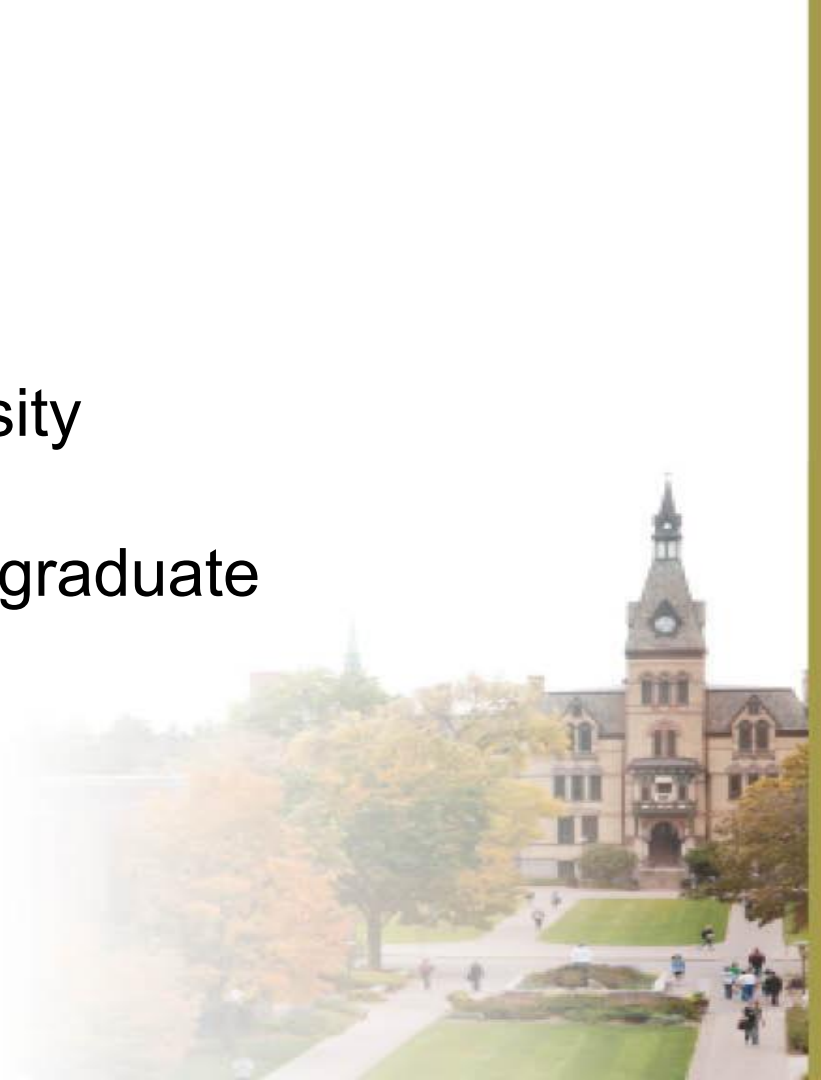


Low-Cost Dashboards for Visualizing Data and Supporting Decisions

Sally Gerlach
Tracy Williams

Hamline University

- Private, liberal arts university
- St. Paul, MN
- 1814 undergraduate, 759 graduate students (Fall 2024)



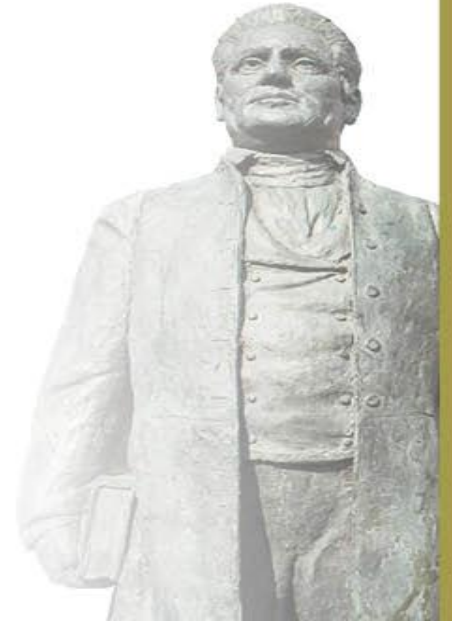
Institutional Effectiveness

- 2 FTE
- Institutional Research
- Financial Aid reporting
- Learning Outcomes Assessment
- Student Success
- NCAA Reporting
- Compliance



Visualization Tool Needs:

- Low-cost
- Little training required
- Secure data



Google Looker Studio

1. Free
2. Resources and support available
3. Shareable
4. Secure, but be careful
5. Not as robust as more expensive tools

Current projects using Google Looker Studio

1. Demographic data by program for enrolled students and graduates
2. Course DFW rates
3. NSSE results
4. Learning Outcomes Assessment
5. Graduate Programs Completion Data
6. Student Work Patterns
7. Permanent Residence of Students for State Authorization Compliance

New Report - Page 1

AIRUM24 - First to Second Fall Enrollment

Reset Share Edit ?

Demographics

Retention



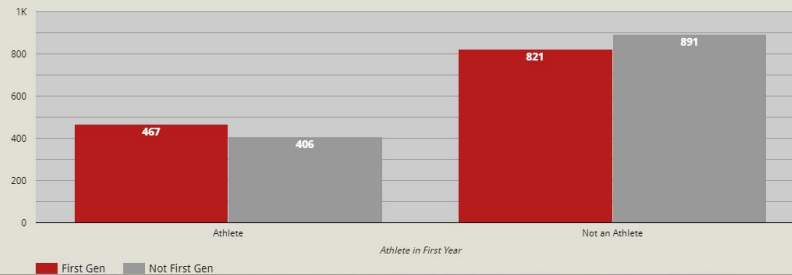
New First Year and Transfer Students

The following data consists of new students who enrolled at Hamline between Fall 2020 and Fall 2023.

Filter: Filter by any of the student groups below (Note: This will adjust all charts and tables below)

Deceased Cohort Term Entry Type First Term FT/PT

Number of Students Participating in Athletics in their First Year (by First Gen Status)



New Report - Page 2

AIRUM24 - First to Second Fall Enrollment

Reset

Share

Edit

⋮

?

👤

Demographics

Retention



New First Year and Transfer Students

The following data consists of new students who enrolled at Hamline between Fall 2020 and Fall 2023.

Filter: Filter by any of the student groups below (Note: This will adjust all charts and tables below)

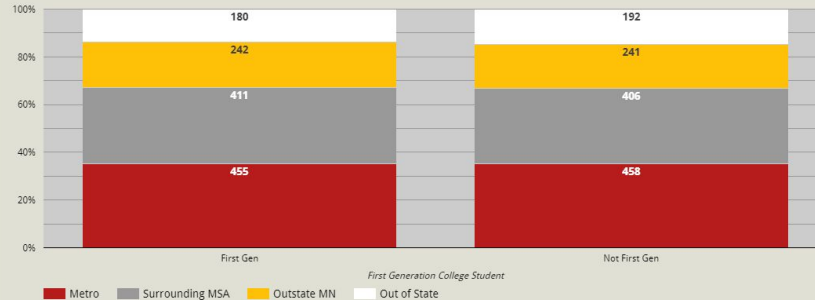
Retention Statu... ▾

Cohort Term ▾

Entry Type ▾

First Term FT/PT ▾

Number of Students Who are First Generation by Where They Came From



Google Looker Studio

How To...

Building a new Report

Things to know before hand:

- Can NOT get to it from your Google Apps



- Reports DO NOT show up in your Google Drive

<https://lookerstudio.google.com/navigation/reporting>

- Data Sources: Can Link to MS Excel (limit of 2GB for free) or Google Sheets

Building a new Report - Create Report

Looker Studio ?

[Create](#)

Recent

Shared with me


Owned by me

Trash

Templates

Pro subscription

Recent **Reports** Data sources Explorer




Get Looker Studio Pro New


Collaborate at enterprise scale with Team Workspaces. Store and manage Looker Studio assets on Google Cloud. Get help from Cloud Customer Care.

[Tell me more](#) [Not now](#)


Start with a Template Template Gallery ↕




Blank Report
Looker Studio




GA4 Report
Google Analytics




Acme Marketing
Google Analytics



Search Console Report
Search Console



Google Ads Overview
Google Ads



YouTube Channel Report
YouTube Analytics

Building a new Report - Select Data File













Add data to report

[Connect to data](#) My data sources

Search


Google Connectors (24)

Connectors built and supported by Looker Studio [Learn more](#)


 Looker By Google Connect to your Looker semantic models.	 Google Analytics By Google Connect to Google Analytics.	 Google Ads By Google Connect to Google Ads performance report data.	 Google Sheets By Google Connect to Google Sheets.
 BigQuery By Google Connect to BigQuery tables and custom queries.	 AppSheet By Google Connect to AppSheet app data.	 File Upload By Google Connect to CSV (comma-separated values) files.	 Microsoft Excel By Google Connect to Microsoft Excel files.
 Amazon Redshift By Google	 Apigee PREVIEW By Google	 Campaign Manager 360 By Google	 Cloud Spanner By Google

Building a new Report - Select Data File (Google Spreadsheet)

← Add data to report

 **Google Sheets**
By Google
The Google Sheets connector allows you to access data stored in a Google Sheets worksheet.

[LEARN MORE](#) [REPORT AN ISSUE](#)


ALL ITEMS Spreadsheet 

OWNED BY ME

SHARED WITH ME

STARRED

URL

OPEN FROM GOOGLE DRIVE 

- Profile Numbers Fall 2023
- Untitled spreadsheet
- Final_RetentionOnly
- Final_No Retention
- Final
- 2024-05-01 10:29 Sally/Irina Dashboard Lo...
- UG Enrollment Report - Fall 2024
- UG Enrollment Report - Fall 2023
- GRAD Enrollment Report - Fall 2024
- Current Registration for Enrollment Reports
- GRAD Enrollment Report - Summer 2024
- Fall 2015 Graduate Census Report
- Enrollment Report - Fall 2018
- Enrollment Fall 2018 PS Reports
- Program Counts Fall 2024 IM Updated 4/2...




If you cannot find your data file, you can search for it. Click the magnifying glass to open the search box.

Building a new Report - Select Data File (MS Excel)

← Add data to report

1.98 GB space available out of 2 GB. Upgrade to get more space. [Learn more](#)

 **Microsoft Excel**
By Google

The Microsoft Excel connector lets you access data from Excel files. Using this connector, you can create a new data source using a single worksheet, data table or named range.

[LEARN MORE](#) [REPORT AN ISSUE](#)

Available Files [+ New](#)

Search files

AIRUM_Firs ... Retention 536 KB

Worksheets

Search worksheets

Final

Pivot

Build

Configuration

Range selection

- Include entire worksheet
- Include specific range

Use first row as headers for sheet/range ⓘ

Include hidden and filtered cells

Select rows to skip

Select columns to skip

Drag and drop your file from your current file location. Select the file and tab you want to use.

*NOTE: Files will appear here indefinitely

Building a new Report - Change File Name

Same as changing a google doc file - Click on Untitled Report and type new file name

AIRUM24 - First to Second Fall Enrollment

Navigation and tool icons: back, forward, search, Add page, Add data, Add a chart, Add a control, Theme.

+ Add quick filter

	Deceased	Record Count
1.	No	2,570
2.	Yes	15

1 - 2 / 2 < >

Building a new Report - Report View Sections

AIRUM24 - First to Second Fall Enrollment

File Edit View Insert Page Arrange Resource Help

Reset Share View

Pause updates

Deceased	Record Count
1. No	2,570
2. Yes	15

Menu Bar

- Insert: Charts/Graphs, Controls/Filters, Text Boxes, Shapes, Images
- Page: Add, Duplicate, Delete Pages, Page Settings (change the page layout)
- Resource: Manage added data sources

*Can do a lot of the same things using this menu bar and the one below it.

Let's get started

Drag a field from the Data Panel to the canvas to add a new chart or select a component on the report canvas to edit it.

Data

Search

AIRUM24.2 - Sheet1

- 123 ACT Composite Score
- REC Athlete in First Year
- REC Cohort Term
- REC Deceased
- REC Declared Major by End of First Term
- REC Entry Type
- REC First Generation College Student
- REC First Term FT/PT
- REC Gender
- 123 HS GPA
- REC Location before Enrollment
- REC Month of Admissions Deposit
- REC On/OFF Campus First Term
- REC Pell/No Pell in First Year
- REC Race/Ethnicity
- REC Registration Hold
- REC Retention Status (2nd Fall)
- 123 Student ID
- REC Transferred Credits?
- 123 Record Count

+ Add a field
+ Add a parameter
+ Add Data

Building a new Report - Report View Sections

AIRUM24 - First to Second Fall Enrollment

File Edit View Insert Page Arrange Resource Help

Reset Share View ? ? ?

Pause updates

+ Add quick filter

Deceased	Record Count
1. No	2,570
2. Yes	15

Elements

- Add pages and move to through pages
- Add data (can also do from Resources/Manage added data sources)
- Add a control: Filters that can be selected when looking at the report
- Add a chart (can also do from Insert above)
- Add Images, Text Boxes, Lines, or Shapes
- Theme and Layout

Let's get started

Drag a field from the Data Panel to the canvas to add a new chart or select a component on the report canvas to edit it.

Data

Search

AIRUM24_2 - Sheet1

- 123 ACT Composite Score
- REC Athlete in First Year
- REC Cohort Term
- REC Deceased
- REC Declared Major by End of First Term
- REC Entry Type
- REC First Generation College Student
- REC First Term FT/PT
- REC Gender
- 123 HS GPA
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- REC Month of Admissions Deposit
- REC On/OFF Campus First Term
- REC Pell/No Pell in First Year
- REC Race/Ethnicity
- REC Registration Hold
- REC Retention Status (2nd Fall)
- 123 Student ID
- REC Transferred Credits?
- 123 Record Count

+ Add a field
+ Add a parameter
+ Add Data

Building a new Report - Report View Sections

Filter

- Adds a hard coded filter to the page that is not selectable in the report

Data

- Files linked to report and the variables available

Properties

- The building properties of the charts, controls, page settings, themes, etc
 - Tab 1: the setup - how to build your element
 - Tab 2: the style - customize the look

View/Edit

- Toggle between editing and viewing the report

Building a new Report - Theme

The screenshot shows the AIRUM24 report builder interface. The main report area displays a table with the following data:

Deceased		Record Count
1.	No	2,570
2.	Yes	15

The 'Theme and Layout' panel is open on the right side of the screen, showing three theme options: Default, Edge, and Constellation. Each theme includes a preview of a report card with a bar chart and a pie chart. The 'Default' theme is selected. The panel also includes a 'Customize' button and an 'Extract theme from image' button. The 'Data' panel on the far right lists various data fields such as ACT Composite Score, Athlete in First Year, Cohort Term, Deceased, etc.

Click “Theme and Layout”

- This will open the Theme and Layout properties panel on the right side of your screen.
- Can use a default theme or create your own under Layout

Building a new Report - Page Setup

AIRUM24 - First to Second Fall Enrollment

File Edit View Insert **Page** Arrange Resource Help

New page Ctrl+M
Duplicate page
Delete page
Current page settings
Hide current page in view mode
Manage pages
Next page Pg:↓
Previous page Pg:↑
First page Home
Last page End

Deceased	
1.	No
2.	Yes

1 - 2 / 2 < >

Properties panel

Pause updates

Current Page Settings ✕

SETUP **STYLE**

Page

Canvas Size

Auto

Width (px)	Height (px)
1200	900

[Reset to report theme](#)

Data

Properties

Filter bar

Building a new Report - Images

AIRUM24 - First to Second Fall Enrollment

File Edit View **Insert** Page Arrange Resource Help

Reset Share View

Add page Add data Add a chart Add a control Theme and layout

+ Add quick filter

Reset

Image Properties Data

SETUP STYLE Search

Image File

Hamline.PNG

Preserve Aspect Ratio

Image Link URL

Insert link

Images need to be saved as files or as URL links

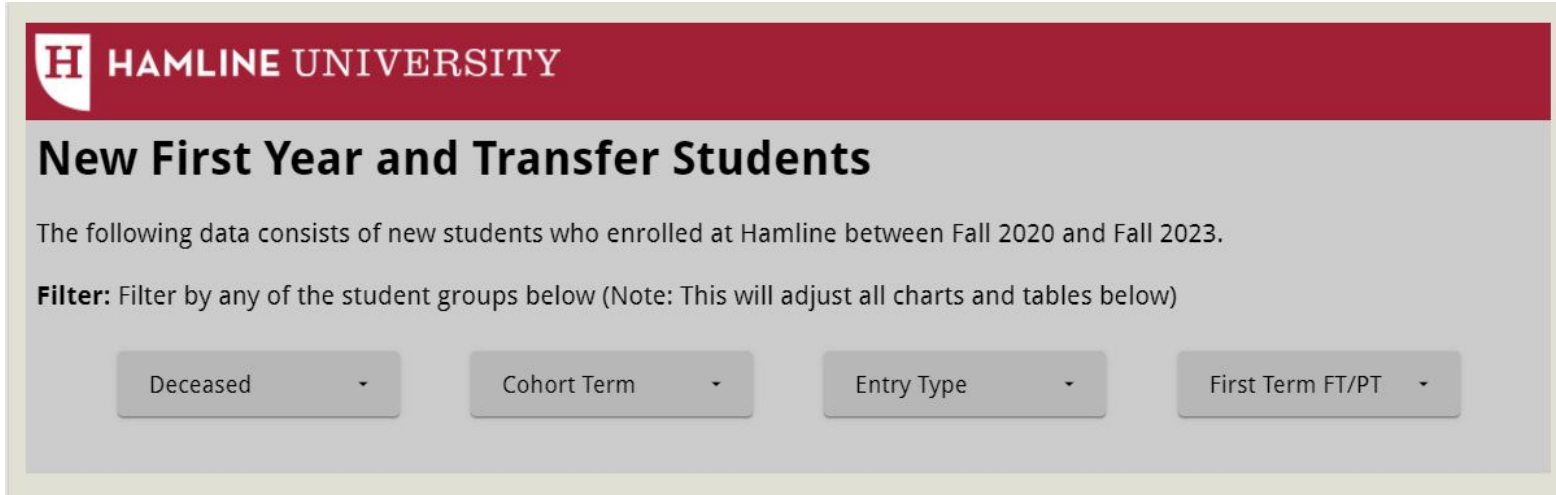


Building a new Report - Text Boxes

The screenshot shows a report builder interface for a report titled "AIRUM24 - First to Second Fall Enrollment". The top navigation bar includes "File", "Edit", "View", "Insert", "Page", "Arrange", "Resource", and "Help". The "Insert" menu is highlighted with an orange box. Below the navigation bar is a toolbar with icons for "Add page", "Add data", "Add a chart", "Add a control", and "Theme and layout". A search bar with "Add quick filter" is also visible. The main content area displays a report header for "HAMLINE UNIVERSITY" and a section titled "New First Year and Transfer Students". The text below the title reads: "The following data consists of new students who enrolled at Hamline between Fall 2020 and Fall 2023." and "Filter: Filter by any of the student groups below (Note: This will adjust all charts and tables below)". On the right side, the "Text Properties" panel is open, showing options for font and paragraph formatting, including font size (20px), font family (Droid Sans), bold, italic, underline, list, and overflow settings (visible).

Can use the Text Properties to adjust the text.

Building a new Report - Adding Selectable Filters



HAMLINE UNIVERSITY

New First Year and Transfer Students

The following data consists of new students who enrolled at Hamline between Fall 2020 and Fall 2023.

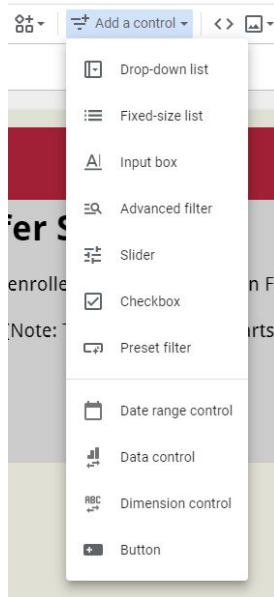
Filter: Filter by any of the student groups below (Note: This will adjust all charts and tables below)

Deceased ▾ Cohort Term ▾ Entry Type ▾ First Term FT/PT ▾

- Filters will adjust the visualizations in the report.
- They will only change the visualizations on the page they are set up on.

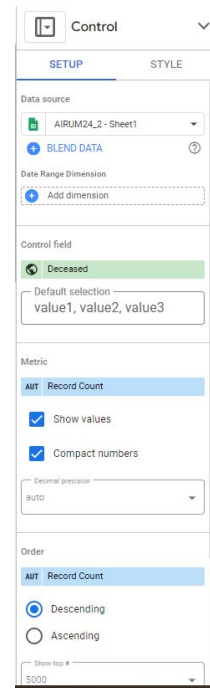
Building a new Report - Adding Selectable Filters

- Add a Control
 - Select the type of list you want your filter to be

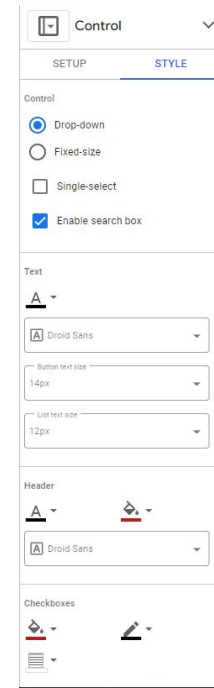


Properties Panel

Setup

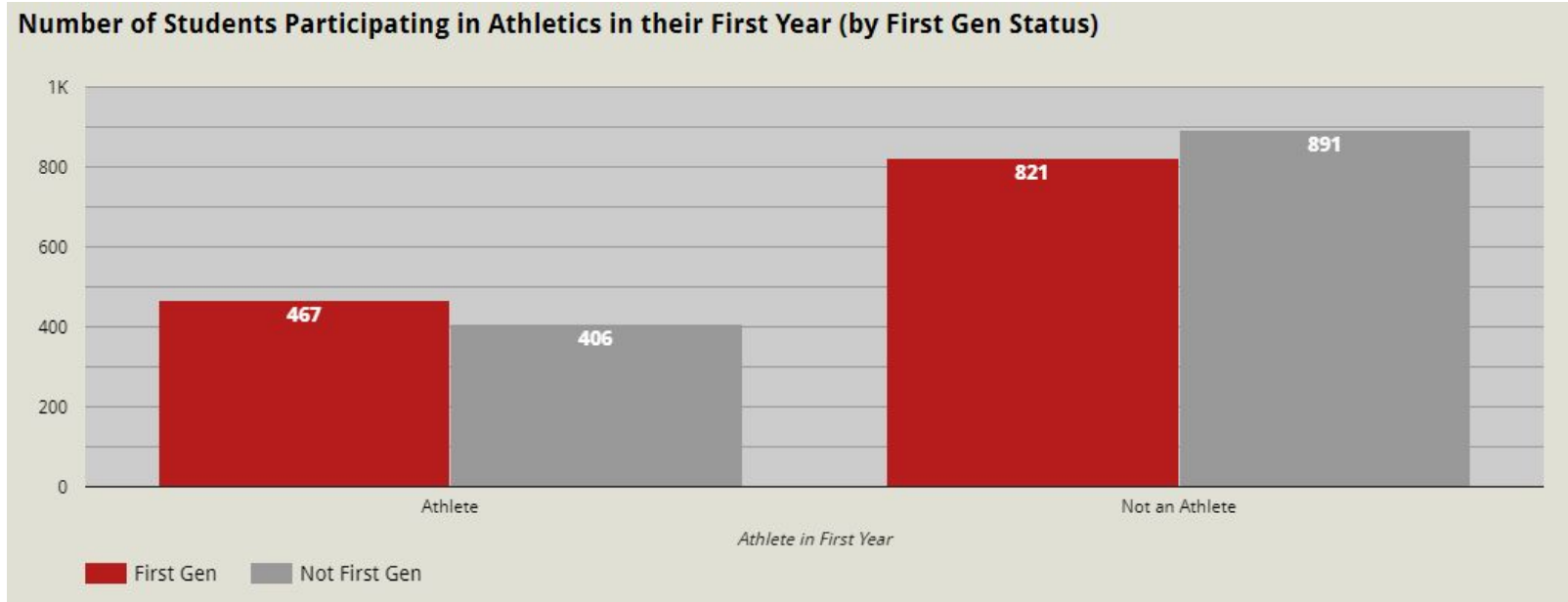


Style



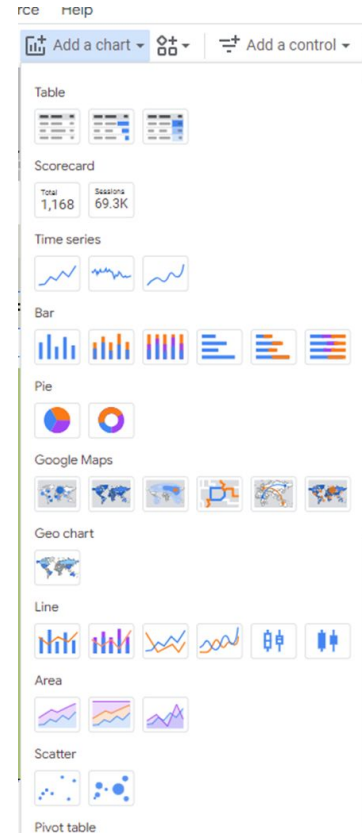
Building a new Report - Adding a Chart

Basic Bar Chart (but lots of options)



Building a new Report - Adding a Chart

- Add a chart
 - Select one to start, can change as you build
 - Once selected, the properties panel will open
 - Can also do this through the Menu bar/Insert
- Replicate charts so formatting/style stays the same
 - Right click on or around the chart
 - Select “Duplicate” from menu that opens



Building a new Report - Adding a Chart

Chart Setup

Chart Type - bar chart

Dimension (variable you want to show) - Athlete in First Year

Breakdown Dimension (secondary variable) - First Generation College Student

Metric (what is it showing) - count of IDs

Sort - sorting on Athlete in First Year

Secondary sort - sorting on First Generation

Chart

SETUP STYLE

Data source
AIRUM24_2 - Sheet1
BLEND DATA

Date Range Dimension
Add dimension

Dimension
ABC Athlete in First Year
Drill down
Breakdown Dimension
ABC First Generation College Student

Metric
AUT Record Count
Optional metrics
Metric sliders

Sort
ABC Athlete in First Year
Descending
Ascending

Secondary sort
ABC First Generation College Student
Descending
Ascending

Filter
Filter On This Chart
ADD A FILTER

Chart interactions
Cross-filtering
Change sorting
Zoom

Cross-filtering - allows user to click on a chart bar to filter all the other charts on the page (acts like a page filter)

Change sorting - allows users to change the sort on charts

Building a new Report - Adding a Chart

Chart Style

Add a Title

Change the font

Change your bar colors

Change your axis/titles

Add labels

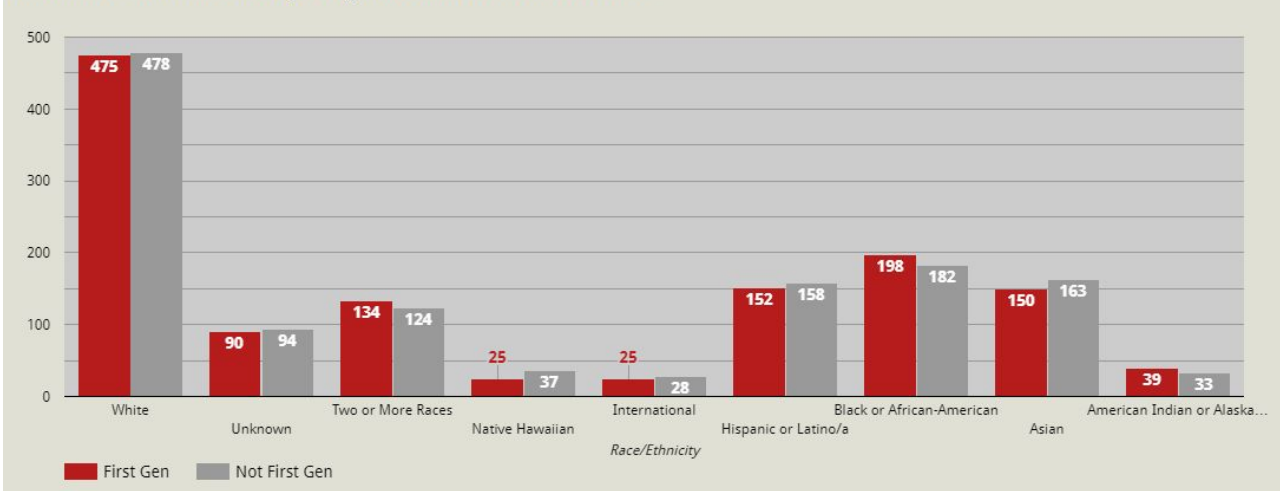
*Easy to miss things, just go slow as you go through the list of formatting properties

The image displays four sequential panels of the 'Chart Style' configuration interface for a bar chart. Each panel has a 'SETUP' and 'STYLE' tab, with the 'STYLE' tab selected.

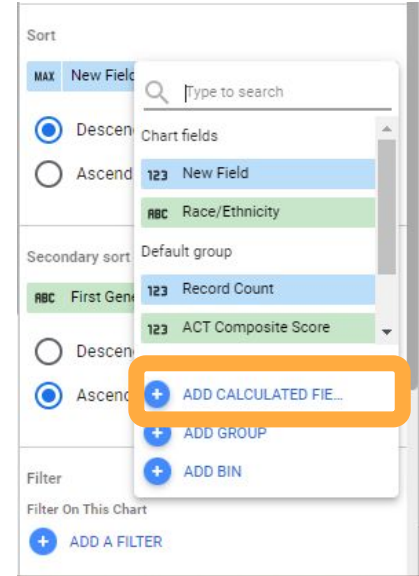
- Panel 1:** Shows the 'Chart title' section with the title 'Number of Students Participating' and a font size of 18px. The font is set to 'Droid Sans'. Below this are text formatting options (bold, italic, underline) and bar chart style options (bar width, group bar width).
- Panel 2:** Shows the 'Data label' section with 'Show data labels' checked. It includes options for 'Stacked Bars', 'Compact numbers', and 'Decimal precision'.
- Panel 3:** Shows the 'Axes' section with 'Show axes' checked. It includes options for 'Reverse Y-axis direction', 'Reverse X-axis direction', and 'Align both axes to 0'. Below this are 'Chart spacing' sliders for 'Bar width' and 'Group bar width'.
- Panel 4:** Shows the 'Grid' section with 'Axis color' set to 'Droid Sans' and 'Axis font size' set to 12px. It also includes a 'Legend' section with 'Auto' alignment and 'Droid Sans' font, and a 'Background and Border' section with '100%' opacity.

Building a new Report - Custom Sorting

Number of Students Participating in Athletic in their First Year



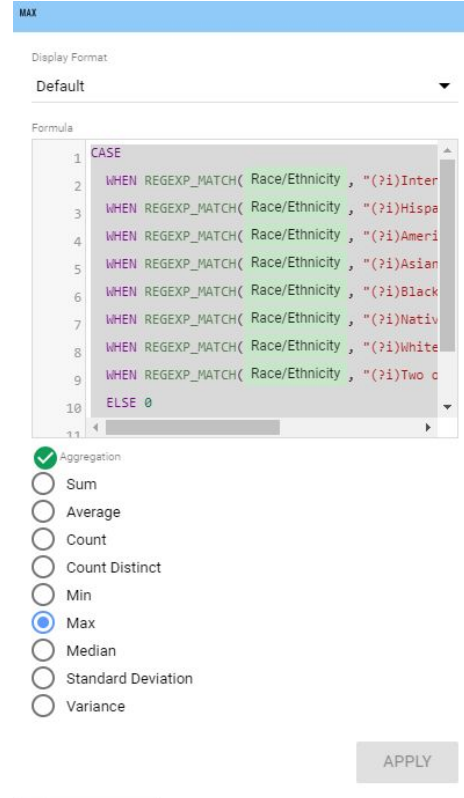
In the chart's properties, go to the Setup tab, and down to Sort. Click the field and a box will appear. Click on "ADD CALCULATED FIELD"



Building a new Report - Custom Sorting

In the box that opens, enter code with your order of categories, click APPLY, and then select “Max”:

```
CASE  
  
  WHEN REGEXP_MATCH(Race/Ethnicity, "(?)International") THEN 8  
  
  WHEN REGEXP_MATCH(Race/Ethnicity, "(?)Hispanic or Latino/a") THEN 7  
  
  WHEN REGEXP_MATCH(Race/Ethnicity, "(?)American Indian or Alaska Native") THEN 6  
  
  WHEN REGEXP_MATCH(Race/Ethnicity, "(?)Asian") THEN 5  
  
  WHEN REGEXP_MATCH(Race/Ethnicity, "(?)Black or African-American") THEN 4  
  
  WHEN REGEXP_MATCH(Race/Ethnicity, "(?)Native Hawaiian") THEN 3  
  
  WHEN REGEXP_MATCH(Race/Ethnicity, "(?)White") THEN 2  
  
  WHEN REGEXP_MATCH(Race/Ethnicity, "(?)Two or More Races") THEN 1  
  
  ELSE 0  
  
END
```



MAX

Display Format
Default

Formula

```
1 CASE  
2   WHEN REGEXP_MATCH( Race/Ethnicity , "(?)Inter  
3   WHEN REGEXP_MATCH( Race/Ethnicity , "(?)Hispa  
4   WHEN REGEXP_MATCH( Race/Ethnicity , "(?)Ameri  
5   WHEN REGEXP_MATCH( Race/Ethnicity , "(?)Asian  
6   WHEN REGEXP_MATCH( Race/Ethnicity , "(?)Black  
7   WHEN REGEXP_MATCH( Race/Ethnicity , "(?)Nativ  
8   WHEN REGEXP_MATCH( Race/Ethnicity , "(?)White  
9   WHEN REGEXP_MATCH( Race/Ethnicity , "(?)Two c  
10  ELSE 0  
11
```

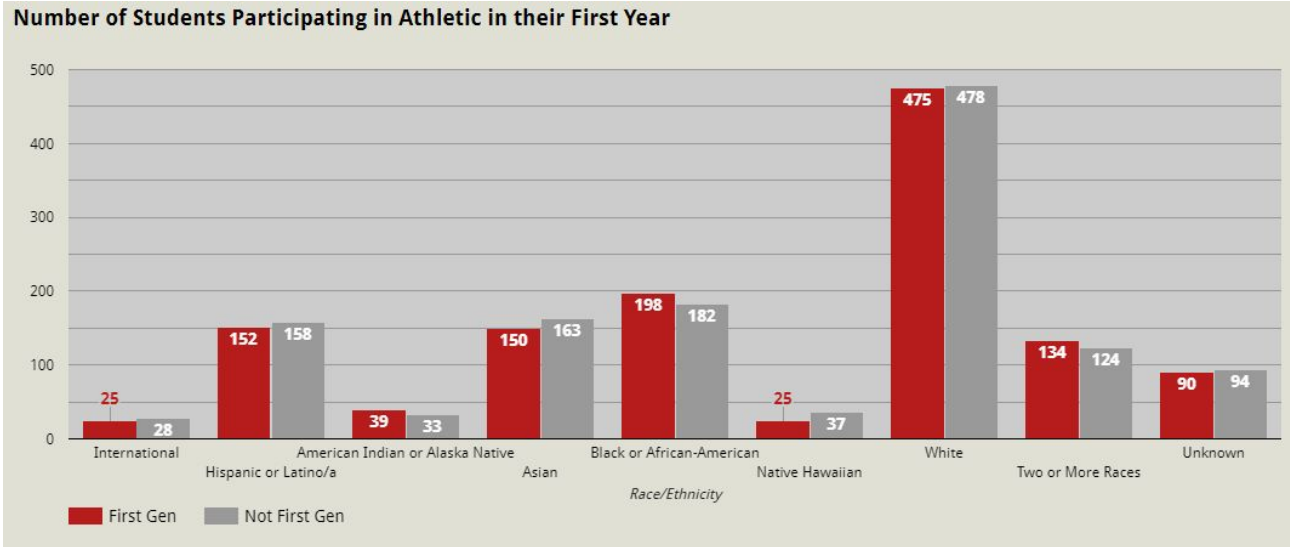
Aggregation

- Sum
- Average
- Count
- Count Distinct
- Min
- Max
- Median
- Standard Deviation
- Variance

APPLY

Building a new Report - Custom Sorting

Choose the sort direction



Dimension

- RBC Race/Ethnicity

Drill down

Breakdown Dimension

- RBC First Generation College Student

Metric

- AUT Record Count

Optional metrics

Metric sliders

Sort

- MAX New Field
- Descending
- Ascending

**This new calculated field is only on this chart. If you play around with the chart types, it might disappear. If you duplicate the chart, it should remain.*

Building a new Report - Custom Sorting

- If using a stacked bar chart, can custom sort the axis (Sort) and the groups (Secondary sort) using the same method.
- Note - even though the fields are named the same, they are NOT the same.
- Don't Forget to change the variable types to MAX

Sort

MAX New Field

Descending

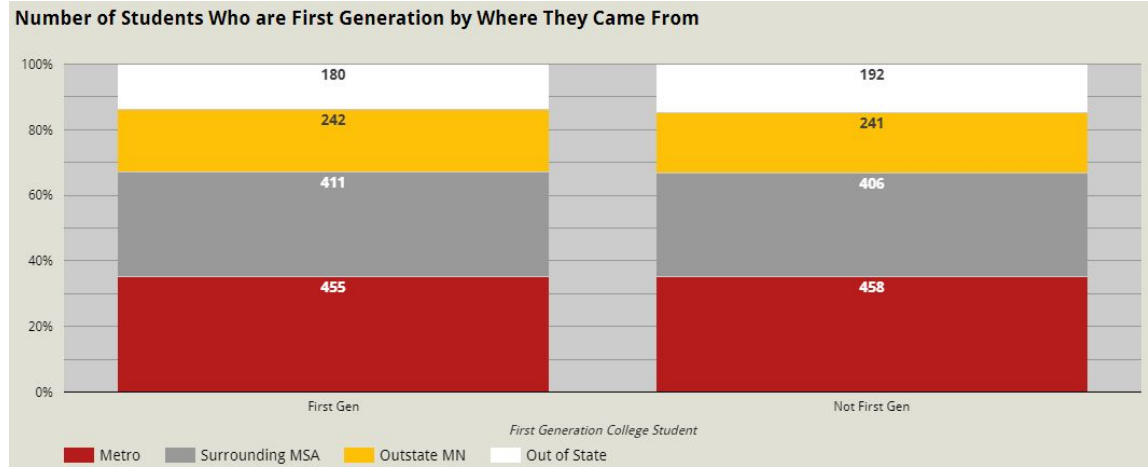
Ascending

Secondary sort

MAX New Field

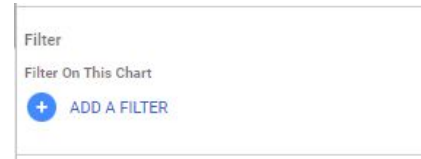
Descending

Ascending



Building a new Report - Clustered Stacked Bar Chart

- Looker Studio CANNOT currently create Clustered Stacked Bar Charts
- Work Around: Create separate graphs with Filters (under Setup) for comparison groups



Edit Filter X CLOSE

Name
Athlete AIRUM24_2 - Sheet1

Include Athlete in First Year Starts with Ath OR

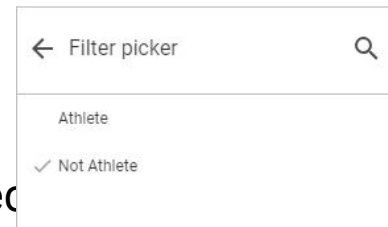
AND

This filter has 1 clause SAVE

Can change name of Filter

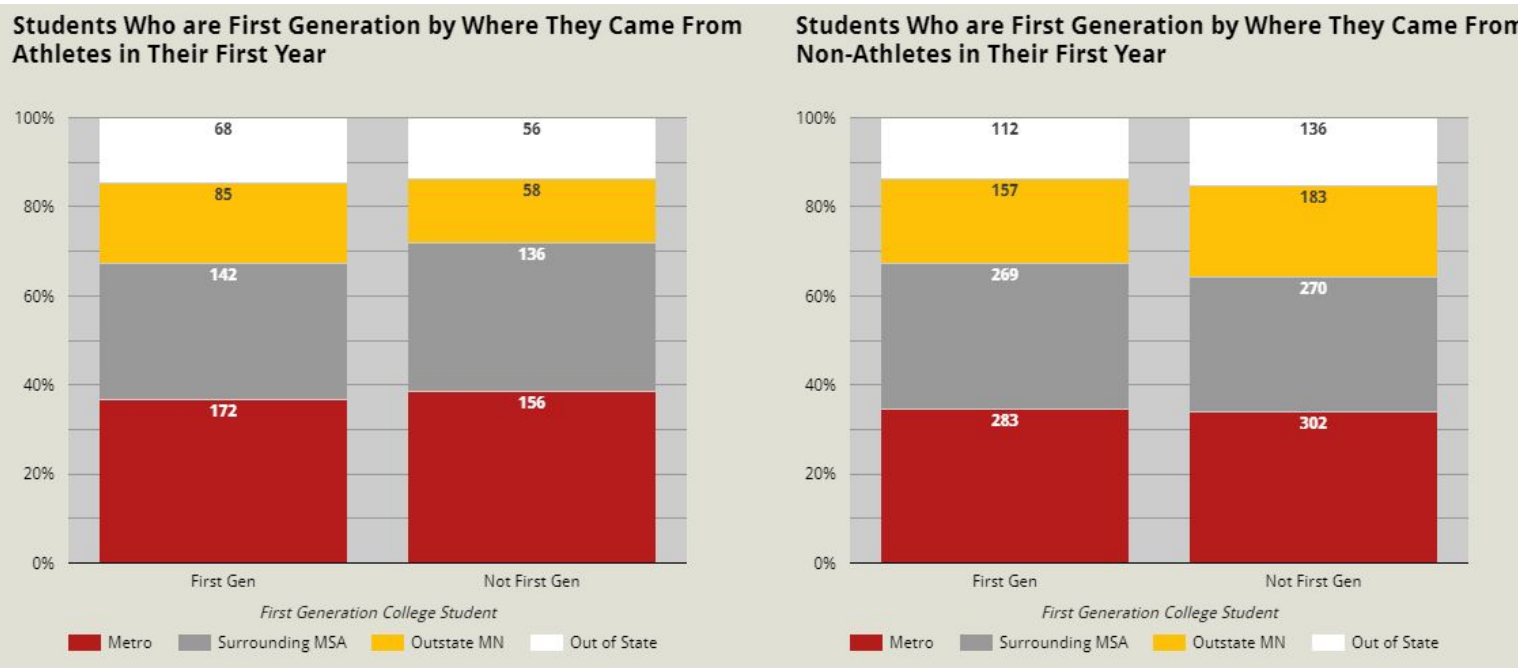
(An orange arrow points from the highlighted text box to the 'Athlete' name field, and another orange arrow points from the 'Athlete' name field to the 'Include' dropdown menu.)

- Once created, filters can be used on other charts, just select in the Filter picker after select ADD A FILTER
 - Once a filter has been created, will need to select the CREATE A FILTER at the very bottom, or select already created one.



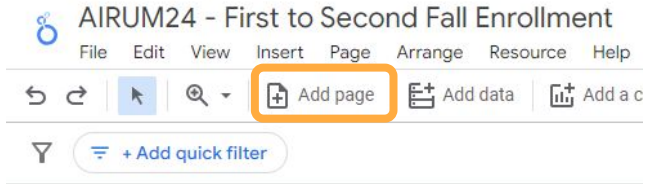
Building a new Report - Clustered Stacked Bar Chart

- Make sure to change title so you know what you filtered
 - Google Looker Studio does not wrap title text, if long, will need to create text boxes instead

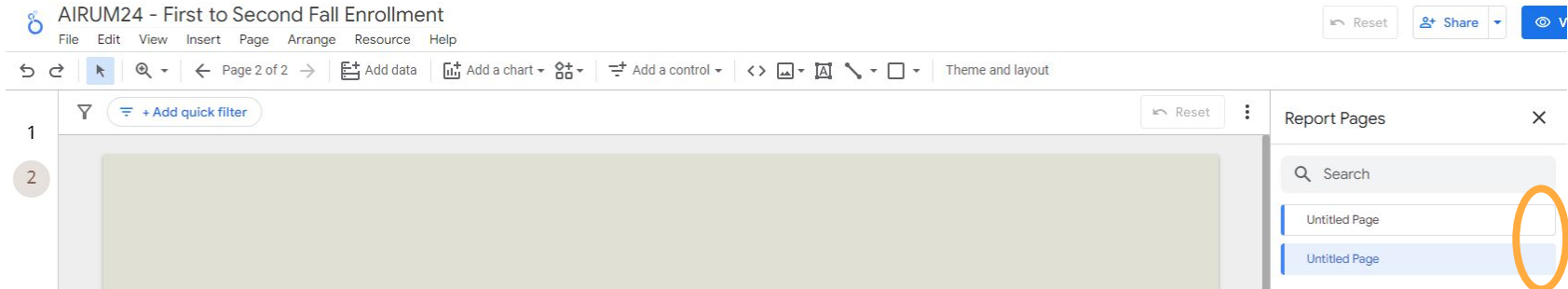


Building a new Report - Add a Page

Add a Second Page



Rename Page



Three dots appear when hover over page (can also get from Page/Manage Pages from Menu bar), rename from here

Building a new Report - Add a Page Filter (Hard Code)

Page Filters filter the entire page, and is not adjustable by the user

AIRUM24 - First to Second Fall Enrollment

File Edit View Insert Page Arrange Resource Help

Page 2 of 2

+ Add quick filter

Choose a field X

Search

- AIRUM24_2 - Sheet1
- 123 ACT Composite Score
- RBC Athlete in First Year
- RBC Cohort Term
- RBC Deceased
- RBC Declared Major by End of First Term
- RBC Entry Type
- RBC First Generation College Student
- RBC First Term FT/PT
- RBC Gender
- 123 HS GPA
- RBC Location before Enrollment
- RBC Month of Admissions Deposit
- RBC On/Off Campus First Term
- RBC Pell/No Pell in First Year
- RBC Race/Ethnicity
- RBC Registration Hold
- RBC Retention Status (2nd Fall)
- 123 Student ID
- RBC Transferred Credits?

AIRUM24 - First to Second Fall Enrollment

File Edit View Insert Page Arrange Resource Help

Page 2 of 2

+ Add quick filter

Deceased No (1) X

1

2

HAMLINE UNIVERSITY

Page 2 now has a filter that selects only students still living

Viewing your Report

AIRUM24 - First to Second Fall Enrollment

Reset Share Edit ?

Demographics

Retention



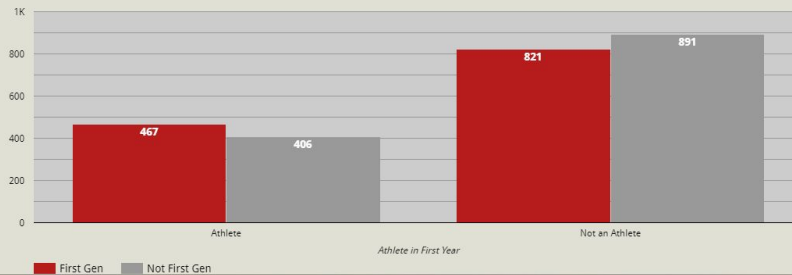
New First Year and Transfer Students

The following data consists of new students who enrolled at Hamline between Fall 2020 and Fall 2023.

Filter: Filter by any of the student groups below (Note: This will adjust all charts and tables below)

Deceased Cohort Term Entry Type First Term FT/PT

Number of Students Participating in Athletics in their First Year (by First Gen Status)



Viewing your Report

AIRUM24 - First to Second Fall Enrollment

Reset

Share

Edit

⋮

?

👤

Demographics

Retention



New First Year and Transfer Students

The following data consists of new students who enrolled at Hamline between Fall 2020 and Fall 2023.

Filter: Filter by any of the student groups below (Note: This will adjust all charts and tables below)

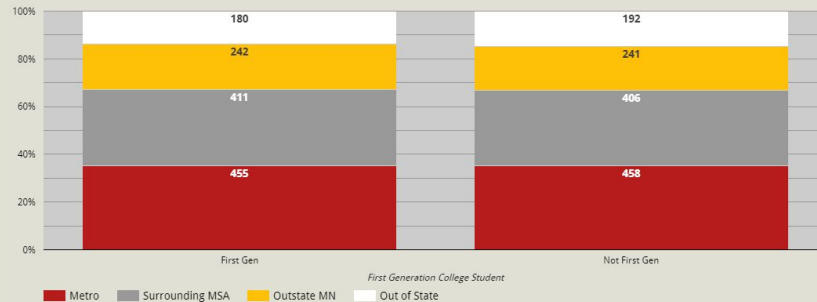
Retention Statu... ▾

Cohort Term ▾

Entry Type ▾

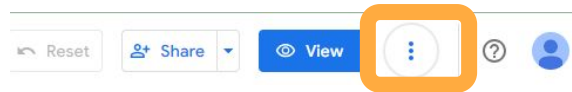
First Term FT/PT ▾

Number of Students Who are First Generation by Where They Came From



Other Tidbits

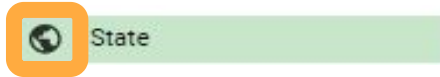
- Can be really slow - be patient
- When you change charts, things might get messed up - just keep playing with it
- It gets easier the more you work in it
- Try to build your google spreadsheet out the way you want to present your data
 - Can refresh your data using the three dots, but it sometimes doesn't take



- When you come back to the report, click the Edit button in the top right to get back to building the report

Other Tidbits (continued)

- To create a map by state, state needs to be set up as a geocode. If you don't see the globe next to state variable in Chart Setup, hover over it and a pencil icon will show - click, select the Data Type = "Country subdivision (1st level)"



- Can cross-filter across charts: if select one group in a chart, the cross-filtered charts will change to show just the group selected. Or you can turn this off.
- Add multiple pages so you can tell your story
- Share your report with certain people or post online. Shares similarly to how other Google products get shared.

Questions or Tips to Share

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