
   $___________ + $___________ + $___________ = $___________

3. Calculate the indirect costs.
   $___________ \times .57 = $___________

Additional Notes:
Resources

Common Acronyms

- BAA: Broad Agency Announcement
- BUA: Biological Use Approval
- CGA: Contracts and Grants Accounting
- COI: Conflict of Interest
- F&A: Facilities & Administrative rates; also referred to as indirect cost rate (IDC or ICR) or “overhead”
- FOA: Funding Opportunity Announcement
- IACUC: Institutional Animal Care and Use Committee
- IP: Intellectual Property
- IPF: Internal Processing Form
- IRB: Institutional Review Board
- NICRA: Negotiated Indirect Cost Rate Agreement
- PI: Principal Investigator
- RCI: Research Compliance and Integrity
- RCR: Responsible Conduct of Research
- RFA: Request for Applications
- RFP: Request for Proposals
- SBIR: Small Business Innovation Research
- SPO: Sponsored Programs unit in the Office of Research
- STTR: Small Business Technology Transfer
Websites and Online Documents

- Office of Research Website: http://research.ucdavis.edu
- Sponsored Programs Website: https://research.ucdavis.edu/proposals-grants-contracts/spo/
- Office of Research Listservs: http://research.ucdavis.edu/resources/listserv-subscriptions/
- Sponsored Programs Research Administration Kiosk (SPARK) Website: http://spark.ucdavis.edu/training/
- Training Sessions at Research Park: https://research.ucdavis.edu/proposals-grants-contracts/spo/spo-training/
- Cayuse SP and 424: https://ucdavis.cayuse424.com