

Proposal Budget Formulas

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Annualized Salary (Personnel section of [OR Budget Templates](#))

When populating the [OR Budget Templates](#) you want to determine Total Annual Salary.

- Annualized salary helps ensure accuracy of effort reported in the **Project Period % Effort** section.
 - UC Davis certifies effort on an annual basis to the federal government, so annualizing effort in our internal budget provides consistency with that system using our best estimate for how this budget will align with reporting.

1. Faculty & staff with **12-month appointments (12/12)**:

- **No formula** is required.
- There is no need to enter **Summer** salary since 12/12 employees have none.
- Simply enter their **Base** salary and this will be reflected as their **Total Annual Salary**.

2. **Summer** salary formula for faculty/researchers with **9-month appointments (9/12)**:

Add this to the **Summer** column:

$$=[\text{Base}]/9*3$$

- **Base** salary reflects 9 months.

- The formula above adds 3 months of **Summer** salary in order to capture **Total** Annual Salary (over 12 months)
- The formula divides the 9/12 salary by 9 to determine 1 month of salary. It then multiplies this month by 3. 9 + 3 = 12 months of salary

Important: If the faculty/researcher will be providing effort over summer months, enter a second row for them in the OR Budget Template even if their effort will be the same over the summer months as over the Academic Year (AY).

- This will allow you to enter a Summer benefits rate in the **UCPath CBR Group** column of the **Benefits by Person** section. Summer benefits rates differ greatly from AY rates. Example:

PERSONNEL										Salary Basis
Name/Role:	Annual Salary			Project Period % Effort					Salary Basis and Type	
	Base	Summer	Total	Per 1	Per 2	Per 3	Per4	Per5		
1 Youa Thao	168,000	=E8/9*3	224,000	11.25%	11.25%	11.25%	11.25%	11.25%	AY 9/12	
2 Youa Thao	168,000	56,000	224,000	12.5%	12.5%	12.5%	12.5%	12.5%	SMR 9/12	

3. Summer salary formula below for faculty/researchers with 11-month appointments (11/12):

Add this to the **Summer** column:

$$=[\text{Base}]/11$$

- **Base** salary reflects 11 months.
- The formula above adds 1 month of **Summer** salary in order to capture **Total** Annual Salary (over 12 months).
- The formula divides the 11/12 salary by 11 to determine 1 month of salary. If it weren't redundant, you would multiply this month by 1. 11 + 1 = 12 months

Important: As mentioned under #2 above, if the faculty/researcher will be providing effort over summer months, enter a second row for them in the OR Budget Template. Example:

PERSONNEL										Salary Basis
Name/Role:	Annual Salary			Project Period % Effort					Salary Basis and Type	
	Base	Summer	Total	Per 1	Per 2	Per 3	Per4	Per5		
1 Mohandes Singh	120,000	=E8/11*1	130,909	13.75%	13.75%	13.75%	13.75%	13.75%	AY 11/12	
2 Mohandes Singh	120,000	10,909	130,909	4.17%	4.17%	4.17%	4.17%	4.17%	SMR 11/12	

4. General Annualized Salary formulas:

- Salary/# of Appt. Months = One Month Salary
- One Month Salary * 12 = Annualized Salary
- **Shortcut:** Salary/# of Appt. Months * 12 = Annualized Salary

Effort Commitment (Project Period % Effort section of the [OR Budget Templates](#))

Determine effort over 12 months. This amount will then be multiplied by the **Total** Annual Salary to populate the salary figures on the right side of the OR Budget Template.

1. Faculty & staff with 12-month appointments (12/12):

- No formula/calculation is needed. Simply enter the effort.
 - Example: PI with 12/12 appointment says they'll provide 20% effort during each project period.
 - Enter 20 in the cell for each applicable project period.

Name/Role:	Annual Salary			Project Period % Effort					Salary Basis and Type
	Base	Summer	Total	Per 1	Per 2	Per 3	Per 4	Per 5	
1 Werner Bumblechow	151,212		151,212	20.0%	20.0%	20.0%	20.0%	20.0%	CAL 12/12

2. Academic Year (AY) effort formula for faculty/researchers with 9-month appointments (9/12):

Add this to each appropriate **Project Period % Effort** cell:

$$=9/12*[\text{Academic Year (AY) effort}]$$

- Base** salary reflects 9 months.
- The formula above divides 9 by 12 to calculate the % of a year that a certain effort is expended. 9/12ths of a year is 75% of the year.
 - Example: PI with 9/12 appointment says they'll provide 20% effort over the academic year (AY).
 - 20% for 9 months is 20% for 75% of the year.
 - $= 9/12*0.2$ [for 20%] $= 0.75*0.2 = 0.15$, or 15% effort over the project period.

Name/Role:	Annual Salary			Project Period % Effort					Salary Basis and Type
	Base	Summer	Total	Per 1	Per 2	Per 3	Per 4	Per 5	
1 Youa Thao	168,000	56,000	224,000	$=9/12*0.2$	15.0%	15.0%	15.0%	15.0%	AY 9/12
2 Youa Thao	168,000	56,000	224,000	0.83%	0.83%	0.83%	0.83%	0.83%	SMR 9/12

3. Summer effort formula for faculty/researchers with 9-month appointments (9/12):

Add this to each appropriate **Project Period % Effort** cell:

$$=[\text{\# of summer months investigator will work}]/12*[\text{summer effort}]$$

- Though we determined Annual Salary for 3 summer months, the faculty/research may choose to work only 1 or 2 months.
- The formula above divides the number of months they commit to work by 12 to calculate the % of a year that a certain effort is expended.
 - Example: PI with 9/12 appointment will provide 10% effort to a project over 1 summer month.
 - $= 1/12*0.1$ [for 10%] $= 0.083*0.1 = 0.008333$, or 0.83% effort over the summer for that project period.

- Note: per Federal guidelines, effort does not actually have to be expended during the summer, so this 0.83% annual effort is “recommended.”

Enter **Summer** effort in 2nd row for that faculty/researcher.

Name/Role:	Annual Salary			Project Period % Effort				
	Base	Summer	Total	Per 1	Per 2	Per 3	Per4	Per5
1 Youa Thao	168,000	56,000	224,000	15.0%	15.0%	15.0%	15.0%	15.0%
2 Youa Thao	168,000	56,000	224,000	=1/12*0.1		0.83%	0.83%	0.83%

AY effort + Summer effort = Total effort over project period

Example: 15% + 0.83% = 15.83%

4. Academic Year (AY) effort formula for faculty/researchers with 11-month appointments (11/12):

Add this to each appropriate **Project Period % Effort** cell:

$$=11/12*[effort]$$

- Base salary reflects 11 months.
- The formula above divides 11 by 12 to establish 1 to calculate the % of a year that a certain effort is expended.
 - Example: PI with 11/12 appointment says they’ll provide 20% effort over the AY.
 - = 11/12*0.2 [for 20%] = 0.9167*0.2 = 0.1833, or 18.33% effort over that project period.

Name/Role:	Annual Salary			Project Period % Effort					Salary Basis and Type
	Base	Summer	Total	Per 1	Per 2	Per 3	Per4	Per5	
1 Mohandes Singh	120,000	10,909	130,909	=11/12*0.2		18.33%	18.33%	18.33%	AY 11/12
2 Mohandes Singh	120,000	10,909	130,909	0.83%	0.83%	0.83%	0.83%	0.83%	SMR 11/12

5. Summer effort formula for faculty/researchers with 11-month appointments (11/12):

Add this to each appropriate **Project Period % Effort** cell:

$$=1/12*[summer effort]$$

- The formula above divides 1 summer month by 12 to calculate the % of a year that a certain effort is expended.
 - Example: PI with 11/12 appointment will provide 10% effort to a project over 1 summer month.
 - = 1/12*0.1 [for 10%] = 0.083*0.1 = 0.0083.33, or 0.83% effort over the summer for that project period.
 - Note: per Federal guidelines, effort does not actually have to be expended during the summer, so this 0.83% annual effort is “recommended.”

Enter **Summer** effort in 2nd row for that faculty/researcher.

Name/Role:	Annual Salary			Project Period % Effort					Salary Basis and Type
	Base	Summer	Total	Per 1	Per 2	Per 3	Per4	Per5	
1 Mohandes Singh	120,000	10,909	130,909	18.33%	18.33%	18.33%	18.33%	18.33%	AY 11/12
2 Mohandes Singh	120,000	10,909	130,909	=1/12*0.1		0.83%	0.83%	0.83%	SMR 11/12

AY effort + Summer effort = Total effort over project period

Example: 18.33% + 0.83% = 19.16%

6. General effort formulas:

- Total Months Worked = Appointment Months + Summer Months
- Basic Formula (*use when effort commitment is the same for all working months*)
 1. (Total Months Worked * % Effort)/12 = Annualized % Effort Commitment
 2. Total Months Worked * % Effort = Annualized Effort Commitment in person-months
- Advanced Formula (*use when effort commitment is different for Academic vs. Summer months*)
 1. (Appointment Months * % Effort)/12 = AY % Effort Commitment
 2. (Summer Months * % Effort)/12 = Summer % Effort Commitment
 3. AY Effort + Summer Effort = Annualized Effort
- **Shortcut:** [(AY Months * % Effort) + (Summer Months * % Effort)]/12 = Annualized % Effort

F&A/Indirect Costs

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 [federally negotiated rates \(NICRA\)](#) 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.
 - The most commonly used base at UC Davis, and the default if not identified by the sponsor, is **Modified Total Direct Costs (MTDC)**.
 - 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 excludes equipment, capital expenditures, charges for patient care, rental costs, tuition remission, scholarships and fellowships, participant support costs and the portion of each subaward in excess of \$25,000.
 - Not all sponsoring agencies may apply all of these categories to the MTDC. Check the specific agency guidelines for instructions on budget calculation.
 - A sponsor, however, may stipulate an indirect cost base of:
 - **Total Direct Costs (TDC):** This includes all of 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
 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.
 - **Total Costs (TC):** This is used when the 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 **costs are known**:

$(TDC / (1 - F\&A \text{ Rate})) * F\&A \text{ Rate} = F\&A \text{ Costs}$

- Example: TDC = \$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 **costs are unknown**:

$$TC * F\&A \text{ Rate} = F\&A \text{ Costs}$$

- Example: Your limit is \$100,000 and the F&A rate is 10% TC.
 $\$100,000 \times 10\% = \$10,000$

2. Split Rates

The [OR Budget Templates](#) 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:

1. 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: $(\text{Project Period Costs}/\# \text{ of project period months} * \text{Months at Rate 1} * \text{Rate 1}) + (\text{Project Period Costs}/\# \text{ of project period months} * \text{Months at Rate 2} * \text{Rate 2}) = \text{F\&A costs for PY}$

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
4. 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: $(\$300,000/12 * 10 * 0.6) + (300,000/12 * 2 * 0.61) = \$180,500$