



A UX Approach to Data Visualizations and Navigation

UCOP Tableau User Group
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Kelsey Heider
Institutional Research and Planning Analyst,
UCOP - IRAP

Anna Ahearn
Lead UX Designer, UCLA - IT Services

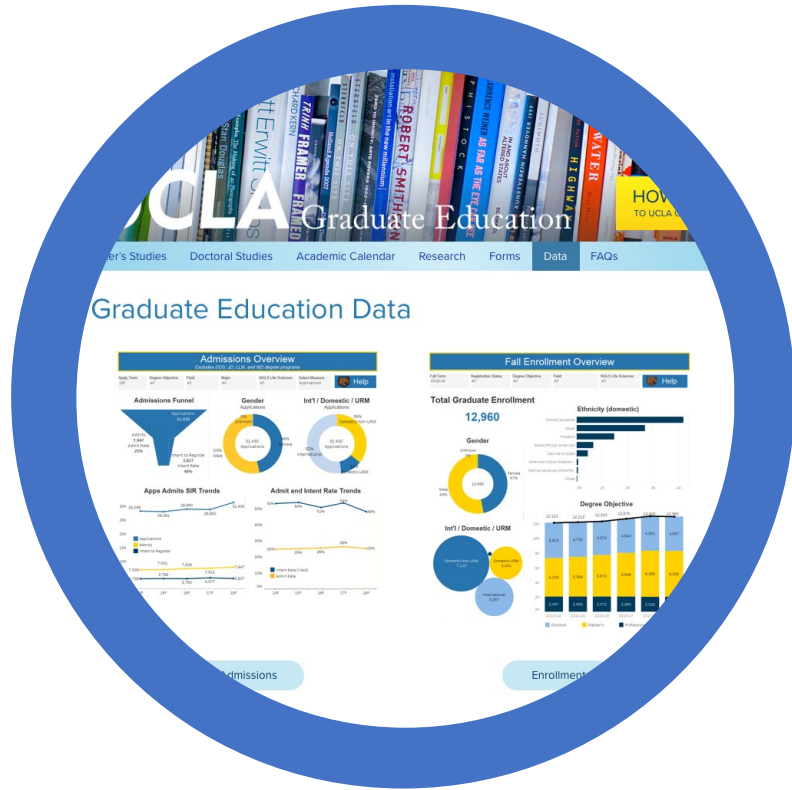
Project background



UCLA Graduate Division

- ~13,000 graduate students; ~900 postdocs
- ~55 staff members
- Decentralized IT and IR teams

Project background



Roll out first public dashboards

- First set of dashboards published
 - Admissions
 - Enrollment
- Second set of dashboards published
 - TTD/Completions
 - Postdocs
 - Doctoral Career Outcomes

Countless resources exist to guide us in designing dashboards that are understandable, but how do we know if people are interacting with our dashboards in the way we intended?

Let's find out with a User Experience (UX) approach

Introduction to UX

What is UX?



UX is not:

“We want you to make this dashboard look pretty.”

It's this:

“User experience encompasses all aspects of the end-user’s interaction with the company, its services, and its products.”

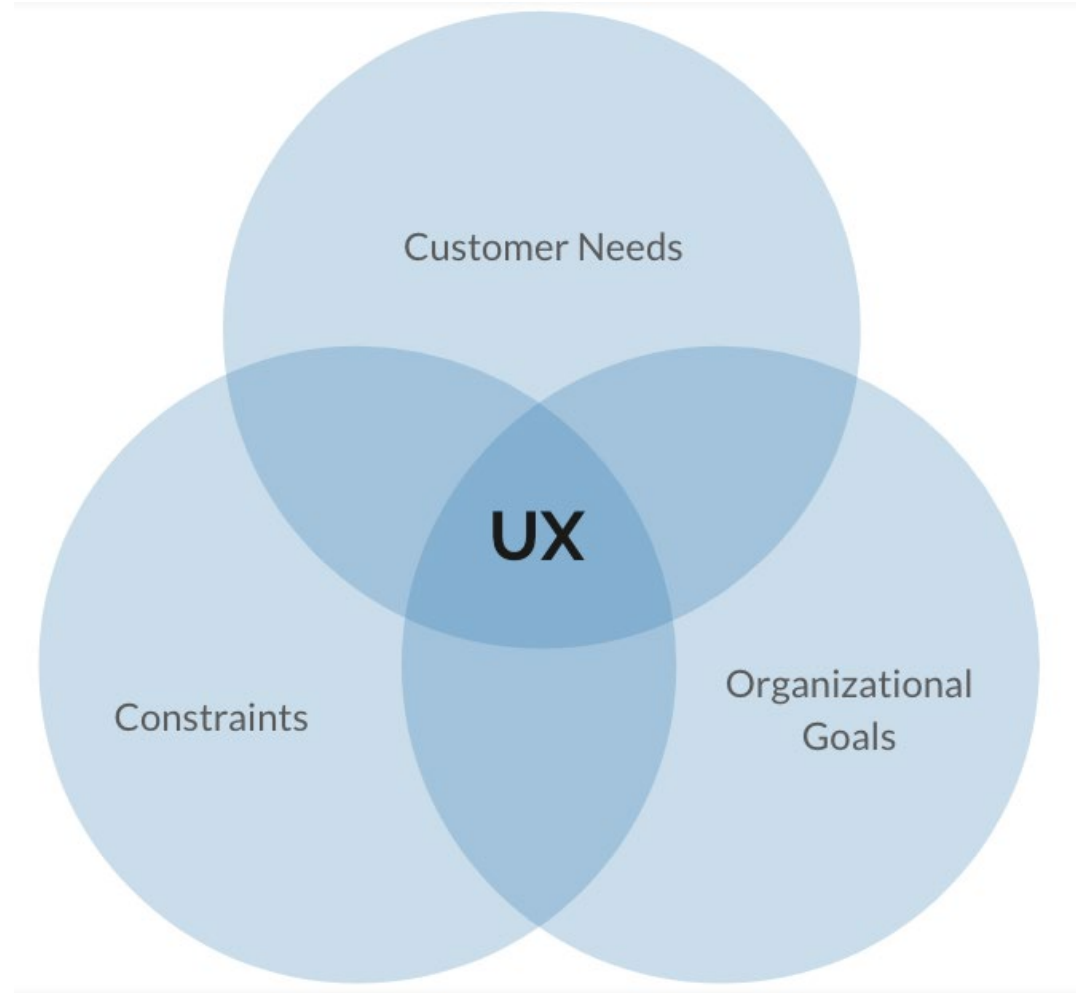
Don Norman and Jakob Nielsen of the Nielsen Norman Group

In other words:

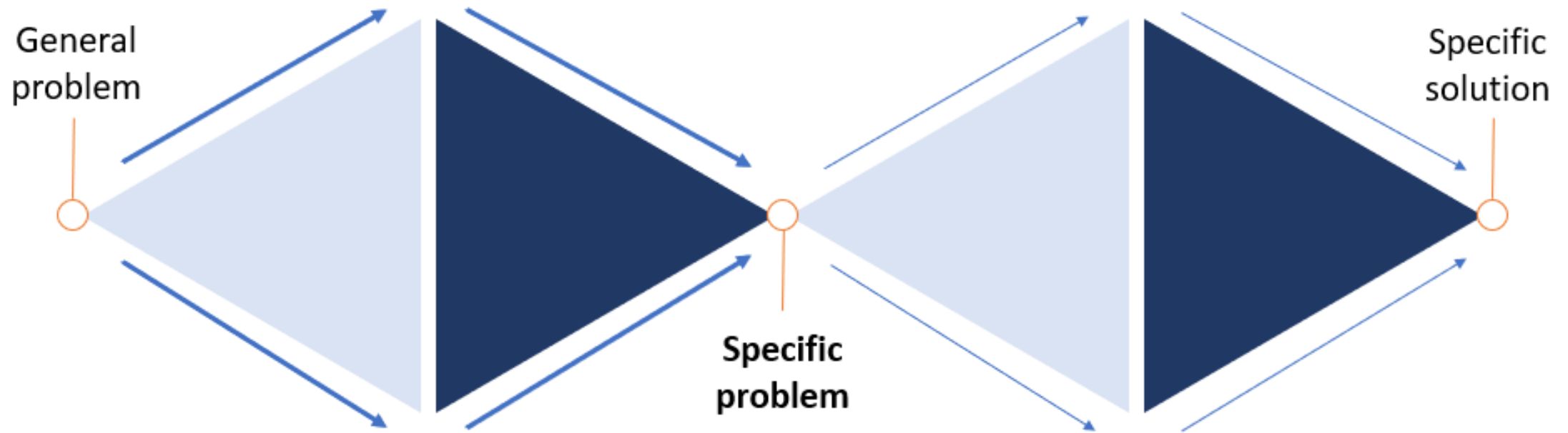
A UX team wants to make everything your organization does easy to use.

(including dashboards!)

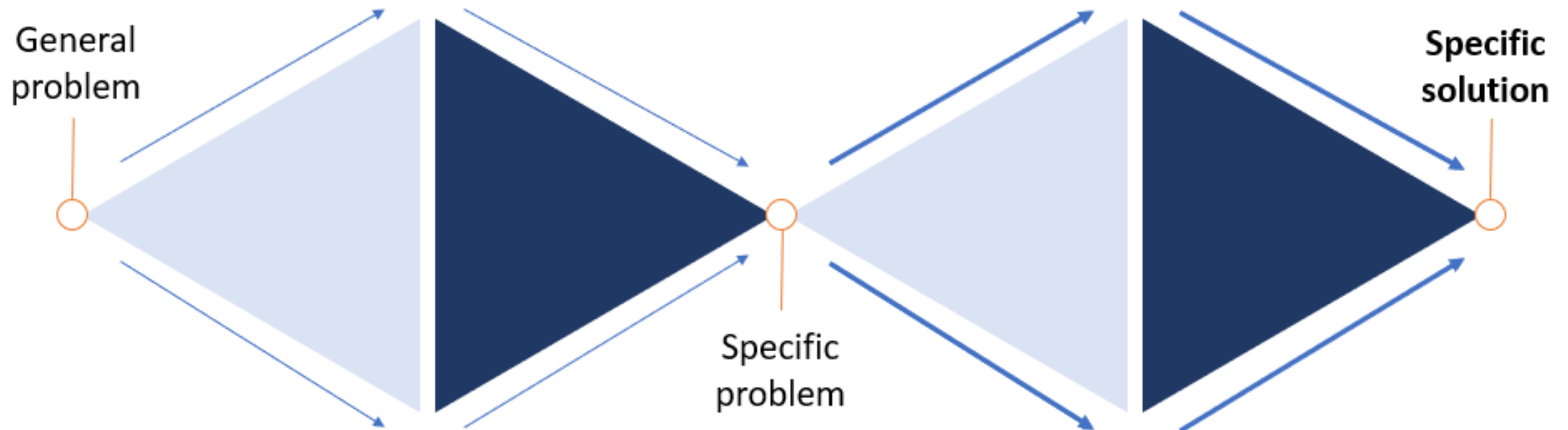
UX in practice



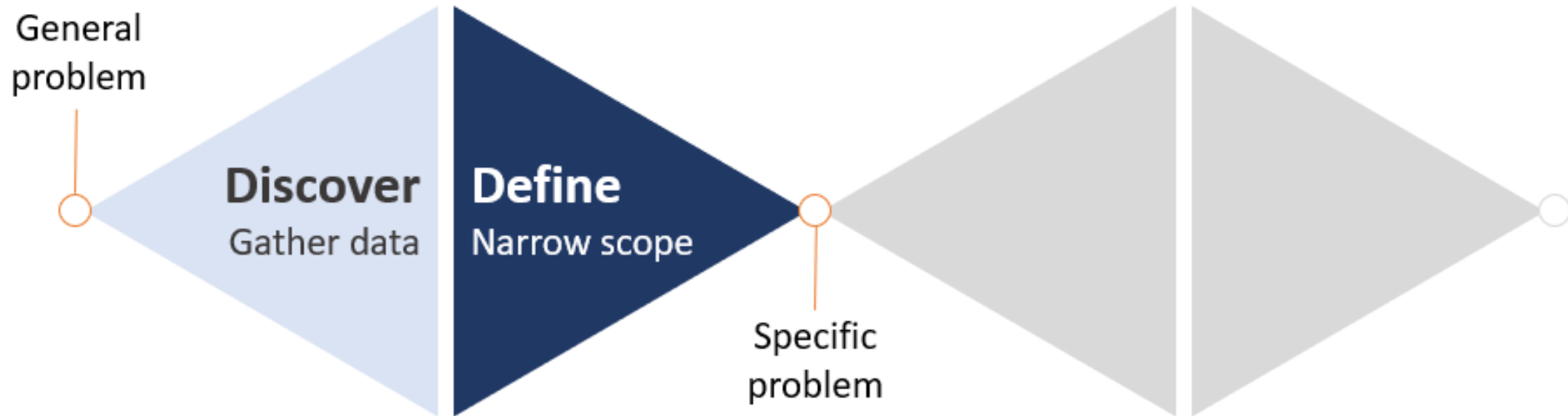
How UX approaches a project



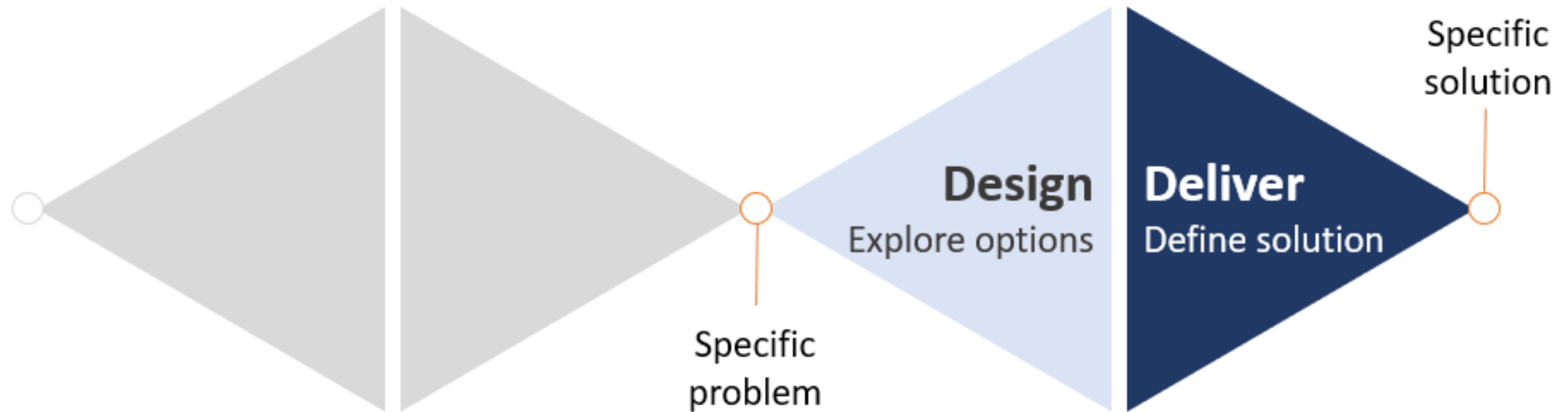
How UX approaches a project



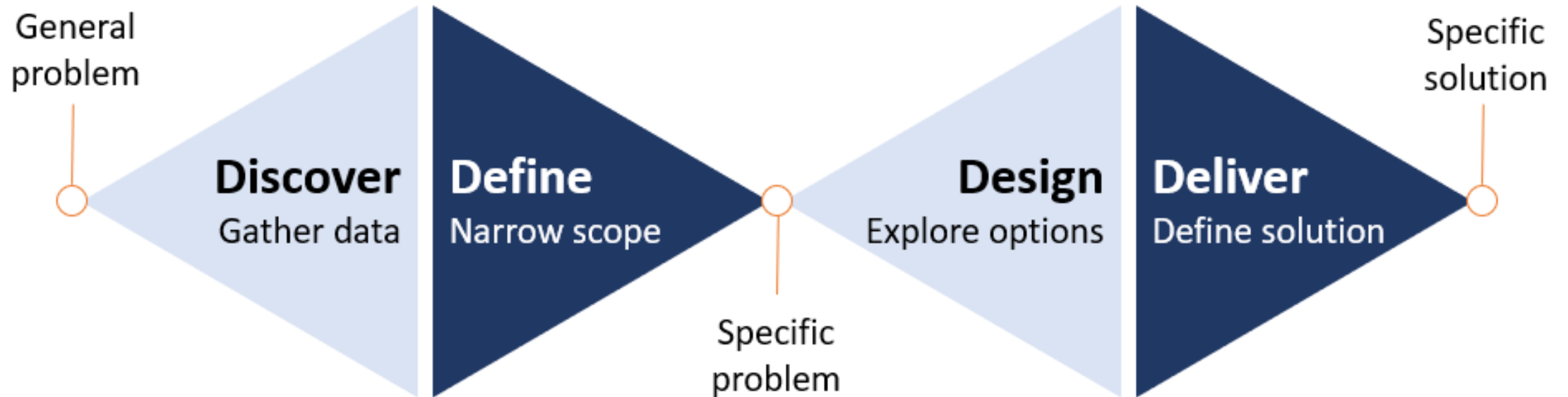
Diamond 1: Definition



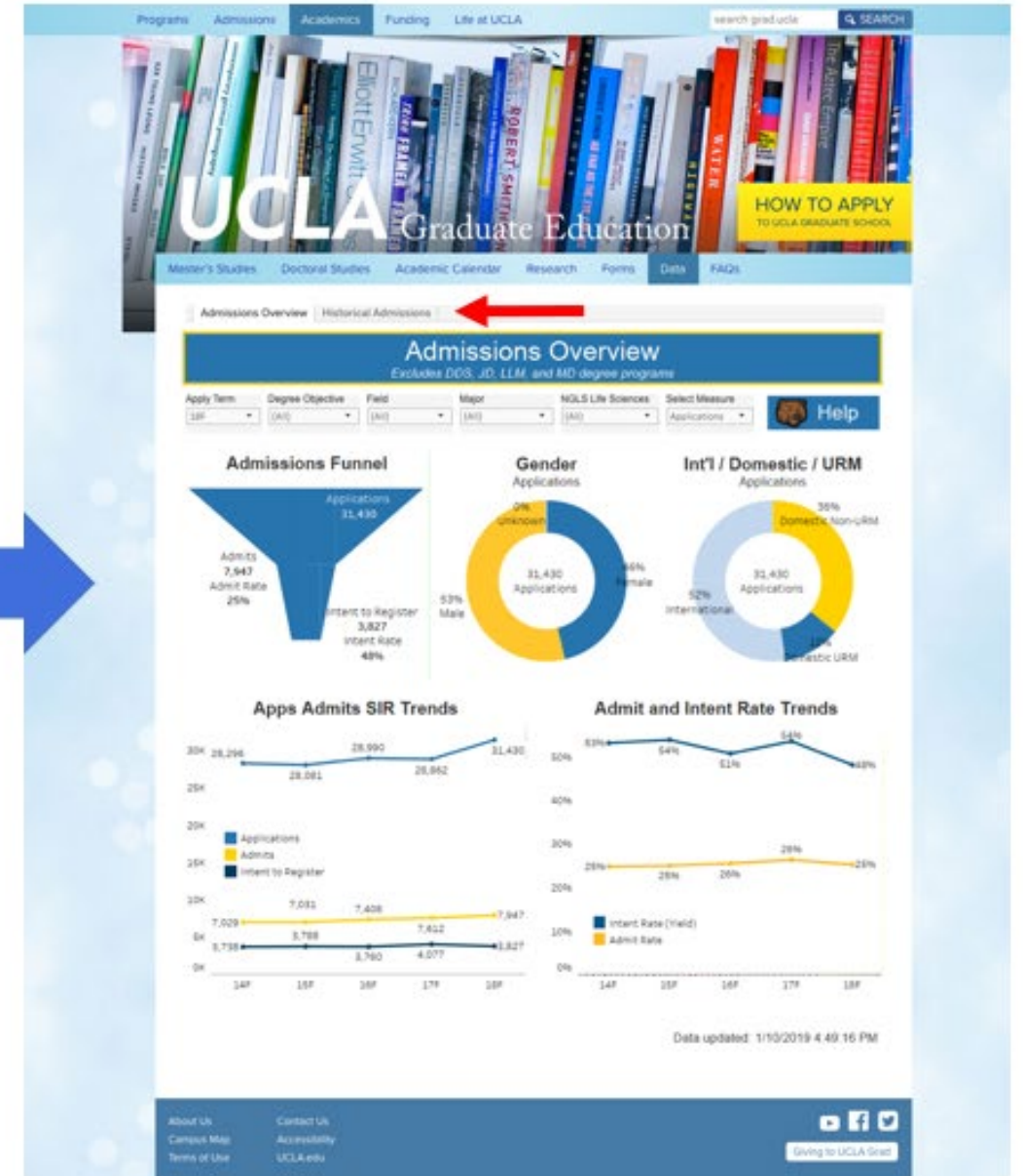
Diamond 2: Execution



Putting it all together



A UX approach in practice



General problem 1

We suspect people aren't finding our dashboards

General
problem



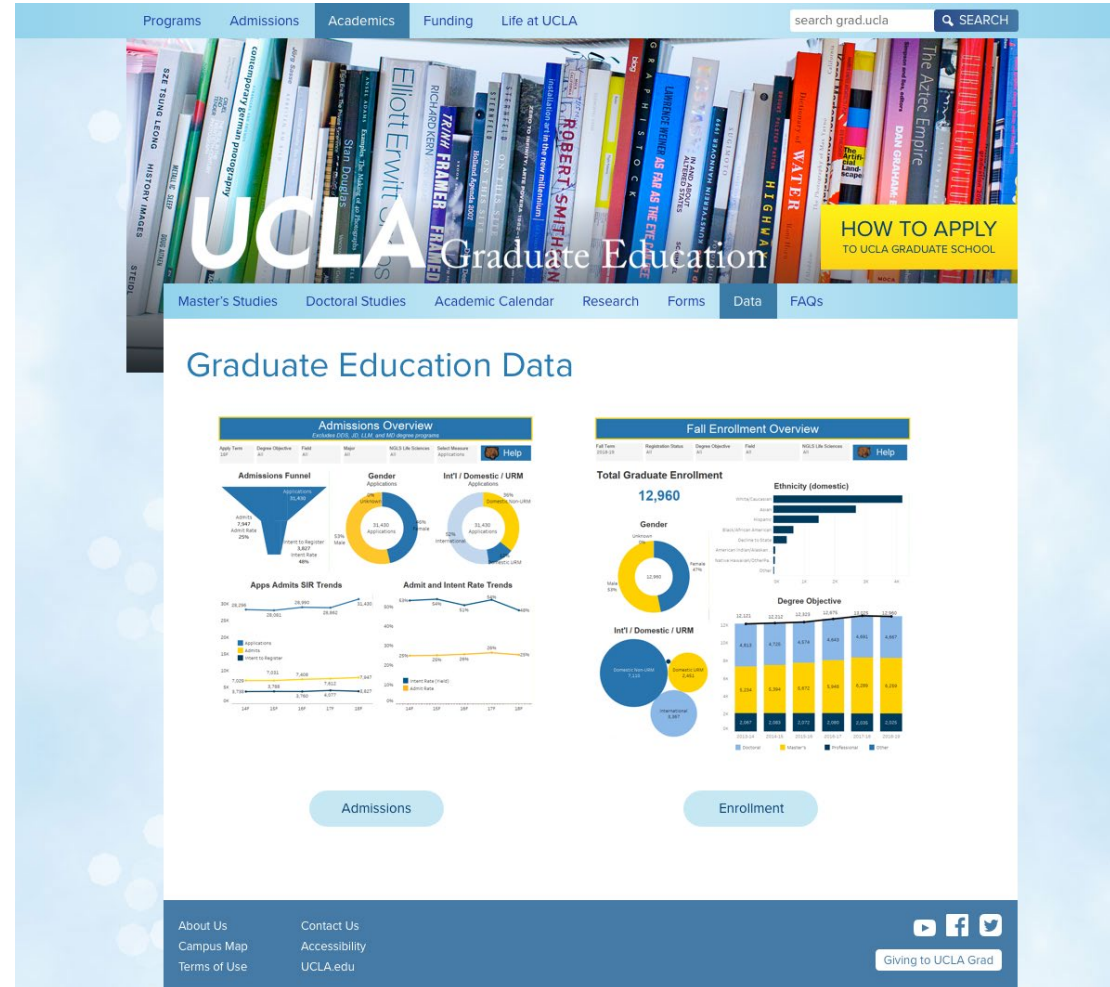
Discover
Gather data

Define
Narrow scope

Design
Explore options

Deliver
Define solution

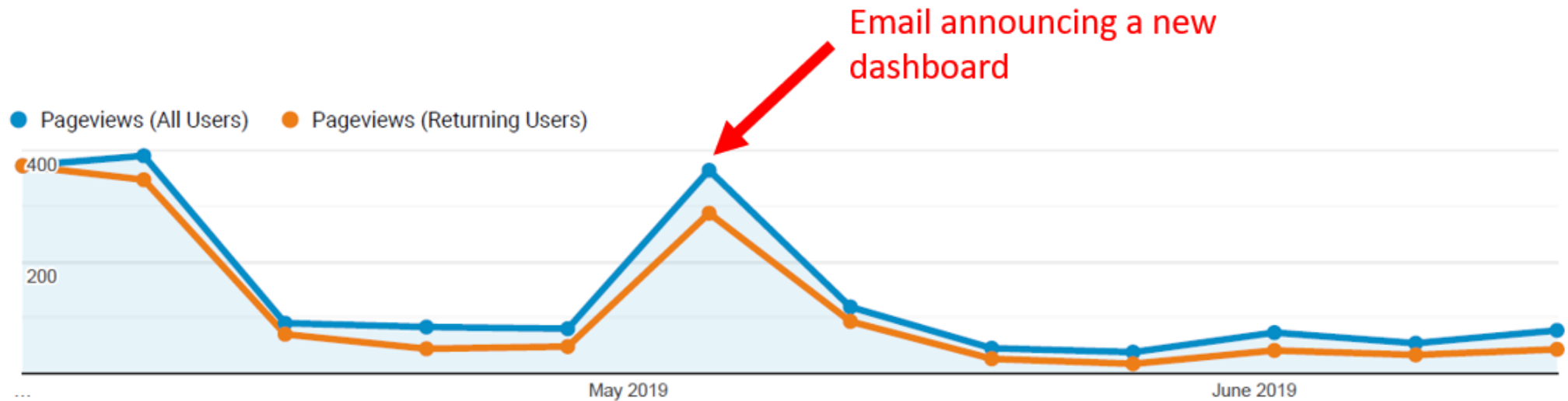
Gather data about the landing page



Google Analytics

Traffic to new public dashboard landing page

<100 pageviews each week



Gather data about existing Program Stats page

UCLA graduate data

Q All Images News Maps Shopping More Settings Tools

About 13,700,000 results (0.51 seconds)

Program Statistics | UCLA Graduate Programs

<https://grad.ucla.edu/programs/program-statistics>

Statistics on **graduate** education at **UCLA** for prospective applicants. **Data** reported includes admissions, enrollment, diversity, and number and type of degrees awarded. (Program Statistics is also known as Program Profile Report). Each report presents five years worth of **data**.



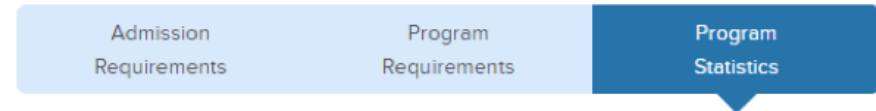
Program Statistics

Statistics on graduate education at UCLA for prospective applicants.

Data reported includes admissions, enrollment, diversity, and number and type of degrees awarded. (*Program Statistics* is also known as *Program Profile Report*). Each report presents five years worth of data.

To see a program's statistics, type a program's name.

lookup statistics for a program



Program Profile Report: Aerospace Engineering

ADMISSIONS DATA

Average Number of Applicants	160
Average Number of Admits	67
Percent of Applicants Admitted	42%
Average Number of New Registrants	22
Percent of Admits Registered	33%

Applications, Admits, and New Registrants data are the averages for Fall 2009 - Fall 2013.

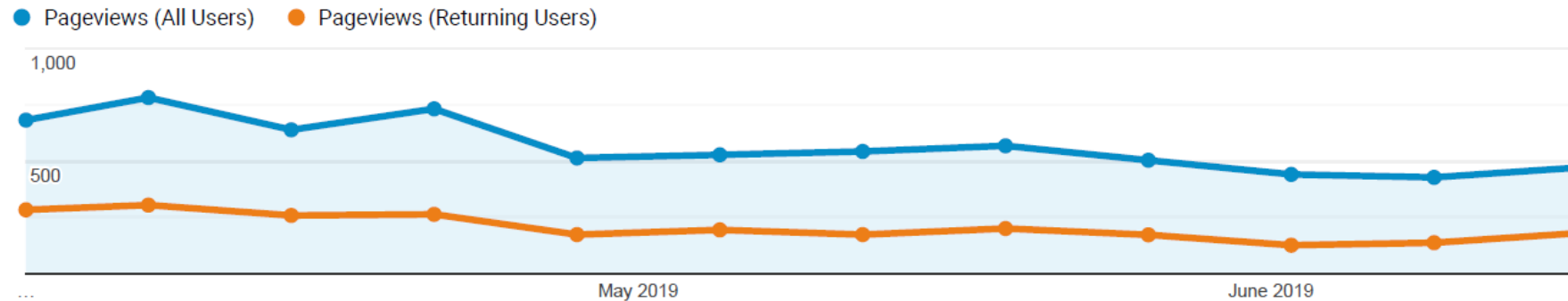
Percent of Applicants Admitted = number of admits divided by number of applications.

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Google Analytics

Traffic to existing program statistics search page

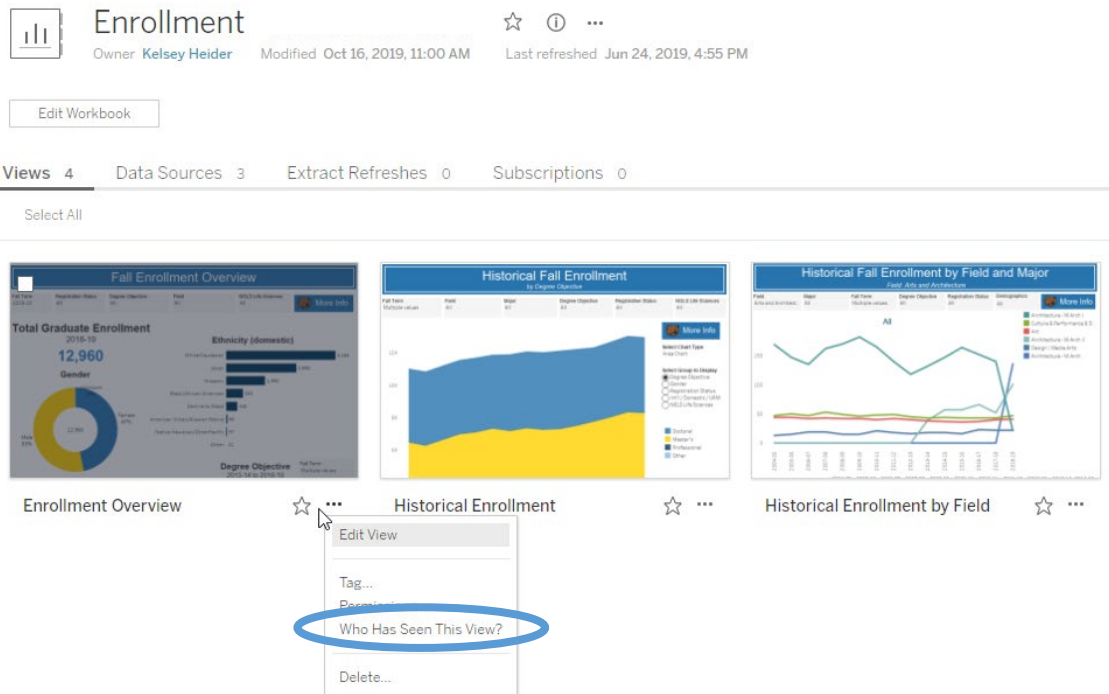
~500 pageviews each week



Gather data about the dashboards

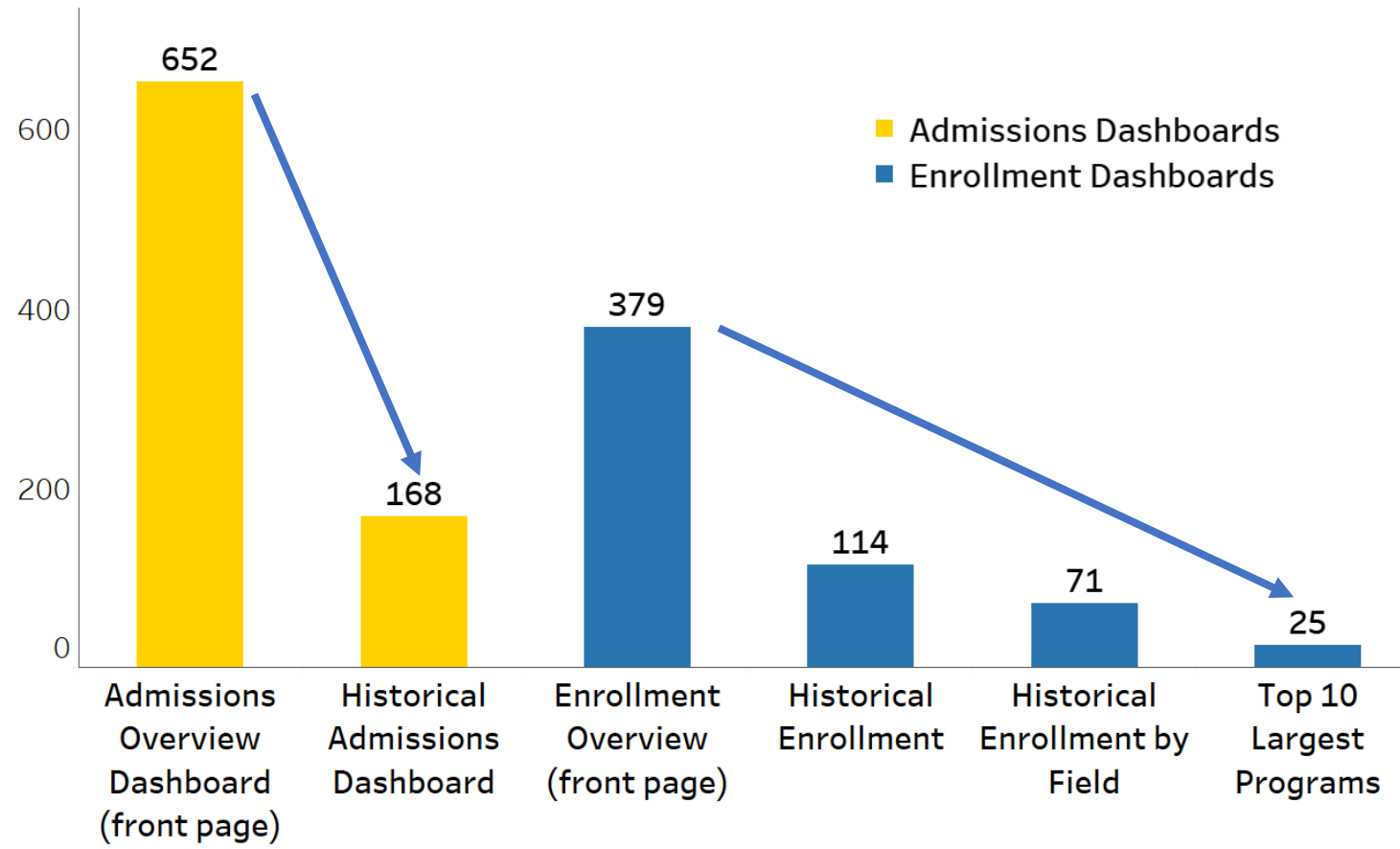


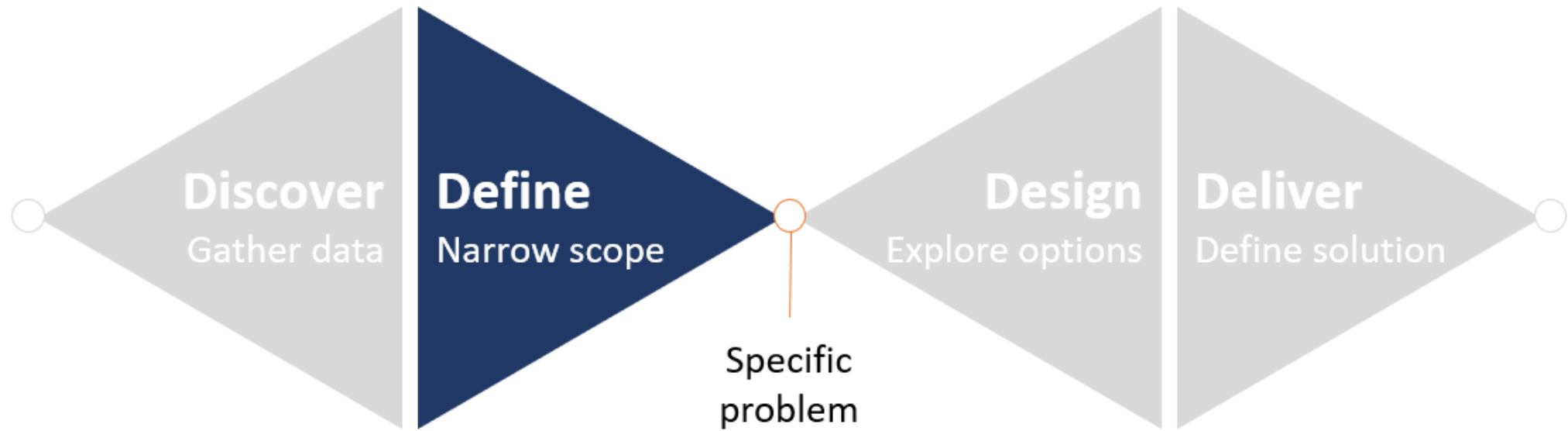
Who has seen this view?



Username	View Name	Last Viewed	Times Viewed
aahearn@ucla.edu	Enrollment Overview	6/25/2019 1:53:33 PM	3
cmt@ucla.edu	Enrollment Overview	2/14/2019 5:18:54 PM	1
elevy@ucla.edu	Enrollment Overview	2/14/2019 5:14:32 PM	3
guest	Enrollment Overview	9/18/2019 2:01:29 PM	614
jctaylor@ucla.edu	Enrollment Overview	6/11/2019 2:47:36 PM	1
kheider@ucla.edu	Enrollment Overview	9/11/2019 11:55:39 AM	109
sbolsen@ucla.edu	Enrollment Overview	9/18/2019 1:58:41 PM	39
vanngnguyen@ucla.edu	Enrollment Overview	4/11/2019 5:16:39 PM	40

Guest views of dashboards





Specific problem 1


People are skipping our dashboards because they are looking for data on a different page

Program Statistics

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Admission Requirements

Program Requirements

Program Statistics

Program Profile Report: Aerospace Engineering

ADMISSIONS DATA

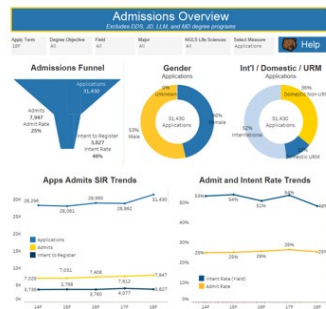
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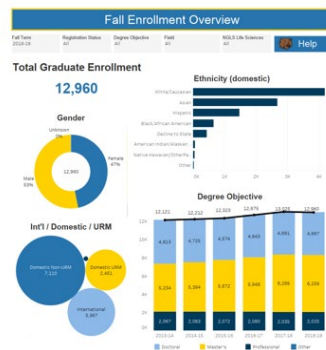
Specific problem 2

People aren't navigating to subsequent dashboards within a category

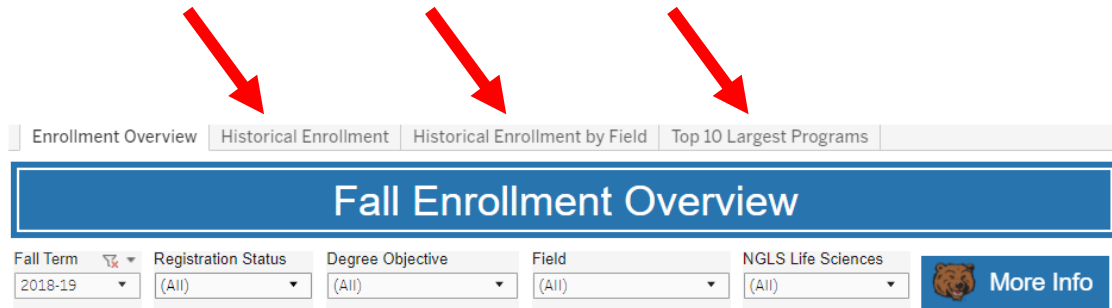
Graduate Education Data

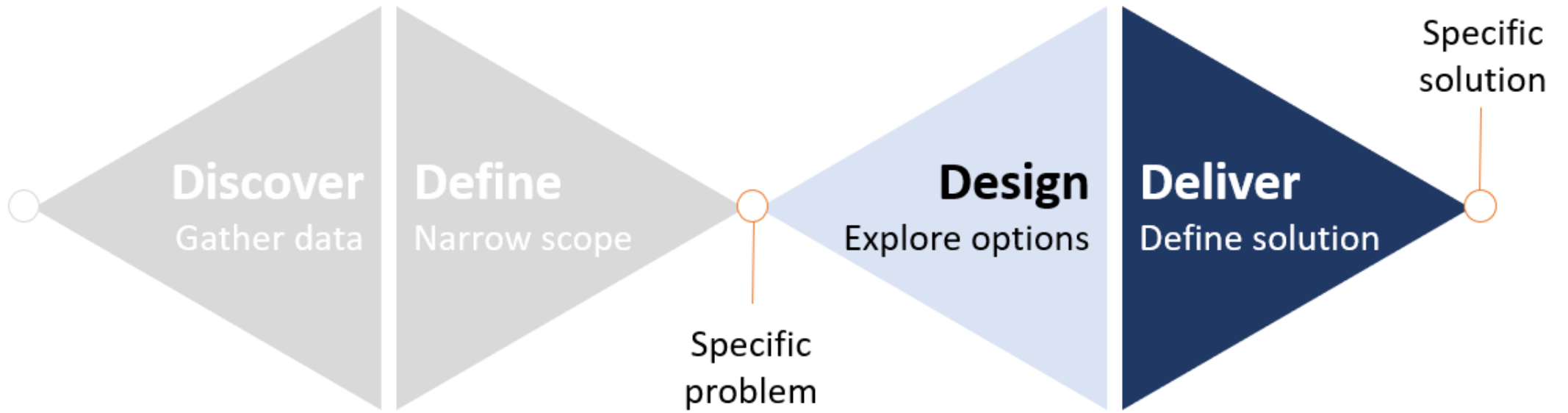


Admissions



Enrollment





Problem 1 solution

People are skipping our dashboards because they are looking for data on a different page

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lookup statistics for a program



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To see a program's statistics, type a program's name.

lookup statistics for a program



For additional statistics please view the [UCLA Graduate Program Statistics Dashboards](#).

Problem 1 solution

People are skipping our dashboards because they are looking for data on a different page

Admission Requirements Program Requirements **Program Statistics**

Program Profile Report: Aerospace Engineering

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Admission requirements Program requirements **Program statistics**

Program Profile Report: Aerospace Engineering

Program admits through the Graduate Programs in Aerospace Engineering. For additional information about this program please view the [UCLA Graduate Education Statistics Dashboards](#).

ADMISSIONS DATA

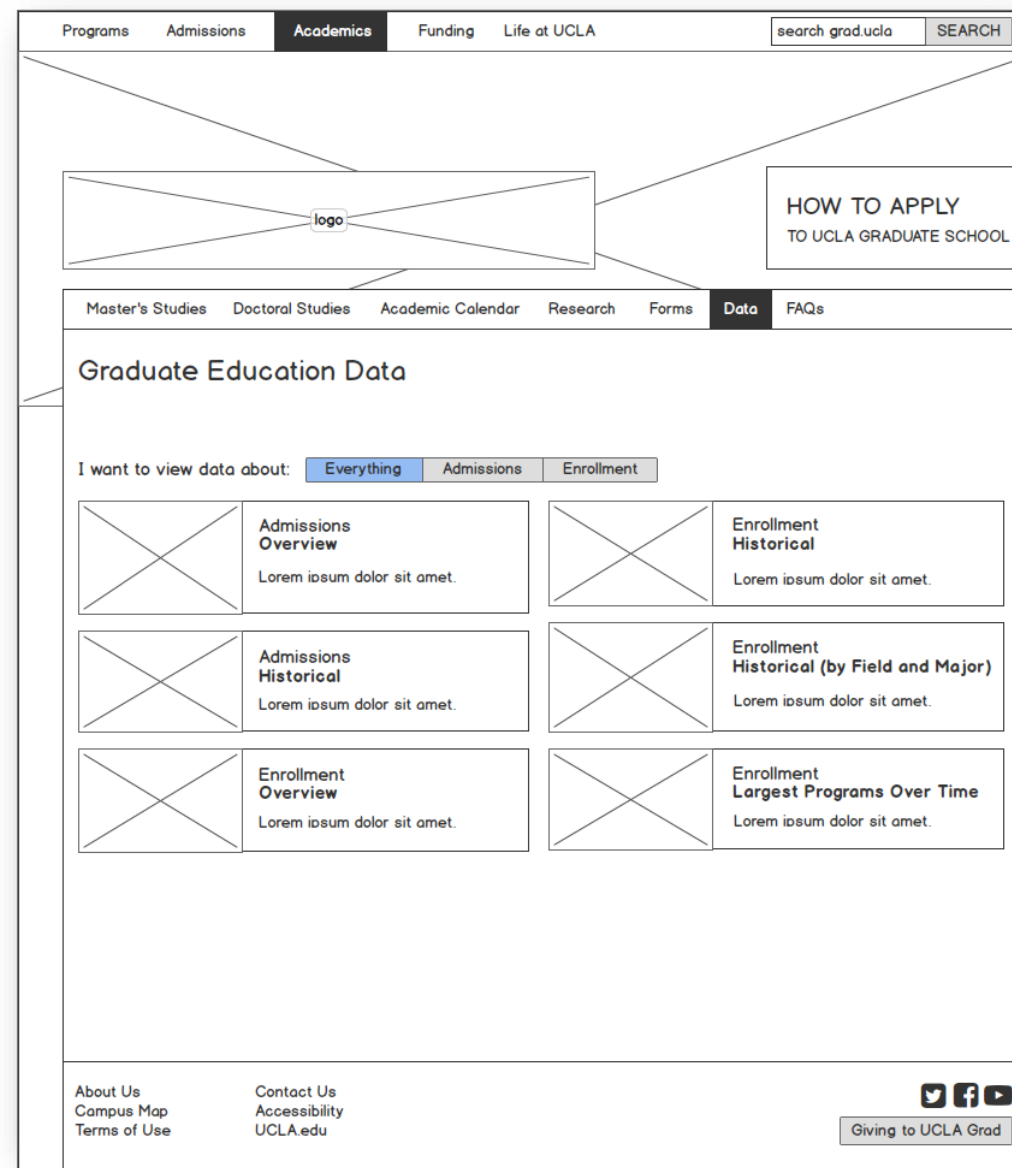
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Problem 2: exploring solutions

Wireframes quickly
communicate a page's
structure, acting as a
blueprint.

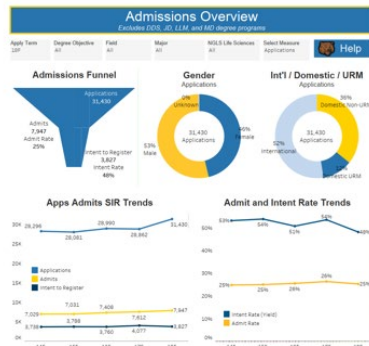
Wireframes do not include
colors, fonts, logos, or any
other decorative elements.



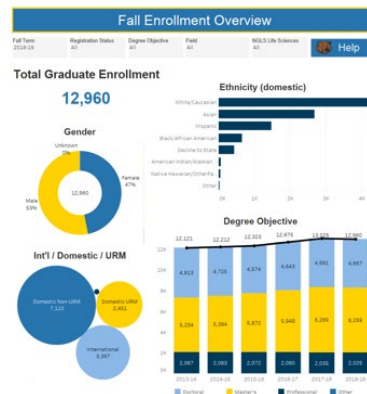
Problem 2 solution

People aren't navigating to subsequent dashboards within a category

Graduate Education Data



Admissions



Enrollment

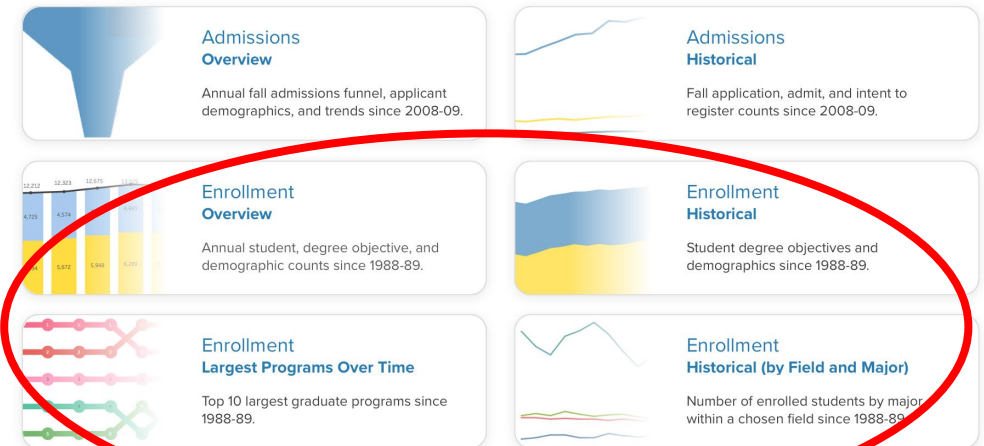
Graduate Education Data

I want to view data about:

Everything

Admissions

Enrollment



Did it work?

Yes, but...

General problem 2

We still don't know how people are interacting with our dashboards

General
problem



Discover
Gather data

Define
Narrow scope



Design
Explore options

Deliver
Define solution



Gather data about visitor interactions

To get concrete data, we ran a **usability test**. Five people were brought in to test our dashboards.

Each was provided 10 tasks to complete while our team observed in another room.



Gather data about visitor interactions

Tasks were based on **real-world** scenarios:

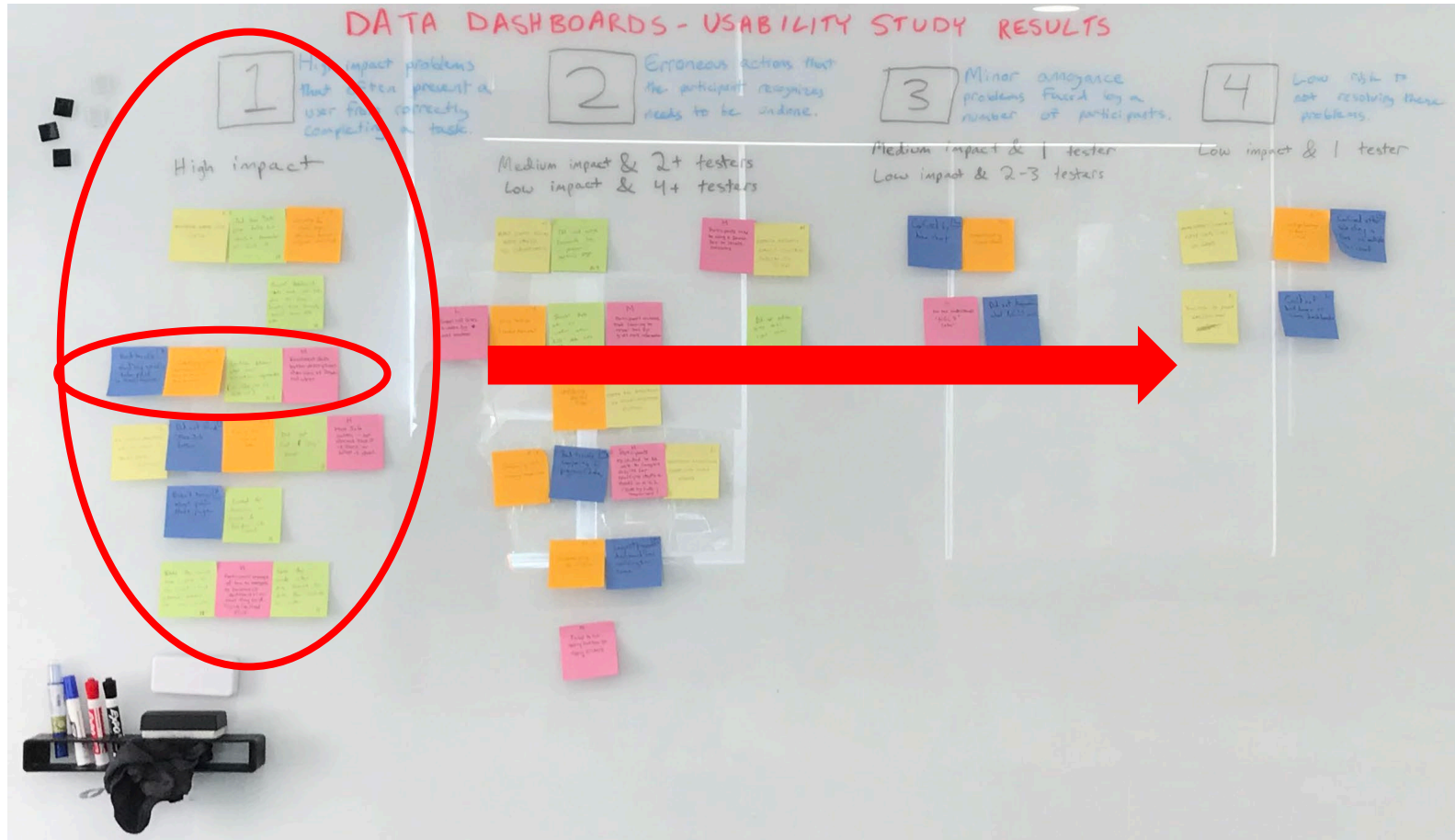


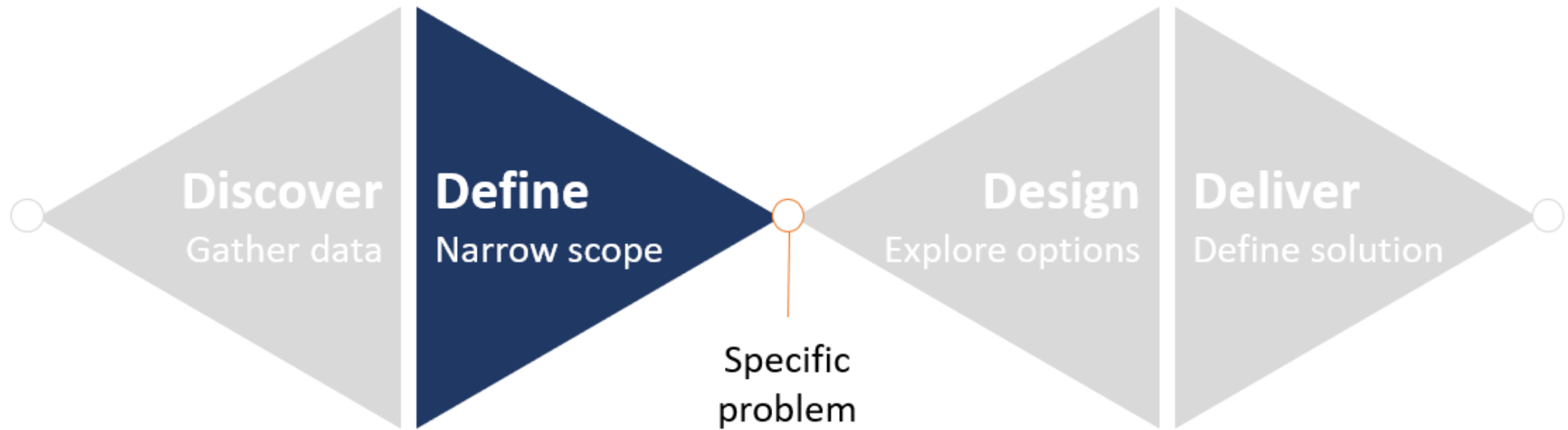
“Find the dashboard page on our website.”



“How long does it take URG students in our program to complete a doctorate compared to non-URG students?”

There were many findings from the test





Specific problem 1

Participants searched for data on a different page and didn't notice the link to our dashboards

Admission requirements Program requirements **Program statistics**

Program Profile Report: Aerospace Engineering

Program admits through the Graduate Programs in Aerospace Engineering. For additional information about this program please view the [UCLA Graduate Education Statistics Dashboards](#).

ADMISSIONS DATA

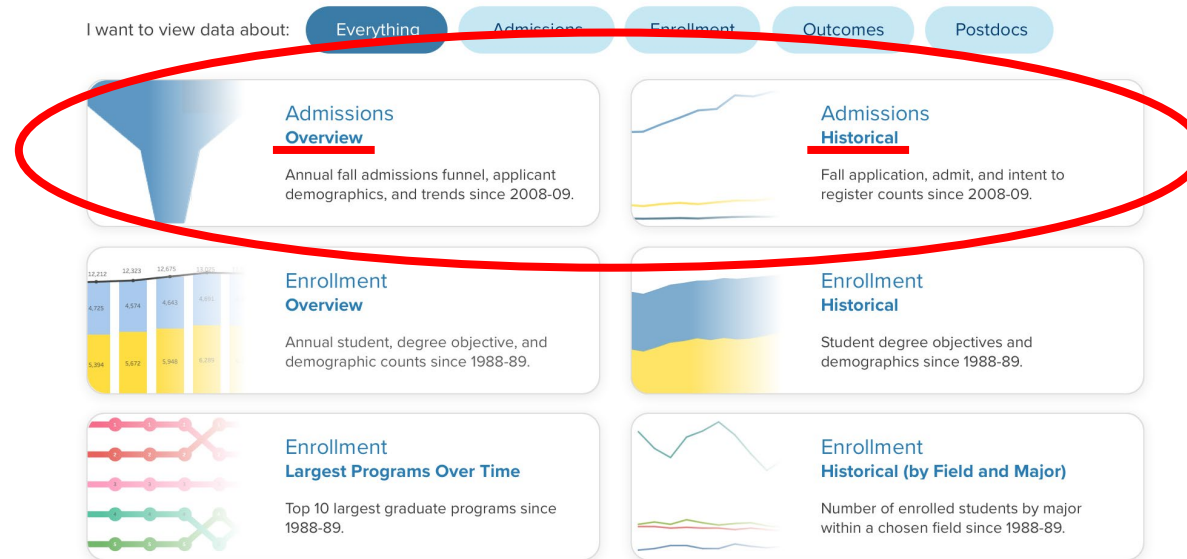
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Specific problem 2

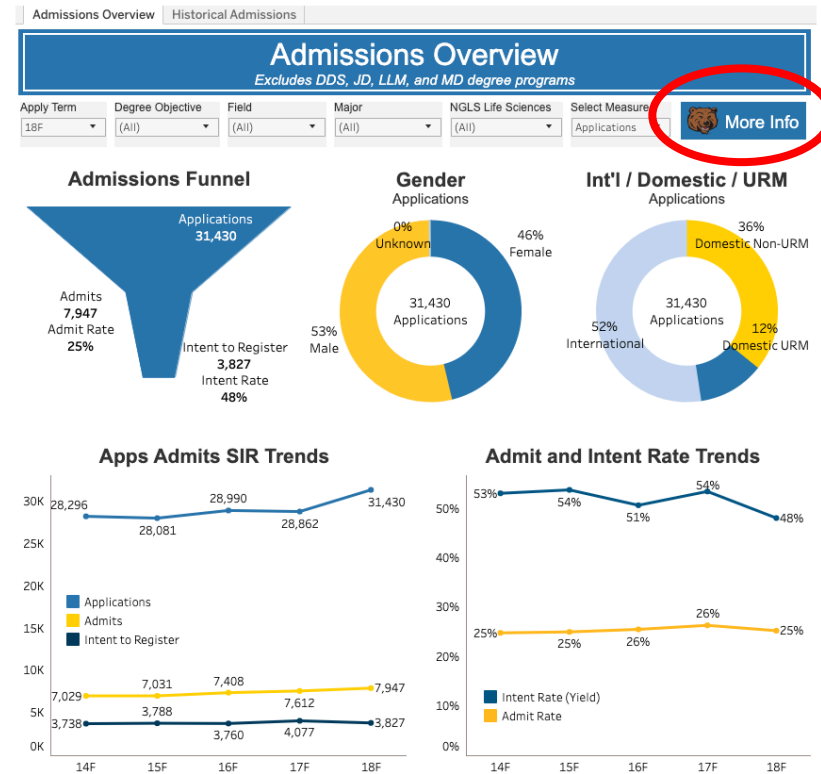
Participants did not understand the difference between categories – "Overview" and "Historical" sounded the same

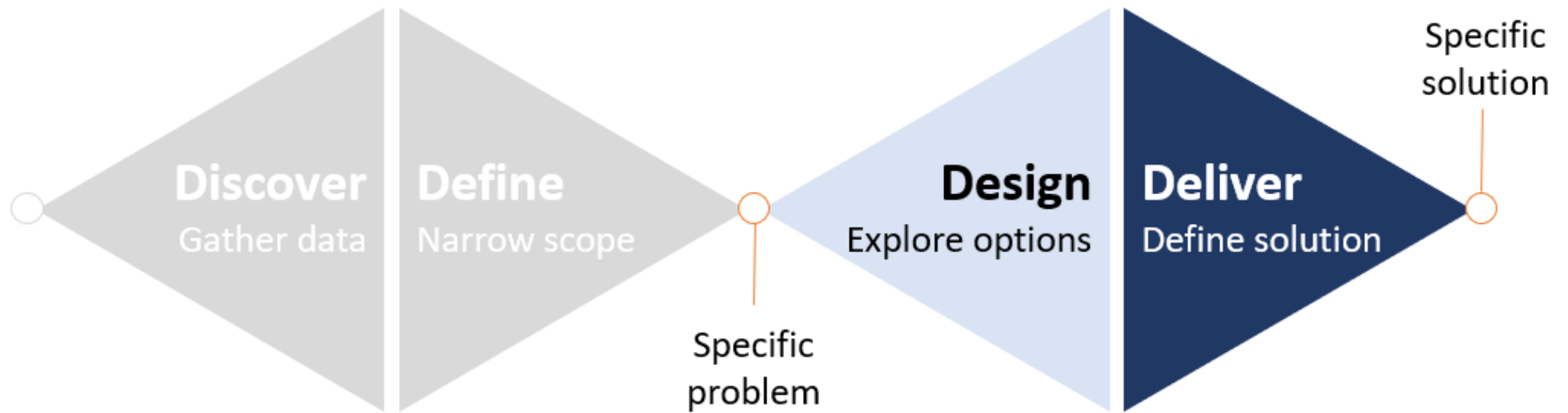
Graduate Education Data



Specific problem 3

Participants could not find notes and definitions





Specific problem 1 solution

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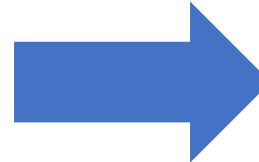
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[Notes and definitions](#)



Specific problem 1 solution

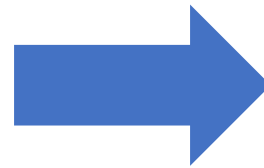
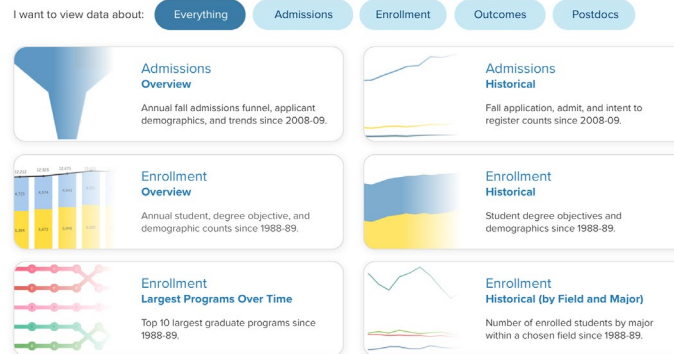
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Specific problem 2 solution

Participants did not understand the difference between categories – "Overview" and "Historical" sounded the same

Graduate Education Data



Graduate Program Statistics

I want to view data about: **Everything** Admissions Enrollment Outcomes Postdocs

Admissions



Enrollment

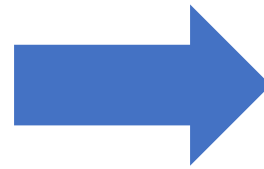
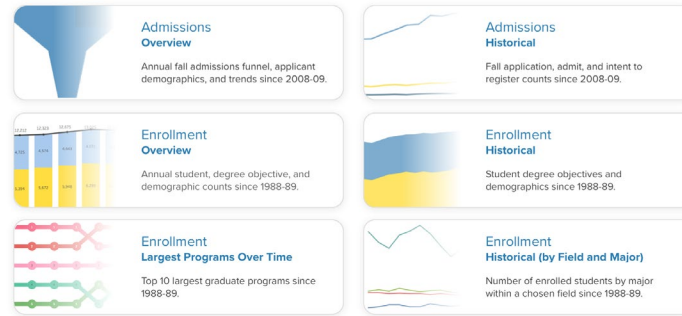


Specific problem 2 solution

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Graduate Education Data

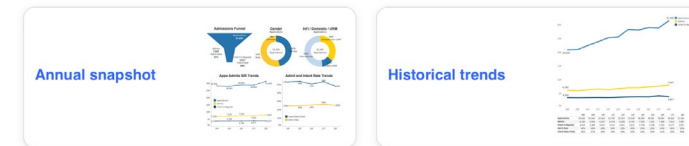
I want to view data about: Everything Admissions Enrollment Outcomes Postdocs



Graduate Program Statistics

I want to view data about: Everything Admissions Enrollment Outcomes Postdoctoral

Admissions

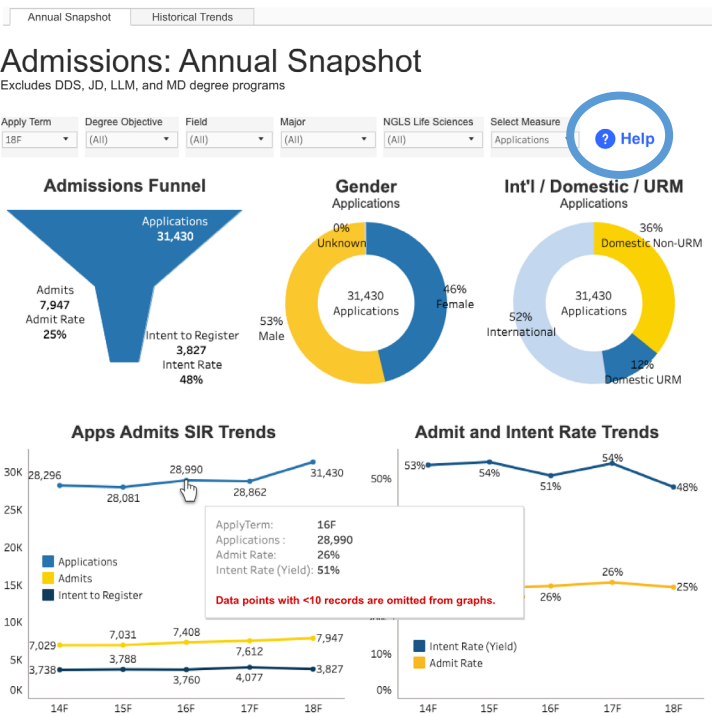
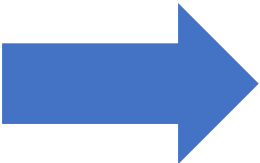
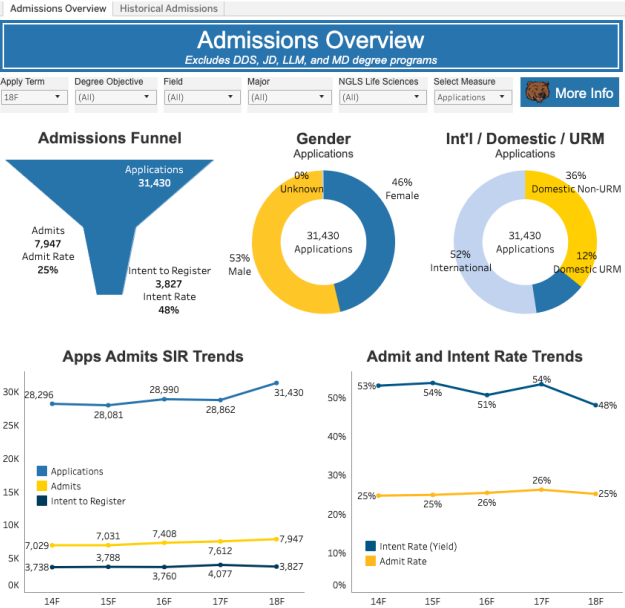


Enrollment



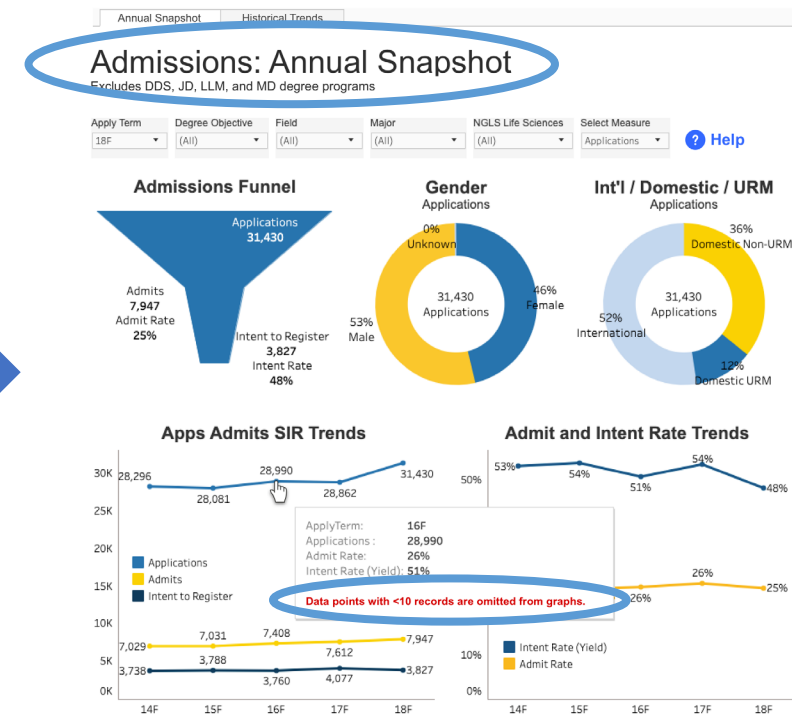
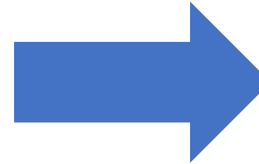
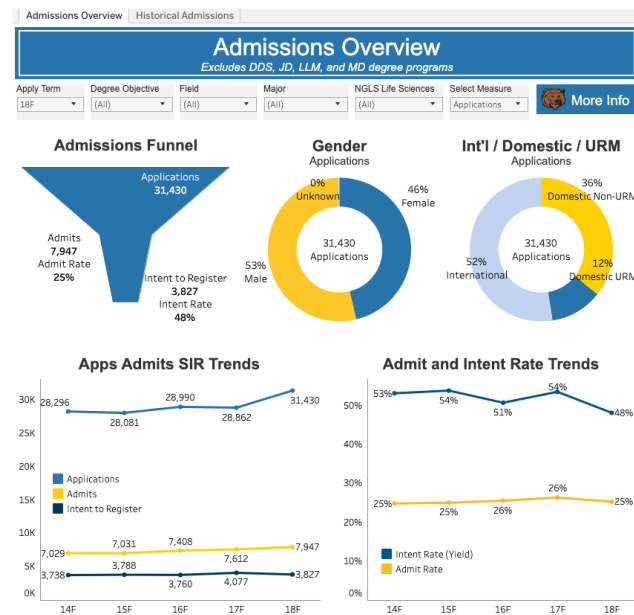
Specific problem 3

Participants could not find notes and definitions



Specific problem 3

Participants could not find notes and definitions



Did it work?

Percentage of dashboard traffic generated from this page

The 'Before' dashboard layout features a top navigation bar with three tabs: 'Admission requirements', 'Program requirements', and 'Program statistics'. The 'Program statistics' tab is active. Below the tabs, the title 'Program Profile Report: Aerospace Engineering' is displayed. A paragraph of text follows, mentioning 'Program admits through the Graduate Programs in Aerospace Engineering' and providing a link to 'UCLA Graduate Education Statistics Dashboards'. The 'ADMISSIONS DATA' section is titled in blue. It contains a table with five rows of data. At the bottom, there is a paragraph of explanatory text for the data points.

ADMISSIONS DATA	
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Before: 27%

The 'After' dashboard layout is more compact. It features the same top navigation bar with 'Admission requirements', 'Program requirements', and 'Program statistics' tabs. The title 'Program Profile Report: Aerospace Engineering' is present. The 'ADMISSIONS DATA' section is titled in blue. It contains a table with five rows of data. Below the table, there is a link to 'Notes and definitions'. At the bottom, there is a section titled 'View more admissions data: Annual snapshot' with a link to 'Annual snapshot' and a small chart.

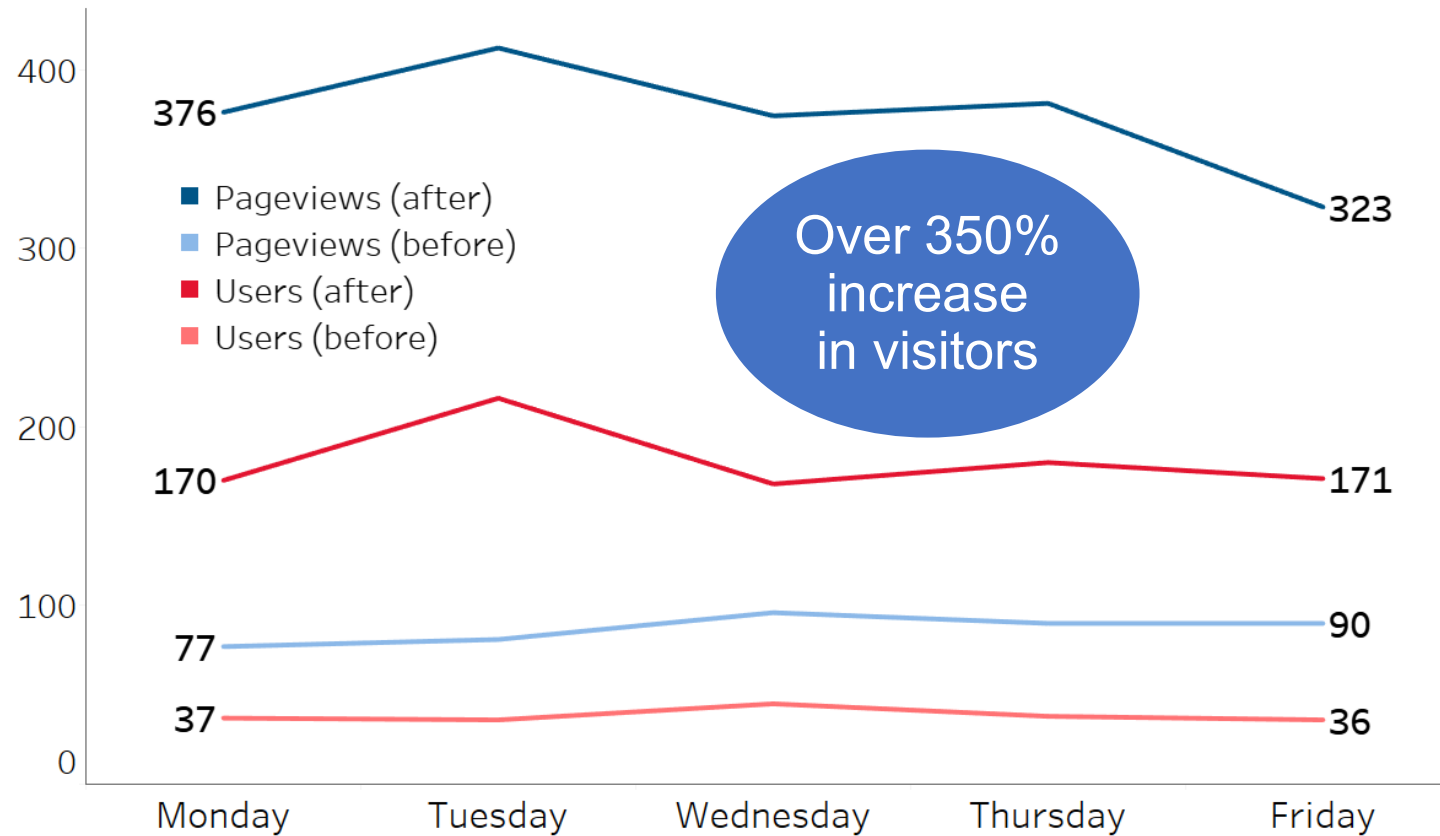
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► Notes and definitions

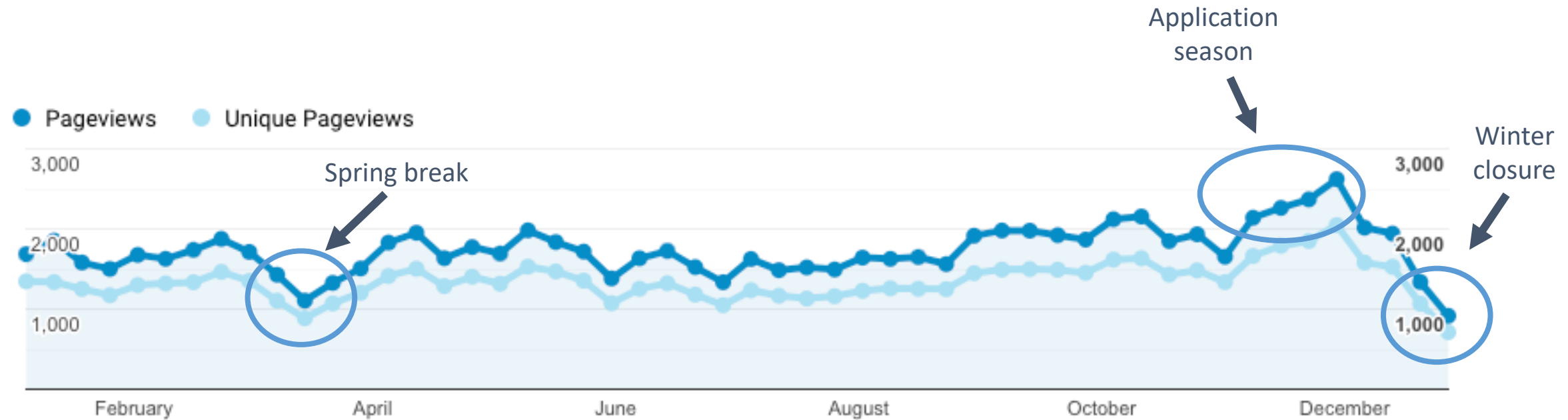
View more admissions data:
[Annual snapshot](#)

After: 45%

Did it work?



How things looked over time



You don't need to be a UX Designer

Anyone can apply a UX approach to their work.

Learn how to wireframe and run usability tests with this resource sheet.

Try a UX approach with these resources



Wireframing 101

Watch this 3 minute demonstration:

<https://www.nngroup.com/videos/sketch-ui-non-designers/>

Learn the basics:

<https://www.usability.gov/how-to-and-tools/methods/wireframing.html>

Learn about the benefits of wireframing:

<https://boagworld.com/design/the-7-wonders-of-wireframes/>

Download these templates and try it yourself:

<https://www.uistencils.com/blogs/news/ui-stencils-drafting-templates>

Usability testing 101

Watch this 25 minute demonstration:

https://youtu.be/1UCDUOB_aS8

Learn the basics:

<https://boagworld.com/usability/usability-testing/>

Learn about writing usability tasks:

<https://www.nngroup.com/articles/better-usability-tasks/>

Download these templates and try it yourself:

<https://www.sensible.com/downloads-rsme.html>

UCLA

[PDF with links to UX resources](#)

Questions

kelsey.heider@ucop.edu

aahearn@it.ucla.edu