FOA Tracker Resource Tool

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Project Context

What is a FOA?

Funding Opportunity Announcement

A FOA is an **announcement** where folks can receive funding for certain research initiatives that they want to partake in.

The FOA goes through **multiple stages** from creation of the idea to when grants are awarded to applicants.

What is the FOA Tracker?

A multi phase web app to resolve branch's pain points and create a more effective workflow

The FOA Tracker is a web application tool to compile and visualize the FOA planning and implementation process.

This resource will display and clarify the FOA process with the different DERT business units.

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Who are our users?

Scientific Program Officer

Develop FOA initiatives and manage the programmatic, scientific, and technical aspects of the FOAs

Scientific Review Officer

Assemble scientific panel and manage initial review for FOA grant applications

Grants Management Specialist

Negotiate, award, and obligate grant funds and keep track of NIEHS fiscal year budgets

DERT Leadership Committee

Supervise all DERT related activities and oversees FOA planning and implementation process

MAIN USER GROUPS

User Research & Synthesis

Research Goals

1. Understand the FOA planning and implementation process from proposal to awards

2. Hear users' thoughts and experiences with the current workflow

3. Identify ways the different business units contribute to and collaborate within the FOA process

4. Uncover and highlight pain points users have about FOA planning

User Interviews

Conducted 10 interviews with **Program Officers, Scientific Review Officers, Grants Management Specialists,** and **DERT Leadership Committee members**

Key Pain Points

Difficult to visualize FOA process and its different stages

The Division manages around 100 FOA initiatives (all at different stages of the FOA process and with multiple dates for multiple years), which makes it difficult to visualize the timeline for all the existing FOAs and to estimate planning for future FOA timelines.

Lack of transparency about FOA planning

There is a lack of communication between the different business units when it comes to planning out projected timelines and budgets for FOAs, causing workload inefficiencies.
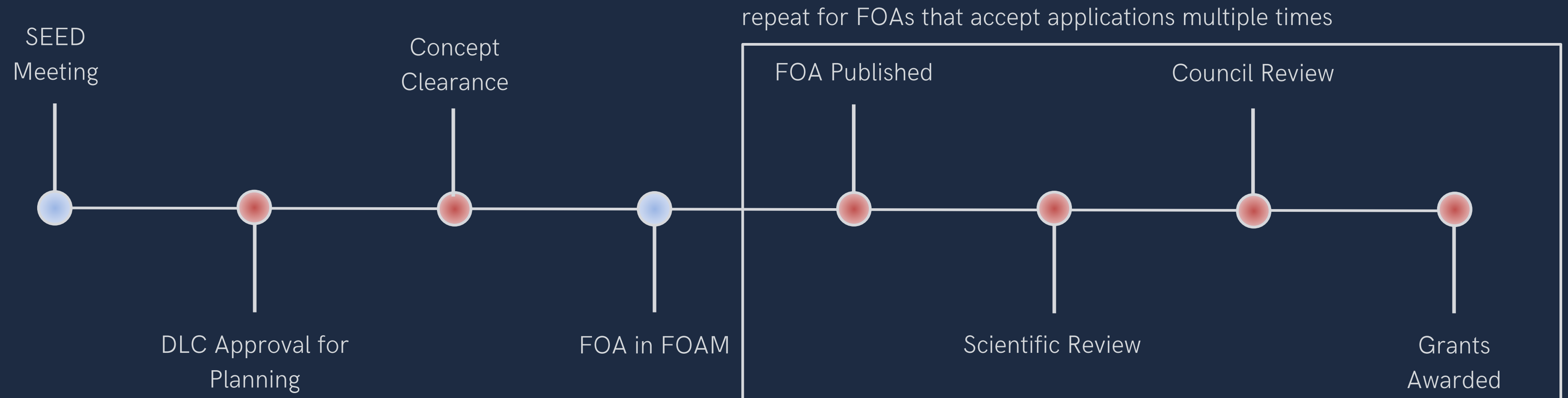
Challenges with workload and budget management

Tracking staff workload and budgets for future fiscal years is challenging as is because there are no data visualizations displaying this information, causing frustrations with staff, work overload, and not meeting budget goals sometimes.

Role

I oversee the creation of new FOA ideas.
I interact with Scientific Review and Grants Management branches to plan out FOA details and projected timelines.
Sometimes, I must manage multiples FOAs at one time.

Goals

Because I keep track of information from multiple FOAs, I want to visualize dates and other related data into separate visualizations.
I care about the upcoming dates for the FOAs I author, so I want a way to see and understand what dates I have to pay attention to.
My goal is to visualize FOA timelines for future fiscal years.

Scientific Program Officer

Motivations

I hope to ease my future monthly workload per month by viewing the existing timelines and planning future FOA concepts around these dates.
I hope to create more dialogue between the different branches to plan out this timeline in a way that doesn't overwhelm them.

Frustrations

There are not only regular dates, but also multiple dates per year (sometimes spanning multiple years) for these FOAs, which is difficult to visualize in a Microsoft Excel spreadsheet.
There are currently no visualizations to showcase FOA timelines and their duration, causing frustration when I want to plan out new FOAs since I cannot estimate well.
I don't remember my points of contact that I need to collaborate with on a FOA.

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Role

As an SRO, I organize the merit review for all FOA applications, so I keep track of dates related to the merit review.
I work with Program Officers and Grants Management Specialists for purposes related to the FOA I'm reviewing.

Goals

I want to have a visualization showing me information about dates and points of contact for FOAs.
I want to be able to update FOA information regarding dates and points of contact.
I need to keep track of how many FOAs need review for a certain round in order to plan out future workloads per merit review round.

Scientific Review Officer

Motivations

I want to create more communication between the 3 branches with the FOA planning and implementation process.
I want to be able to understand the data better in order to create insights on how to plan out my future workload.

Frustrations

I cannot keep track of all the dates – from concept clearance dates to scientific review dates, the ones I find most important.
I do not know who I need to contact to ask questions about the FOA I am in charge of reviewing.

Role

My main responsibility as a GM Specialist is that I work on a budget plan for the approved FOA applications that have been approved for funding. I work mainly with Program Officers as my point of contact regarding anything with the FOA.

Goals

I want to visualize dates related to the earliest start date for when the grants will be rewarded. I want to know which Grants Management and Program Officer folks to contact in order to coordinate how to plan out projected timelines.

Grants Management Specialist

Motivations

I want to improve workload inefficiencies caused by not having funding plans on time.
I want to perform my duties with budgets better and to have more communication with the FOA I am tasked to fund.

Frustrations

I do not know much information about the FOA timelines and how budgets are considered into this projected timeline.
I do not have a way to forecast how the workload will look like for me unless I am able to see a funding plan.

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Role

As a committee member, I oversee all operations within the DERT branch, including the FOA planning and implementation process and tracking that workflow.
I have to see big picture of FOA related data in terms of workloads and budgets.

Goals

I hope to visualize overall FOA information for the current and future fiscal years
I need a way to display future FOA budgets in order to see what new FOAs can be allocated.
I want to keep track of all new FOA concepts and see timelines for all of them.
Having historical FOA data (duration of a timeline, past FOAs, etc.) is important to me.

DERT Leadership Committee

Motivations

I want to better estimate these timelines and have a better way to plan out projected dates.
I want to improve workload inefficiencies and make sure we are working towards our goal budget by the end of the fiscal year.
I want to create more transparency between the 3 branches to see a monthly review of tasks.

Frustrations

There is currently no way to visualize budgets for multiple fiscal years.
It's very hard to handle multiple FOAs with different due dates, which is very important when planning out future fiscal years.
Sometimes dates are not as accurate as they should be on our Excel spreadsheet since they are changed over time depending on workload.

Competitive Analysis

I wanted to learn more about existing visualization software, especially ones that use timeline visualization, so I identified 4 software solutions that provides me a start to designing a custom solution.

|	Tableau	Qlik Sense	Microsoft Power BI	Microsoft Project
Timeline Features	Tableau's main timeline visualizations are Gantt charts.	Community examples show timeline visuals to help represent different stages and duration of a process.	Power BI can incorporate timeline visuals. Also, it can connect with Microsoft Project to create own solutions.	Its focus is to visualize timelines of big projects, usually in a Gantt format.
Cost	Around $2k/year	Existing NIH licenses	NIEHS subscription	Can get through OIT
Pros	Has visuals to resolve workload and budget pain points Can show regular FOA timelines	Visuals are easy to read, and universal access to data Examples show timelines that show FOAs with multiple dates	Can connect with Microsoft products and can import data Can create custom dashboards	Can connect with Microsoft software to customize solution Helps manage workloads
Cons	Gantt charts are hard to read Difficult to show FOA timelines with multiple receipt dates	Can't download reports to Microsoft Excel Lots of technical glitches in features	May not handle complex table relationships Hard to learn Can't configure user's visuals	Difficult to show multiple FOAs in one dashboard Project files aren't shareable outside of Project
Notes	https://public.tableau.com/app/profile/robertrouse/viz/GenesisGenealogy/GenesisTimelinefromAdamtoAbraham Community example of a potential solution	1)https://developer.qlik.com/garden/5c38a38f1f9bf60010baa65e 2)https://github.com/kai/qlik-sense-timeline Sample Community examples	https://timelinestoryteller.com/#examples Community example	https://techcommunity.microsoft.com/t5/project-blog/monitor-resource-allocation-with-project-power-bi-template/ba-p/2492453 Community Example

FOA Data Dictionary

Important definitions for key components of the FOA Tracker

Provides insight into the source of data and its place in the FOA timeline

Solves the issue of standardization of FOA data inputs

| Column Name	Column Description	Data Format	Permissible Inputs	Source of Data
FON (FOA #)	Funding Opportunity Announcement	Alphanumeric	e.g. PAR-19-134	NIH Guide Notices
Cofund?	Incoming funds from another source	Alphabet	Yes, No, Potential	Input by representative of DLC
Activity Code	Specified activity code from NIH.	Alphanumeric	All activity codes (Multi-select), Administrative Supplement (admin_sup), Not permissible	NIH Guide Notices
Title	Title of Funding Opportunity Announcement	Alphanumeric	Free-text format	NIH Guide Notices
Lead Authors	Scientific/Research Contact(s) for Grant	Alphabet	Free-text format (Multiselect), Not determined	NIH Guide Notices
Funding Line/ Source	The organization sponsors the grant funding	Alphabet	Single select - RPG, SRP, WTP, Training, Centers, Other, WTP - Opioid, SBIR	Input by representative of DLC
FOA Stage	Stage of FOA processing	free-text format	e.g. 'published'	Generated automatically based on the process timeline
Set-Aside Amount (from FOA)	Organization-assigned money for FOA	single-select (numeric)	Numerical entry, No set aside (0), or undetermined	NIH Guide Notices
Expected Awards (high end)	Maximum number of grants that could be awarded	single-select (numeric)	Integers or None Stated	NIH Guide Notices
Council round (concept)	Date of council review for approval of FOA concept	numeric	yearmonth (i.e. 202005)	Input by representative of DLC
Fiscal Year $	Year of funding disbursement	numeric	year (i.e. 2021)	Derived field from "Earliest Award Date"
Council round (review)	Date of second level of review for grant application	numeric	mm/yyyy (i.e. 11/2019)	NIH Guide Notices
Posted Date (NIH Guide)	Date when FOA Released on Website	numeric	dd/mm/yyyy (i.e. 4/11/2019)	NIH Guide Notices
Open Date (Earliest Submission Date)	The date when FOA starts accepting applications	numeric	dd/mm/yyyy (i.e. 4/11/2019)	NIH Guide Notices
Letter of Intent Due Date(s)	The date of confirmed intent to apply for the grant	numeric	dd/mm/yyyy (i.e. 4/11/2019)	NIH Guide Notices
Application Due Date(s)	The date that the grant application is due	numeric	dd/mm/yyyy (i.e. 4/11/2019)	NIH Guide Notices
Scientific Merit Review (Month from FOA)	The planned date of council review of application	Alphanumeric	Month Year (i.e. March 2021), 'standard dates'	NIH Guide Notices
Scientific Merit Review (Actual start dates)	The actual date of council review of application	numeric	dd/mm/yyyy (i.e. 4/11/2019)	Input by representative of SRB
Number of review days	The time required to complete the merit review	numeric	number entry (i.e. 15)	Input by representative of SRB
ES Review Officer	Scientific Review Officer who oversees FOA policies	Alphabet	Last, First (i.e. Latoni, Alfonso); committee name (i.e. CSR, SRB)	NIH Guide Notices
Advisory Council Review	Date of second level of review for grant application	Alphanumeric	Month Year (i.e. March 2021), 'standard dates'	NIH Guide Notices
Earliest Start Date	The date of earliest disbursement of grant money	numeric	dd/mm/yyyy (i.e. 4/11/2019)	NIH Guide Notices
GM Contact	The Grant Management Contact	Alphabet	Last, First (i.e. Latoni, Alfonso)	NIH Guide Notices
Expiration Date	The FOA expiration date	numeric	dd/mm/yyyy (i.e. 4/11/2019)	NIH Guide Notices

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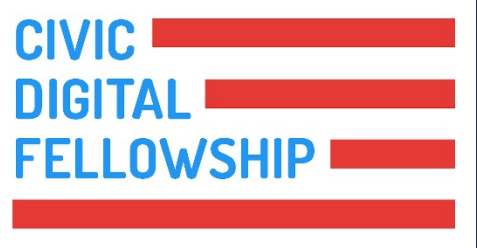
How can folks better visualize, understand, and plan out the FOA process as is?

Recommendation


Utilize Gantt Charts to manage project timelines.

o Competitive analysis shows most software utilize Gantt charts as
their main timeline visualization.
o Gantt charts showcase significant dates in a process and the time
duration it takes to complete a certain stage of the project.
o Will help keep track of dates of multiple FOAs and provide
historical timeline data to use for better estimation when planning
future FOA timelines
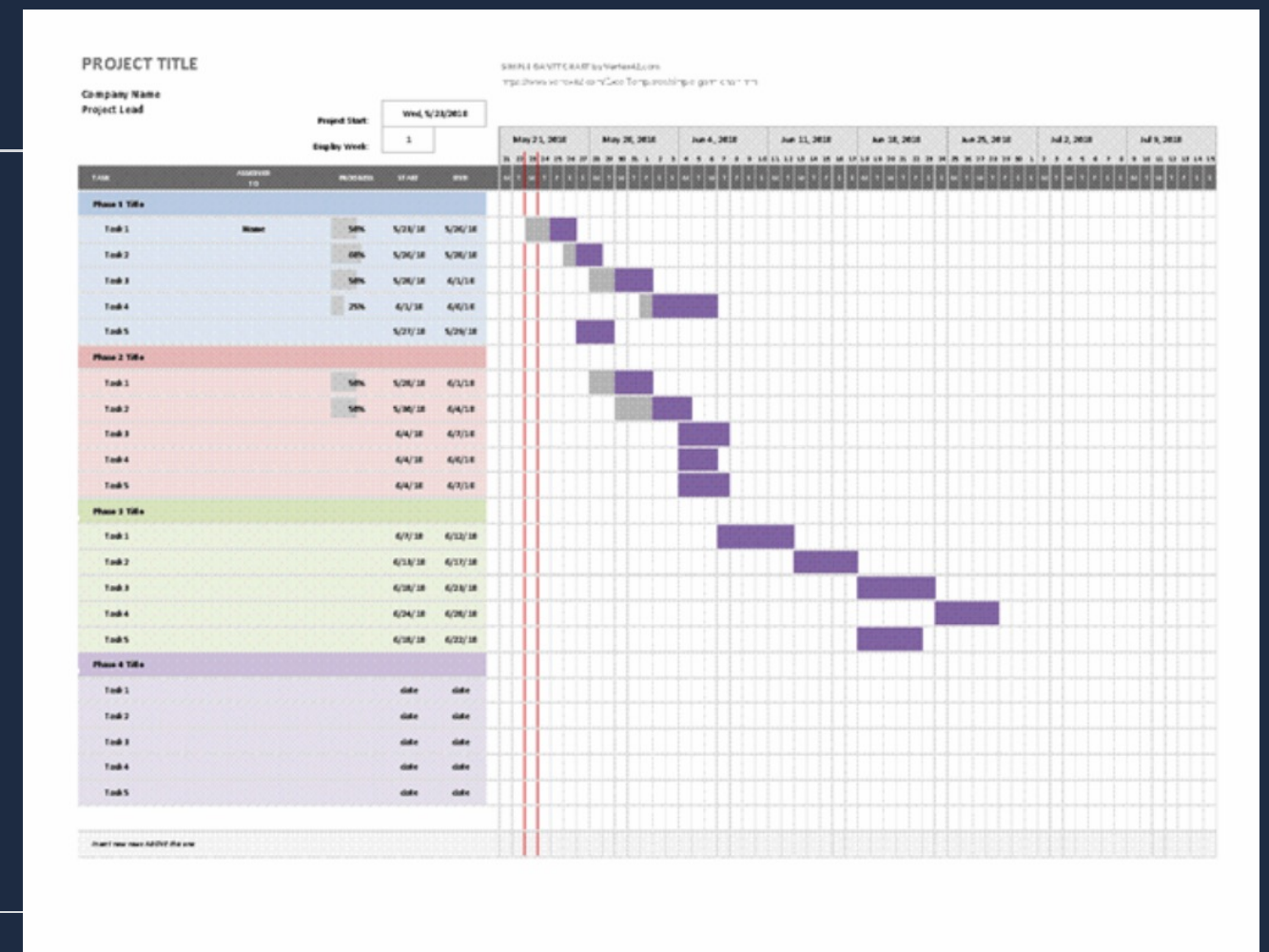
# Recommendation

Microsoft tools addresses the most needs.

o From observations and analysis, Microsoft Power BI and Microsoft Project can connect with each other to create a customized solution for the branch's needs.
o Power BI offers interactive visualizations to help manage member workloads and budgets for fiscal years. Project offers timeline visualizations to keep track of deadlines and other FOA info.
o Using existing software saves on costs for branch.
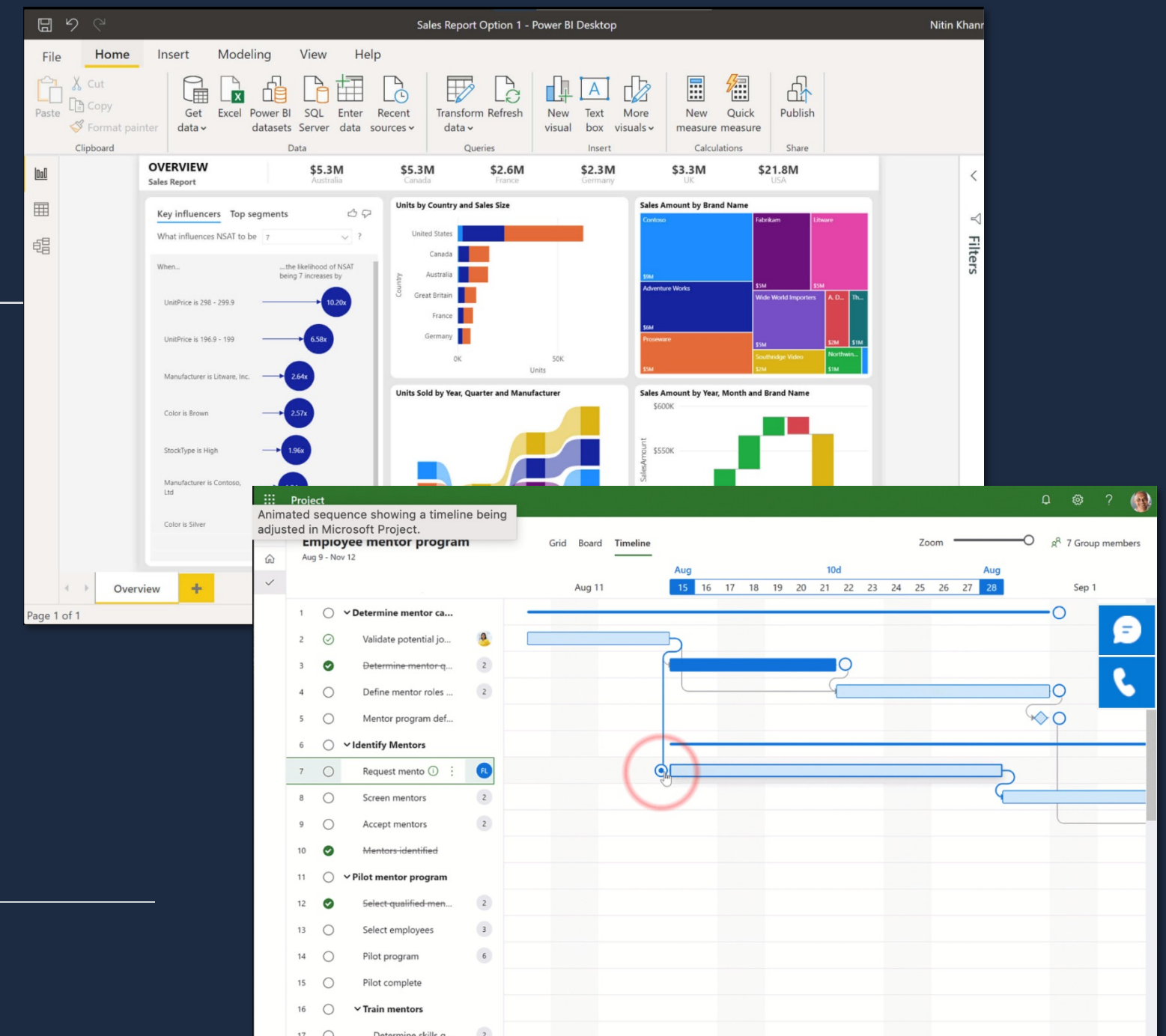
Recommendation

Developing a custom web app with automation.

o Users explicitly said they want a custom solution with automated data for dates, saving them time on manually tracking info.
o A custom solution can resolve edge cases such as tracking FOAs with multiple dates per year or multiple dates for multiple years.
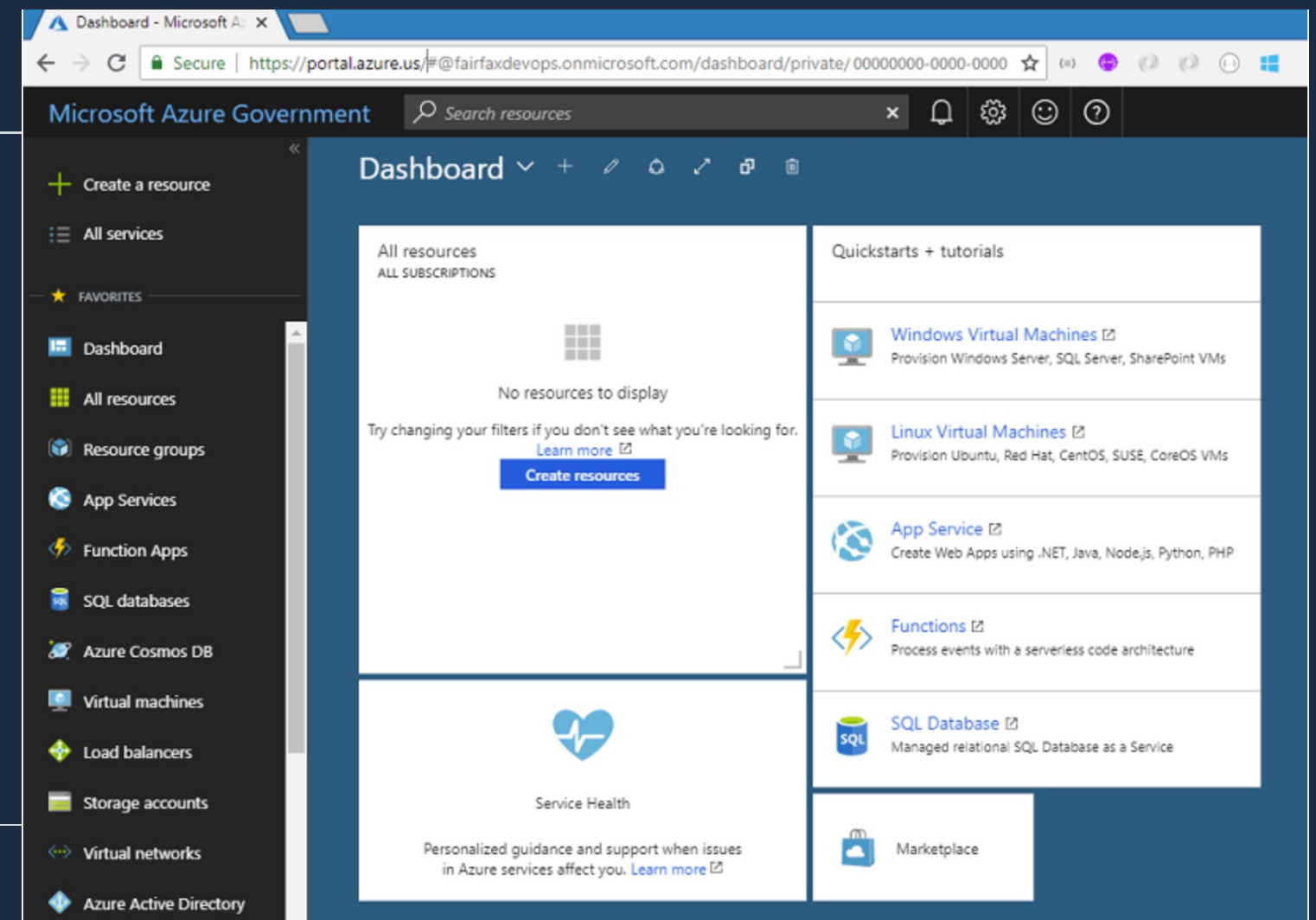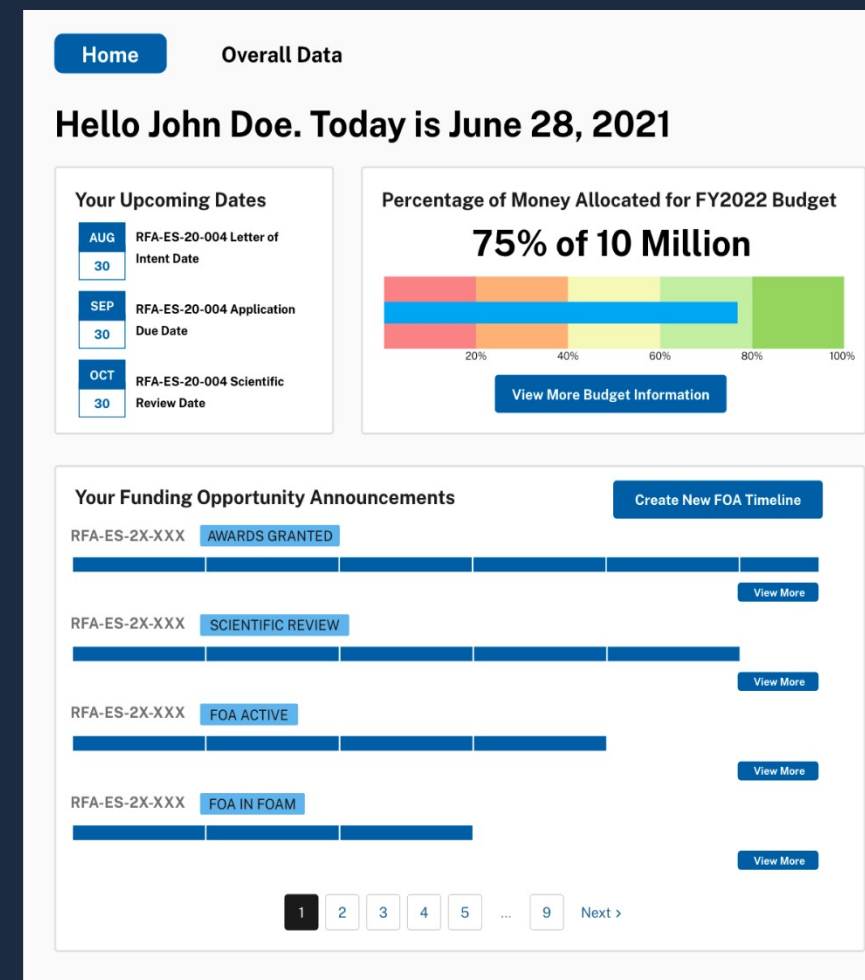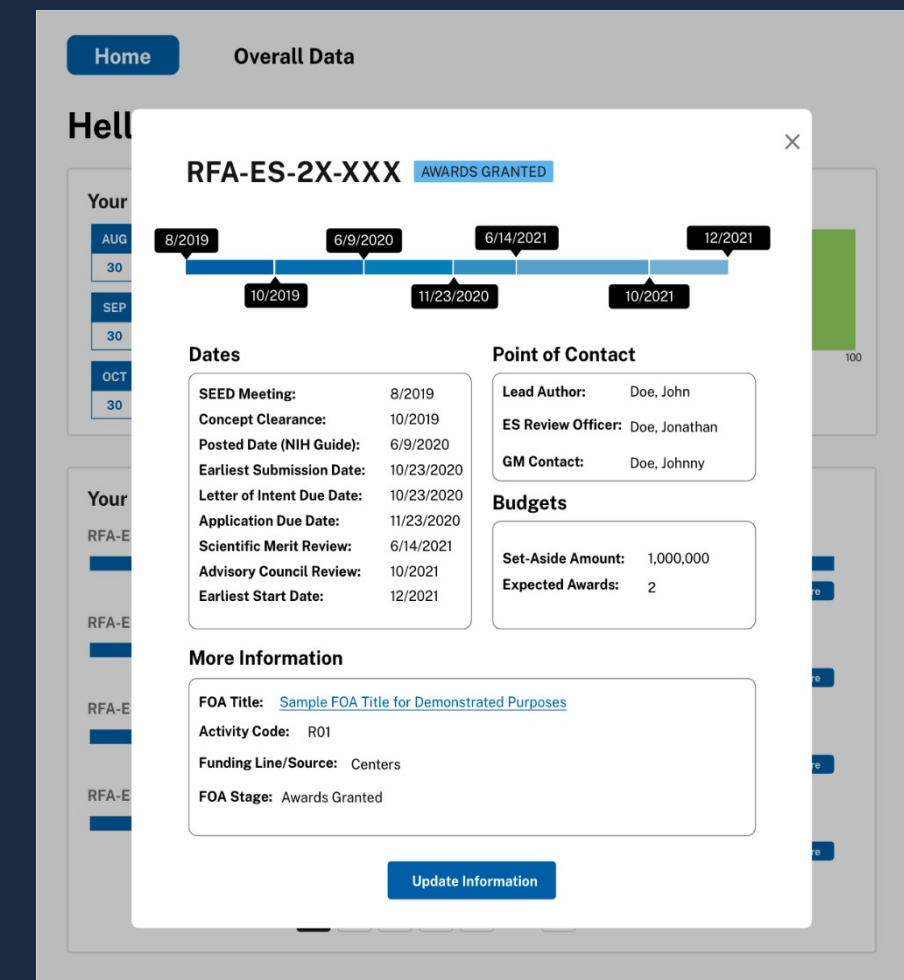
First Iteration of Designs

After creating my user personas, I created my first iteration of designs using **Adobe XD** and validated my ideas before going back to user research to better understand the problem so that my designs reflect more user needs.

All FOAs Page

Home Page

FOA Details Modal

FOA Tracker Resource Tool Progress

Ryan's Work

Everything After Ryan

Building the Foundation

Created data dictionary, which helped folks understand source of data

My fellow intern and I created the data dictionary in order to understand the necessary data to track during the FOA process and the source of data. This helped understand how to create a future backend database to pull information from for this resource tool.

Drew process diagram, which shows FOA process as is to improve upon it

The process diagram displays the current steps of the FOA process and the data associated with each step. By creating the diagram, I helped highlight pain points within the process in order to suggest ways to improve upon it and increase communication between folks.

## Wrote up timeline viz summary, which proposed potential implementable solutions

Writing up the timeline visualization research summary aided in folks' understanding of how to implement the custom web app solution they want out of this project by showing existing software, comparing these software, and providing visualization recommendations.

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Along the way, I learned...

I learned how to extensively conduct user research and synthesis through different methods in order to understand users and frame the problem.

I learned the complicated federal process of FOA planning and implementation, which I want to give myself credit for.
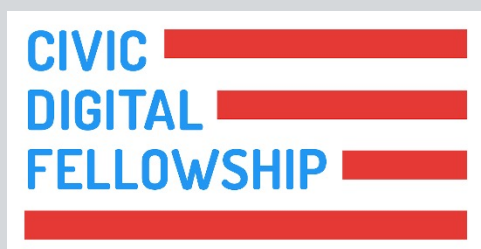
With more time, I would...

I would have conducted user surveys to gather information about folks' experiences with the FOA process from a wide range of users.

I would have wanted to ask more specific and clear questions in my user interviews to gather the information I was looking for at first.

Thank You!

NIEHS DERT

Chris Duncan
Christie Drew
Kristi Pettibone
Steven Tuyishime

Mentors

Eric Chiu

My Fellow Fellows

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