GUIDED PATHWAYS DASHBOARD.

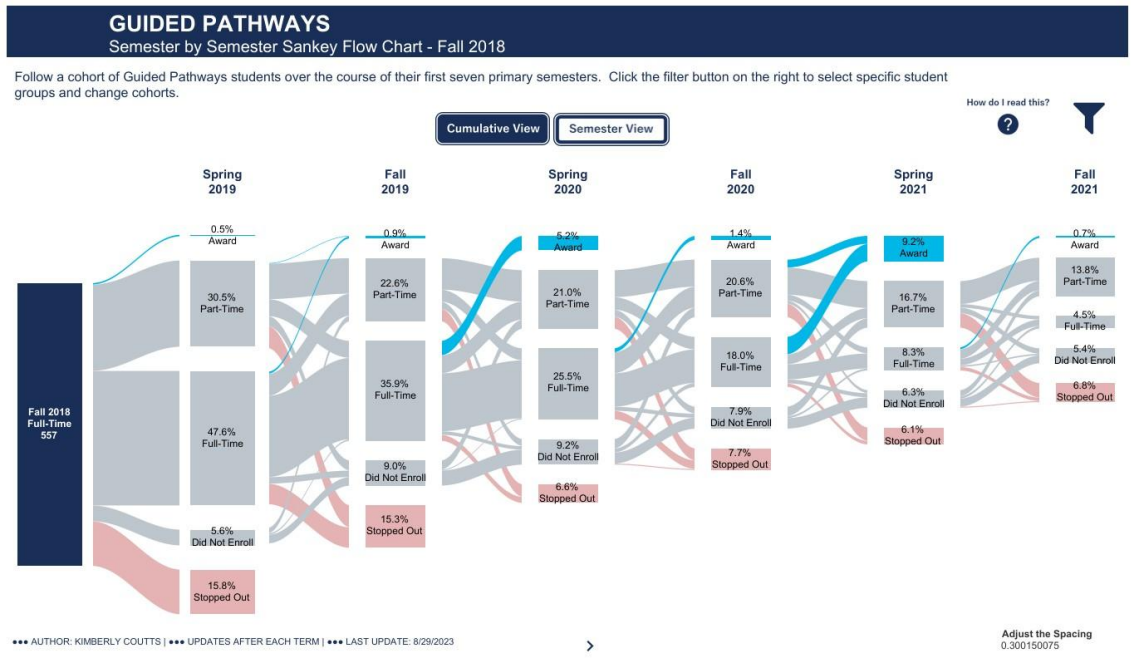
AGENDA.

- Accessing Tableau Public And The Guided Pathways Dashboard
- Scenario – Big Picture Story
- Specifics
- Related Scenarios
- How People Use This Dashboard
- Why This Works
- Alternative View
- Process
- Outcomes
- Commentary – Andy Cotgreave

ACCESSING TABLEAU PUBLIC AND THE GUIDED PATHWAYS DASHBOARD.

- Click below to access the public dashboard:

Guided Pathways Dashboards



Original Dashboard Designer: Kimberly Coutts.

Organisation: MiraCosta College.

How this dashboard delivers: The dashboards allows college administrators and support staff to see the flow of a cohort of students through their first seven semesters of college.

Audience: College administrators and support staff.

Tools: Tableau.

SCENARIO – BIG PICTURE STORY.

- You are a college administrator, and you want to know how the students in your college **progress** through their program over various semesters.

- Starting with a full-time or part-time cohort, you want to **see how students progress** semester by semester as they complete the program, move or remain part-time / full-time, stopout, or simply don't enrol in the following semester.

SPECIFICS.

- **You need to see**:

  - A cohort of full-time or part-time students in a **starting** semester.
  - Each **subsequent** semester, going out seven semesters, which is a three and a half year time period.
  - For each semester, the **percentage** of students who:
    - Were **awarded** a degree or certificate or transfer to a four-year institution.
    - **Remained** full time.
    - **Switched** to part-time.
    - **Did not enrol** in that semester but **returned** at a later point in time.
    - **Stopped out**.

RELATED SCENARIOS.

- You are a hospital administrator watching the **patient flow over time**, or through stages or phases of procedures and recovery.

- You are a web marketing manager **tracking the flow of users** on your website, from the home page, through all of the other pages on the website.

- You are a production / inventory manager **monitoring the flow** of production or inventory as it moves.

HOW PEOPLE USE THE DASHBOARD.

- Colleges often face **major challenges** in serving diverse student populations, ranging from degree seekers to lifelong learners pursing certifications or personal development.

- The Guided Pathways dashboard was developed to **visualise** the **complex** educational journey of students at MiraCosta College.
  - It provides **actionable insights** into how students **progress** through their programs, with a **long-term goal** of **improving retention** and **success rates**.
  - The dashboard focuses on tracking a cohort of students who start as full-time or part-time students over seven semesters, **analysing their transitions** between full-time, part-time, and non-enrolment categories.

HOW PEOPLE USE THE DASHBOARD.

- The dashboard developer **Kimberly Coutts** said …

  "We had a tendency to **assume** that full-time and part-time students were these **unchanging** groups, meaning that if a student started part-time, they stayed that way through their entire experience."

  "Seeing the **amount of flow** between the different enrolment statuses was the first **big eye-opener** for many."

- Serving **multiple stakeholders**, including deans, administrators, and trustees, the dashboard is primarily accessed through MiraCosta's Tableau environment.
  - It offers a combination of **interactive** and **static views**, with its centrepiece being a **horizontal Sankey diagram** that maps the flow of students over time.
  - Users can apply **interactive filters** to **drill-down** into specific demographics or student attributes, making it an interactive tool for understanding **student dynamics** and **finding insight**.

WHY THIS WORKS.

- **Great Use of a Sankey Diagram**.

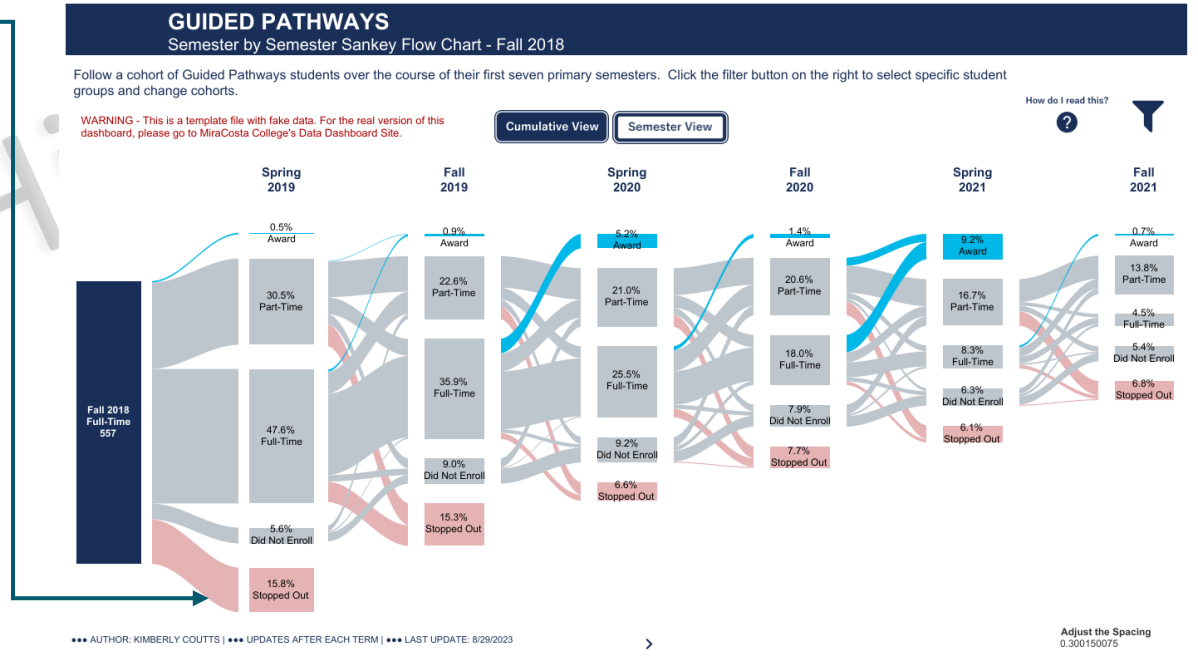
  - **Sankey diagrams** can be very useful to illustrate **flow through a system**, but they can **appear complicated**, especially if you have never seen one before.
  - The Sankey diagram is an ideal choice for visualising student pathways because it **captures** the **complexity** of their transactions in an **intuitive and engaging** way.
  - By showcasing the **flow** of students across categories, such as full time, part time, stopped out, or not enrolled, the Sankey provides a **clear picture** of where the students succeed and where they encounter **challenges**.

  - The visualisation emphasizes the **dynamics** of the student movement semester by semester, making areas of **attrition** immediately **evident**.
    - For example, the thinning of the bands from one semester to the next, clearly illustrates where students are dropping out or switching enrolment status.

WHY THIS WORKS.

- From the illustration opposite we can quickly see that 15.8% of full-time students from the fall 2018 cohort stopped out after the semester and didn't return for spring 2019 or any other semester.

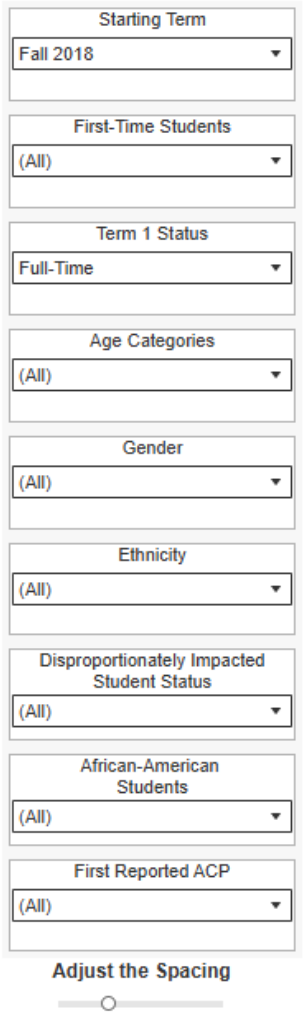
- This visualisation **transforms abstract data** about thousands of students each with their own journey, into a **single overall view**, allowing stakeholders to **quickly identify problem areas** and allocate resources **effectively**.



WHY THIS WORKS.

- **Interactive Features**.

- One of the most **powerful** aspects of the Guided Pathways dashboard is its **interactive features**, particularly the ability to **customise** views.
- Users can filter the data by **various** demographic attributes.
  - These filters allow the user to **drill-down** into specific student populations.
  - This level of **flexibility** ensures that the dashboard is not a one-size-fits-all tool, but an **interactive tool**, **tailored** to the needs of diverse **stakeholders**.



WHY THIS WORKS.

- Administrators **focusing** on ethnicity initiatives can **filter** the dashboard to view the experiences of specific demographic groups, such as first-generation college students or part-time students, to **identify patterns** of **attrition** and **success**.
  - Similarly, program leaders can use these filters to **evaluate** the outcomes of **targeted** support programs for underserved populations.
  - This ability to **customise** and segment data also fosters more meaningful discussions.
- As Kimberly explained …

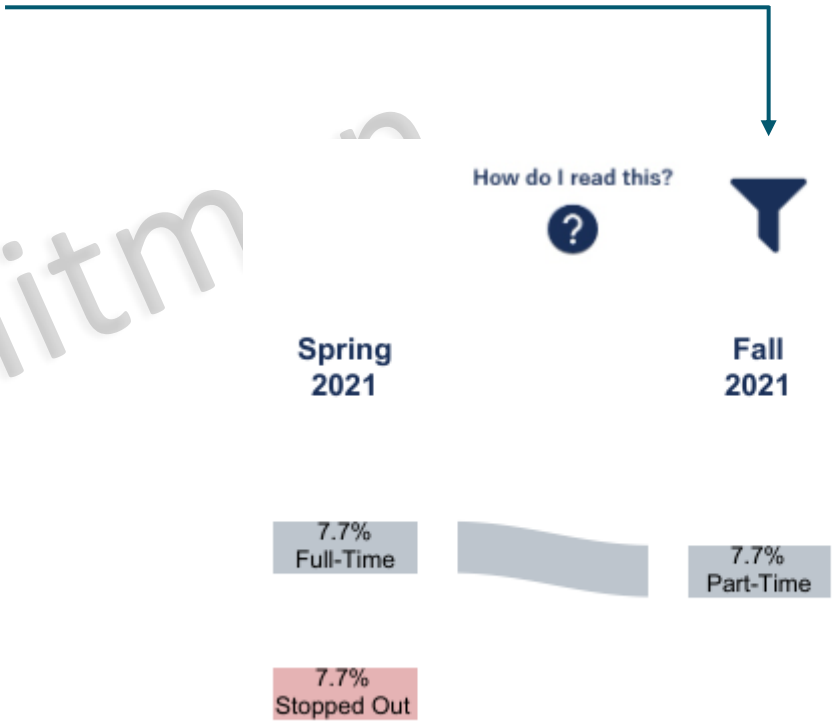
  "Frequently, someone will share a link to this dashboard with a specific team or leadership group. They may be interested in not just the overall student body but in understanding how specific populations such as African American students, are navigating their pathways."

- These **tailored insights** make it possible to align institutional **strategies** with the unique challenges and goals of different student groups.

WHY THIS WORKS.

- As we have now seen, nine filters creates a **rich interactive** experience, but placing nine filter options on a dashboard would **quickly clutter** the view.

  - Kimberly provides a **simple filter** button (the funnel icon in the upper top right corner) that can expand or collapse to show the nine filters and change them.



The dashboard filter button (the funnel icon) allows for the maximum amount of space without cluttering the view with nine views.

WHY THIS WORKS.

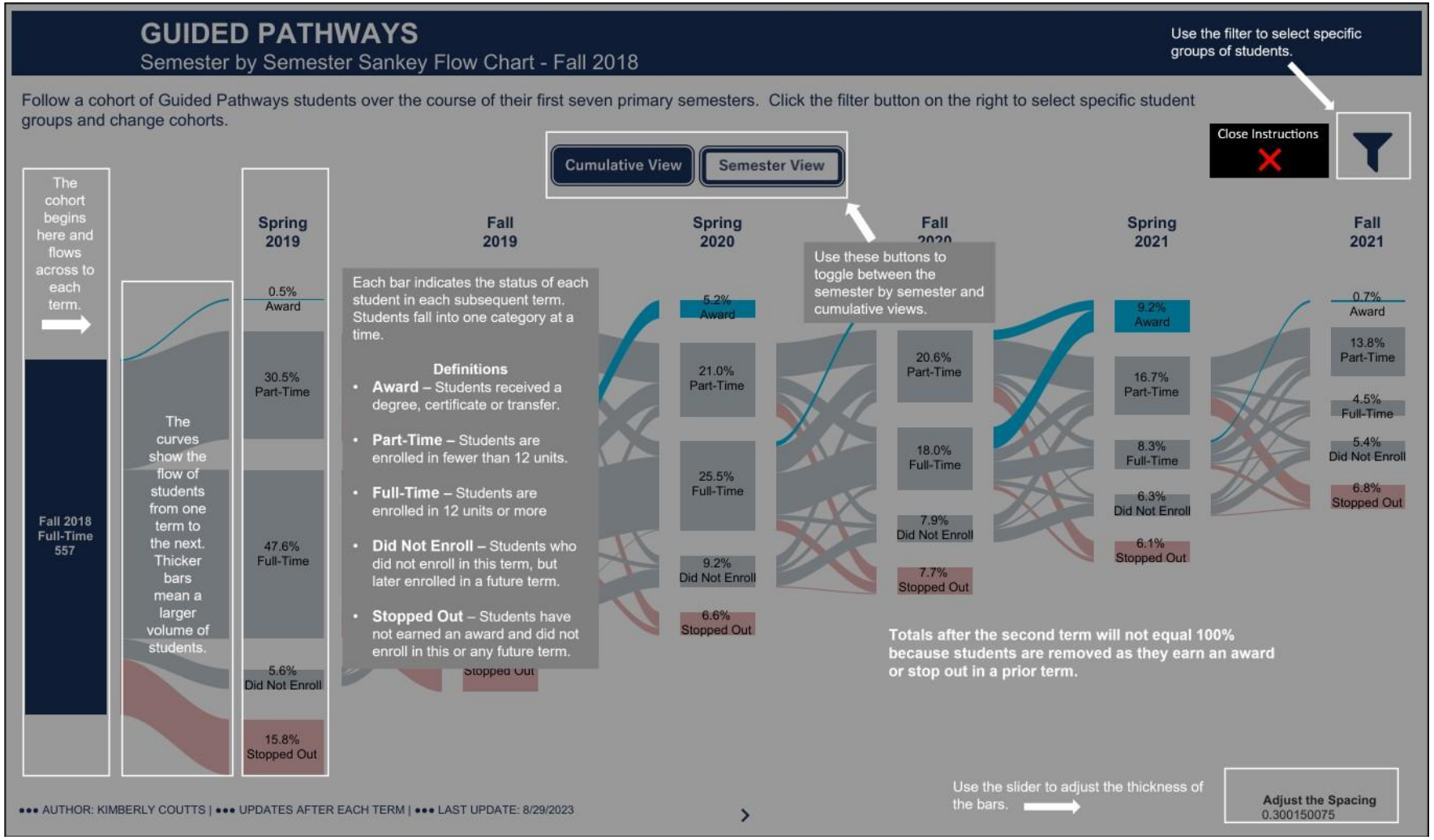
- **Instruction Overlay**.

- The Guided Pathways dashboard includes a thoughtfully designed "**How do I read this ?**" **overlay feature**, ensuring that even nontechnical audiences can **easily** understand and navigate the visualisation.
  - With just a click of a button, users can access a **detailed guide** that explains each component of the dashboard.

- The overlay design shown on the next slide provides a breakdown of the key elements of the Sankey diagram.

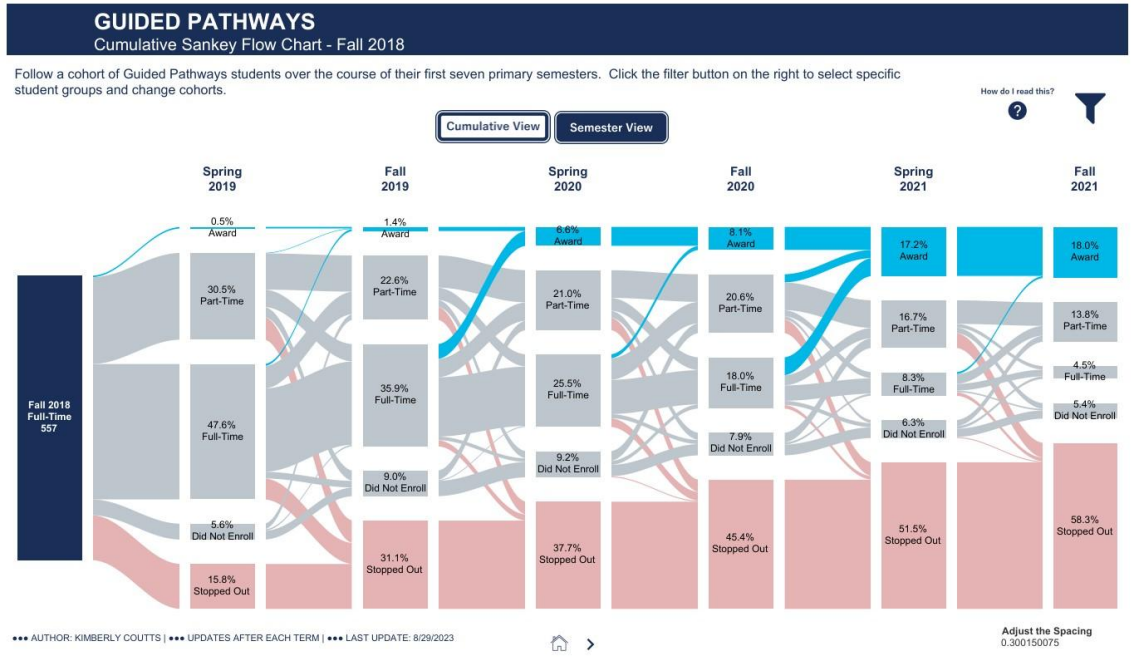
- The overlay design **anticipates** common user questions and makes a chart type that can feel complex, **more accessible**.
  - Even if a user hasn't read data from a Sankey chart, the overlay puts the **functions** and **content** in **plain language**.

WHY THIS WORKS.

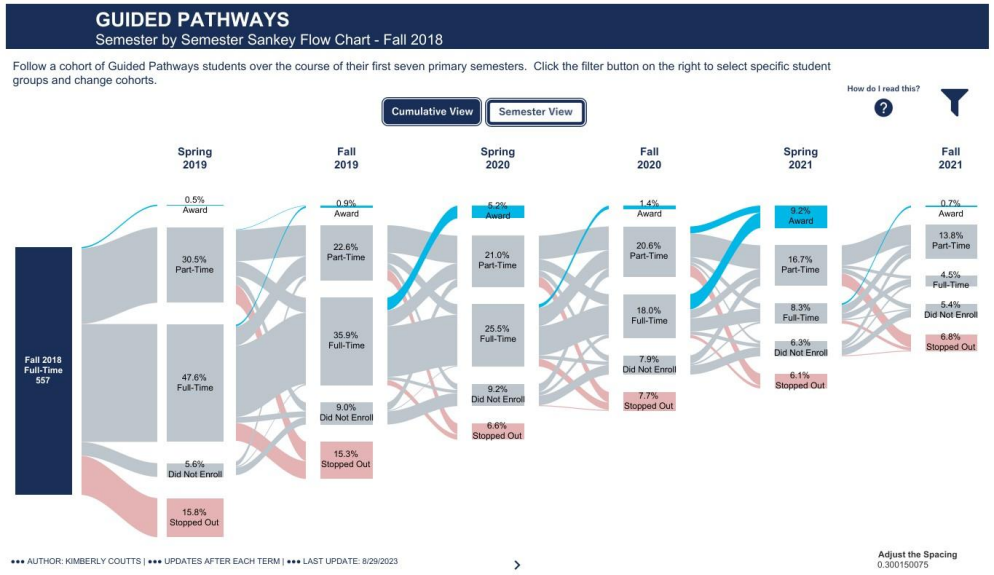


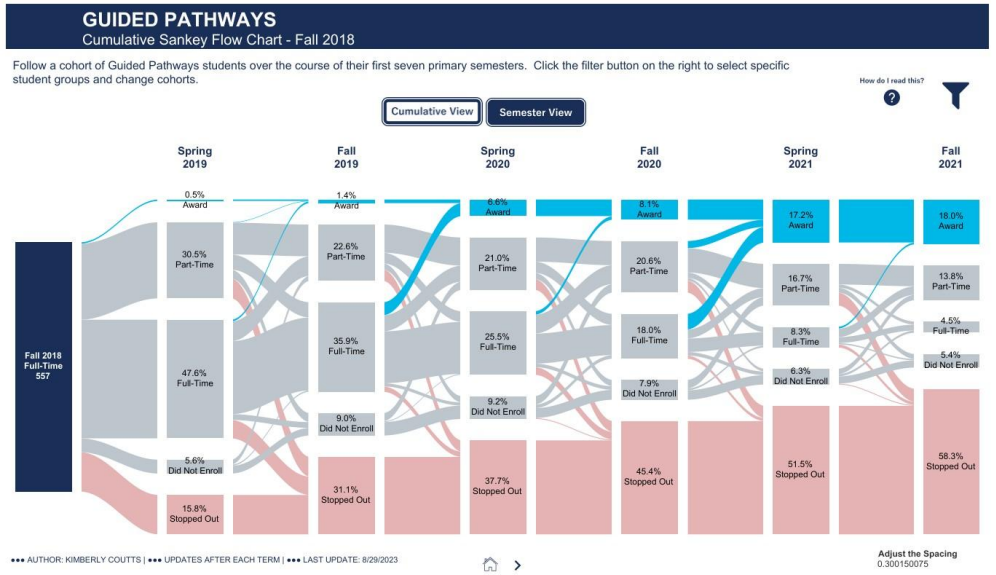
ALTERNATIVE VIEW.

- The semester-based view we've seen **simplifies** the flow for non-data-savvy users by **focusing** on changes between individual terms.
- In addition to the semester-based view, an **alternative cumulative view** is also possible.
  - This cumulative view provides a **holistic** understanding of **attrition** and **retention** trends across the three-year timeline.
- The image to the right shows the **cumulative view** for the fall 2018 cohort.
  - In this view, **every student** at the start of the cohort is represented throughout the **entire visualisation**.



ALTERNATIVE VIEW.





- Now let's **compare** the two views side by side.
- Notice how the two views answer **different** questions.
  - In the semester view on the left, you can see that 15.8% of students stopped out by the spring of 2019, and another 15.3% stopped out by fall 2019.
- The semester view makes it **easy to see** the remaining students after each semester.

- But what if you wanted to know the total percentage of students that have stopped out from the fall 2018 cohort ?
- The cumulative view provides an **easy way** to see those numbers **without** the mental math necessary to keep a tally.
  - We can **easily see** the breakdown of the entire cohort, total awards, total remaining and total stopped out, and all of them at any point in time.

PROCESS.

- The spark for this dashboard came from **conversations** with the dean of Research Planning and Institutional Effectiveness, Dr. Chris Hill, who envisaged a tool to **track** student attrition visually.
  - The dean told Kimberley that she thought it would be helpful to see how a cohort of full-time students progress semester by semester.

- Kimberley initially **explored** a vertical funnel diagram but **quickly pivoted** to a horizontal **Sankey** diagram.

- Kimberly said ….

  “ A vertical view limits the available real estate, forcing people to scroll down. Downward scrolling felt off to me, as our other success charts are typically displayed in an upward trajectory. I tried to display it from bottom to top but thought this would be too challenging to our audience and would require too much scrolling. Ultimately having everything on a single page with success at the top and stopped out at the bottom made the most sense.”

PROCESS.

- A Sankey diagram was **not easy** to implement since it wasn't a default chart type within Tableau.
  - These types of visualisation in Tableau required **complex calculations** and **structures**.
  - Kimberly encountered many early challenges, including complex data transformations and **iterative design** revisions.
  - Early attempts involved complex Excel calculations, which made the **data processing very slow**.
  - Tableau's table calculations were another hurdle, with minor configuration errors often causing major issues.

- The dashboard took considerable time to develop, and periods of trial, failure and revision.
  - Like most developers, Kimberly worked on the dashboard as one project in a larger portfolio.
  - Eventually she **leveraged** the **templates** built by Ken Flerlage, which **streamlined development** and helped get the first release out the door.

PROCESS.

- **Tools and Methods Change and Advance Over Time**.

- Over the years, people in the community have continued to develop different methods for making Sankeys in Tableau with each improving on the last.
  - Ken Flerlage developed **templates** Tableau developers could use with their own datasets to create almost instant Sankeys.
    - This is the template Kimberly ended up using as her solution.
  - Even with a streamlined solution like Ken's, the community kept pushing to reduce barriers to building these more complex chart types.
    - Tristan Guillevin developed a web-based tool called **AdvViz** that assists users in creating all sorts of bespoke visualisation.
    - Fast forward to the latest version of Tableau and there is a newer feature called Viz Extensions that allow users to create these more complex visualisation directly in Tableau with a few clicks.

PROCESS.

- Overall, the development of the dashboard was an **iterative**, **trial-and-error process** that required **engagement** with data structuring, various visualisation techniques, and **working with stakeholders**.
  - The initial requesting dean was **very involved** in the early development.

- Also, it's very important to note the very long lifecycle of a cohort (5-7 years).
  - While it's too early to measure the **direct impact** of this visualisation, it has already **improved transparency** and **decision making** as it related to student **retention strategies**.

OUTCOMES.

- About three years ago, the college implemented the Caring Campus initiative.
  - Instead of offering the students services and hoping they would take advantage of them, college staff reached out **directly** to these first-time students.
  - Students are **encouraged** to develop a long-term educational plan, offered peer mentors and other support services that are tailored to each student's specific needs.

- They **measure** several **leading / lagging** indicators as part of each student's experience.
  - The users of this dashboard track the cohorts in this Sankey and compare them with their **metric achievement** (i.e. completing their educational plan, persisting to the second semester and completing college math and English) to ensure that the college is doing everything they can to prepare students for each stage of their education.

- Kimbery said …

  "For us '**success**' will mean that the larger portions of these cohorts transition to the Award group within the first three years, and fewer will stop out."

OUTCOMES.

- **The response from the deans** ….

  - Using those charts, our ACP Success Teams saw when the most **pain points** for the students are and when most drop off.
  - The two things that come to mind are **changes** to:
    - Our onboarding efforts for our new students so they are **more prepared** to start classes and stay to **complete their goal**.
    - Our changes in **proactive** year-round case management (phone campaigns) even during the intersessions (winter and summer) to support **retention** since we lose so many students between semesters.

  - We have also started to **track** and contact students beyond 1 year since many students **still** need support and encouragement to make it past year 2 and 3.
    - Especially part-time students.
    - The dashboard **emphasized** the need to continue to include part-time students in our outreach and case management efforts.

COMMENTARY – ANDY COTGREAVE.

- I often wonder how someone will **react** to a dashboard visualisation.
  - When you see a complicated one like this, I worry you'll have a quick reaction and think …

    "**Ugh, that dashboard's not for me**"

- When I first saw this dashboard, my thoughts were that a Sankey-based dashboard was going to **turn people off**.
  - However, I came to realise just how **good** it is at **revealing extensive insights**.
    - I now know it's an exceptional way to show cohort data.

- If you make complicated dashboards, it makes **user engagement** all the more **important**.
  - Some of your users might have the same **initial** reaction.
  - A **big part** of the processes is the **importance** of the early and **continued engagement** with the **users**.
    - Followed by **training** and **support.**
    - That stage is **vital** to win them over to the **value** of complex visuals like this one.