**UB Business Days 2023** 

Informed Decision-Making with Actionable Intelligence Dashboards

Brian O'Connor, AVP for Data Analytics Office of Institutional Analysis (OIA) Institutional Analytics Team





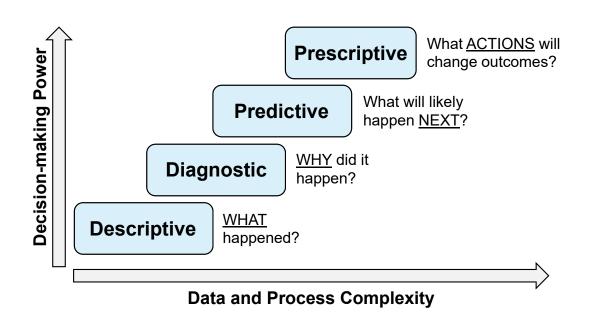
### A Story of Actionable Intelligence at UB

- Actionable Intelligence Implementation (What, Why, How)
- A National Call to Action on Analytics in Higher Education
- The Office of Institutional Analysis (OIA) & Analytics Team
- Analytics Ecosystem Path to Actionable Intelligence
- Improved Communication and Collaborative Partnerships
- One Size Doesn't Fit All → Designing for Different Audiences
- Selected Dashboard Examples with Decision Impact
- Questions?

# **Analytics Maturity: Shifting Culture Towards Actionable Intelligence**

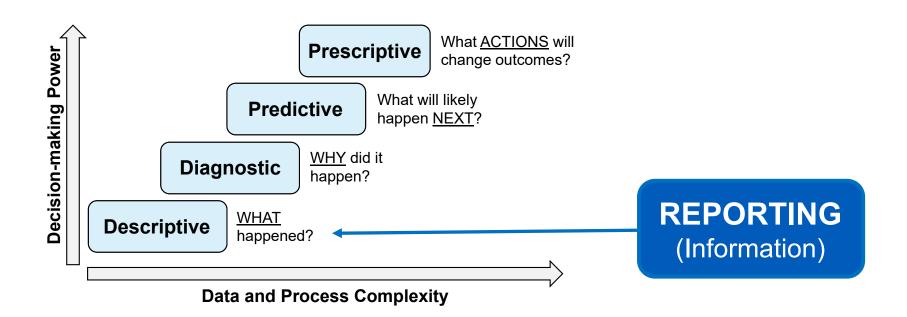


# **Shifting Culture Towards Actionable Intelligence**



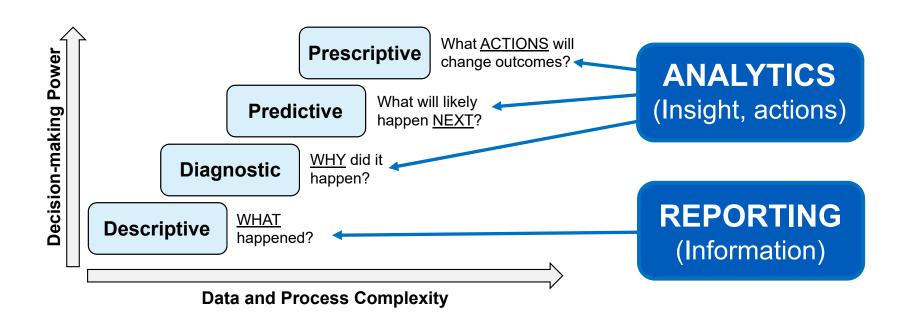


# **Shifting Culture Towards Actionable Intelligence**



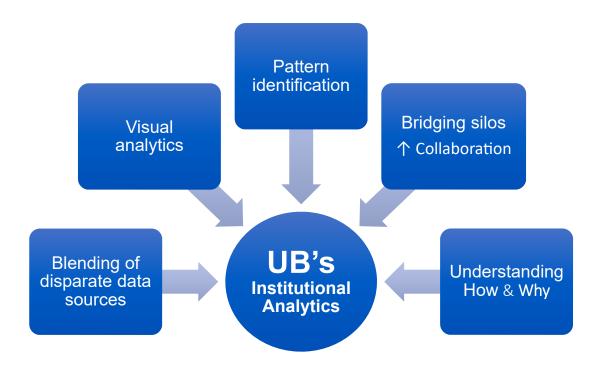


# **Shifting Culture Towards Actionable Intelligence**





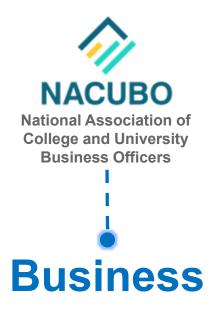
# Institutional Analytics Team → Actionable Intelligence



# National Call to Action on Analytics in Higher Education



# 2019 Joint Statement on Analytics in Higher Education

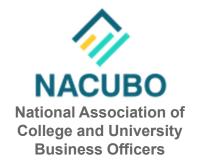








# 2019 Joint Statement on Analytics in Higher Education





EDUCAUSE

Information technology leaders and professionals

**Business** 

+ Data

+

**Technology** 

"Analytics can save higher education. Really."















#### **Dashboard of Dashboards**

The Dashboard of Dashboards (DoD) was developed to simplify users' access to some key campus dashboard sets, without requiring them to navigate through lists of Tableau sites and projects. It serves as a "one stop" launch page for the current Institutional Analytics dashboards available to the campus.



#### **Enrollment Modeling Tools**

Increased understanding of the underlying impact metrics that drive changes in outcomes is a great first step. The reality is that numerous metrics have potential impact, and to different degrees, so where do you start? Enrollment modeling tools are available to the campus community that give users the ability to "turn dials" up or down on selected metrics to see the resultant outcome changes over multiple years.





#### **Institutional Analytics Team**

- Brian O'Connor
- Mychal Ostuni
- Shannon Mahany-Kulinski
- Tiffany Fuzak
- Damir Mesic



What are we Trying to Better Understand?

Operational Processes

Institutional Priorities

**Campus Initiatives** 



What are we Trying to **Better Understand?** 

> **Operational Processes**

> Institutional **Priorities**

> > **Campus Initiatives**

**Data Transformation** and Curation

**Rich Disparate Sources Raw Data Cleansing Integrating Sources Making Viz-Ready** 



What are we Trying to Better Understand?

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Data Transformation and Curation

Rich Disparate Sources
Raw Data Cleansing
Integrating Sources
Making Viz-Ready

Visualizations to Tell the Data Stories





What are we Trying to Better Understand?

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**Campus Initiatives** 

Data Transformation and Curation

Rich Disparate Sources
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Visualizations to Tell the Data Stories



Utilization → Data-Informed Discussions and Actions

Viewing the <u>PAST</u>
Monitoring the <u>PRESENT</u>
Understanding the <u>FUTURE</u>

All levels and functions
Promoted cross-function use

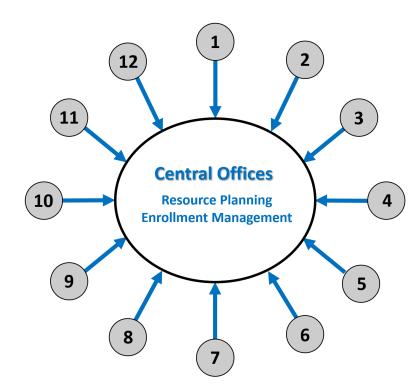
Deep data dives
Trusted data sources
Discovery of new insights



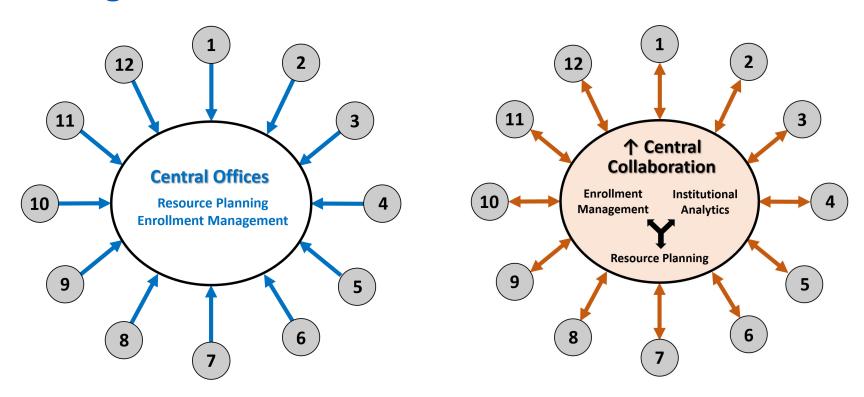
**Visualizations to Tell** Utilization → Data-Informed the Data Stories **Discussions and Actions** What are we Trying to **Better Understand?** Viewing the PAST **Data Transformation Monitoring the PRESENT Operational** and Curation **Understanding the FUTURE Processes Rich Disparate Sources** Institutional **Raw Data Cleansing** All levels and functions **Priorities Integrating Sources** Promoted cross-function use **Making Viz-Ready Campus** Deep data dives **Initiatives Trusted data sources Discovery of new insights** 

Moving from knowing  $\underline{\mathsf{WHAT}} \overset{\mathsf{to}}{\Longrightarrow}$  understanding  $\underline{\mathsf{WHY}} \overset{\mathsf{to}}{\Longrightarrow}$  effective planning for  $\underline{\mathsf{WHAT}} \, \mathsf{NEXT}$ 

# **Changes in Data Communication and Collaboration**



# **Changes in Data Communication and Collaboration**



# Let's look at some examples of Actionable Intelligence Dashboards

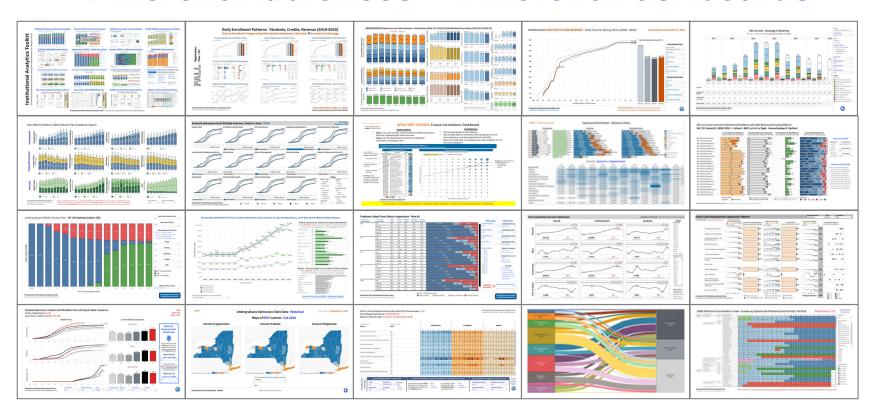


### **Different Audiences = Different Dashboards**

- Administrative Summary / KPI (Small Multiples)
- What-if Scenario Testers (Informing Strategy)
- Metric Flow (In-Cycle, Multiple Years)
- Point-in-time Comparisons (with Caution)
- Deep Dive to How and Why (Explore/Discovery)

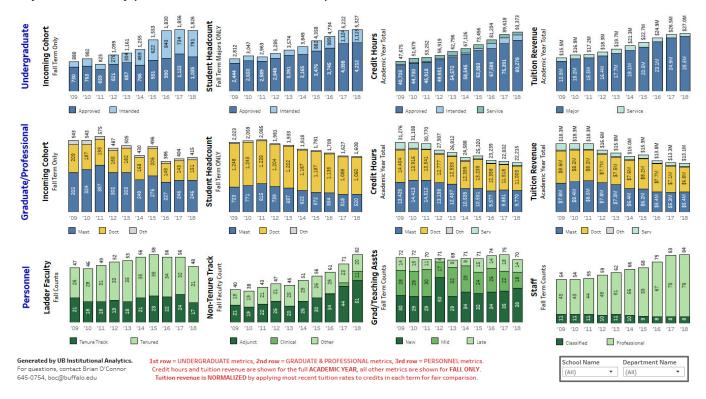


## **Different Audiences = Different Dashboards**



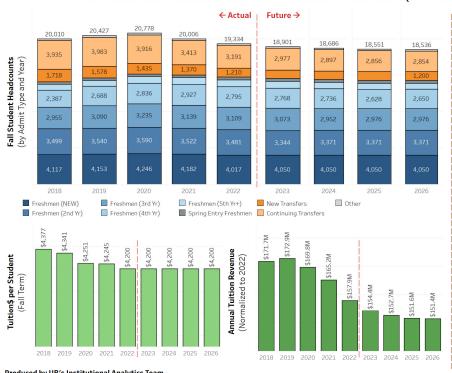
# **Example #1** → **Administrative Summary / KPI**

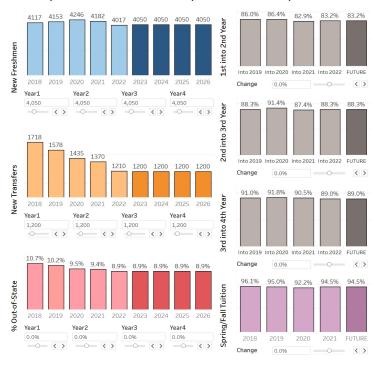
Key Metrics History (Most Recent Ten Academic Years)



# **Example #2** — What-if Scenario Testing / Planning

#### UNDERGRADUATE Headcounts and Tuition Revenue - Actual Values (2018-19 to 2022-23) and Modeled Future Values (2023-24 to 2026-27)

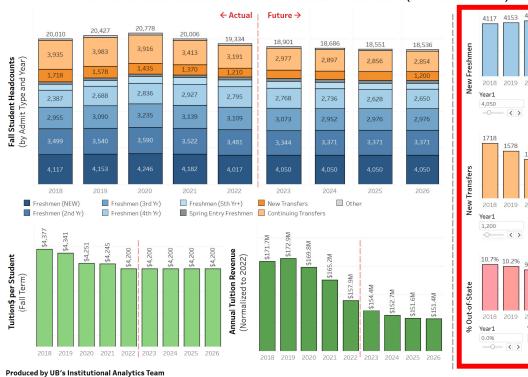


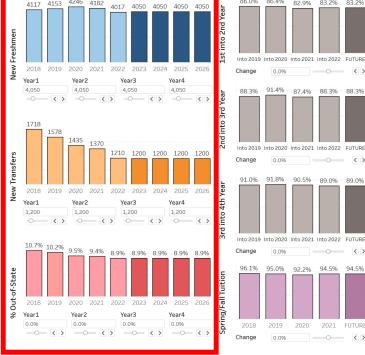


Produced by UB's Institutional Analytics Team
For questions, contact Brian O'Connor (645-0754, boc@buffalo.edu)

# **Example #2** $\rightarrow$ **What-if Scenario Testing / Planning**

UNDERGRADUATE Headcounts and Tuition Revenue - Actual Values (2018-19 to 2022-23) and Modeled Future Values (2023-24 to 2026-27)





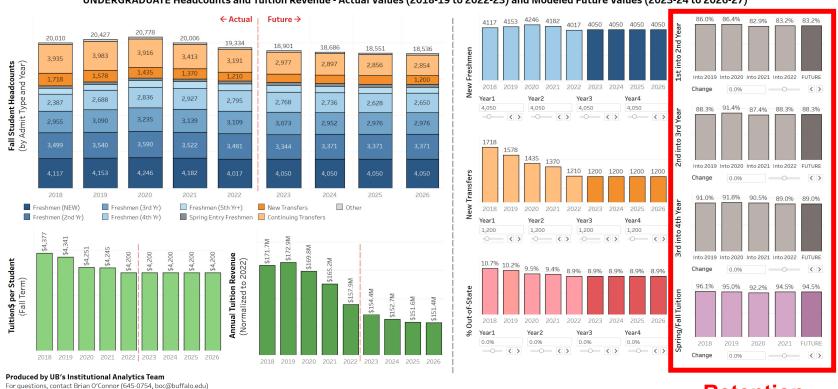
**Incoming Students** 

For questions, contact Brian O'Connor (645-0754, boc@buffalo.edu)

89 0% 89 0%

# **Example #2** — What-if Scenario Testing / Planning

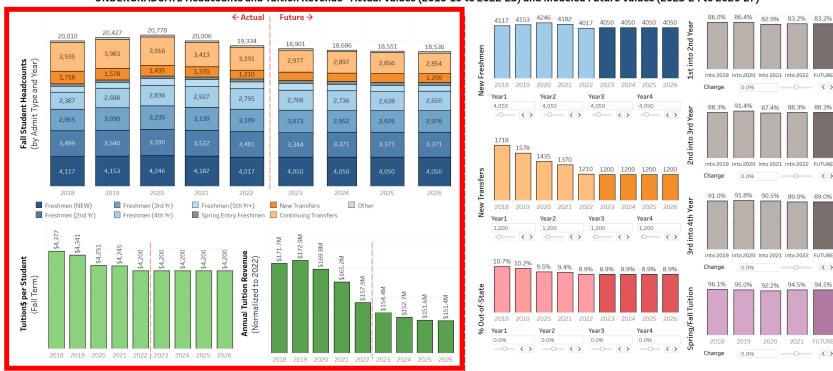
UNDERGRADUATE Headcounts and Tuition Revenue - Actual Values (2018-19 to 2022-23) and Modeled Future Values (2023-24 to 2026-27)



Retention

# **Example #2** $\rightarrow$ **What-if Scenario Testing / Planning**

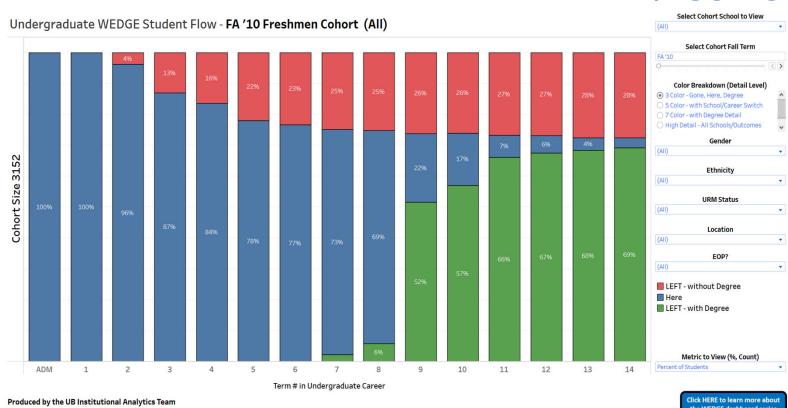
UNDERGRADUATE Headcounts and Tuition Revenue - Actual Values (2018-19 to 2022-23) and Modeled Future Values (2023-24 to 2026-27)



**Headcount and Tuition Outcomes** 

89 0% 89 0%

# **Example #3** → **Metric Flow - Multiple Years (Aggregated)**

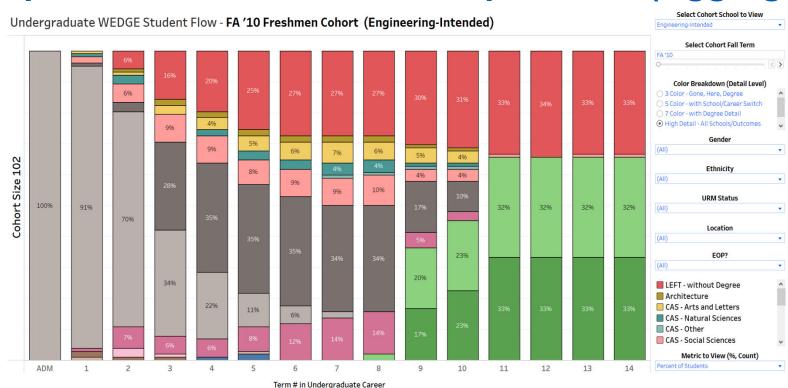


For questions, contact Brian O'Connor (boc@buffalo.edu)

the WEDGE dashboard series



# **Example #3** → **Metric Flow - Multiple Years (Aggregated)**



Produced by the UB Institutional Analytics Team For questions, contact Brian O'Connor (boc@buffalo.edu) Click HERE to learn more about the WEDGE dashboard series



# **Example #3** → **Metric Flow - Multiple Years (Details)**

Student Identifier	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
MM64	6	6	9	19	19	10	2	1	2	1	1	1	1	1	1	1
AM18	9	19	19	19	2	1	1	1	1	1	1	1	1	1	XX	1
AQ16	9	19	19	19	2	1	1	1	1	1	1	1	1	1	XX	1
EA94	9	19	19	19	2	1	1	1	1	1	1	1	1	1	DR	DR
JD52		19	19	19	2			1		1	1			1	DR	DR
CR49		19	19	19	2			1		1	1		DR	DR	DR	DR
AS88		19	19	19	2		1	1		1	1	DR	DR	DR	DR	DR
AR50		19	19	19	2	1	1	1	1	1	1	DR	DR	DR	DR	DR
KN23	12	19	19	19	2	1	1	1	1	1	1	DR	DR	DR	DR	DR
BM96	9	19	19	19	2	1	1	1	1	1	DR	DR	DR	DR	DR	DR
WF08	9	19	19	19	2	1	1	1	1	1	DR	DR	DR	DR	DR	DR
JW34	9	19	19	19	2	1	1	1	1	1	DR	DR	DR	DR	DR	DR
S092		19	19	19	2			1		1	DR	DR	DR	DR	DR	DR
ZX49		19	19	19	2	1	1	1	1	1	DR	DR	DR	DR	DR	DR
VV91		19	19	19	19	17	2	1	MA							
SG14	9	19	19	19	2	1	1	MA								
JC15	9	19	19	19	2	1	MA									
CN41		19	19	19	2		MA									
T063		19	19	19	2		XX									
KP01	9	19	19	19	2	1	XX									
GH43	9	19	19	19	2	1	XX									
DC86	9	19	2	MA												

■ Doctoral Degree

Currently Enrolled - One Credit

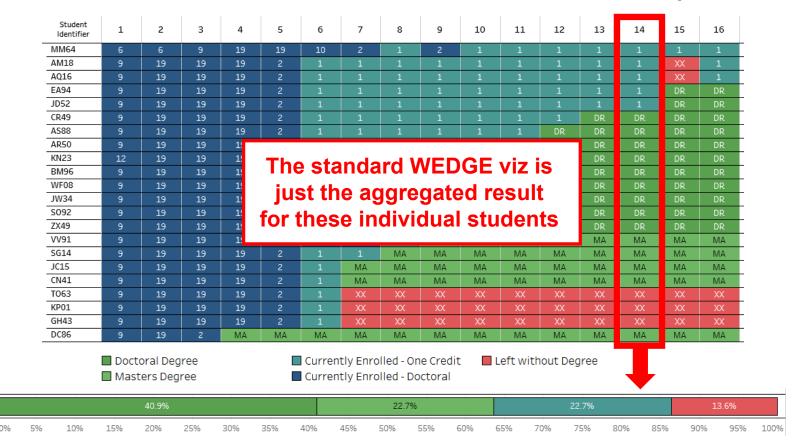
Left without Degree

■ Masters Degree

■ Currently Enrolled - Doctoral



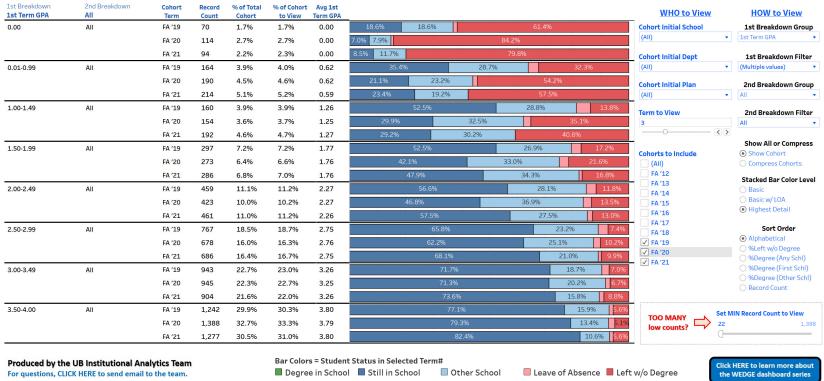
# **Example #3** → **Metric Flow - Multiple Years (Details)**





# **Example #3** → **Metric Flow - Multiple Years (Discovery)**

#### Freshmen Cohort Term Status Comparisons - Term #3



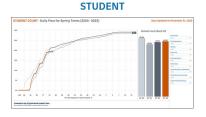


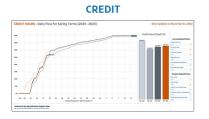
# **Example #4** $\rightarrow$ In-Cycle Metric Flow / Integrated Data

Daily Enrollment Patterns - Students, Credits, Revenue (2020 - 2023)

Click on thumbnail image to load the desired dashboard, then click 🚭 to return to this page

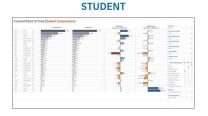
Registration Flow Daily







Comparison
Point-in-Time







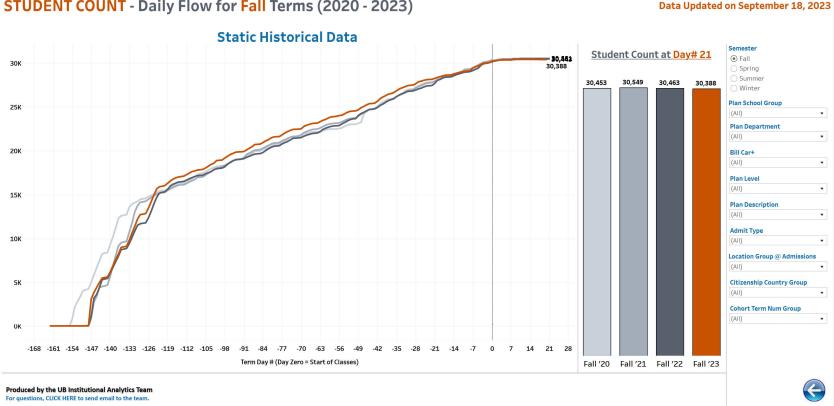
**Produced by the UB Institutional Analytics Team** For questions, CLICK HERE to send email to the team.

Data Updated on September 18, 2023



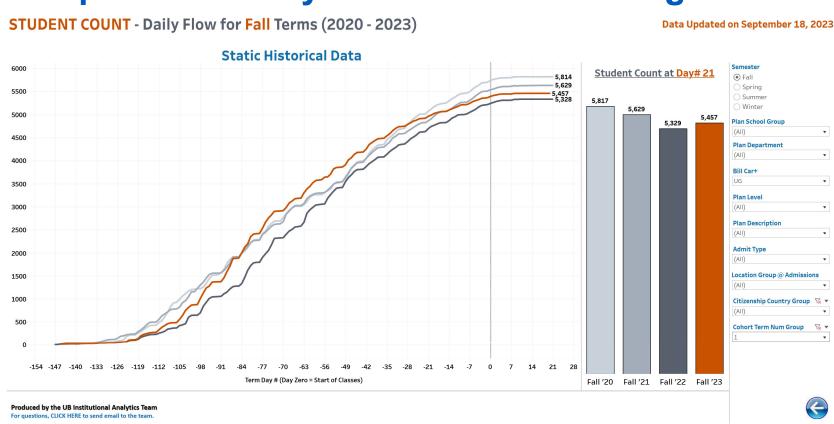
# **Example #4** → In-Cycle Metric Flow / Integrated Data

STUDENT COUNT - Daily Flow for Fall Terms (2020 - 2023)



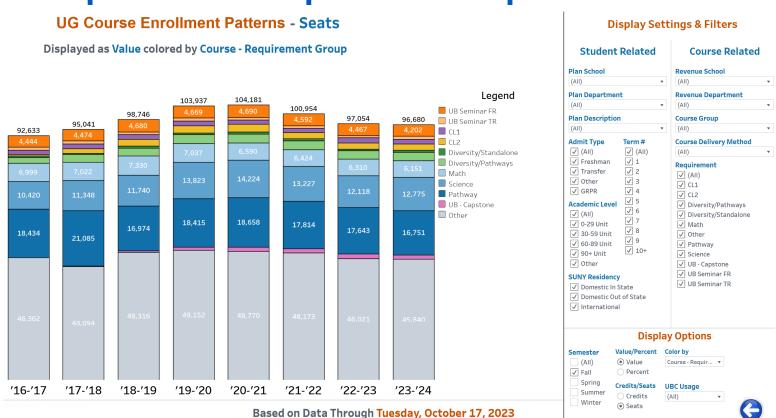


# **Example #4** $\rightarrow$ In-Cycle Metric Flow / Integrated Data





# **Example #5** → **Deep Dive to Explore & Discover**





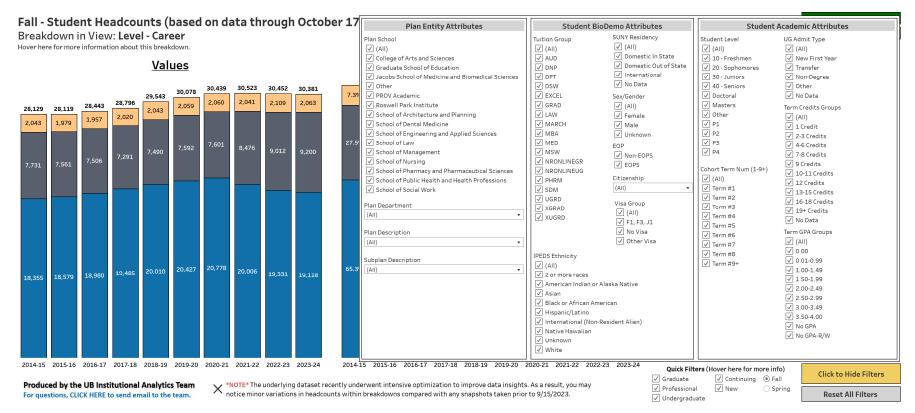
# **Example #5** $\rightarrow$ **Deep Dive to Explore & Discover**

Fall - Student Headcounts (based on data through October 17, 2023) Breakdown in View: Level - Career Hover here for more information about this breakdown Color Legend Color Breakdown UG Adm - Entry Term Type Percent of Total Values GR GR Adm - UG Admit Type O BioDemo - Citizenship PR BioDemo - Ethnicity 30,439 30,452 30.381 30.078 6.9% 6.9% 6.8% 6.8% 6.7% 6.9% 6.8% ○ BioDemo - Gender 29,543 2,041 28,796 2.060 2.109 2.063 Credits - Credit Hour Groupings 28,443 2.059 28,119 2.043 O GPA - Academic Standing 2,020 1,957 1,979 O GPA - Cumulative GPA (0.5 bins) GPA - Term GPA (0.5 bins) 25.2% 8.476 Level - Career 7,291 O Level - Early/Mid/Late O Location - At Admission O Location - Residency O Plan - Department Plan - Description O Plan - Subplan O Plan - Approved/Intended Plan - Has Minor Revenue - Tuition Group O Student - Funding 67.7% 67.9% 68.3% 66.7% 66.1% 19,485 20,010 20.006 O Student - Higher Ed History 18,355 18,579 O Student - Online Status O Term Num Term Num - with Summer Entry O Visa O Visa - Group 2014-15 2015-16 2016-17 2017-18 2018-19 2019-20 2020-21 2021-22 2022-23 2023-24 2014-15 2015-16 2016-17 2017-18 2018-19 2019-20 2020-21 2021-22 2022-23 2023-24 Quick Filters (Hover here for more info) **Click for More Filters** ✓ Graduate Produced by the UB Institutional Analytics Team \*NOTE\* The underlying dataset recently underwent intensive optimization to improve data insights. As a result, you may \*NOTE\* The underlying dataset recently underwent intensive optimization to improve the underlying dataset recently underwent intensive optimization to improve the underlying dataset recently underwent intensive optimization to improve the underlying dataset recently underwent intensive optimization to improve the underlying dataset recently underwent intensive optimization to improve the underlying dataset recently underwent intensive optimization to improve the underlying dataset recently underwent intensive optimization to improve the underlying dataset recently underwent intensive optimization to improve the underlying dataset recently underwent intensive optimization to improve the underlying dataset recently underwent intensive optimization to improve the underlying dataset recently underwent intensive optimization to improve the ✓ Professional ✓ New Spring Reset All Filters For questions, CLICK HERE to send email to the team.

✓ Undergraduate

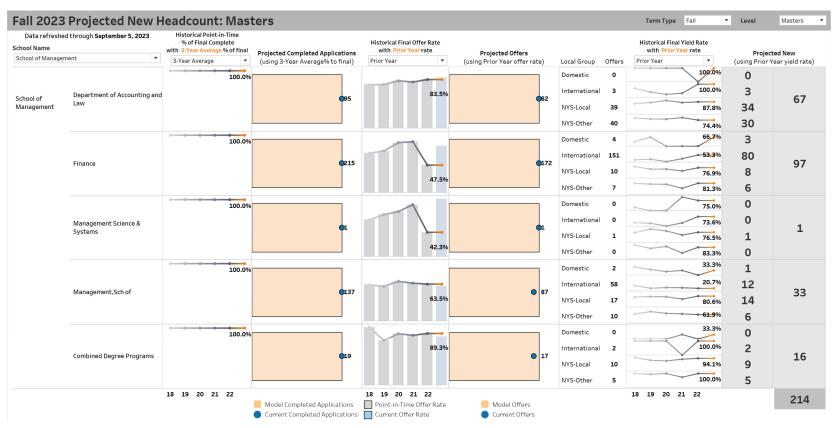


# **Example #5** → **Deep Dive to Explore & Discover**





# **Example #5** → **Deep Dive to Explore & Discover**



# Thanks for coming!

How did I do? Please take the Session Survey on your smart device using the QR Code on your schedule.