Graduate Student Success and Graduation Rates: Our Story

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Outline

- About us
- What's the question?
- Background
- Data Model
- Dashboard demonstration
- Next steps/Future direction
- Q&A

University of Houston

- 46,676 students: Fall 2023

- 16 colleges

- Bachelors, masters, doctoral, and professional programs

- 11,156 degrees awarded: 2,268 masters, 388 doctoral, 450 professional

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What's the question?

- What do we know about graduate student graduation rates at UH?

- What is the 5-year graduation rate for master's level students and what is the 10-year graduation rate for doctoral and professional students?

Background

- 18 characteristics of Texas doctoral programs

- Data requests for graduation rates for all graduate levels
  - Began calculating master's programs

Background

- Issues:
  - Once produced data was not easily accessible

  - No demographic information

  - College and department level aggregate

Early Graduation Rates Report

10 Year Doctoral Graduation Rate - 3 Year Average*

College	Department	Program	2010 Start #	2010 10 Year Graduation N	2010 10 Year Graduation %	2011 Start #	2011 10 Year Graduation N	2011 10 Year Graduation %	2012 Start #	2012 10 Year Graduation N	2012 10 Year Graduation %
Business	Business (Interdept)	Bus Admn, PHD	11	6	54.5	8	6	75.0	16	9	56.3
Education	Curriculum And Instruction	Curriculum & Instruction	10	7	70.0	21	14	66.7	20	16	80.0
	Educational Leadership & Cultural Studies	Professional Leadership, EDD	43	36	83.7	51	47	92.2	6	4	66.7
	Educational Psychology	Counseling Psychology	2	1	50.0	2	2	100.0	4	3	75.0
		Measure Quant & Learn Sci, PHD	2	2	100.0	3	1	33.3	9	7	77.8
		School Psychology	1	1	100.0	1	1	100.0	1	1	100.0
Engineering	Biomedical Engineering, Dept	Biomedical Engineering, PHD	3	2	66.7	1	1	100.0	2	1	50.0
	Chemical And Biomolecular Engineering	Chemical Engineering	17	13	76.5	13	11	84.6	1		
	Civil And Environmental Engineering	Civil Engineering	8	7	87.5	7	4	57.1	9	4	44.4
	Electrical And Computer Engineering	Electrical Engineering	27	16	59.3	11	10	90.9	3	1	33.3
	Engineering (Interdept)	Aerospace Engineering	3	2	66.7						
		Engineering - Environmental Engineering				4	2	50.0	2	2	100.0
		Engineering - Materials Engineering				1	1	100.0	2		
	Industrial Engineering	Industrial Engineering	4	3	75.0	5	2	40.0	4	2	50.0
	Mechanical Engineering	Mechanical Engineering	13	10	76.9	8	4	50.0	7	4	57.1
Law	Law (Interdept)	Law	289	255	88.2	274	248	90.5	236	215	91.1
Liberal Arts And Social Sciences	Economics	Economics	7	4	57.1	10	7	70.0	9	6	66.7
	English	English	7	6	85.7	5	2	40.0	8	6	75.0
		English - Creative Writing & Literature	6	3	50.0	8	6	75.0	13	12	92.3
	History	History	4	2	50.0	4	3	75.0	7	6	85.7
	Health And Human Performance	Physical Education/Kinesiology	5	4	80.0	5	2	40.0	1		
	Modern And Classical Languages	Spanish				5	4	80.0	6	3	50.0
	Music	Conducting	2	2	100.0	1			1	1	100.0
		Performance	12	7	58.3	9	8	88.9	8	8	100.0
		Composition				1	1	100.0			
		Music Education				1					
	Political Science	Political Science	4	2	50.0	4	2	50.0	4	2	50.0
	Psychology	Clinical Psychology	8	8	100.0	4	3	75.0	1	1	100.0
		Dev, Cog, & Beh Neurosci, PHD	1	1	100.0	2	2	100.0			
		Industrial/Organizational Psychology							1	1	100.0
		Social Psychology	5	4	80.0						

Graduation Rate for Graduate Students

Source: Google images
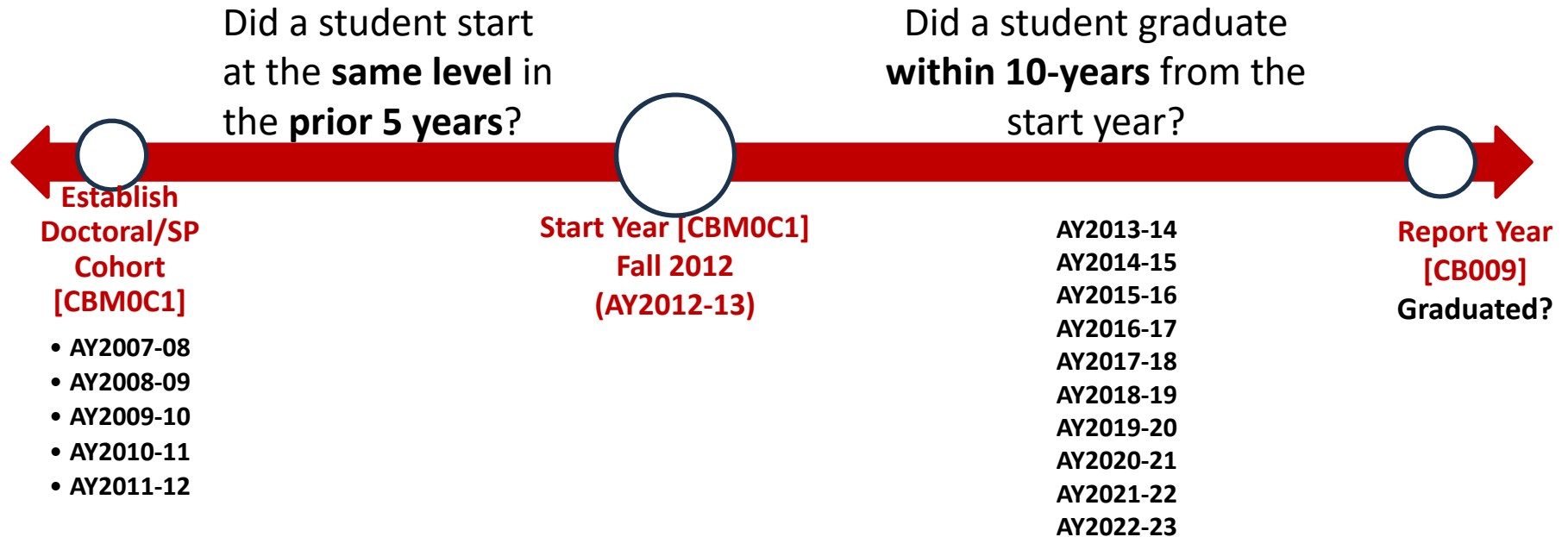
Establishing a Cohort

- Similar to CB definition, a cohort is determined by pulling all the students coded on the CBM0C1 at a graduate level in the fall semester

- **Checked in the five prior years** to determine if they had been coded at the same level

- Cohort established for those students who were not coded at that level in the prior years.

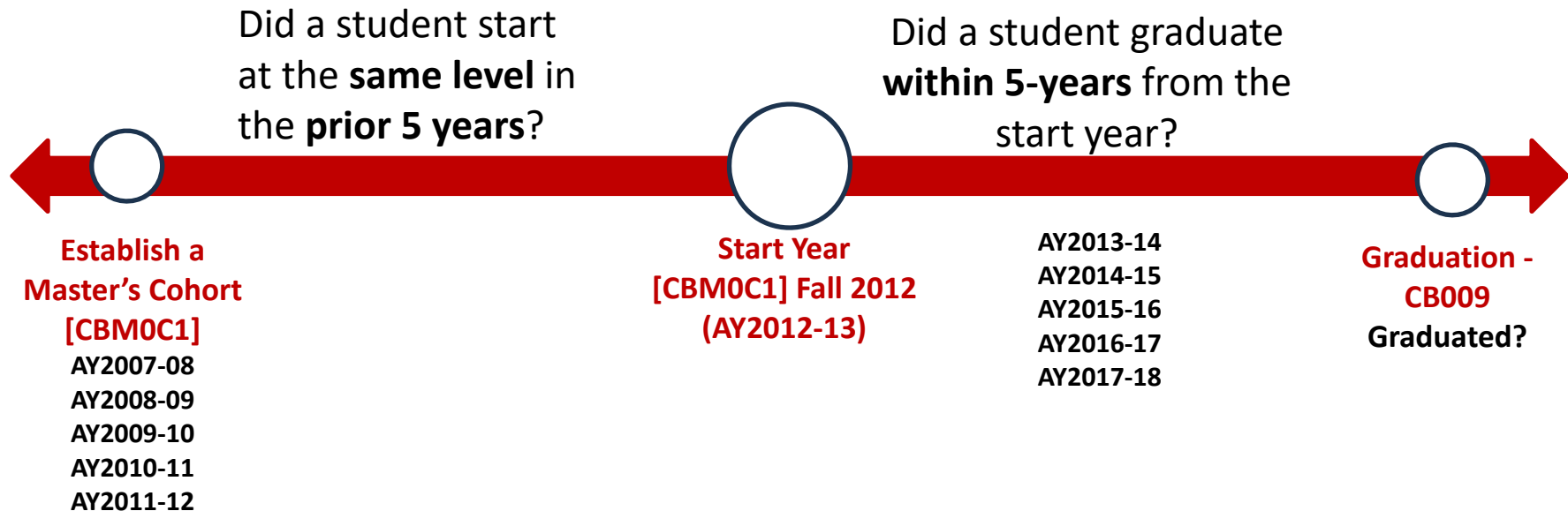UNIVERSITY of **HOUSTON** | INSTITUTIONAL RESEARCH

Start Year and Report Year

- From the start semester (e.g., Fall 2012)
  - Doctoral/professional cohort tracked for 10 years
  - Master's cohort tracked for 5 years

Cumulative proportion of students graduated year over year

	2014	2015	2016	2017	2018	2019	2020	2021	2022
Business				26.1%	60.9%	82.6%	82.6%	82.6%	82.6%
CLASS		2.0%	17.0%	49.0%	58.0%	67.0%	69.0%	70.0%	73.0%
Education	7.8%	15.7%	29.4%	51.0%	66.7%	72.5%	74.5%	74.5%	74.5%
Engineering		4.9%	20.6%	51.0%	61.8%	65.7%	67.6%	68.6%	68.6%
NSM	0.8%	3.1%	13.3%	43.8%	65.6%	65.6%	66.4%	66.4%	66.4%
Optometry					14.3%	14.3%	28.6%	42.9%	42.9%
Pharmacy		7.1%	28.6%	64.3%	92.9%	100.0%	100.0%	100.0%	100.0%
Social Work		25.0%	25.0%	25.0%	50.0%	50.0%	50.0%	75.0%	75.0%

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Ten-Year Doctoral/Professional Graduation Rate

Did a student start at the **same level** in the **prior 5 years**?

Did a student graduate **within 10-years** from the start year?

Establish Doctoral/SP Cohort [CBM0C1]

- AY2007-08
- AY2008-09
- AY2009-10
- AY2010-11
- AY2011-12

Start Year [CBM0C1] Fall 2012 (AY2012-13)

AY2013-14
AY2014-15
AY2015-16
AY2016-17
AY2017-18
AY2018-19
AY2019-20
AY2020-21
AY2021-22
AY2022-23

Report Year [CB009] Graduated?

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Five-Year Master's Graduation Rate

Did a student start at the **same level** in the **prior 5 years**?

Did a student graduate **within 5-years** from the start year?

Establish a Master's Cohort [CBM0C1]
AY2007-08
AY2008-09
AY2009-10
AY2010-11
AY2011-12

Start Year [CBM0C1] Fall 2012 (AY2012-13)

AY2013-14
AY2014-15
AY2015-16
AY2016-17
AY2017-18

Graduation - CB009
Graduated?

Main issue/challenges

- Transition into Peoplesoft and Data Warehouse (DW)

- DW has PeopleSoft data:
  - Enrollment: Summer 2000 onward
  - Admissions: Fall 2010 onward
  - CB: Fall 2007 onward

- Doctoral and professional 10-year tracking was not possible prior to Fall 2012

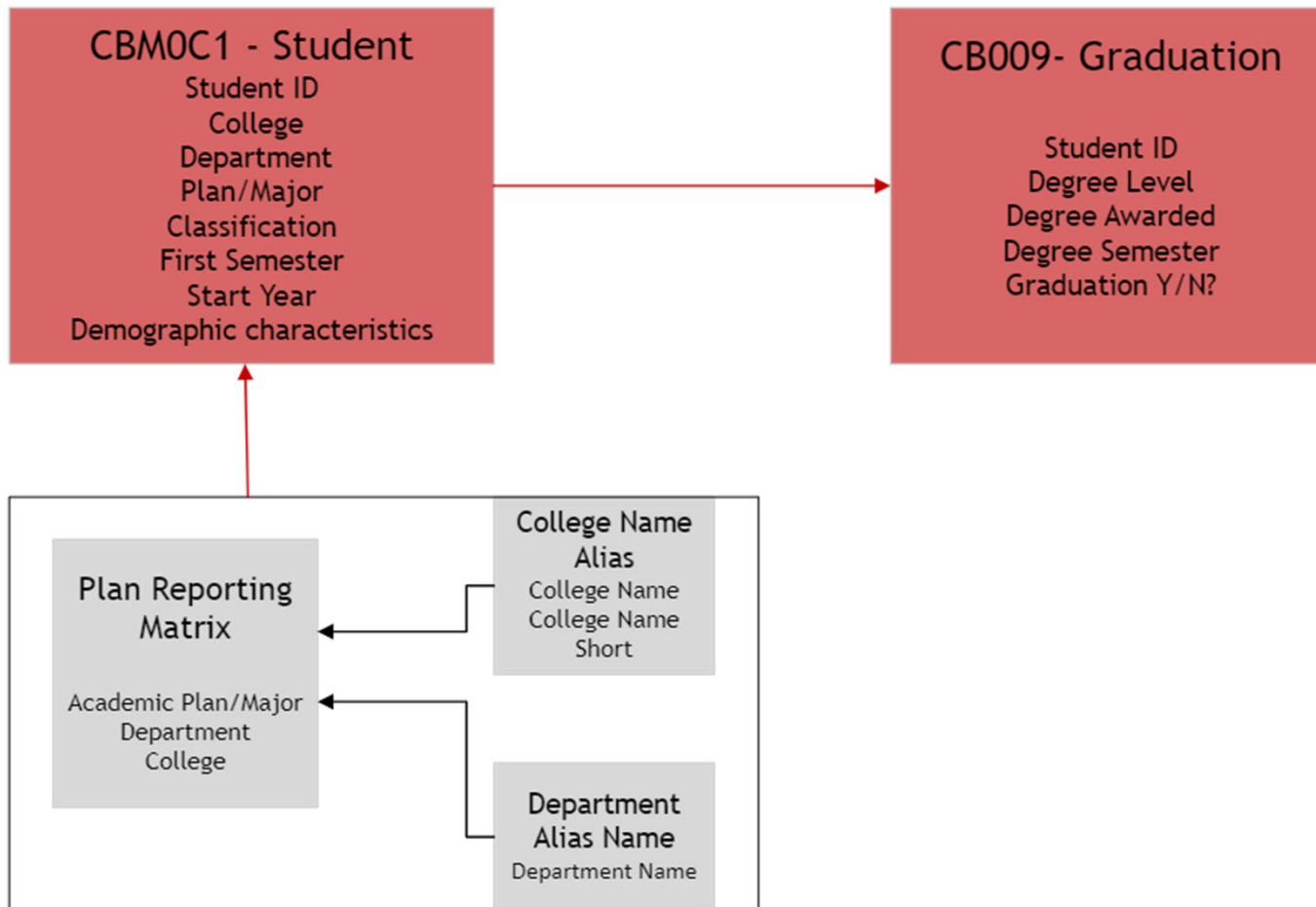UNIVERSITY of **HOUSTON** | INSTITUTIONAL RESEARCH

UH Graduation Rates Dashboard

- One source of data

- Allows for longitudinal analysis

- Easily accessible data

- Provide data by demographic information

- Temporary dashboard on graduate graduation rates provides information on college, department, and plan, similar to the early report

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Data Decisions

- Use the CB tables already in our Data Warehouse (DW)
  - Maintenance should be easy

  - Years to include

  - DW tables to be utilized

  - Data fields to be included in the data model

  - Data preparation in SAS for proof of concept

Data Model Using CB Tables in DW

CBM0C1 - Student
Student ID
College
Department
Plan/Major
Classification
First Semester
Start Year
Demographic characteristics

CB009- Graduation

Student ID
Degree Level
Degree Awarded
Degree Semester
Graduation Y/N?

Plan Reporting Matrix

Academic Plan/Major
Department
College

College Name Alias
College Name
College Name Short

Department Alias Name
Department Name

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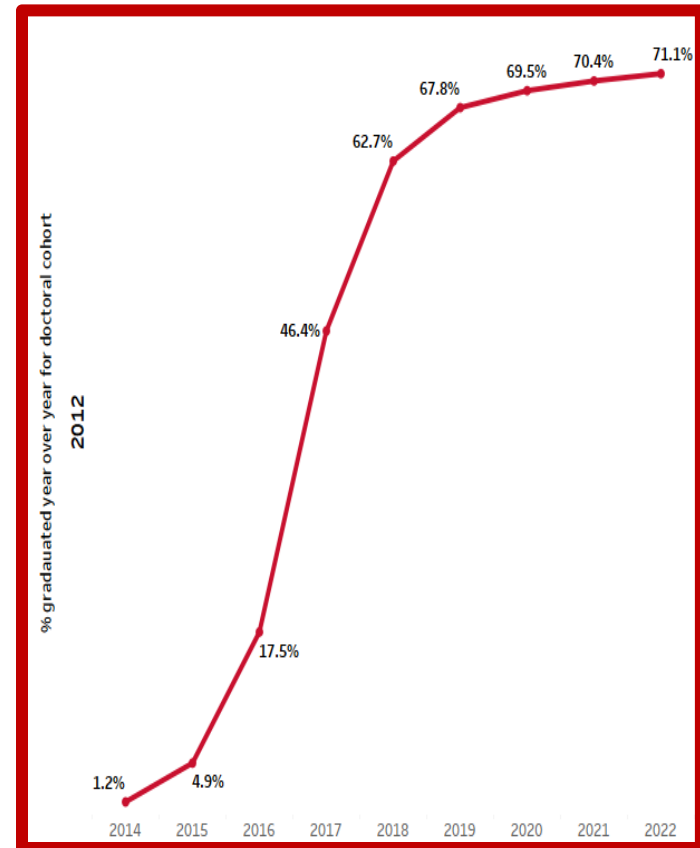
Data Preparation: What we learned

- Establishing cohort by year and level using DW tables

- Early reports vs. DW tables
  – CB Classification vs. In-house classification

- Multiple degrees

- Calculated field: graduation status: Y/N?

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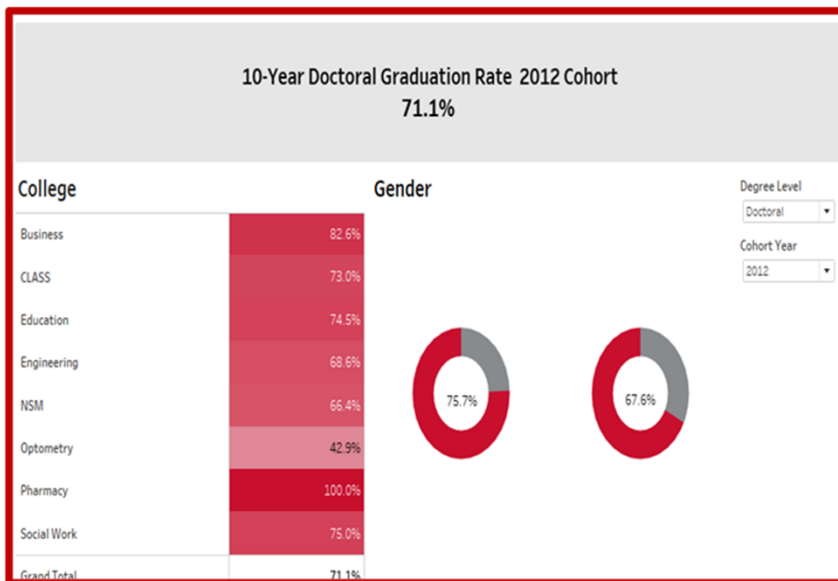
Data Validation

- Accurate calculation of graduation rates

  - Data checking and testing for all years
    - Compare DW numbers with existing CB reports
    - Testing for any issues/data errors
  - Address any changes in student ID overtime

- Share the logic with DW team

- Create a dashboard template

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Data Visualization

- Information we want to communicate

- Intended audience

- Displaying graduate rate vs. % graduated

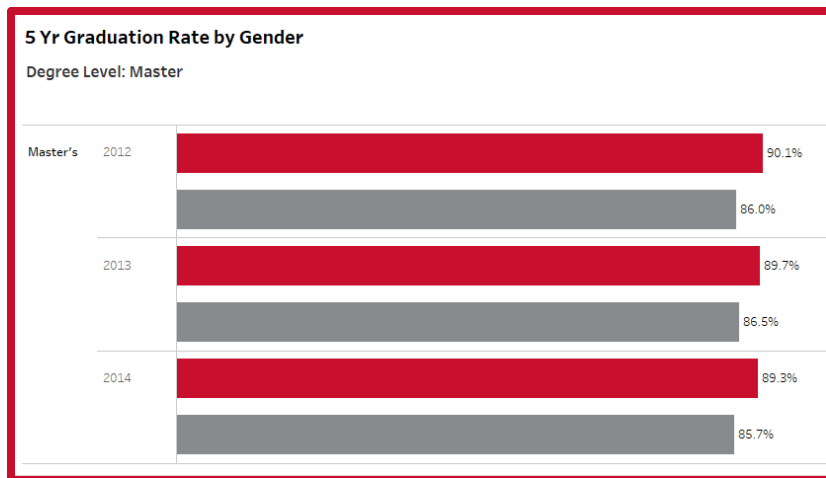UNIVERSITY of **HOUSTON** | INSTITUTIONAL RESEARCH

Key Considerations for Dashboard

- Chart type

- Clear and precise labeling

- Visual aesthetics

- UH color palette

- User friendliness

Key Considerations for Dashboard

5 Yr Graduation Rate by Gender
Degree Level: Master

- Data displayed by level

- What details should be included?

- Weekly Tableau meetings to discuss dashboard issues and/or exchange ideas

Next Steps

- Created a DW table for graduate student graduation rates and is in testing/data validation phase

- Extract for Tableau server – in development

- Use this dashboard with the Tableau extract and test

- Utilize user feedback for enhancements

- GO LIVE with production dashboard for UH By the Numbers website

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Demonstration

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Thank you!!

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