Proposal Budget Formulas

The <u>OR Budget Templates</u> were updated in 2024 to simplify salary and effort entries, which reduces the need to enter formulas. You no longer have to annualize either salary or effort and can now enter effort in either **Person Months** or as % Time or Effort, to match whatever format investigators share their effort with you.

This said, some formulas are still helpful:

For instance, if a Co-PI indicates that he will work 10% each Academic Year (AY) + 10% during 2 summer months, for the AY simply add 10% to a % Time or Effort row but for the summer, in a Person Months row, enter this formula:

=2*0.1

This indicates that the Co-PI will work 10% (or 0.1) of two months, or 0.20 months.

Personnel					Enter effort either in Person Months (top section) or %				
Name/Role:		Appt.	Effort Type	Base Salary	Months	Person Months			
		Туре			or %:	Per 1	Per 2	Per 3	Per 4
1	Co-PI - Cuthbert Calculus - SMR	9/12	SMR	166,425	Months	=2*0.1	0.20	0.20	0.20
2	GSR - TBD	12/12	CAL	64,990	Months	=9*0.25	2.25	2.25	2.25
Personnel by %					% Time or Effort				
1	PI - Minerva McGonagall	12/12	CAL	202,080	%	15.0%	15.0%	15.0%	15.0%
2	Co-PI - Cuthbert Calculus - AY	9/12	AY	166,425	9/5	10.0%	10.0%	10.0%	10.0%
3	Co-PI - Henry Jones, Jr.	9/12	AY	166,425	%	10.0%	10.0%	10.0%	10.0%

Likewise, if you have a GSR who will commit 25% over 9 months, in a **Person Months** row enter this formula:

=9*0.25

This indicates the GSR will work 25% over 9 months (of a 12-month calendar year appointment), or 2.25 months.

IMPORTANT: Effort entered into Cayuse SP and the proposal submission system, such as Cayuse 424, should be annualized.

- For personnel with 9/12-month or 11/12-month appointments, **the percentage (%) effort entered in the spreadsheet is not annualized** and instead indicates their effort over 9 or 11 months.
 - To determine annualized effort simply refer to the **Personnel Reference** tab (at bottom) of the <u>OR Budget Template</u>.
 - The Annual Effort based on 12 months table reflects annualized effort as a %.
- PM effort in the spreadsheet is already annualized over 12 months for all appointment types (9/12, 11/12 & 12/12) but you can see <u>all</u> effort summarized in PM format in the **Person Months (For agency forms)** table under the **Personnel Reference** tab.
- **IMPORTANT: Add together annualized effort that was entered on two separate rows** for investigators with 9/12 or 11/12 appointments (*see screenshot below*).

Personnel (For Reference)		Person Mor APP (9/12,1 correctly in sheet to	ths (For age TTYPE and BA 1/12,12/12) adicated on th ensure persor accuracy	Annual Effort based on 12 months		
	Name/Role: Type? (Choose Below)	Period 1	Period 5	Туре	Period 1	Period 5
1	Co-PI - Stephen Robinson - SMR	0.20	-	SMR	1.67%	
2	Co-PI - Stephen Robinson - AY	0.90	-	AY	7.50%	

= 1.10 Person Months total

= 9.17% annual effort

Formulas those unable to reference the **Personnel Reference** tab in the **OR Budget Templates**:

Formula to convert Person Months (PM) to percentage (%):

PM / 12 * 100 e.g., 0.2 / 12 * 100 = 0.0167 * 100

As mentioned above, effort entered in Person Months (PM) is already annualized over 12 months.

• 0.2 PM reflects 10% effort over 2 summer months.

Formula to convert % to PM:

% * # of appointment months

e.g., 10% * 9 months = 0.1 * 9 = 0.9 PM

In other words, 0.9 PM reflects 10% effort over 9 months.

Formula to convert un-annualized % to annualized % (over 12 months):

% * # of appointment months / 12 * 100

e.g., 10% * 9 months / 12 * 100 = 0.1 * 9 / 12 * 100 = 0.9 / 12 * 100 = 0.075 * 100 = 7.5%

In other words, 7.5% annualized effort reflects 10% effort over 9 months.

If an investigator has two different effort commitments in one project period:

Add the two periods together as in the screenshot above.

1. Indirect costs (also referred to as Facilities and Administrative costs)

Indirect costs are associated with the general operation of UC Davis and cannot be readily assigned to individual projects.

Indirect cost base [MTDC, TDC, or TC] * indirect cost rate = indirect costs

- Indirect cost rate: The proportion of indirect costs each program should bear using sound administrative principles.
 - The university commonly uses <u>federally negotiated rates (NICRA)</u> though rates may vary based on sponsor policy and program guidelines.
 - If a sponsor specifies a different rate, an exception to the NICRA rates may need to be approved by the UC Office of the President (UCOP).
- Indirect cost base: The amount of direct costs to which the indirect cost rate is applied.
 - 1. The most commonly used base at UC Davis is Modified Total Direct Costs (MTDC).
 - All negotiated rates at UC Davis are applied on an MTDC base as defined in our <u>Negotiated Indirect Cost Rate Agreement (NICRA)</u>.
 - MTDC consists of all direct salaries and wages, applicable fringe benefits, materials and supplies, services, travel and up to the first \$25,000 of each subaward (regardless of the period of performance of the subawards under the award).
 - MTDC <u>excludes</u> equipment, capital expenditures, charges for patient care, rental/lease costs of off-site facilities, tuition remission, scholarships and fellowships, participant support costs and the portion of each subaward in excess of \$25,000.
 - MTDC can actually vary by organization. "MTDC" can mean any modified base. Check the specific agency guidelines for instructions on budget calculation.
 - Example: NIH training grants state 8% MTDC, but only tuition and equipment are excluded.
 - F&A Cost formula based on MTDC: Calculate the Total Direct Costs and subtract the excluded items listed above (or identified by the sponsor):
 - a. TDC [excluded items] = MTDC Base
 - b. MTDC Base x F&A Rate = F&A Costs

- 2. **Total Direct Costs (TDC):** This base is typically used when a sponsor declines to pay UC Davis's federally approved indirect cost rate and an indirect cost waiver is granted by the University.
 - TDC includes all the direct costs being charged to the sponsor. Nothing is excluded from the base prior to calculating the indirect costs except:
 - Subawards to other UC campuses
 - Service agreements to other UC campuses
 - **F&A Cost formula based on TDC:** Indirect costs based on TDC do not include subawards or service agreements to other UC campuses.
 - a. TDC [subawards & service agreements to UC campuses] = TDC Base

b. TDC Base x F&A Rate = F&A Costs

- 3. Total Costs (TC): This base is used when a sponsor states that only a certain percentage of Total Project Costs can be charged for indirect (F&A) costs.
 - As with TDC, nothing is excluded from the base prior to calculating the indirect costs except:
 - Subawards to other UC campuses
 - Service agreements to other UC campuses
 - Use this formula if **direct costs are known**:
 - a. TDC [subawards & service agreements to UC campuses] = TDC Base
 - b. (TDC Base / (1-F&A Rate)) * F&A Rate = F&A Costs
 - Example: TDC Base = \$100,000 and the F&A rate is 25%. (\$100,000/(1-0.25)) * 0.25 = (\$100,000/0.75) * 0.25 = \$133,333 * 0.25 = \$33,333
 - Use this formula if **only the total budget limit is known**:

Total Budget Limit * F&A Rate = F&A Costs

- Example: Your limit is \$100,000 and the F&A rate is 10% TC.
 \$100,000 x 10% = \$10,000 (and \$90,000 in Direct Costs)
- 4. Total Federal Funds (TFF) best way to calculate these is to use OR Budget Template F (USDA)
 - Most US Dept of Agriculture (USDA) National Institute of Food and Agriculture (NIFA) projects require that we take the lesser of:
 - 30% of the Total Federal Funds (TFF) awarded (which is equal to TC), and
 - the applicable NICRA rate.
 - UCD shares the indirect costs with any subawards. If each subaward is calculating at 30% TC, we only calculate on UCD's costs. If, however, a subaward is requesting less than 30% TC, we add the difference to UCD.

2. Split Rates

The <u>OR Budget Templates</u> auto-calculate split rates, which occur when a project period spans two fiscal periods that have differing indirect cost rates. If you need to calculate them manually though, this is how you would do it for a 12-month period of performance:

- Project Period Costs/# of project period months [i.e, 12 for annual project period] = One month of costs
 - a. If the period of performance were shorter, say, 6 months, then you would divide by 6.
- 2. Months before end of Fiscal Year (FY) (before June 30th) = Months at Rate 1
- 3. One Month of Costs * Months at Rate 1 * Rate 1 = F&A costs at Rate 1
- 4. Months after start of next FY (after July 1st) = Months at Rate 2
- 5. One Month of Costs * Months at Rate 2 * Rate 2 = F&A costs at Rate 2
- 6. F&A costs at Rate 1 + F&A costs at Rate 2 = Cost for Project Year (PY)

Shortcut: (Project Period Costs/# of project period months * Months at Rate 1 * Rate 1) + (Project Period Costs/# of project period months * Months at Rate 2 * Rate 2) = F&A costs for PY

Example:

You are working on a budget for a research project with a start date of September 1, 2023 and end date of August 31, 2024. The appropriate F&A Rate is 60% for FY 2023-2024 and 61% for FY 2024-2025 with an MTDC Base. The MTDC is \$300,000.

- 1. Determine one month of costs.
 - \$300,000/12 = \$25,000
- 2. Determine the # of months at the first rate.
 - How many months occur before 6/30/2024? 10.
- 3. Calculate the F&A Costs at Rate 1.
 - \$25,000 * 10 * 0.6 [for 60%] = \$150,000
- Determine the # of months at the second rate. How many months occur on/after 7/1/2024? 2.
- 5. Calculate the F&A Costs at Rate 2.
 - \$25,000 * 2 * 0.61 [for 61%] = \$30,500
- 6. Calculate the F&A costs at both rates.
 - \$150,000 + 30,500 = \$180,500

Shortcut: (\$300,000/12 * 10 * 0.6) + (300,000/12 * 2 * 0.61) = \$180,500