# Table of Contents

1  Introduction to System-to-System (S2S) Submission......................................................................................................................... 4  
   1.1  Developing S2S Proposals – Business Process .......................................................................................................................... 4  
   1.1.1  S2S and the Multi-Prong Approach ....................................................................................................................................... 6  
   1.2  SF424 Workflow ............................................................................................................................................................................ 7  
2  Develop your proposal for S2S ............................................................................................................................................................... 8  
   2.1  Funding Proposal- SmartForm Pages for S2S ................................................................................................................................. 8  
   2.1.1  General Proposal Information ........................................................................................................................................ 8  
   2.1.2  Personnel .................................................................................................................................................................................. 8  
   2.1.3  Submission Information ....................................................................................................................................................... 10  
   2.1.4  Funding Opportunity Announcement .................................................................................................................................... 12  
   2.1.5  Budget Periods and Key Dates ........................................................................................................................................ 12  
   2.1.6  Compliance Review ............................................................................................................................................................. 13  
   2.1.7  Additional Proposal Information ........................................................................................................................................ 14  
   2.2  Budgets- SmartForm pages for S2S .......................................................................................................................................... 14  
   2.2.1  Project Budgets ..................................................................................................................................................................... 14  
   2.2.2  Subaward Budgets ............................................................................................................................................................ 19  
   2.2.3  Cost Share Budgets .......................................................................................................................................................... 23  
3  SF424 Application ................................................................................................................................................................................. 23  
   3.1  Create-Update the SF424 .............................................................................................................................................................. 23
3.2 Review the SF424 Workspace ................................................................. 27
3.3 Review the SF424 Application .................................................................. 29
  3.3.1 SF424 Form Review ........................................................................... 31
  3.3.2 SF424 Budget Form Review ............................................................... 32
  3.3.3 Validating the SF424 Forms ............................................................... 32
3.4 Updating the SF424 ................................................................................ 34
3.5 Add subawards to the SF424 ................................................................. 36
  3.5.1 Subaward Reminders ........................................................................ 37
3.6 Validate for Submission and Submission Pre-Check ............................... 38
  3.6.1 Validate Submission .......................................................................... 38
  3.6.2 Submission Pre-Check ..................................................................... 40
4 SF424 Tracking and Next Steps ................................................................... 41
  4.1 Application Submission and Checking Submission Status ..................... 41
  4.2 Change/Corrected or Other Errors ........................................................ 42
5 NIH S2S Instructions .................................................................................. 43
  5.1 NIH R Opportunities ............................................................................ 43
    5.1.1 NIH R - Funding Proposal ................................................................ 43
    5.1.2 NIH R - Budget ............................................................................. 44
    5.1.3 NIH R - SF424 Application ............................................................ 44
  5.2 NIH K Opportunities ............................................................................ 45
    5.2.1 NIH K - Funding Proposal .............................................................. 45
    5.2.2 NIH K - Budget ............................................................................ 45
    NIH K - General Proposal Information .................................................. 45
    NIH K - Personnel Budgeting ................................................................. 46
    NIH K - General Cost Type Budgeting ................................................... 46
    5.2.3 NIH K - SF424 Application ............................................................ 47
  5.3 NIH F Opportunities ............................................................................ 48
    5.3.1 NIH F - Funding Proposal .............................................................. 48
    5.3.2 NIH F - Budget ............................................................................ 48
    5.3.3 NIH F - SF424 Application ............................................................ 49
  5.4 NIH DP Opportunities ............................................................................ 49
    5.4.1 NIH DP - Funding Proposal ............................................................ 49
    5.4.2 NIH DP - Budget .......................................................................... 50
    NIH DP - Personnel Budgeting ............................................................... 50
    NIH DP - screenshots when the PI’s salary is at or over the NIH Salary Cap: ........................................... 50
1 Introduction to System-to-System (S2S) Submission

This section introduces the system-to-system proposal submission process. It introduces the SF424 module, and covers the general process, advantages, and workflow. It also includes considerations for using the multi-prong submission approach for a S2S application.

Princeton ERA allows for the system-to-system (or S2S) submission of proposals for Grants.gov sponsors. Applications can be directly submitted from the Princeton ERA system to Grants.gov, instead of using a separate sponsor system. Princeton will initially roll-out S2S submission for NIH R, K, F, and DP opportunities. S2S submission may be expanded to include additional sponsors and opportunities in the future.

Using S2S submission allows Princeton to develop and submit the proposal all in one system, instead of using sponsor portals. This streamlines the process and reduces duplicate data entry. The use of S2S submission is not mandatory, but is highly encouraged for NIH R, K, F, and DP opportunities.

1.1 Developing S2S Proposals – Business Process

Department administrators follow a similar proposal development process for S2S applications as for non-S2S applications. The main difference is that an SF424 application is created within the system and most attachments are uploaded within the SF424 module instead of the Funding Proposal module.

As outlined below, the funding proposal is created by completing each SmartForm page. This guide outlines the key considerations when completing the funding proposal SmartForm pages for an S2S application.
After the funding proposal has been created, the department administrator will complete the workspace activities. This includes obtaining PI assurances, adding any additional required ancillary reviews, confirming conflict of interest disclosures, and developing a budget (including any cost share or subaward budgets). The department admin will also add a comment to state if the proposal uses the multi-prong approach.

Creating the SF424 application is a new step for S2S applications. Department administrators will use the Create-Update SF424 activity on the funding proposal workspace to create the SF424 application. Creating the SF424 will automatically map some information from the Funding Proposal and Budgets to the application forms.

Once the SF424 has been created, department administrators will navigate to the SF424 workspace. They must open the SF424 SmartForms to review the data that has mapped from the funding proposal and budget and complete any remaining information. They will make any needed updates and additions, including uploading required research related documents. All uploaded documents should be in PDF format.
If the department administrator is not using the multi-prong approach, once the SF424 has been reviewed and all information has been entered (including uploading all documents!), department administrators will validate the application to ensure all required information is included and ready for submission. Once all errors have been resolved, the SF424 will be locked from further editing. The submission can be unlocked if needed. When the SF424 is Valid for Submission, add a comment to let your ORPA GCA know that it is ready for a full review. If the department administrator is not using the multi-prong approach, they will validate the SF424 and then submit for department review.

If the department administrator is using the multi-prong approach, they may submit the funding proposal for review before validating the SF424 so they can continue to upload research related documents once those documents are complete. Add a comment to let the GCA know you are using the multi-prong approach. When all attachments have been uploaded, validate the submission, and add a comment to let your GCA know the application is complete.

1.1.1 S2S and the Multi-Prong Approach
Princeton ERA allows department administrators to submit a proposal for review using a “multi-prong” approach or “non-multi-prong” approach. The “multi-prong approach”, as recommended by the Task Force on Administrative Workload in Research, gives department administrators the option to submit a proposal and kick-off the internal review process even though the final scientific or research elements may not be finalized.

When using the multi-prong approach for S2S submissions, the department administrator will complete and upload all final administrative information to the funding proposal record and budgets. They will create the SF424 record and begin reviewing for completeness and accuracy. But they will NOT validate the SF424 prior to submitting for department and ORPA review because that locks it from future editing, and the application may not successfully validate at this point because it most likely will be missing mandatory attachments. Even if draft mandatory attachments are uploaded, the SF424 should not be validated.
The department administrator will use the Add Comment activity to alert their reviewers that they are using the multi-prong approach. The funding proposal can then be submitted for department review. After the department reviewer approves the proposal, the proposal moves to Specialist Review and GCA can begin reviewing the administrative components.

When the final research elements are complete, the department administrator will upload the final documents to the SF424 and validate it for submission. Then they will add a comment on the funding proposal to notify the reviewer that the application is ready for full review.

As a best practice, administrative components should be submitted at least 5 business days prior to the submission deadline. For a careful review of the scientific components, they should be finalized 2 business days prior to the submission deadline.

1.2 SF424 Workflow
Similar to the funding proposal, the SF424 will go through a series of states as it progresses through creation, review, submission to and processing by Grants.gov, to being retrieved by the federal funding agency and federal funding agency tracking number assignment. Below are the SF424 states.

Department administrators will create the SF424. Once it is created the SF424 will be in pre-submission state, the department administrator will validate the application, moving it to the Valid for Submission state.

From there, ORPA will submit the proposal. Grants.gov will process the application and send automatic updates back to Princeton ERA regarding the processing status.
2 Develop your proposal for S2S

One of the advantages of system-to-system submission is that it directly maps information from your funding proposal and budget to the SF424 application. This section identifies fields on each funding proposal or budget SmartForm that map to the SF424 so you can ensure you’re completing these properly when developing the proposal and budget.

The instructions in this guide are specific for S2S and are not comprehensive for the parts of the proposal that are not related to S2S, such as PI Assurances and COI information. Please see the Funding Proposal and Budget guides or the video series for more information.

2.1 Funding Proposal- SmartForm Pages for S2S

This section identifies funding proposal fields that will map to the SF424. It explains how they map, and any other important considerations for that field when creating a S2S application.

Please note that this section is not a comprehensive list of ALL fields, but only those that impact the SF424. For information on completing other funding proposal fields, refer to the Funding Proposal guide.

2.1.1 General Proposal Information

The General Proposal Information SmartForm includes basic information about the proposal that will map to the SF424 application on the SF424 R&R cover page and R&R Senior/Key Person Profile.

<table>
<thead>
<tr>
<th>Field</th>
<th>SF424 Mapping</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Type</td>
<td>Type of Application on the SF424 R&amp;R Cover page. Can be updated on the SF424 if needed.</td>
<td></td>
</tr>
<tr>
<td>3. Long Title</td>
<td>Descriptive Title of Applicant’s Project on the SF424 R&amp;R Cover Page.</td>
<td></td>
</tr>
<tr>
<td>4. Program Director/Principal Investigator/Project Lead/Fellow</td>
<td>PI on SF424 application, including R&amp;R cover page and R&amp;R Senior/Key Person Profile.</td>
<td></td>
</tr>
<tr>
<td>5. Select the direct sponsor</td>
<td>Select the direct sponsor. <em>The best practice is to select the specific Institute if known at time of proposal submission. Otherwise, use “NIH – National Institutes of Health”. Note – when the proposal gets to NIH’s receipt and referral team, they will assign it to the appropriate Institute.</em></td>
<td>Selecting a federal sponsor is required in order to be able to search funding opportunities on the Submission Information SmartForm page.</td>
</tr>
<tr>
<td>8. Expected Start Date</td>
<td>Proposed Project Start Date on the SF424 R&amp;R Cover Page.</td>
<td></td>
</tr>
</tbody>
</table>

2.1.2 Personnel

The Personnel page includes information about internal and external project personnel. Senior/Key personnel or other significant contributors listed on this page will map to the R&R Senior/Key Personnel Form.
<table>
<thead>
<tr>
<th>Field</th>
<th>SF424 Mapping</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Program Director/Principal Investigator/Project Lead/Fellow</td>
<td>PI on SF424 application, including R&amp;R Senior/Key Person Profile.</td>
<td>If this is a fellowship, the fellow will be listed as the PI. Their mentor should be listed in 1a, but also must be added to the SF424 R&amp;R Senior/Key Person form with the role type of “Other (Specify)” and “Sponsor.”</td>
</tr>
<tr>
<td>1b. Biosketch</td>
<td>Maps to Biosketch for the PI on the R&amp;R Senior/Key Person Profile.</td>
<td>Biosketches should be uploaded for S2S proposals if required at time of submission.</td>
</tr>
<tr>
<td>1c. Other Support</td>
<td>Maps to Current &amp; Pending Support for the PI on the R&amp;R Senior/Key Person Profile.</td>
<td>Current &amp; Pending report should be uploaded for S2S proposals if required at time of submission.</td>
</tr>
<tr>
<td>2. Responsible Department</td>
<td>Maps to Department on SF424 R&amp;R Cover page and on the R&amp;R Senior/Key Person Profile for the PI.</td>
<td></td>
</tr>
<tr>
<td>3. Project Personnel</td>
<td>All personnel in 3a or 3b that are marked as Senior Key Person or Other Significant Contributor will map to the R&amp;R Senior/Key Person Profile. People marked as “Other Personnel” will not map to the SF424.</td>
<td>When internal personnel are selected, information from their Contact Profile in the system will also map to Senior/Key Person Profile- including their position, title, dept., address, contact information and, for NIH applications, their ERA Commons ID.</td>
</tr>
<tr>
<td>3a. Institutional Personnel</td>
<td>Name, Project Role, Biosketch, Current &amp; Pending, and Key designation will map to the R&amp;R Senior/Key Person Profile.</td>
<td></td>
</tr>
<tr>
<td>3b. Non-institutional Personnel</td>
<td>Any information provided will be mapped to the R&amp;R Senior/Key Personnel Profile. This includes: Prefix, Name, Suffix, Position/Title, Organization, Department, Division, Address, contact information, Credentials, Project Role, Key designation, Biosketch, and Current &amp; Pending.</td>
<td>Ensure Biosketch, Current &amp; Pending (if required at time of submission), and, for NIH applications, their ERA Commons ID are entered.</td>
</tr>
</tbody>
</table>

It is important to ensure personnel are entered with the proper role and personnel designation (such as Senior/Key, Other Significant Contributors, or Other) for system-to-system proposals. This information will appear on the SF424 application and affects who appears on the R&R Senior/Key Personnel Profile.

*Always select the appropriate roles based on the funding source you are proposing for. Contact your GCA if you are unsure on which role to select.*

<table>
<thead>
<tr>
<th>Project Role</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Co-Investigator</td>
<td>Use for co-investigators on NIH or NASA proposals, as appropriate.</td>
</tr>
<tr>
<td>Consultant</td>
<td>Do not use.</td>
</tr>
<tr>
<td>Co-PD/PI</td>
<td>Use for Co-PIs.</td>
</tr>
<tr>
<td>Faculty</td>
<td>Use if appropriate. May be used for contributor that is not being named in another Project Role.</td>
</tr>
<tr>
<td>Graduate Student</td>
<td>Use only if the graduate student is named on the proposal.</td>
</tr>
<tr>
<td>Role</td>
<td>Description</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Other Professional</td>
<td>Use as appropriate. May be used for professional specialist or other contributors that do not fit into another Project Role.</td>
</tr>
<tr>
<td>Post Doctoral</td>
<td>Use general Post Doctoral role for all post docs.</td>
</tr>
<tr>
<td>Post Doctoral Associate</td>
<td>Do not use.</td>
</tr>
<tr>
<td>Post Doctoral Scholar</td>
<td>Do not use.</td>
</tr>
<tr>
<td>Technician</td>
<td>Use for technicians.</td>
</tr>
<tr>
<td>Undergraduate Student</td>
<td>Use only if the undergraduate student is named on proposal.</td>
</tr>
<tr>
<td>Secretarial/Clerical</td>
<td>Use for administrative personnel.</td>
</tr>
<tr>
<td>PD/PI</td>
<td>Use for multi-PI awards, such as for NIH multi-PI proposals, where the Co-PI designation is not used. Should be used for all other PI’s not listed on Personnel question 1.</td>
</tr>
<tr>
<td>Other (Specify)</td>
<td>Do not use for internal people.</td>
</tr>
</tbody>
</table>

Refer to the following guidance when determining what type of personnel an individual is:

- **Senior/Key Personnel**: As determined by the RFP and sponsor guidance
- **Other Significant Contributor**: NIH term referring to individuals who have committed to contribute to the scientific development or execution of a project but are not committing measurable effort to the project.
- **Other Personnel**: Additional personnel on the project who are not key. May include graduate students, secretarial/clerical, other professionals, etc. Personnel marked as “Other Personnel” will not map to the SF424.

### 2.1.3 Submission Information

The Submission Information page is used to denote that system-to-system submission will be used and direct you to select the funding opportunity.

Confirm the submission type is Federal and that your Direct Sponsor appears.

Click Yes that the application will be system-to-system. When yes is selected, the search box for funding opportunity announcements will be displayed and the other fields which are only applicable to non-S2S applications will disappear.
To search for your funding opportunity, enter the Package ID, Opportunity ID, CFDA number, or Competition ID. Click the “Find” button to search. Searching by Opportunity ID is the most common way to easily find your opportunity.

Grants.Gov will display the matching opportunities, their requirements, and forms.

Click the radio button to select the desired opportunity.
Once an opportunity is selected, you can click continue to move to the next SmartForm page. For S2S submissions, a SmartForm page called Funding Opportunity Announcement will appear next.

### 2.1.4 Funding Opportunity Announcement

This Funding Opportunity Announcement SmartForm page will only appear for system-to-system submissions where the opportunity has been selected on the Submission Information SmartForm page. The page provides additional details about the FOA and system support for submission.

#### Funding Opportunity Announcement

These forms are fully supported and the application will be submitted to Grants.gov

<table>
<thead>
<tr>
<th>1. Required SF424 Forms:</th>
<th>Supported</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form Name</td>
<td></td>
</tr>
<tr>
<td>SF424 (R&amp;R) V2.0</td>
<td>yes</td>
</tr>
<tr>
<td>Research &amp; Related Project/Performance Site Location(s) V2.0</td>
<td>yes</td>
</tr>
<tr>
<td>Research &amp; Related Other Project Information V1.1</td>
<td>yes</td>
</tr>
<tr>
<td>Research &amp; Related Senior/Key Person Profiles (Expanded) V2.0</td>
<td>yes</td>
</tr>
<tr>
<td>PHS 398 Cover Page Supplement V5.0</td>
<td>yes</td>
</tr>
<tr>
<td>PHS 398 Research Plan V4.0</td>
<td>yes</td>
</tr>
<tr>
<td>PHS Human Subjects and Clinical Trials Information V2.0</td>
<td>yes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. Optional SF424 forms:</th>
<th>Supported</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form Name</td>
<td></td>
</tr>
<tr>
<td>Research &amp; Related Budget V1.1</td>
<td>yes</td>
</tr>
<tr>
<td>Research &amp; Related Subaward Budget Attachment(s) Form 5 YR 30 ATT V1.1</td>
<td>yes</td>
</tr>
<tr>
<td>PHS 398 Modular Budget V1.2</td>
<td>yes</td>
</tr>
<tr>
<td>PHS Assignment Request Form V3.0</td>
<td>yes</td>
</tr>
</tbody>
</table>

| 3. Package ID:                                            |           |
| PKG00055328                                               |           |

| 4. Opportunity ID:                                        |           |
| PA-FN-R01                                                 |           |

| 5. CFDA Number:                                           |           |
| 93.855                                                   |           |

| 6. Opportunity Title:                                     |           |
| G: Training and NIH Ext-UAT FOA (R01-Clinical Trial Not Allowed) |           |

| 7. Activity Title:                                        |           |
| Allergy and Infectious Diseases Research                  |           |

| 8. Information URL:                                       |           |
| Instructions for FOA#PA-FN-R01                           |           |

Review the funding opportunity information including required forms, optional forms, and instructions link. A message will confirm if the forms are fully supported and this application can be submitted to Grants.gov.

If an optional form is not supported, you may still proceed with S2S submission. However, if a mandatory form is not supported than the application may not be submitted S2S.

### 2.1.5 Budget Periods and Key Dates

The Budget Periods and Key Dates page contains information about the project start and end dates which will map to the R&R Cover page. Decisions on this field also inform how the funding proposal budget is created. The budget can also map to the SF424 application if desired.

#### Budget Periods and Key Dates – SmartForm Page

<table>
<thead>
<tr>
<th>Field</th>
<th>SF424 Mapping</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. Date Project Starts</td>
<td>Proposed Project Start Date on the SF424 R&amp;R Cover Page.</td>
<td></td>
</tr>
<tr>
<td>4. Date Project Ends</td>
<td>Proposed Project End Date on the SF424 R&amp;R Cover Page.</td>
<td></td>
</tr>
</tbody>
</table>
### 6. Modular Budget
Does not directly map but allows you to setup a modular budget for the proposal which will account for modular offsets. The Modular Budget forms should be selected when executing Create-Update SF424.

### 7. Budget Periods
Does not directly map but establishes the budget periods used for creating your budget. Budget can be mapped to the R&R budget or modular budget forms.

#### 2.1.6 Compliance Review
The Compliance Review SmartForm page contains compliance related questions regarding human subjects, animals, and stem cells that will map to the SF424 application.

<table>
<thead>
<tr>
<th>Field</th>
<th>SF424 Mapping</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Involves human subjects?</td>
<td>Maps yes or no to human subjects question on the R&amp;R Other Project Information page.</td>
<td>Note that Princeton’s human subject assurances number will automatically default on the R&amp;R Other Project Information page if this is yes.</td>
</tr>
<tr>
<td>1b. IRB Protocol Submitted?</td>
<td>If no is selected, the IRB review will be marked as pending on the R&amp;R Other Project Information page. If yes is selected, the information from 1C will be used for mapping to the SF424.</td>
<td></td>
</tr>
<tr>
<td>1C. IRB Protocols</td>
<td>If all protocols listed have an Exemption # listed, the project will be marked as exempt from federal regulations. All applicable exemption numbers will map. If some protocols are exempt but not all, it will map as not exempt. If any protocol is listed as Pending, it will map that the IRB Review is Pending. If all protocols listed are marked as approved, it will map that the IRB review is not pending. If all protocols are listed are approved (none are pending), the IRB approval date will be listed as the most recent protocol approval date.</td>
<td></td>
</tr>
<tr>
<td>2. Live, Vertebrate animals used?</td>
<td>Maps yes or no to vertebrate animals question on the R&amp;R Other Project Information page.</td>
<td>Note that Princeton’s animal welfare assurance number will automatically default on the R&amp;R Other Project Information page if this is yes.</td>
</tr>
<tr>
<td>2a. IACUC Protocol Submitted?</td>
<td>If no is selected, the IACUC review will be marked as pending on the R&amp;R Other Project Information page. If yes is selected, protocol information from 2B will be used for mapping.</td>
<td></td>
</tr>
<tr>
<td>2b. IACUC Protocols</td>
<td>If any protocols listed are Pending, it will map that the IACUC Review is Pending. If all protocols listed are</td>
<td></td>
</tr>
</tbody>
</table>
marked as approved, it will map that the IACUC review is not pending.

If all IACUC protocols listed are approved (none are pending), the IACUC approval date will be listed on the form as the most recent protocol approval date.

11. Human Embryonic Stem Cells
Maps yes or no to PHS 398 Cover Letter Supplement. If yes, and a stem cell line is listed, it maps as well. Otherwise the “stem cell cannot be referenced at this time” box will be checked.

2.1.7 Additional Proposal Information
The Additional Proposal Information SmartForm page includes application institution information and program income information that will map to the SF424.

<table>
<thead>
<tr>
<th>Field</th>
<th>SF424 Mapping</th>
<th>Notes</th>
</tr>
</thead>
</table>
| 1. Application Institution   | Makes Trustees of Princeton the applicant institution on the SF424 R&R Cover Page and the Project/Performance Site Primary Location on the Project/Performance Site Locations form.  
This field will also cause additional institutional information to default on the SF424 application, including applicant institution details, contact information, and the authorized representative. | Trustees of Princeton should always be selected. This will default and should not be edited. |
| 2. Program Income            | Maps to the SF424 R&R Cover Page estimated project funding and the PHS 398 Cover Page Supplement. Program income details provided (budget period number, source of funding, and amount) will map too if provided. | |

2.2 Budgets- SmartForm pages for S2S
This section describes how to develop budgets for S2S submission. It explains how budgets map and additional special considerations. Project budgets (also known as sponsor budgets), subaward budgets, and cost share budgets will be covered. Please note that the Budgets Guide may also serve as a helpful resource for budget development.

The SF424 can use either the R&R Budget form or the PHS 398 Modular Budget form. Modular Budget is only used by the NIH. If this is an NIH modular budget, it’s important to confirm on the Budget Periods and Key Dates page of the funding proposal SmartForm that yes is selected for the Modular Budget Question. This will ensure your Total Direct Costs, Total Indirect Costs, and Total Project costs are calculated correctly using the modular method. It is also important to note that budget periods and their dates are also determined on the Budget Periods and Key Dates page. This page will be used in accordance with the budget information below when the SF424 budget is created.

2.2.1 Project Budgets
When the funding proposal is created, the system automatically creates a project budget with the name of the primary sponsor. This budget should be completed as part of the proposal development process. This type of budget is called a sponsor budget or project budget.
Multiple project budgets may be created using the Create Additional Budget activities for various scenarios such as different F&A rates, different PIs, or different departments. If multiple project budgets are created (and marked as Include in Consolidate Budgets = Yes), they will all map to the SF424 budget forms with their appropriate rates and values applied.

**General Budget Information**

Information selected on this page will define how our budget it is built and affect budget values such as Indirect Costs and the inflation applied to budget items.

- **F&A Cost base and rates** selected will appear on the R&R budget form in Section H – Indirect Costs or the PHS 398 Modular Budget – Box B. These values will be used to calculate the F&A base amount and funds request for each period. Ensure the proper base and rate is selected.

  *Please note that if you are proposing an F&A rate less than Princeton’s federally negotiated rate, the waived or reduced F&A rate must be approved using an ancillary review to the ORPA Director (for waivers or unpublished reduced rates) or your ORPA GCA (for reduced but published rates).*

```
3. * Does this budget use the standard F&A cost base and rates? ☐
   ☐ Yes  ☐ No  Clear

  Standard F&A cost base and rates

<table>
<thead>
<tr>
<th>Period</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>F&amp;A Cost Base</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Start:</td>
<td>10/12/2021</td>
<td>10/12/2022</td>
<td>10/12/2023</td>
<td>10/12/2024</td>
<td>10/12/2025</td>
</tr>
<tr>
<td>MTDC Rate:</td>
<td>62%</td>
<td>62%</td>
<td>62%</td>
<td>62%</td>
<td>62%</td>
</tr>
</tbody>
</table>
```

- If the budget is marked as Include in Consolidated Budgets, it will map to the SF424. If No is selected, it will not map. Project budgets should typically be marked as Yes unless they were created as a draft budget.

  *Note if additional budgets are created as “drafts” to test various scenarios (e.g. budgeting 2 grad students versus 3), it’s important to ensure the draft budget is marked as In Consolidated Budgets = No so those drafts do not map to the SF424.*

```
4. Include in consolidated budgets? ☐
    ☐ Yes  ☐ No  Clear
```

- **Salary cap** will default for all NIH sponsors; leave blank for all other sponsors.

```
5. Salary cap: ☐
    $197,300.00
```

- Appropriate inflation rates should be used for Personnel and General (non-personnel) Costs as they will affect the budget values. If a personnel member is budgeted at the salary cap, you will not want to apply inflation for them since this will generate cost sharing.
Personnel Cost Definition & Personnel Costs

All Princeton personnel included in the budget will be listed on the Personnel Cost Definition page and then budgeted on the Personnel Cost page using their % effort, % salary requested, benefits rate, and base salary.

For R&R budgets, each person’s name, role, base salary, effort months, requested salary, and fringe benefits will map to the R&R Budget – Sections A Senior/Key Personnel or to Section B Other Personnel. For other personnel (such as grad students or post docs), the number of individuals listed on the budget will map.

For modular budgets, personnel costs will map to the PHS 398 Modular budget forms by period and the PHS 398 Modular Budget- Cumulative. Personnel costs will be included in the total direct costs in Box A. Personnel costs are summed with the general cost types for total Direct Costs.

Personnel Cost Definitions

When adding personnel to the Personnel Cost Definition page, it is important to keep in-mind their base salary and appointment type to ensure we comply with the NIH salary cap:

- **Appointment Type – Faculty**: PI and other faculty with an academic year appointment should have a 9-month appointment type, unless this is an NIH application where the PI or faculty member’s salary is above the NIH salary cap; in that case, budget to the NIH salary cap with a 12-month appointment type (this is because the NIH cap is based on 12 months). Not following these instructions for faculty with salaries over the NIH cap will generate cost sharing.

- **Appointment Type - Post Docs and Grad Students**: They are typically budgeted at 12 months.
  - Note: Graduate students can be budgeted at 12 months by adding their academic and summer month salaries. This process is recommended when submitting via S2S. If you calculate one person using a 10-month appointment and separate 2 month appointment, then the person will map as “Quantity: 2” on the R&R budget forms, but you can manually update the quantity on the R&R budget form to “1”.

- **Base Salary**: Use the personnel’s salary, unless their salary exceeds the NIH salary cap. Then enter the NIH salary cap as the base salary

  **Inflation Rate**: For NIH, inflation should be set to No if you are budgeting at or close to the salary cap. Otherwise cost sharing will be generated.
On the Personnel Costs page, personnel can be budgeted using the standard method described in-depth in the Budget Manual. For detailed questions, refer to the budget manual. The below information will give you the standard process and key considerations to keep in mind for S2S applications.

**Budgeting Salary**

- Salary is budgeted based on the personnel’s base salary and the salary requested percentage. Proposed effort will also be recorded and used to calculate personnel cost share in scenarios where the effort percentage exceeds the salary requested percentage.
- **Please use the Princeton ERA – Effort Distribution Tool available on the ORPA website to calculate the correct effort percentages.** The tool will calculate the proper percentage based on the person’s appointment. The Effort Distribution tool can be used if the effort is known in months or as a dollar amount.
- Entering 7 decimals for Effort and Salary Requested is required for exact rounding of months on the R&R Budget form.
  - For example, if the PI is committing 1 month of effort with a 12-month appointment (as their salary is over the NIH salary cap), their salary requested would be 8.3333333%.

To see the total salary amount calculated based on the base salary and salary requested, click the show totals button.
Budgeting Benefits

- Benefits are budgeted based on the current and provisional fringe benefits rate. Refer to the [sponsored project rate sheet](#) for more information on Princeton’s current and provisional rates. By default, the system fills in the provisional rate as the default fringe rate for all budget years, including budgets that start in the current FY.
- If the initial period does not start on 7/1 and therefore spans the current fiscal year and next fiscal year, then the FB Rate should be updated with a blended FB Rate. **Please use the Princeton ERA-Blended Fringe Rate Tool, available on the ORPA website, to calculate the correct rate for the blended period.** The example below shows a Technician that is budgeted for 12 months, 2 months are in the current FY and 10 months are in the next FY. Change the value in period 1 to the value calculated by the tool.

<table>
<thead>
<tr>
<th>Person: Martha Gibbs</th>
<th>Role: PD/PI</th>
<th>Salary: $16,442.00</th>
<th>Benefits: $8,583.00</th>
<th>Total: $22,295.00</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Period</th>
<th>Effort</th>
<th>Salary</th>
<th>Benefits</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>100 %</td>
<td>$16,442.00</td>
<td>$8,583.00</td>
<td>$22,295.00</td>
</tr>
<tr>
<td>2</td>
<td>100 %</td>
<td>$16,442.00</td>
<td>$8,583.00</td>
<td>$22,295.00</td>
</tr>
<tr>
<td>3</td>
<td>100 %</td>
<td>$16,442.00</td>
<td>$8,583.00</td>
<td>$22,295.00</td>
</tr>
<tr>
<td>4</td>
<td>100 %</td>
<td>$16,442.00</td>
<td>$8,583.00</td>
<td>$22,295.00</td>
</tr>
<tr>
<td>5</td>
<td>100 %</td>
<td>$16,442.00</td>
<td>$8,583.00</td>
<td>$22,295.00</td>
</tr>
</tbody>
</table>

- Remember to remove benefits from personnel who do not receive benefits such as grad students.

General Cost Definition & General Costs

The general cost types selected and their per period values will map to the R&R Budget by period and the R&R Budget-Cumulative. General cost types will map to the proper section of the form based on either type.

- Equipment Cost Types will map to “Section C- Equipment Description.”
- Travel Costs (domestic and foreign) will map to “Section D- Travel.”
• Participant Trainee Costs (including tuition, stipends, travel, subsistence) will map to “Section E – Participant Trainee Support Costs.”
• Other Direct Costs (including Materials and Supplies, Consultant Services, Subawards, Equipment or Facilities Rental/User Fees, and Others) will map to “Section F – Other Direct Costs.”

For modular budgets, the general cost types and their per period values will map to the PHS 398 Modular budget forms by period and the PHS 398 Modular Budget- Cumulative. All direct costs (including general cost types and personnel costs) are summed in Box A for each period of the form.

**Attachments**

The Budget Justification must be uploaded directly to the SF424 instead of the Attachment page of the budget SmartForm. The document can be uploaded on the R&R Budget – Period 1 – Section K or PHS-398 Modular Budget – Cumulative section.

The document will not map from the project budget SmartForm to the SF424, so if it is uploaded here it will still need to be uploaded again directly on the SF424 as required.

**2.2.2 Subaward Budgets**

Subaward budgets are created from the project budgets using the Create Subaward button. An individual subaward budget must be created for each subawardee.

The Subaward Budget section in the Budget Manual provides in-depth instructions to create a subaward budget, but this guide will cover the key steps and include considerations for S2S Submissions.

**Subaward Budget Information**

Information selected on the Subaward Budget Information page will define how our budget is built and affect budget values. There are a few key considerations for setting up the subaward budget for S2S submission.

• The **SF424 Subaward Import** method should be chosen for system-to-system submissions. The subawardee’s budget totals are imported to the system using their completed R&R subaward Budget PDF Form. The system can then directly map this budget to the R&R Subaward Budget Attachments on the SF424.
- **Include in consolidated budgets** should always be yes (unless its parent project budget is not be included because it's a draft). Selecting yes means this will be included in our budget totals.

- For budgets using the MTDC cost base, the system displays the **Subaward Indirect Contribution Limit**. It automatically defaults to $25,000, representing that only the first 25K of the subaward will be used in calculating Indirects for the project budget. Update if necessary.
  
  *Note: This question only displays if MTDC was selected as the cost base on the sponsor budget that this subaward was created on.*

---

**SF424 Subaward Import**

This SmartForm page will only appear if, on the Subaward Budget Information SmartForm, you selected “SF424 Subaward Import” for the budget detail level. This option must be selected when submitting the proposal system-to-system.

**SF424 Subaward Import**

1. To import, select your SF424 Subaward PDF click Save. The totals from the form will be loaded in the system.

The R&R Subaward Budget PDF must be completed and returned by the subawardee for uploading. The **editable PDF version of the form must be downloaded from the SF424 workspace within Princeton ERA and sent to the subawardee**, as opposed to the version available on the Grants.gov website. This will help ensure the import process works correctly.
Note: It is recommended to get this file from the subawardee as soon as possible to ensure the file is valid and allow time for the subawardee to correct any invalid files or budget errors.

To complete the SF424 Import for system-to-system applications, follow the steps below.

Download the R&R Subaward Budget forms from the associated SF-424 workspace for the subawardee to complete.

When the completed file is received from the subawardee, return to the SF424 Subaward Import page within the subaward budget SmartForms to update the file. Drag & drop the file over the box or select Choose File to select the file from your desktop.

Click Save or Continue. The form has been imported and you can confirm the totals by reviewing the Financial tab on the Subaward Budget Workspace.
If there is an issue with the Subaward R&R budget form, you will receive an error message when importing. To avoid potential errors, ensure the editable PDF version of the form is downloaded from the SF424 workspace within Princeton ERA and completed correctly. The most common error is that the period dates entered in the Subaward R&R Budget PDF form do not match the budget periods of the primary budget. Correct any errors on the form and retry the import.

**Attachments**

No attachments will propagate from the subaward budget SmartForm to the SF424. However, your required subaward documentation should be provided here.

Upload the Subrecipient Statement of Collaborative Intent form and all associated attachments, following the naming conventions in the Subaward Documents Naming Conventions guide.

Drag and drop a file or select the Add button to choose a file.

If needed, click the ellipsis to upload a revision.

**For all subawards:**

Subrecipient/Contractor Classification form and Subrecipient Statement of Collaborative Intent (Commitment form) including statement of work with deliverables, budget and budget justification including F & A documentation, Financial Status Questionnaire with attachments (see form for applicability), Sole Source Justification (for contracts only) should be uploaded and labeled appropriately. See the Subaward Documents Naming Conventions guide. Note that the subawardee may have included their budget justification within the R&R documents.

**For fixed price subawards:**

Justification statement for fixed price subawards must be included in the prime award budget justification; verification of DUNS and SAM.gov registrations as well as above referenced info must be included too. All are uploaded in the Subaward Attachments tab and labeled appropriately.
Refer to the ORPA website for details on the subaward document naming convention.

**Additional Subaward Mapping Details**

Using the SF424 Subaward Import Method allows us to directly map the subaward information from the subawardee to the R&R Subaward Budget Attachment in the SF424 application. The document details provided will map exactly to the application.

The subaward costs will also be included in the R&R Budget or PHS398 Modular Budget.

- For R&R budgets, the subaward direct and indirect costs will be included in the R&R Budget – Section F Other Direct Costs as “Subawards/Consortium/Contractual Costs” for each period and on the R&R Budget – Cumulative.
- For modular budgets, the subaward costs will be included in the PHS398 Modular Budget Form - Direct Costs Box A for each period and for the cumulative budget. The section is split into “Direct Costs less Consortium FA” and “Consortium FA.” The subaward direct costs will map to the “Direct Cost less Consortium FA” and the Indirects will map to “Consortium FA.” These values are summed for the Total Direct Costs in Box A.

For details on how to map the subaward budgets to the SF424 forms, refer to the section on Adding Subawards to the SF424 application.

### 2.2.3 Cost Share Budgets

Please refer to the Cost Share Manual for detailed instructions on creating Cost Share budgets.

For S2S applications:

- The total amount of the cost sharing will not map to cost share budgets will not map to the Total Non-Federal Funds box on the SF424 (R&R) form. You will have to manually update that field in the SF424 module.
- The cost share items will not map to the R&R budget form or PHS 398 Modular Budget Form if the cost share budget because cost share budgets should always be marked as “Include in Consolidated Budgets” = No. This is the standard process for cost share budgets. If cost share budgets are marked as “Include in Consolidated Budgets” as “yes”, then the values will appear on the R&R budget form as if they were sponsor costs, which they are not.

Also keep in mind when developing your cost share budget, that additional steps are required for funding proposals with cost share. Complete the following workspace activities:

- Complete the Create-Update Cost Share Commitment activity on the funding proposal workspace
- Add required Ancillary Reviews with the type “Cost Sharing” and send to the appropriate cost sharing department. If the cost share is voluntary, an Ancillary Review to the ORPA director is also required for approval.

### 3 SF424 Application

The following section outlines how to create the SF424, review the application forms, make updates, add subawards, and validate for submission.

#### 3.1 Create-Update the SF424

Once proposal and budget information has been completed, you are ready to create the SF424 application.

From the funding proposal workspace, click the Create-Update SF424 activity.
Note: This activity is used to create the SF424 application for the first time and for any subsequent updates.

In Create-Update SF424 window, select the SF424 forms you want to map data to from the funding proposal or budget and Click OK.

*Required forms will default to “checked.” Any optional forms can be checked as well. If this proposal includes a budget, either the R&R Budget or PHS 398 Modular Budget form for NIH submissions should be selected.*
The status column will update as each form is generated. A success alert appears when the SF424 application has been generated and is ready for review. The window will automatically close once the process is complete; do not “x” out of the window prematurely.
The SF424 has been generated! A link to the SF424 will appear in the workspace under Proposal Information. Details about the SF424 will also appear in the SF424 Summary tab on the funding proposal. The summary shows the link and current state of the SF424 (which is pre-submission). Once we submit to Grants.gov, it will also show our tracking number the date/time it was received, and the last time the status was updated.

These links can be used to navigate to the SF424 application workspace.
The SF424 application has its own workspace and SmartForms.

### 3.2 Review the SF424 Workspace

The SF424 application has its own workspace, similar to how a funding proposal or budget has a workspace. You can navigate to the SF424 workspace by clicking the SF424 link on the funding proposal workspace.

The SF424 workspace displays the proposal title and the SF424 ID. You do not need to remember the SF424 ID, since you can always navigate to the SF424 from the funding proposal.
The center of the workspace provides basic demographic information and tracking info for the SF424. You can also navigate to the FP or FOA from this view.

Below that are the workspace tabs. The History tab shows all activities that are run on the SF424 workspace. The Change Log tab shows when changes are made to the SF424 application SmartForm. If you click on a change, it will show you which field was updated.

On the left side of the workspace, we see the State of the SF424 application. The SF424 will always begin in Pre-Submission State. We can use the Edit Grant Application button to open the SF424 SmartForm. When the application is in a read-only state, this button is labeled as “View Grant Application”.

![Image of SF424 workspace with demographic information and tracking data.](image-url)
Below these buttons, we see the SF424 workspace activities.

- **Validate Submission**: This activity is used to check the application for completeness and accuracy. If it passes validation, the SF424 workspace will display as the “Valid for Submission” state. This is the state in which the GCA will review the full application prior to submitting to Grants.Gov. Review the [Validate Submission section](#) for detailed instructions.

- **Generate PDF Version**: Click this activity to generate a PDF version of your application. You can select if you would like it to include attachments or not, though typically you will want to include attachments. Once the activity is complete, the window will close, and the PDF version will appear in the center of the SF424 workspace in the PDF Version field. Click the “View” link to review the PDF.

- **Assign Editors and Readers**: This activity will display all people that have Edit and Read access to the SF424 application. It is the same list of department editors that defaulted on your funding proposal. Generally, if you want someone to access the submission, they should be added to the funding proposal. The list on the SF424 is set when the SF424 is created and updated each time the Create-Update SF424 activity is executed.

- **Log Comment**: This activity should generally not be used; Comments to your reviewers and GCA should be logged on the funding proposal using the Add Comment activity. This activity will add a comment to the SF424 workspace instead.

- **Import Subaward**: This activity can be used to upload a R&R subaward forms into the application, however this activity will generally not be used as the forms can instead by mapped from the subaward budget SF424 Subaward Import. Review the [Updating the R&R Subaward Budget Forms section](#) for details.

### 3.3 Review the SF424 Application

The SF424 application is populated with information from the funding proposal SmartForms, budget SmartForms, and institutional Princeton defaults. Additional questions must be answered directly on the SF424 and your documents should be uploaded directly to the SF424 application.

You can review and update your SF424 application information within the SmartForm pages. You can also generate a PDF version of the application from the workspace. When submitting to Grants.gov, the application information will be turned into an XML file that is transmitted to Grants.gov.
As you review and update the SF424, it is important to consider what kind of updates you are making and where the appropriate place is to make that edit:

- If you are editing information that is only on the SF424 (it did not map from your funding proposal or budget), you will make these edits directly on the SF424 application.
- If you are updating information that originally mapped from the funding proposal or budget, then you must make the edits there and use the Create-Update SF424 activity to edit your SF424 application.
- Any edits you make on the SF424 do not map back to the Funding Proposal. Any edits that are made on the Funding Proposal only map to the SF424 if the “Create-Update SF424” activity is executed. Refer to the next section on Updating the SF424 for more details and instructions.

This is not a comprehensive guide to completing the SF424 Application as the instructions and required forms may vary based on the Funding Opportunity. When in doubt, always refer to NIH guidance or reach out to your ORPA GCA with questions. The information below will provide an introduction to commonly required forms and how they are populated by the system.
### 3.3.1 SF424 Form Review

#### Select Optional Forms Page
- Application Filing Name may be updated
- Additional optional forms may be selected; required forms are listed

#### SF424 R&R Cover Page
- Applicant institution, EIN/Applicant Type, application contact, and AOR default from Princeton's information
- Project Dates, Descriptive Title, and Total Federal Funds Requested defaults from the proposal and budget.
- Manually add the total cost share in the Total Non-Federal Funds section.
- Certification must be provided
- Type of Submission and Application Information defaults. Can be updated as needed. If this is a renewal, revision, or change corrected - ensure the proper Type of Submission and Application are selected. Confirm the appropriate federal identifier and Grants.gov tracking ID are added as applicable per sponsor guidance.

#### Project/Performance Site Locations
- Trustees of Princeton University information defaults
- Subawardee locations will default
- Update or add additional performance locations, as applicable

#### R&R Other Project Information
- Human subjects and animal information defaults based on the answers on the Funding Proposal Compliance Review page
- Complete all other yes/no questions, adding additional details if yes is selected
- Upload applicable documents directly to SF424: Project Summary/Abstract, Project Narrative, Bibliography & References Cited, Facilities & Other Resources, Equipment, Other Attachments

#### R&R Senior/Key Person Profile
- PI Profile defaults based on the funding proposal PI and their system information
- Internal and External personnel marked as Senior/Key persons or Other Significant contributors and their profile appears
- Degree Type, Degree Year, Biosketches and Current & Pending documents provided for PI or Senior/Key persons on the funding proposal appear
- Add additional personnel as required (such as a Mentor with the type "Other(Specify) - Sponsor"); unfortunately the Mentor does not map even when the Mentor information is included on the FP) and upload and any additional profiles needed

#### PHS398 Cover Page Supplement
- Program income and human embryonic stem cell information maps from proposal compliance information
- Complete additional questions regarding vertebrate animals, human fetal tissue, inventions and patents, and change of investigator

#### PHS398 Research Plan
- Upload Research Plan documents directly to the SF424.

#### PHS Human Subjects and Clinical Trials Information
- Human subjects and study information trails maps based on the responses to the compliance information and the R&R Other Project information. Update information as needed.
### R&R Budget

- R&R Budget form will be created with Sections A-K for each budget period. A cumulative page will also be included.
- Personnel budget information will map to Section A - Senior/Key Personnel and Section B - Other Personnel. Information includes name, role, base salary, effort months, requested salary, fringe benefits. By default, person months appear in the Calendar months section and can be manually moved from calendar months to academic and/or summer months; but please note if you execute the "Create-Update S424" activity again, it will overwrite those manual changes.
- General Cost Types will map properly into sections C-F based on their type. Subaward costs will also map.
- Indirect Costs included in the budget SmartForm will be included in Section H - Indirect Costs, including the base and rate.
- Total Directs and Indirects requested (across all project budgets) will be included in Section I.
- The budget justification should be attached directly to the SF424 R&R budget form for Period 1 in field L. Budget Justification.

### PHS 398 Modular Budget

- The Modular Budget form will be created for each period and a cumulative page will be included.
- Direct Costs (including personnel, general cost types, and subawards) will be mapped to Box A.
- Indirect Costs, including the base and rate, will map to Box B - Indirect Costs.
- Total Direct and Indirect Costs will be summed in Box C.
- Budget justifications should be directly uploaded to the PHS 398 Modular Budget - Cumulative page.

### R&R Subaward Budget

- The Subaward R&R form should be downloaded from the SF424 workspace, completed by the subawardee, and uploaded to the SF424 Subaward Import on the subaward budget SmartForm.
- The R&R Subaward Budget - Number of Subawards page will appear when the R&R Subaward Budget Attachment is added to the SF424 application. Manually enter the number of subawards to create placeholder sub budgets for each subawarded. The Create-Update SF424 activity must be run again to populate the sub budgets.
- The SF424 R&R subaward budgets will directly reflect what is in the file, including any budget justification attachments.

### 3.3.3 Validating the SF24 Forms

As you review the SF424 forms, use the validate button to check for errors and ensure you have all required information. Click the Validate button in the top left corner.
The system will detect errors and alert you of them. The red stop sign icon means this issue must be resolved before submitting. Messages with a Yellow Triangle are warnings. Warnings will not stop the submission but should be reviewed to ensure the information is correct. The green checkmark icon means that the information on the page passes validation.

To jump to a message for review, click the link in blue text. You will be brought directly to the field with an error.

**Required Fields**

Fields with a red asterisk are mandatory. In certain cases, Grants.gov may require additional fields to be completed in addition to the ones required by the system. Validating your application will let you know if any of these fields have been missed.
3.4 Updating the SF424

The SF424 should be updated using the Create-Update SF424 activity when changes are required to the SF424 based on information that came from the funding proposal or budget.

Changes to information that was NOT auto populated or mapped by the system may be made directly to the SF424, as there is nowhere to update this information on the funding proposal or budget. Examples include the Research Strategy and other documents. The manual entry fields or documents will not be overwritten by running the Create-Update SF424 activity.

However, when SF424 updates are needed for information that was initially entered on the funding proposal or budget SmartForms, then the information should be updated on the funding proposal SmartForm first, and then the Create-Update SF424 activity should be run. It is important to note that any change you made to any field on the SF424 which was mapped from the Funding Proposal SmartForms or Budget will be overridden when you execute the Create-Update SF424 activity unless you uncheck that form in the Create-Update SF424 activity.

It is very important to follow this process for a few reasons:

- We want the funding proposal/budget and SF424 information to match up exactly for review and reporting purposes. It is important to make sure the information is accurate and consistent.
- If you update the SF424 directly instead of the proposal or budget and then re-run this activity later your changes will be overwritten, unless you unselect that form for updating!

  *e.g. If I update my equipment budget from $50,000 to $30,000 directly on the SF424, but not on the budget, then when I run the Create-Update activity again for that form my budget will revert to $30,000.*

To run the Create-Update activity, select it from the funding proposal workspace.
In the pop-up window, you can select which forms you would like to update. You can unselect any which you would not like to update. You can also add additional forms if something was previously missed.

*Note that to select all forms, select the checkbox next to “Action.” You can double click this checkbox to “unselect” all forms.*

In the example below, the user is only updating the budget forms since they only made edits to the budget.
The status column will update as each form is processed and will show which forms were “skipped” because they were not selected. A success alert appears when the process is complete, and the window will automatically close; do not “x” out of the window before the process completes.

Once your updates have been made, return to the SF424 workspace to continue your review and validation of the application.

3.5 Add subawards to the SF424
These instructions outline how to add a subaward to your S2S application.

1. Add the Subaward Form to your SF424 Application.
   The form can be added the first time you run the Create-Update SF424 activity, or it can be run again when you are ready to add the sub and include the form. Include the form by checking the box next to Research & Related Subaward Budget Attachment(s) Form.
   You can also add the form directly on the SF424 application. Open the SF424 SmartForm and go to the Select Optional Forms page. Select the checkbox next to the R&R Sub Budget Attachment form and the form will be added.

2. Download the R&R Sub Budget Form from the SF424 workspace. Send the form to your subawardee to complete.
   The subaward budget form should always be downloaded from the SF424 workspace. Do not download the form from Grants.Gov nor from the opportunity. Please download the form each time you create an SF424 with subs to ensure you have the right form that corresponds to the opportunity as well as the most up to date version of the form, otherwise there will be errors. The subawardee should complete the form, including uploading their budget justification to the form.
3. Update the SF424 application with the number of subawards.
   Click on the “Edit Grant Application” button to open the SF424 SmartForms. In the left navigation bar, scroll to “R&R Subaward Budget – Number of Subawards” SmartForm, click on it, and enter the number of subawards on your application. When you save, the subaward forms will be added for that number of subawards. Click save and exit the SmartForm.

4. Once you have received the SF424 subaward budget form from the subawardee, validate the form.
   When you receive the completed form from the subawardee, click on the “Check Form for Errors” button within the subaward budget form to ensure there are no errors. If there are any errors in the form, they must be corrected before proceeding. Also check that the subaward dates are the same as the proposal dates or within the proposed date range. If any subaward period dates on the SF424 subaward budget form are earlier or later than the proposal dates, you will get an error when trying to upload the form in Princeton ERA.

5. Navigate to the subaward budget workspace. From the Budget workspace, click on the “Create Subaward” button to create the subaward budget.

6. Select the “Subaward budget detail level”. On the “Subaward Budget Information” SmartForm, Question 5, select “SF424 Subaward Import”.

7. Upload the R&R Subaward Budget Form to the “SF424 Subaward Import” SmartForm.
   Upload the form, as completed by the subawardee, on the SF424 Subaward Import page.

8. If there is more than one subaward on the proposal, repeat steps 4-7 for each subaward.

9. Run the Create-Update SF424 activity from the Funding Proposal workspace.
   Select only the Subaward form and click OK. Navigate to the SF424 application to see the R&R Subaward Budget Form has populated with the sub data.

3.5.1 Subaward Reminders

- Always download the R&R Subaward Budget Form directly from your SF424 workspace. Using a different version or a file downloaded from Grants.gov or the funding opportunity will result in errors when trying to upload the form in the subaward budget SmartForm.
- Prior to uploading the form, review it to ensure all dates and amounts look correct. Click on the “Check Form for Errors” button in the subaward budget form itself. The form will not upload if there are errors; they will need to be corrected before the form can be uploaded to Princeton ERA. Also, the subaward dates must be the same as or within the proposal start and end dates. Subaward dates before and/or after the proposal end dates will result in an error while uploading the subaward budget form.
- Do not manually update the R&R Subaward Budget Forms within the SF424 application. They should always be mapped from the form which is uploaded to the Subaward Budget SmartForm.
- The Create-Update SF424 activity can be rerun to ONLY update a desired form, such as the SF424 Subaward Budget Form. Ensure only the checkbox next to that form is checked when you run it. If you would like to update additional forms, you can keep them checked as well.
  - It is important to note that any change you made to any field on the SF424 which was mapped from the Funding Proposal SmartForms or Budget will be overridden when you execute the Create-Update SF424 activity unless you uncheck that form in the Create-Update SF424 activity.
3.6 Validate for Submission and Submission Pre-Check

After you have created and updated your SF424, you will validate the submission and run a pre-check to confirm the application is ready for submission for Grants.Gov.

3.6.1 Validate Submission

After the SF424 has been thoroughly reviewed and is considered complete, validate the submission from the SF424 workspace.

Validating the submission will cause the SF424 to be locked from future editing once any errors have been resolved. If you are using the multi-prong approach, do not validate the submission until your finalized documents have been uploaded. Validating the submission will cause the SF424 to be in “Valid for Submission” State. This is a signal to your reviewer that all information in the application is considered final and ready for review.

On the SF424 workspace, click the Validate Submission Activity. This will run validation with built in NIH rules to ensure all required information appears for submission.

A new window will display an error or warning messages. Messages with a red circle icon indicate the issue must be resolved before submission. The yellow triangle icon indicates a warning message. Warnings should be reviewed prior to submission, but the application can be submitted with warnings.

Once all issues are resolved and only warnings appear you can click Continue. If there are no issues, you will automatically be brought to the Validate Submission page.

Verify the correct required and optional forms are selected.
Note: you may select to convert attachments or allow special characters, if applicable. ONLY allow special characters if permissible via sponsor guidance.

Click OK. The process will run and the window will close once its complete. The application will now be in Valid for Submission states. This mean it is ready for final review by the ORPA GCA before submitting to Grants.gov.
The application is now in a view only status. The blue button reads “View Grant Application” instead of “Edit Grant application.”

Notice that you may also reopen the application for editing using the Reopen for Edit activity on the left side of the page. This activity should be used in rare cases when updates are needed to the application, but it's already been validated. If the proposal has already been submitted for department and GCA review, ensure you communicate with reviewers about why the application is being reopened and what has been changed.

### 3.6.2 Submission Pre-Check

The submission pre-check activity is optional but can be run to ensure the SF424 data submitted is formatted correctly for electronic submission.

Click the Submission Pre-Check activity on the SF424 workspace.

A new window will open and provide a message letting you know if the xml generated is valid for submission.
Errors on this activity are extremely rare, but if an error appears – reach out to erasupport@princeton.edu for assistance troubleshooting.

4 SF424 Tracking and Next Steps

An ORPA GCA will review the SF424 and submit it to Grants.gov within Princeton ERA. This section outlines what the next steps are following validating the application for submission.

4.1 Application Submission and Checking Submission Status
Once the SF424 is in Valid for Submission state and the proposal has been routed to Specialist Review, the GCA will review the SF424 application and submit it to Grants.gov.

When a GCA is finished with their review, they will update the funding proposal status to Final SPO Review. While in Final SPO Review status, they will submit the application to Grants.Gov. The GCA will typically leave the proposal in Final SPO Review state until the S2S submission has been accepted and finalized in the NIH eRA commons. After successful submission is confirmed, the funding proposal will be in Pending Sponsor Review State.

When the GCA submits to Grants.Gov, Grants.Gov receives the application and internally process it. It will either by Rejected with errors or be sent on to the federal sponsor. The application will follow the path below.
The statuses from Grants.gov are sent directly to Princeton ERA. The Agency Tracking Number and Grant Tracking Number is transmitted as well.

To view this information, refer to the SF424 workspace or the funding proposal SF424 Summary tab.

These pages can be referenced to understand the progress of your application in submission to the sponsor.

### 4.2 Change/Corrected or Other Errors

If a proposal is Rejected with Errors from Grants.gov or you identify that changes are needed to the application after submission, work with your GCA to make the needed changes. Only the GCA can reopen the application, edit, and
submit change/corrected applications. The S2S process below will be followed for post-submission changes to the proposal.

If a Change/Corrected is needed, use the Send Email activity on the funding proposal workspace to alert your GCA. Include comments to let them know what changes are needed. The GCA will reopen the SF424 application, update the application type to Change/Corrected, add the Grants.Gov tracking number, make any needed changes, and resubmit the application.

5 NIH S2S Instructions

This section outlines instructions for the NIH opportunity types that can be submitted using Princeton ERA system-to-system (S2S) functionality. Each section covers considerations for the funding opportunity type when creating the funding proposal, budget, and SF424 application. This covers R, K, F, and DP opportunities.

5.1 NIH R Opportunities

The “R” opportunities represent NIH’s frequently used research grant programs. This section covers considerations to keep in mind when developing the funding proposal, budget, and SF424 application for your R opportunity. Always refer to the FOA to ensure all off the funding opportunity requirements and guidelines are met.

5.1.1 NIH R - Funding Proposal

- **Personnel Page**: List the PI and all other Senior/Key Personnel so that they will map to the SF424 R&R Senior/Key Person Profile Form. Associated documentation for these individuals will map to the SF424 too, so ensure the proper documentation is attached for each person. For research grant applications, typically the
Biosketch will be required and Other support documentation (the Current & Pending) is not required. Only upload the documents specified in the FOA.

- **Budget Periods & Key Dates Page**: Select if this will be Modular Budget or not on Question 6. Refer to the FOA to determine which budget form should be used for the application. NIH states that “Generally, you must use the R&R Budget Form if you are applying for more than $250,000 per budget period in direct costs, and you must use the Modular Budget Form if you are applying for less than $250,000. However, some grant mechanisms or programs (e.g., training grants) may require other budget forms to be used. Refer to your FOA and to the following instructions for guidance on which Budget Form to use.”
  - If you will use the R&R Budget Form, leave the default answer of “No.” If you will use the Modular Budget Form, update the answer to “Yes.”

### 5.1.2 NIH R - Budget

- **Refer to the FOA for any budgeting limits**. Some research grants may include budget limits based on the activity code or the specific FOA.
- **Salary Cap**: Ensure that if any faculty are over the NIH Salary Cap they are budgeted accordingly. In these cases, a 12 Month Appointment should be selected, and the Base Salary should be entered as the NIH Salary Cap of $197,300. No inflation should be applied as this will lead to cost sharing in out years.

### 5.1.3 NIH R - SF424 Application

- **Ensure you select the appropriate budget form** when generating the SF424 with the Create-Update SF424 activity (Research & Related Budget or PHS 398 Modular Budget may be permitted).
- **Research related documents should be uploaded directly to the SF424**. This includes the Project Summary/Abstract, Project Narrative, Specific Aims, Research Strategy, and any other documents that may be required on the R&R Other Project Information page or PHS 398 Research Plan per the FOA.
  - Always refer to the FOA for the complete list of required documents. Also consider the application type requirements (e.g. Renewal/Revision applications may require a Progress Report).
Confirm all page limitations are met as described in the Table of Page Limits and FOA. If these two differ, the FOA requirements supersede the table page limits. Please note that for R opportunities the Specific Aims is typically limited to 1 page, while the Research Strategy may vary based on the activity code.

5.2 NIH K Opportunities
The “K” opportunities represent NIH’s frequently used career development awards (CDA). This program seeks “to provide individual and institutional research training opportunities (including international) to trainees at the undergraduate, graduate, and postdoctoral levels.” This section covers considerations to keep in mind when developing the funding proposal, budget, and SF424 application for your K opportunity. Always refer to the FOA to ensure all unique requirements are met.

5.2.1 NIH K - Funding Proposal

- General Proposal Information/Personnel Page - Principal Investigator: The career development candidate should be listed as the PD/PI. This will map to the SF424 R&R Form and R&R Senior/Key Personnel Profile Form. Ensure their biographical sketch is provided; a Current & Pending is generally not required unless specified by the FOA.
- Personnel Page – Mentor & Co-Mentors: For mentored career development awards, add the mentor to field 1a Mentor and to 3a Project Personnel. Add any co-mentors to field 3a Project Personnel.
  - Mentors only entered in 1a will not map to the R&R Senior/Key Personnel Profile Form. Senior/Key Personnel or Other Significant Contributors entered in Question 3 will map to the SF424 with the information provided for them.
  - For all mentors and co-mentors, ensure their eRA Commons username is provided. Provide a Biographical Sketch and Current & Pending, unless otherwise noted by the FOA.
  - Enter their Project Role as “Other (Specify)” and for Project Role Category field list “Mentor” or “Co-Mentor” as applicable.
  - Applications may also include collaborators, consultants, and advisory committee members. These individuals are generally not added as senior/key personnel but refer to NIH guidance to determine the full list of senior/key personnel. Personnel who you may wish to list on the proposal but do not want to map to the SF424 can be listed as “Other Personnel”.

5.2.2 NIH K - Budget

NIH K - General Proposal Information

- Select that the budget does not use a standard Base and Rate on Question 3. Enter the FA Cost Base as TDC and the Rate as 8%. For most career development award applications, indirect costs are reimbursed at 8% of modified total direct costs rather than on Princeton’s negotiated rate agreement.
• Transitional career development awards may have out-years at a different FA rate; Update those years on this chart. The same Princeton ERA budget may have different FA rates per period. For example, the K99/R00 may have a 0% FA rate for the R00 Independent Phase.

### Non-standard F&A cost base and rates

<table>
<thead>
<tr>
<th>Period</th>
<th>F&amp;A Cost Base</th>
<th>Start</th>
<th>End</th>
<th>Rate</th>
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</tr>
<tr>
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<td></td>
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<td>7/31/2023</td>
<td>8%</td>
</tr>
<tr>
<td>3</td>
<td></td>
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<td>7/31/2024</td>
<td>0%</td>
</tr>
<tr>
<td>4</td>
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<td>7/31/2025</td>
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</tr>
<tr>
<td>5</td>
<td></td>
<td>8/1/2025</td>
<td>7/31/2026</td>
<td>0%</td>
</tr>
</tbody>
</table>

### NIH K - Personnel Budgeting

• Only the candidate should be budgeted. Include their base salary, person months, and requested salary and fringe benefits. Career development programs typically include a minimum effort requirement of nine person months of 75%. Ensure the minimum effort requirement is met per the FOA.
  o Requested salary should be based on the institution base salary at the time the application is submitted, and not adjusted for any limitations. Any adjustments for salary limitation will be made at the time of award.
• If this is a K99/R00 and the R00 years are to be budgeted as “Other” due not budget Salary and Benefits for the Personnel on the Personnel Cost page. Enter the candidates Effort % but set Sal Req and FB to “0”. Salary and FB requested will be included in the “Other” general cost type.
• In the K99/R00, a cost share budget is not needed for the difference in Effort % and Sal Req %. Due to the difference in Effort and Salary Requested per the opportunity requirements, Princeton ERA will automatically display a cost share message on the budget. It will say “This budget has a salary overage of $X. Use the Cost Share creator to properly capture these costs.” Ignore this message. DO NOT create a cost share budget. DO NOT use the “create-update cost share commitment” activity.

### NIH K - General Cost Type Budgeting

• General Cost Types for K should be itemized by cost type.
  o Please note that NIH may indicate on an FOA that all General Cost Types can be entered as “Materials and Supplies.” However, they also state in the general SF424 K instructions that applicants can enter costs in the applicable detailed budget categories as well. They specifically state that those submitting S2S may opt for this approach. The applicant is responsible for ensuring that the total research development costs do not exceed the allowable total.
  o If you are unsure how to budget for a particular funding opportunity, please reach out to your GCA.
• For transitional career development awards, some years may be budgeted on an itemized level while others should be budgeted as Other. For the K99/R00 all K99 years should be budgeted on the itemized level by using...
the general cost types. For the R00 years, budget all costs (including personnel) as the general cost type “Other”. Enter the description “R00 Independent Years”.

5.2.3 NIH K - SF424 Application

- **SF424 R&R Form - Cover Letter Attachment:** Ensure the cover letter is uploaded directly to the SF424 application, as required per the FOA.
  - Mentored Career Development Award (CDA) applicants must include a cover letter with a list of referees; Non-mentored CDA applicants are encouraged but not required to include the cover letter. Refer to the FOA for additional details.

- **R&R Other Project Information Form:** Attach documents directly to the SF424 application. Project Summary/Abstract should summarize the research project and describe the candidate’s career development plan, career goals, and the environment in which the career development will take place. This attachment is typically limited to 30 lines of text. The Project Narrative should describe the relevance of the project in 3 sentences. Refer to the FOA and Table of Limits to confirm all restrictions are met.

- **R&R Senior/Key Person Profile Form:** Confirm candidate (PI) and any mentors/co-mentors map from the FP. If the mentor was listed on the Funding Proposal SmartForm – Personnel Page 1a but not 3a Project Personnel, they will not map and must be manually added here. Add the Mentor, with a Role of “Other (Specify)” and type the category of “Mentor”. Ensure their biographical sketch, Current & Pending, and eRA Commons username are included.

- **PHS 398 Career Development Award Supplemental Form:** This form should only be used for submitting a career development award or for multi-project applications with an “Indiv. Career Dev” component. Refer to the FOA for guidance on completing this section, as some sections of the form are required for all CDA applications while others are only needed if specified by the FOA. Attach all documents directly to the SF424 (such as Specific Aims, Research Strategy, and Candidate Background and Goals).

- **PHS Human Subjects and Clinical Trials Information:** CDA applicants who are not proposing a clinical trial should follow the standard forms for completing this page. If the applicant is proposing an independent clinical trial or proposing to gain clinical trial research experience under a mentor’s supervision, should confirm the FOA allows this and follow specific NIH guidance for that scenario.

- **R&R Budget Form:** All career development applications must use the R&R Budget Form; The Modular Budget Form is not permitted. Confirm budgeting instructions are followed per the applicable FOA.
  - **A. Senior Key Person Section:** Only the candidate should be budget. Ensure effort and salary guidelines are followed.
  - **Transitional Career Award Applications follow unique budgeting requirements.** For the mentored phase of these awards, budgets are negotiated with the sponsoring intramural laboratory. For awardees who receive the approval to transition to the extramural phase of these awards, a budget will be required as part of the extramural sponsored application
  - **For the K99/R00, confirm K99 years are budgeted with itemized cost types. For the R00 years, confirm section F. Other Direct Costs includes the total requested (including for Personnel costs). The line will map as “Other”, so manually update the line to say “R00 Independent Phase.”**
  - **Budget H. Indirect Costs:** Confirm this section is completed in compliance with the FOA. Career development awards are typically setup with an MTDC base at indirect cost rate of 8%. FA Rate may vary based on period for transitional career development awards.
5.3 NIH F Opportunities
The “F” opportunities represent NIH’s Fellowship Awards. This program seeks to “provide individual research training opportunities to fellows at the graduate and postdoctoral levels.” This section covers considerations to keep in mind when developing the funding proposal, budget, and SF424 application for your F opportunity. Always refer to the FOA to ensure all unique requirements are met.

5.3.1 NIH F - Funding Proposal
- **General Proposal Information/Personnel Page- Principal Investigator:** The Fellow should be listed as the PD/PI. This will map to the SF424 R&R Form and R&R Senior/Key Personnel Profile Form. Add their biographical sketch; a Current & Pending is typically not required unless specified by the FOA.
- **Personnel Page – Sponsors & Co-Sponsor(s):** Add the primary sponsor to field 1a Mentor and to 3a Project Personnel. Add any co-sponsors to field 3a Project Personnel.
  - Mentors only entered in 1a will not map to the R&R Senior/Key Personnel Profile Form. Senior/Key Personnel or Other Significant Contributors entered in Question 3a will map with the information provided for them.
  - Sponsors and co-sponsors should be identified as senior/key personnel, even if they are not committing any specified measurable effort to the proposed project.
  - For all sponsors and co-sponsors, ensure their eRA Commons username is provided. Provide a Biographical Sketch. Current & Pending is typically not needed, unless specified by the FOA.
  - Enter their Project Role as “Other (Specify)” and for Project Role Category field list “Sponsor” or “Co-Sponsor”, as applicable.
  - Applications may also include collaborators, consultants, and advisory committee members. These individuals are generally not added as senior/key personnel but refer to NIH guidance to determine the full list of senior/key personnel. Personnel who you may wish to list on the proposal but do not want to map to the SF424 can be listed as “Other Personnel”.

- **Compliance Review Page** – Ensure any associated IACUC or IRB protocols are listed with the proper designation, as these will map to the SF424.
  - If the fellow is participating in research supported by a research project grant for which the IRB review or IACUC review has already been completed, approved, or exempt then the current designation is sufficient, provided the IRB or IACUC determines the participation of the Fellow does not substantially modify the research. Ensure the appropriate designations are provided.

5.3.2 NIH F - Budget
- **Enter the budget using standard budgeting practices.** The total will map to the SF424 R&R Form Total Federal Funds Requested.
• Refer to the NIH Research Training and Career Development website for current stipend and other budgetary levels.
• For F32s, the stipend as per the NRSA scale should be filled in for the personnel budget and the institutional allowance should be budgeted as a general cost.

• On the SF424, PHS Fellowship Supplemental Form section will need to be completed manually; It will not map from the Princeton ERA budget. However, it is important to ensure that these budgets match.

5.3.3 NIH F - SF424 Application
• SF424 R&R Form: Ensure fields are filled out appropriately. Fellow should be listed as the PD/PI. Cover letter containing a list of the applicant’s references (including name, departmental affiliation, and institution) should be uploaded directly to the SF424.
• R&R Other Project Information Form: Ensure additional documents are uploaded directly to the SF424 such as the Project Summary/Abstract, Project Narrative, Foreign Justification (if needed), Bibliography, and Facilities & Other Resources. Refer to the FOA and Table of Limits for guidance. Review IRB and IACUC protocols mapped over from the funding proposal.
• Project/Performance Site/Location(s) Form: Ensure the sponsoring organization (Princeton) is one of the sites included. Typically, this will be the primary location. If training described in the Research Training Plan will be conducted in multiple locations, add the additional locations.
• R&R Senior/Key Person Profile Form: Confirm candidate (PI) and any sponsors/co-sponsors map from the FP. If the sponsor was listed on the Funding Proposal SmartForm – Personnel Page 1a but not 3a Project Personnel, they will not map and must be manually added here. Add the sponsor, with a Role of “Other (Specify)” and type the category of “Sponsor”. Ensure their biographical sketch and eRA Commons username are included.
• PHS Fellowship Supplemental Form: This form is used specifically for submitting fellowship application. Review the FOA to determine which sections of the form are required and how to properly fill them out. Upload all required attachments directly to the SF424.
  • Please Note: Fellowship applicants and sponsors are strongly encouraged to speak with a PHS Program Official for Institute- or Center (IC)-specific guidance before preparing this application.
  • Budget Section – Budget information will not map to this section from the funding proposal. Enter the budget information on this form, and ensure it matches the funding proposal budget.
• PHS Human Subjects and Clinical Trails Information – Fellowship applicants who are not proposing a clinical trial should follow the standard instructions for completing this form. If the applicant is proposing to gain clinical trial research experience under a mentor’s supervision, they should confirm the FOA allows this and follow specific NIH guidance for that scenario. Independent clinical trials are not permitted for Fellowships.

5.4 NIH DP Opportunities
The NIH Director’s Pioneer Award “supports individual scientists of exceptional creativity who propose highly innovative and broadly impactful research towards the ultimate goal of enhancing human health.” This section covers considerations to keep in mind when developing the funding proposal, budget, and SF424 application for your DP opportunity.

5.4.1 NIH DP - Funding Proposal
• Personnel Page – Ensure the PI’s current & pending is uploaded and up to date.
• Personnel Page – Project Personnel Section – Senior Key Personnel and Other Significant Contributors added here will map to the SF424. Typically, additional key personnel should not be listed on the SF424 R&R Senior/Key Person Profile. Personnel who you may wish to list on the proposal but do not want to map to the SF424 can be listed as “Other Personnel” in this section.
5.4.2 NIH DP - Budget
NIH DP - Personnel Budgeting

- Do not budget DP awards using the cost type of “Other”.
  Even though this opportunity does not have a SF424 detailed nor modular budget form, “other” should not be used. This is because the effort must be tracked in Princeton ERA; this effort will also appear on the Current & Pending Support report.

- Effort Requirements based on the FOA:
  Pioneer awardees are required to commit the major portion (more than 6 person-months or at least 51%) to activities supported by the Pioneer Award research project in the first three years of the project period. See the FOA for additional details.

- Use the Effort Distribution Tool to calculate your Effort and Salary Requested to enter in Princeton ERA.
  - For example, the available total effort is 4.5 academic months (one-half of a 9 month academic year) + 2.5 summer months = 7 months
  - 51% of 7 months of research effort is 3.57 months, which could include summer charged to the award.
  - The effort distribution tool needs to be used to calculate the percentage of summer separately from the overall project effort. For example:
    - The overall percent effort (equivalent to 3.57 months) is entered into the “effort” box in the Princeton ERA budget.
    - The percent summer effort (equivalent to 2.5 months) is entered into the “salary requested” box in the Princeton ERA budget. The “salary requested” is charged to the sponsor.

- No cost share budget or cost share commitment activity are needed in Princeton ERA for DPs.
  Due to the difference in Effort and Salary Requested per the opportunity requirements, Princeton ERA will automatically display a cost share message on the budget. It will say “This budget has a salary overage of $X. Use the Cost Share creator to properly capture these costs.” Ignore this message. DO NOT create a cost share budget. DO NOT use the “create-update cost share commitment” activity.

- No cost share ancillary reviews are needed either.
  The department approver is approving the large effort commitment by approving the proposal.

- Keep in mind that AY time commitment to research cannot exceed 4.5 months across the C&P if funded without DOF approval.

NIH DP- screenshots when the PI’s salary is at or over the NIH Salary Cap:

These screenshots corresponded to the example in the previous section.

- On the “Personnel Cost Definition” page:
  - Appointment: 12 months
  - Base salary applied: The NIH salary cap ($197,300.)
  - Apply inflation rate: No
• The effort distribution tool for 3.57 months displays 29.75% to be entered into the Princeton ERA “Effort” box:

<table>
<thead>
<tr>
<th>Faculty or Non-Faculty Personnel</th>
<th>Faculty over the NIH Salary Cap*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong># Months in Base Salary (Appointment Type, typically 9 or 12)</strong></td>
<td>12</td>
</tr>
<tr>
<td><strong># Months in Budget Period (Typically 12)</strong></td>
<td>12</td>
</tr>
<tr>
<td><strong># Person Months Budgeted (see table below)</strong></td>
<td>3.57</td>
</tr>
<tr>
<td>Effort Percentage to be entered into Princeton ERA</td>
<td>#DIV/0!</td>
</tr>
<tr>
<td>% Effort in Princeton ERA</td>
<td>29.7500000%</td>
</tr>
</tbody>
</table>

• The effort distribution tool for 2.5 summer months displays 20.8333333% to be entered into the Princeton ERA “Sal. Req.” box:
Enter the percentages in Princeton ERA:

**Personnel Costs**

<table>
<thead>
<tr>
<th>Person: Eli Willis (testpi2)</th>
<th>Effort:</th>
<th>29.75%</th>
<th>29.75%</th>
<th>29.75%</th>
<th>29.75%</th>
<th>29.75%</th>
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<td>35.6%</td>
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</tr>
<tr>
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<td>$197,300.00</td>
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<td></td>
</tr>
</tbody>
</table>

This cost share message will appear on the budget workspace; ignore it:

NIH DP - General Cost Type Budgeting

- General Costs should be budgeted at the itemized level within Princeton ERA. Do not budget all general costs as “Other.”

5.4.3 NIH DP - SF424 Application

- **SF424 R&R Cover Page** – Fill in the Agency Routing Identifier with the proper Science Area Designations. Refer to the FOA for codes and abbreviations.
- **Research and Related Senior/Key Person Profile** – Do not complete for additional personnel. Information should only be provided for the PD/PI. Other key personnel are not required but may be included in the Essay. Review if personnel have mapped from the funding proposal and update as needed.