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TEACHERS COLLEGE, COLUMBIA UNIVERSITY

Data Basics for Higher Education

Hana Lahr

June 18, 2024

Institutional data can help us…

…examine college performance.

…examine short- and long-term student outcomes for different populations.

…better understand the student experience.

…identify opportunities for improvement.

…set college goals.

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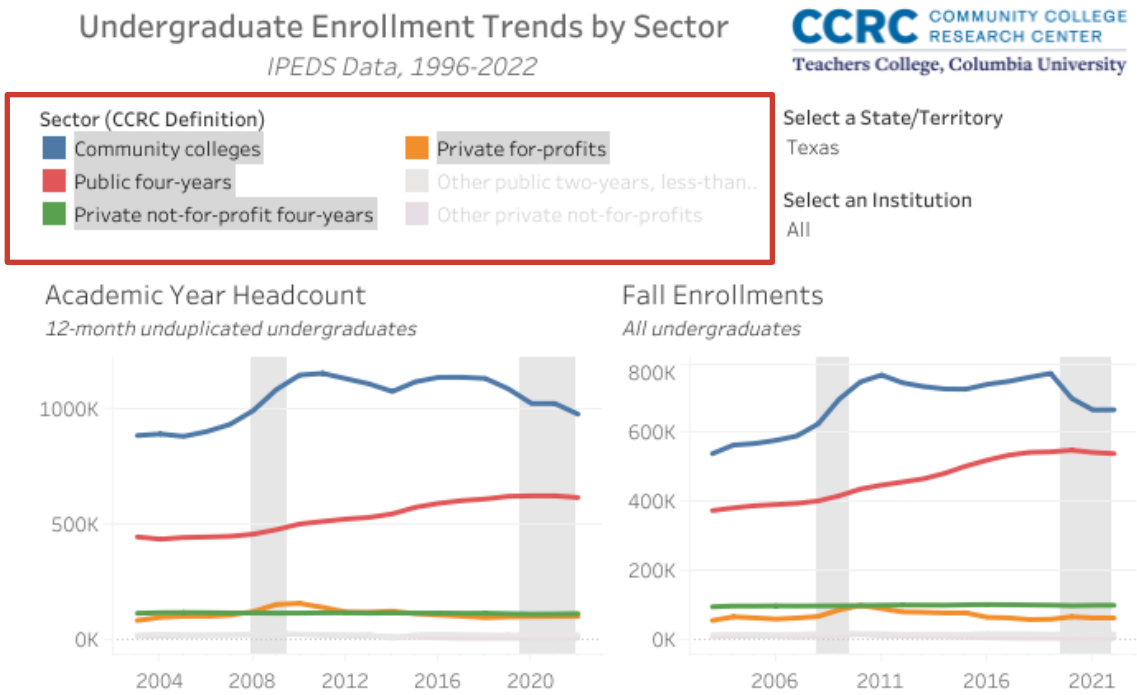
Let’s look at some common data points

Fewer students are enrolling in community colleges



Source: https://public.tableau.com/app/profile/john.fink/viz/UndergraduateEnrollmentTrendsbySector/Summary

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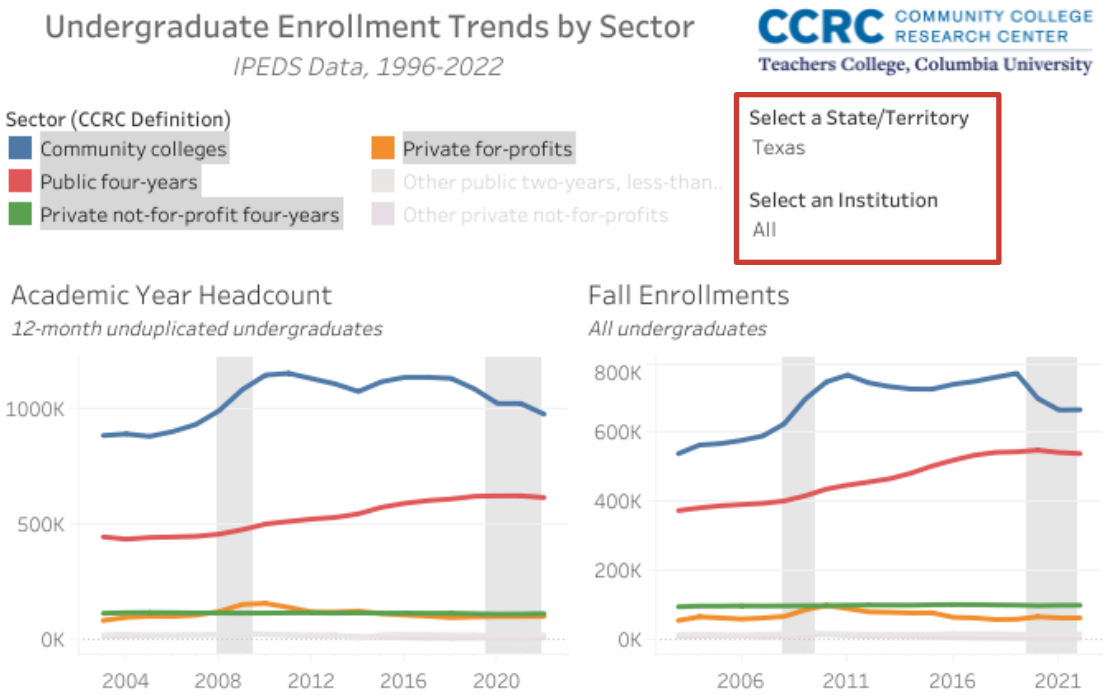

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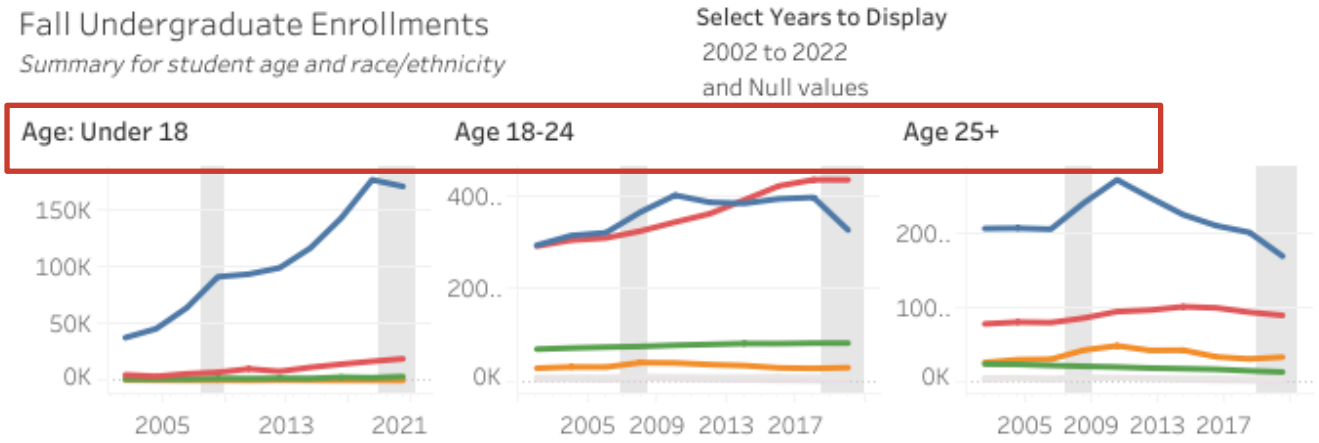
With declines among adults (25+) and traditional age students (18-24)



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With HB8, Texas will fund community colleges based on completion and not enrollment.

"The new model moves to an outcomes-based approach and rewards colleges for awarding degrees, certificates, and other 'credentials of value'."

Source: https://www.highered.texas.gov/2023/06/09/texas-house-bill-8-becomes-law-paves-way-for-innovative-community-college-funding/

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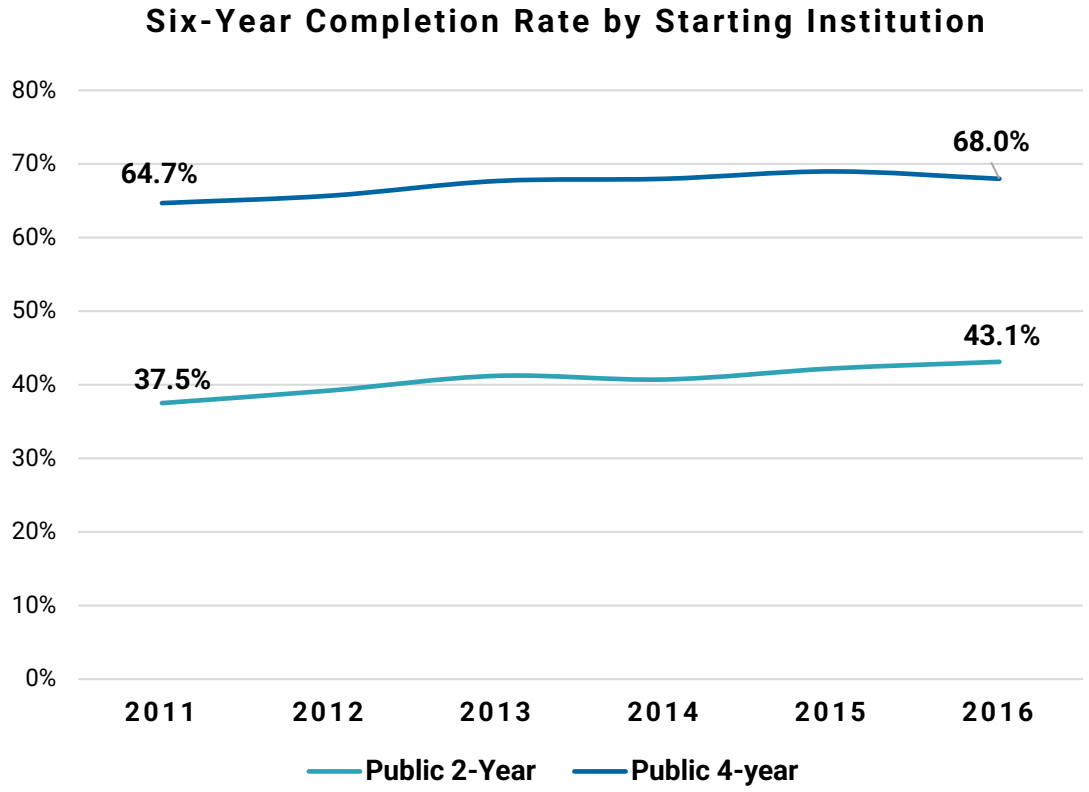
Most community college starters do not earn a credential in six years.



Source: National Student Clearinghouse Research Center, *Completing College*.

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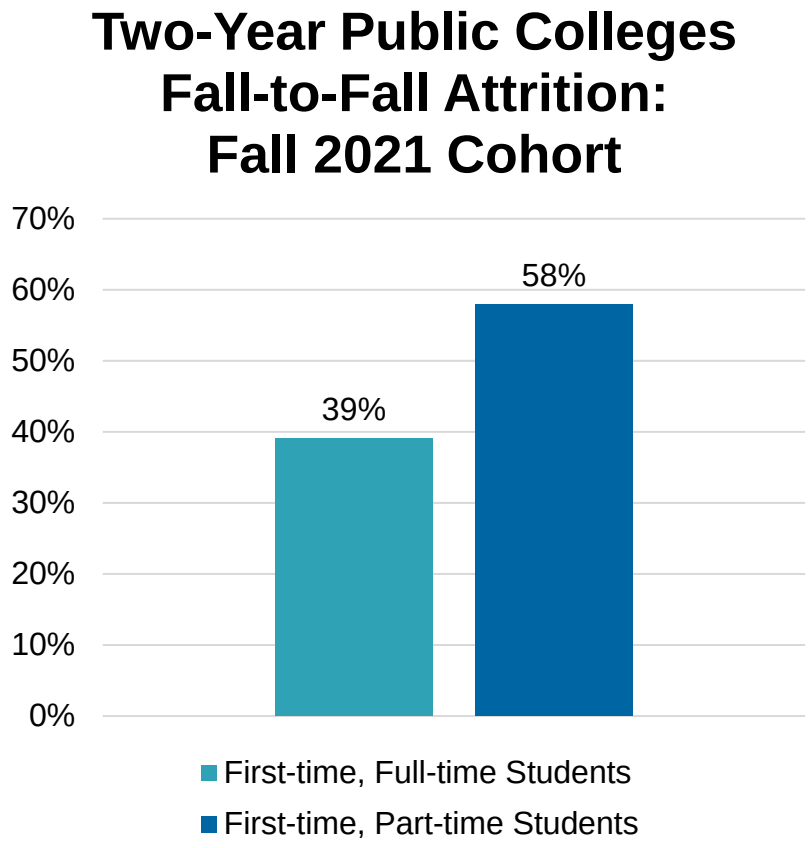
Many students drop out in their first year.

Retaining more students would help address community colleges' enrollment declines.



Source: IPEDS https://nces.ed.gov/ipeds/use-the-data

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Using leading and lagging indicators to motivate and measure college improvement

Leading indicators

- Formative assessment
- Measurable in a short time period
- Primary goal: Improvement (internal)
- Predictive of longer-term outcomes

Lagging indicators

- Summative assessment
- Takes a longer time to measure
- Primary goal: Accountability (external)
- Captures ultimate goals and outcomes

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Leading indicators

First year student momentum:

- College-level credit accumulation
- Gateway course completion
- Course completion
- Persistence fall to spring and fall to fall
- Program momentum

Lagging indicators

Student outcomes:

- CC credential completion
- Transfer + BA completion
- Labor market outcomes

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Metrics for improvement: Early momentum as a leading indicator

CCRC RESEARCH BRIEF

COMMUNITY COLLEGE RESEARCH CENTER | JULY 2019

Early Momentum Metrics
Leading Indicators for Community College Improvement

By Clive R. Belfield, Davis Jenkins, and John Fink

As community colleges across the country implement large-scale reforms to improve student success, they need timely and actionable metrics to determine if the changes they are making in a given year or term will likely improve student outcomes in the long run. In this brief, we examine how well nine measures of students' progress in their first year predict student completion in subsequent years and thus how suitable these early momentum metrics, or EMMs, are as leading indicators of the effectiveness of institutional reforms.

Based on analysis of student data from all community colleges in three states, we find that EMMs do predict longer term success for students. We also find that a key factor in low completion rates, as well as in equity gaps in completion rates, is that many students do not gain early momentum in their first year. College outcomes would be substantially higher if more students met EMMs. Our findings indicate the need for comprehensive reforms to community college organization and practice to help more students gain early momentum on their way to earning a credential.

Based on analysis in three states, we find that measures of student progress in the first year predict student completion in subsequent years.

First-Year Indicators of Longer-Term Success

Throughout the nation, two-year and four-year colleges are recognizing that to "move the needle" on collegewide measures of success (e.g., completion rates) major redesign across the entire institution may be required to ensure that its programs, policies, and practices are well designed and aligned to promote student success. Hundreds of community colleges across the country are adopting whole-college reforms commonly referred to as "guided pathways" (Bailey, Jaggars, & Jenkins, 2015). As part of these reforms, colleges are mapping requirements and options for programs of study so that they are aligned with desired employment and transfer outcomes, redesigning the onboarding process to help new students explore options and interests and develop an academic completion plan, and revamping advising to better support students in making timely progress toward completion of a credential. Faculty are also working together across disciplines to ensure that curricula and teaching prepare students to succeed in employment and transfer in their field of study.

Because they involve a redesign of college practices at scale, guided pathways reforms take several years to implement (Jenkins, Lahr, Fink, & Ganga, 2018, pp. 2–3). Given that whole-college

- Leading indicators are **actionable** and **timely**, and **predictive** of longer-term lagging indicators
- If leading indicators don't improve, college is unlikely to see longer-term outcomes improve.

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Early momentum metrics for first-time-in-college (FTIC) students

- **Credit momentum:**
  - % of FTIC students who complete 6+, 12+ credits in term 1
  - % of FTIC students who complete 15+, 24+, 30+ credits in year 1
- **Gateway momentum:**
  - % of FTIC students who complete college-level math/English (and both) in year 1
- **Persistence:**
  - % of FTIC students who persist from fall to spring
  - % of FTIC students who persist from fall to fall

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The importance of program enrollment and completion data

HB8 is focused on “credentials of value”

- The number of credentials of value awarded…that position graduates for well-paying jobs.
- Credentials of value awarded in high-demand fields where employers are looking for skilled employees.
- Successful student transfers from community colleges to four-year universities.
- Completion of a sequence of dual credit courses, which are offered to high school students and can set them on early pathways to success.

Source: https://www.highered.texas.gov/2023/06/09/texas-house-bill-8-becomes-law-paves-way-for-innovative-community-college-funding/

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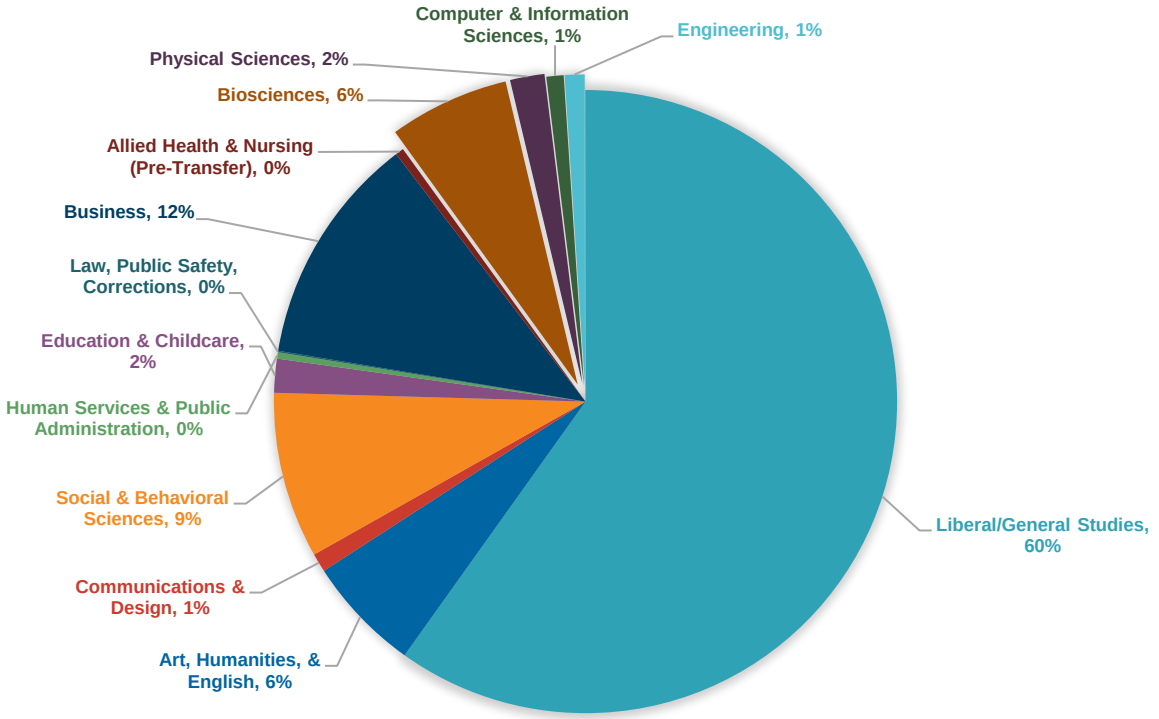
60% of community college transfer associate degrees are in "general or liberal studies"; only 10% are in STEM fields.

Community College Transfer Associate Degrees by Field: AY 2021-22



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Examining program enrollment by post-completion value: Questions to guide inquiry and action

1) Which programs have higher value job advancement and/or transfer in student's major field of interest?
2) Which programs have lower or unclear post-completion value for employment or transfer?
3) How many students are enrolled in higher-value programs compared to lower-value programs? How many students are not in a program that has clear job or transfer outcomes?
4) Which student groups (by race/ethnicity, gender, socioeconomic status, age, geography and other factors) are underrepresented in high value programs?
5) Where are there opportunities to expand access and success in programs with high value for employment and transfer?

UNLOCKING OPPORTUNITY
aspen institute
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Qualitative data tells us about the student experience

Colleges can and should use quantitative and qualitative data, and they serve different purposes

- **Quantitative data** are most useful for:
  - identifying a problem (or opportunity) to improve student outcomes;
  - monitoring leading and lagging indicators of student progression and success to see if reforms are working.
- Quantitative data may point to **problem areas and possible solutions**, but to improve student outcomes, colleges need to change the student experience.

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To understand and improve the student experience, you need qualitative analysis

- This may include talking to students about their experience.
- Mapping out practices and business processes to see where students encounter barriers.
- Setting up systems for better communication among faculty and student services to customize teaching and support to individual students or groups of students---to put in place a continuous improvement process.

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Student experience data from interviews and focus groups

- Interview and focus group data will tell you – *in students' own words* – what they are experiencing.
- Students often have ideas and suggestions for improvement.
- Important to talk to a range of students across the college.
- Interview and focus group data can be more time-consuming to collect.
- Offices and departments across a college should collaborate to avoid overwhelming students with requests.

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What should you look for in institutional data?

Data don’t lie….

But no one data point will tell you the full story

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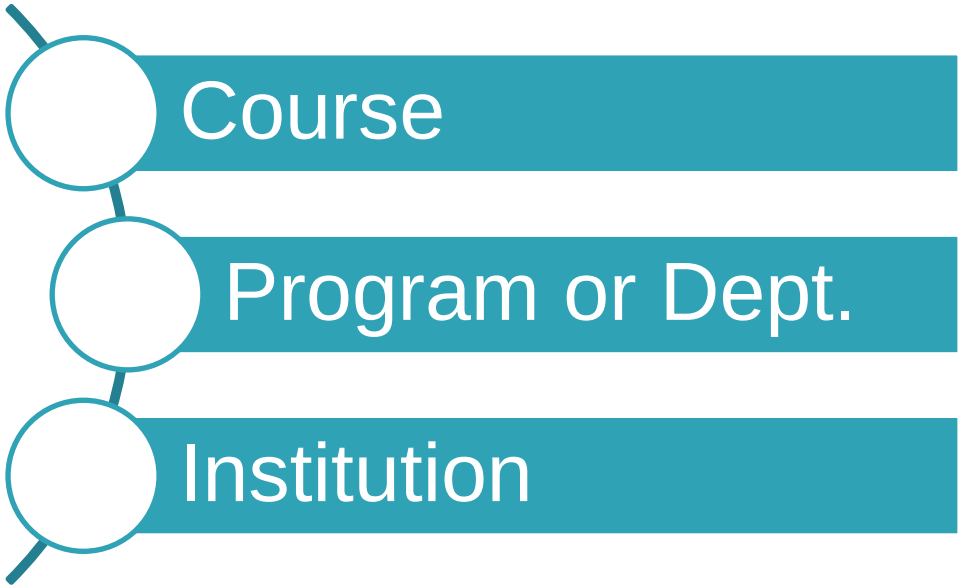
Data can provide information about multiple "levels" of the institution



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Questions to ask when evaluating institutional data

1. What is the student **cohort?** Which students are included in these data? Which students are not included?
    - Are these new students? Returning students? Adult students? Dual credit students? Full-time and/or part-time students? Transfer or workforce students? Credit or non-credit students?
2. What **year** are these from?
    1. If the data are from a single year, is it possible to collect trend data to see how the data are changing year over year?
3. Are the data **disaggregated?** By race, age, income, gender, first-generation status, full-time/part-time status, etc.?

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Questions to ask when evaluating institutional data

1. How are these data connected to our **institutional priorities**?
2. What do these data tell us about the **student experience** at our college?
3. What **additional questions** do these data raise?
    - What additional data do we need to answer these questions?
    - Do we need to collect qualitative data (focus groups, interviews, etc.) to better understand what students experience?

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Undergraduate Enrollment Trends by Sector

IPEDS Data, 1996-2022

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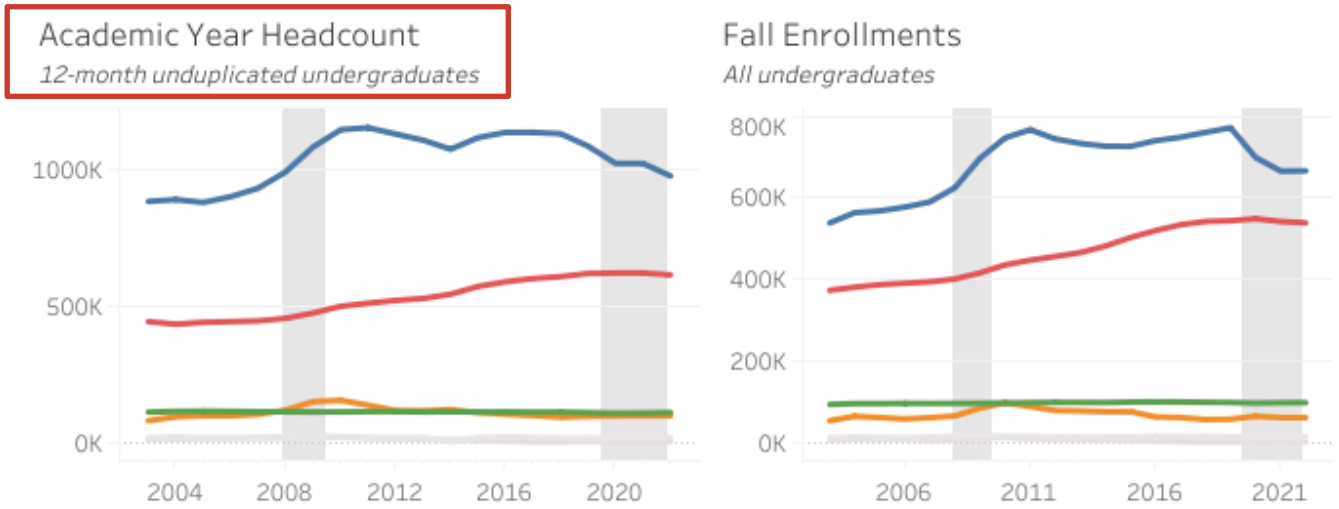
Sector (CCRC Definition)
- Community colleges
- Public four-years
- Private not-for-profit four-years
- Private for-profits
- Other public two-years, less-than..
- Other private not-for-profits

Select a State/Territory
Texas

Select an Institution
All



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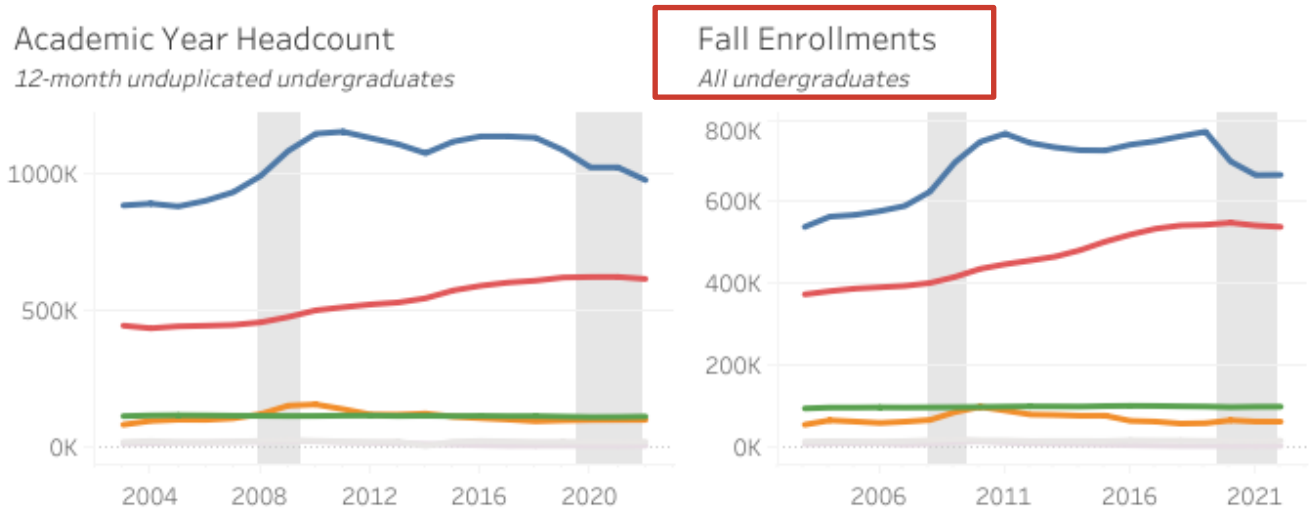

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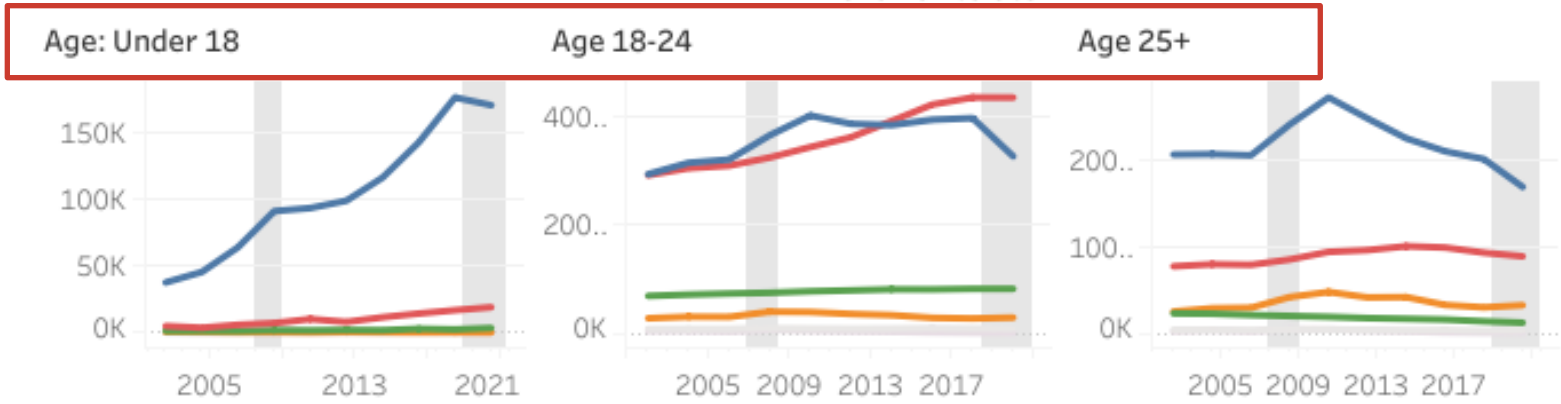
Select a State/Territory
Texas

Select an Institution
All

Fall Undergraduate Enrollments

Summary for student age and race/ethnicity

Select Years to Display
2002 to 2022
and Null values



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Q&A

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Thank you!

Hana Lahr, lahr@tc.edu

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