# Wish We Knew Then What We Know Now:

## Lessons Learned from a Tableau Implementation

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Southern Association for Institutional Research (SAIR)
Fort Worth, Texas
October 9, 2017

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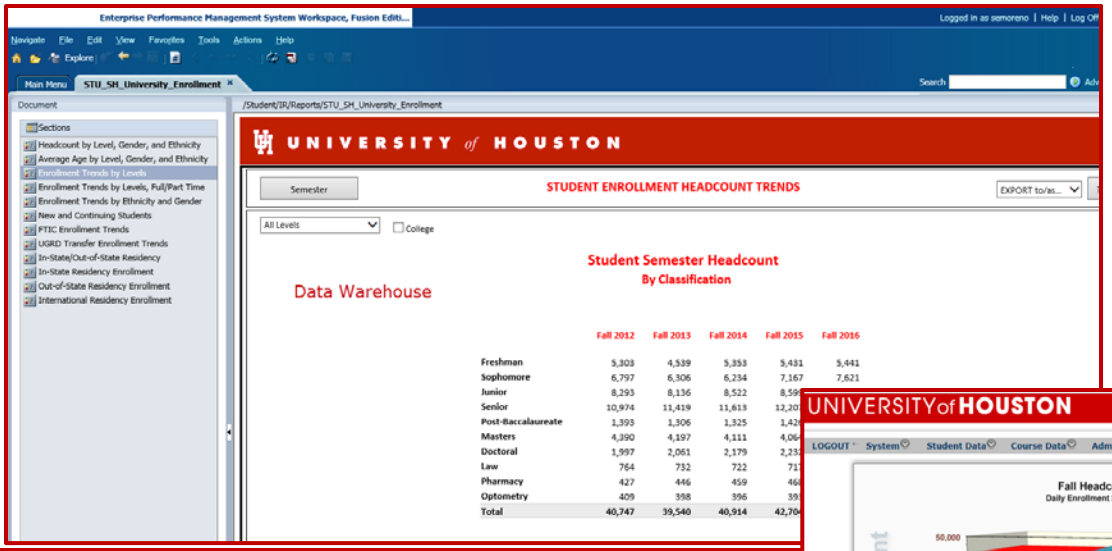
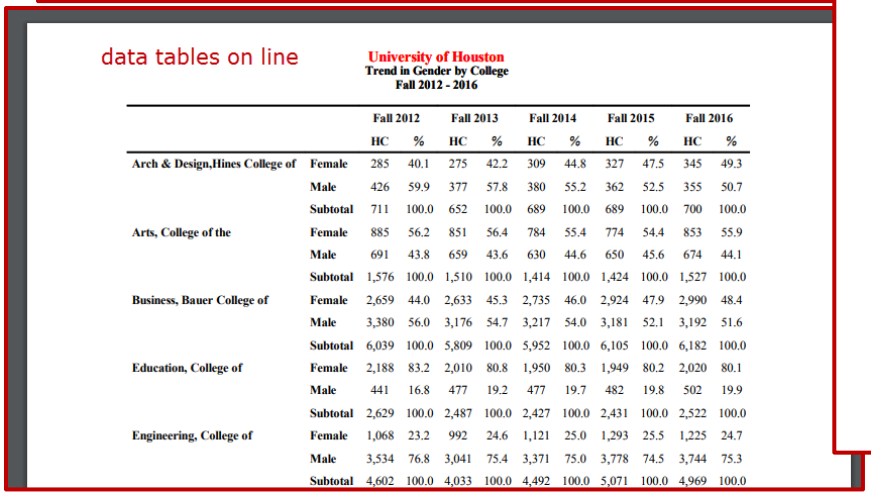
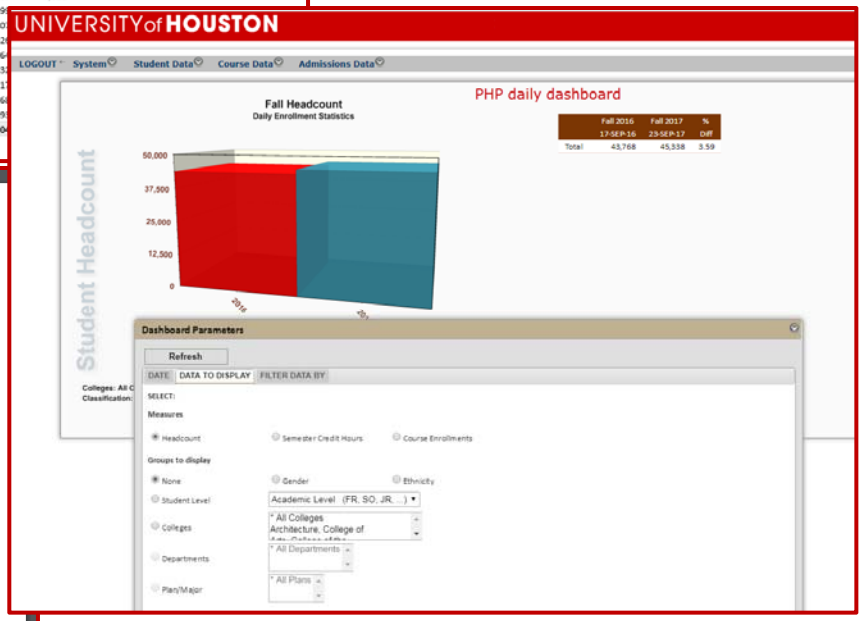
# Why a Visual Tool



# Directive

Spring 2016
Goals for Tool
Fall 2016
RFP posted
January 2017
Tableau Installed

# Direction - ?

- First series of output
- Security & Access
- IR ⟷ Data Warehouse Team

# Tableau Configuration

- Oracle Database Connections
- Live Connection vs. Extract
- Tableau Data Models
- Data Validation

# IR ⟷ DW

- Weekly Meetings for Best Practices and Ideas/Suggestions
- White Papers
- Naming Convention
- Business Process

# Server Performance

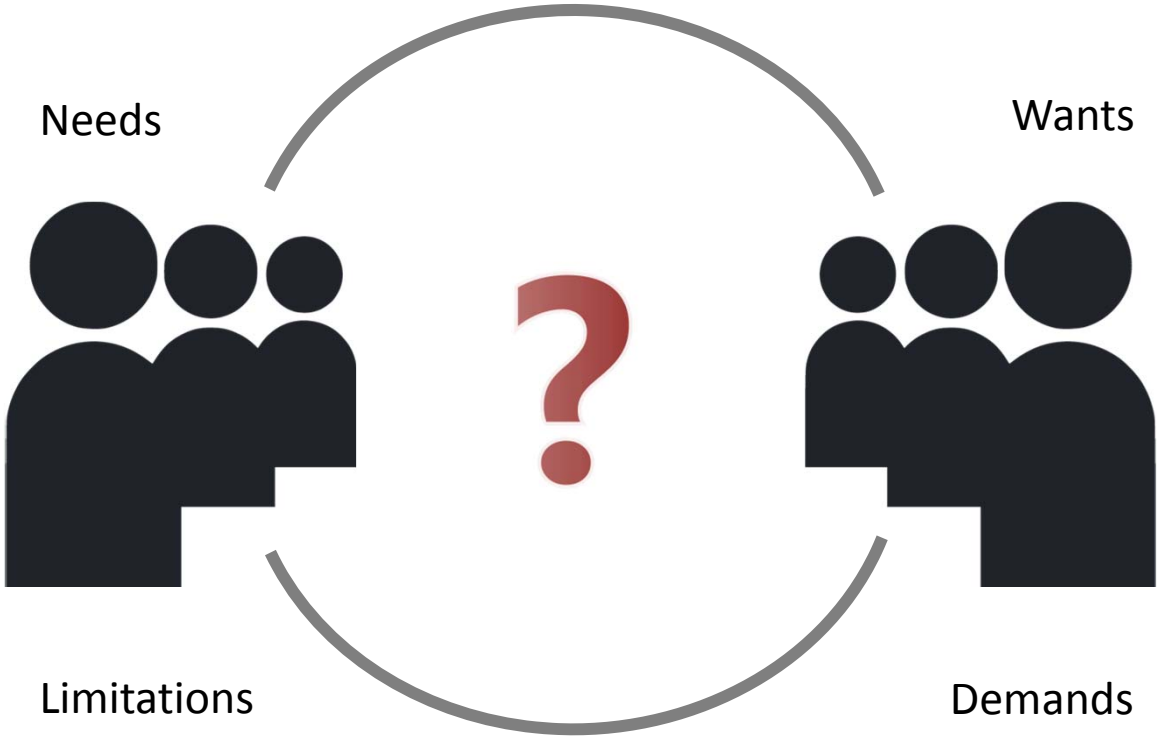
- Server Load Testing
- High CPU Usage

# Managing Expectations

# Excel vs. Data Visualization Tools

| Excel | Data Visualization Tools |
|---|---|
| Primarily static charts | Flexible charts |
| Dashboards are complicated | Dashboards are drag and drop |
| Constraints on dataset size and efficiency | Ability to analyze large datasets with speed and ease |
| Maps? What are maps? | Mapping capability |
| Without lots of programming, product is static (usually printed) | Explore data in real-time |

# The Great Balancing Act



# Excel Document

**As of April 09, 2017**
Day 03 of the Fall Enrollment Cycle

## New and Continuing Student Enrollment *(Session 1 Only)*

| Headcount | New | | | | Continuing | | | | Total | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Student Level | Fall 2015 | Fall 2016 | Fall 2017 | 2015-17 % Diff | Fall 2015 | Fall 2016 | Fall 2017 | 2015-17 % Diff | Fall 2015 | Fall 2016 | Fall 2017 | 2015-17 % Diff |
| UGRD - FTIC | 0 | 0 | 0 | #DIV/0! | 2,632 | 3,832 | 5,120 | 94.5% | 2,632 | 3,832 | 5,120 | 94.5% |
| UGRD - Transfer | 0 | 0 | 0 | #DIV/0! | 550 | 629 | 777 | 41.3% | 550 | 629 | 777 | 41.3% |
| All Undergraduate | 0 | 0 | 0 | #DIV/0! | 3,182 | 4,461 | 5,897 | 85.3% | 3,182 | 4,461 | 5,897 | 85.3% |
| Post-Bacc | 0 | 0 | 3 | #DIV/0! | 2 | 2 | 3 | 50.0% | 2 | 2 | 6 | 200.0% |
| Masters | 18 | 14 | 0 | -100.0% | 703 | 656 | 866 | 23.2% | 721 | 670 | 866 | 20.1% |
| Doctoral | 1 | 0 | 0 | -100.0% | 97 | 54 | 95 | -2.1% | 98 | 54 | 95 | -3.1% |
| All Graduate | 19 | 14 | 0 | -100.0% | 800 | 710 | 961 | 20.1% | 819 | 724 | 961 | 17.3% |
| Law | 0 | 0 | 0 | #DIV/0! | 22 | 24 | 43 | 95.5% | 22 | 24 | 43 | 95.5% |
| Optometry | 0 | 0 | 0 | #DIV/0! | 0 | 0 | 0 | #DIV/0! | 0 | 0 | 0 | #DIV/0! |
| Pharmacy | 3 | 3 | 0 | -100.0% | 74 | 8 | 72 | -2.7% | 77 | 11 | 72 | -6.5% |
| All Special Prof. | 3 | 3 | 0 | -100.0% | 96 | 32 | 115 | 19.8% | 99 | 35 | 115 | 16.2% |
| *Total* | 22 | 17 | 3 | -86.4% | 4,080 | 5,205 | 6,976 | 71.0% | 4,102 | 5,222 | 6,979 | 70.1% |

| SCH | New | | | | Continuing | | | | Total | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Student Level | Fall 2015 | Fall 2016 | Fall 2017 | 2015-17 % Diff | Fall 2015 | Fall 2016 | Fall 2017 | 2015-17 % Diff | Fall 2015 | Fall 2016 | Fall 2017 | 2015-17 % Diff |
| UGRD - FTIC | 0 | 0 | 0 | #DIV/0! | 35,825 | 53,190 | 71,261 | 98.9% | 35,825 | 53,190 | 71,261 | 98.9% |
| UGRD - Transfer | 0 | 0 | 0 | #DIV/0! | 6,448 | 7,238 | 9,084 | 40.9% | 6,448 | 7,238 | 9,084 | 40.9% |
| All Undergraduate | 0 | 0 | 0 | #DIV/0! | 42,273 | 60,428 | 80,345 | 90.1% | 42,273 | 60,428 | 80,345 | 90.1% |
| Post-Bacc | 0 | 0 | 0 | #DIV/0! | 6 | 6 | 18 | 200.0% | 6 | 6 | 18 | 200.0% |
| Masters | 161 | 132 | 0 | -100.0% | 6,314 | 5,450 | 7,208 | 14.2% | 6,474 | 5,582 | 7,208 | 11.3% |
| Doctoral | 9 | 0 | 0 | -100.0% | 748 | 394 | 704 | -5.9% | 757 | 394 | 704 | -7.0% |
| All Graduate | 170 | 132 | 0 | -100.0% | 7,062 | 5,844 | 7,912 | 12.0% | 7,231 | 5,976 | 7,912 | 9.4% |
| Law | 0 | 0 | 0 | #DIV/0! | 281 | 329 | 545 | 94.0% | 281 | 329 | 545 | 94.0% |
| Optometry | 0 | 0 | 0 | #DIV/0! | 0 | 0 | 0 | #DIV/0! | 0 | 0 | 0 | #DIV/0! |
| Pharmacy | 39 | 42 | 0 | -100.0% | 984 | 98 | 1,012 | 2.8% | 1,023 | 140 | 1,012 | -1.1% |
| All Special Prof. | 39 | 42 | 0 | -100.0% | 1,265 | 427 | 1,557 | 23.1% | 1,304 | 469 | 1,557 | 19.4% |
| *Total* | 209 | 174 | 0 | | 50,606 | 66,705 | 89,832 | 77.5% | 50,814 | 66,879 | 89,832 | 76.8% |

# Tableau Version

## New and Continuing Student Fall Enrollment (Headcount)

As of May 21, 2017

| | | New | | | Continuing | | | Total | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 2016 | 2017 | % Change | 2016 | 2017 | % Change | 2016 | 2017 | % Change |
| Undergraduate | FTIC | 281 | 303 | 7.8% | 9,322 | 9,904 | 6.2% | 9,603 | 10,207 | 6.3% |
| | Transfer | 24 | 25 | 4.2% | 10,346 | 11,303 | 9.2% | 10,370 | 11,328 | 9.2% |
| | Total | 305 | 328 | 7.5% | 19,668 | 21,207 | 7.8% | 19,973 | 21,535 | 7.8% |
| Post-Bacc | Post-Bacc | 41 | 32 | -22.0% | 647 | 656 | 1.4% | 688 | 688 | 0.0% |
| | Total | 41 | 32 | -22.0% | 647 | 656 | 1.4% | 688 | 688 | 0.0% |
| Graduate | Master's | 102 | 194 | 90.2% | 1,573 | 1,742 | 10.7% | 1,675 | 1,936 | 15.6% |
| | Doctoral | 33 | 76 | 130.3% | 445 | 653 | 46.7% | 478 | 729 | 52.5% |
| | Total | 135 | 270 | 100.0% | 2,018 | 2,395 | 18.7% | 2,153 | 2,665 | 23.8% |
| Special Prof. | Law | 13 | 38 | 192.3% | 469 | 486 | 3.6% | 482 | 524 | 8.7% |
| | Optometry | | 5 | | | 1 | | | 6 | |
| | Pharmacy | 117 | 102 | -12.8% | 222 | 234 | 5.4% | 339 | 336 | -0.9% |
| | Total | 130 | 145 | 11.5% | 691 | 721 | 4.3% | 821 | 866 | 5.5% |
| Grand Total | | 611 | 775 | 26.8% | 23,024 | 24,979 | 8.5% | 23,635 | 25,754 | 9.0% |

Select View: Headcount

Select Semester: Fall

Number of Years: Two Years

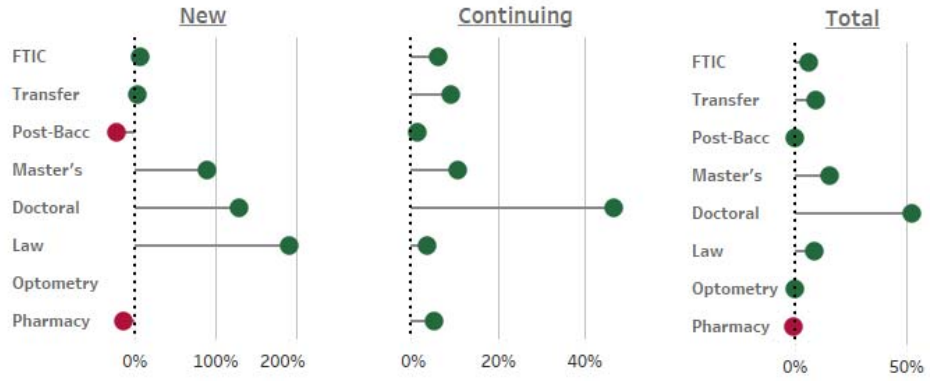
Select a Week: Most Recent Week

Select a Sunday: 5/21/2017

College: (All)

Department: (All)

### Overall Percent Change




Semester: Fall
Alignment: As of May 21, 2017
College: All
Department: All

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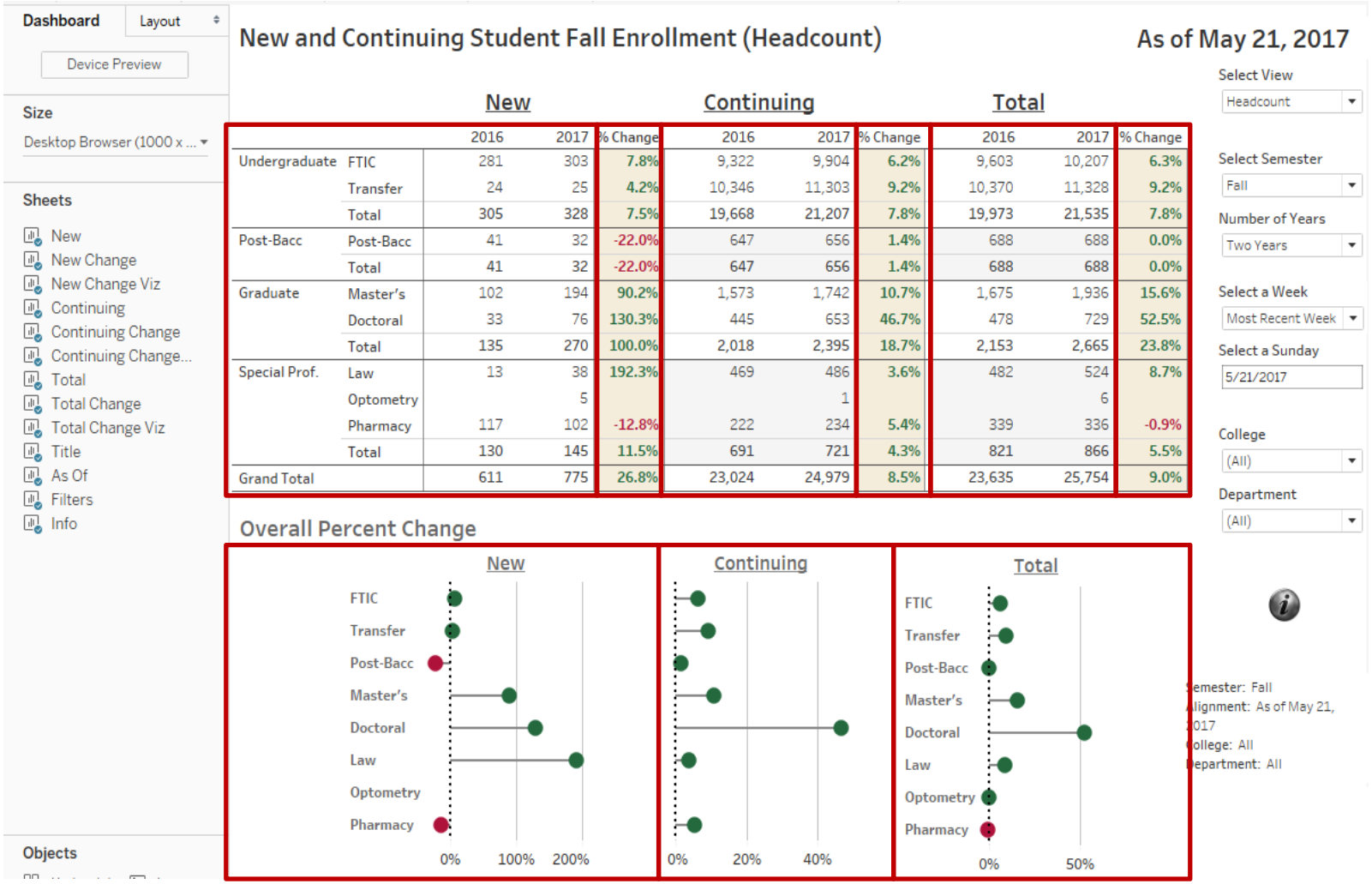
# Behind the Scenes




| | | New | | | Continuing | | | Total | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 2016 | 2017 | % Change | 2016 | 2017 | % Change | 2016 | 2017 | % Change |
| Undergraduate | FTIC | 281 | 303 | 7.8% | 9,322 | 9,904 | 6.2% | 9,603 | 10,207 | 6.3% |
| | Transfer | 24 | 25 | 4.2% | 10,346 | 11,303 | 9.2% | 10,370 | 11,328 | 9.2% |
| | Total | 305 | 328 | 7.5% | 19,668 | 21,207 | 7.8% | 19,973 | 21,535 | 7.8% |
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| | Doctoral | 33 | 76 | 130.3% | 445 | 653 | 46.7% | 478 | 729 | 52.5% |
| | Total | 135 | 270 | 100.0% | 2,018 | 2,395 | 18.7% | 2,153 | 2,665 | 23.8% |
| Special Prof. | Law | 13 | 38 | 192.3% | 469 | 486 | 3.6% | 482 | 524 | 8.7% |
| | Optometry | | 5 | | | 1 | | | 6 | |
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| | Total | 130 | 145 | 11.5% | 691 | 721 | 4.3% | 821 | 866 | 5.5% |
| Grand Total | | 611 | 775 | 26.8% | 23,024 | 24,979 | 8.5% | 23,635 | 25,754 | 9.0% |

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# Presenting Tableau Dashboards

- Tableau Server versus Tableau Public
- Display dashboards on web pages
  - Content management systems
  - Style guidelines
  - Fitting dashboards to existing pages

# Enrollment Trends

At a Glance | Student Characteristics | Student Level | Custom Tables

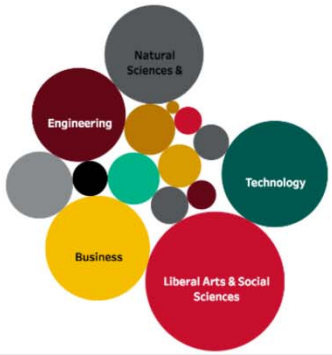
Semes... Fall 2016

## Total Enrollment

**43,774**

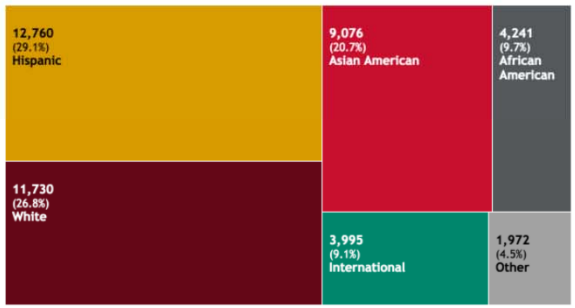
| | |
|---|---|
| Undergraduate | 34,688 |
| Post-Bac | 1,310 |
| Master | 3,985 |
| Doctoral | 2,199 |
| Professional | 1,592 |

## Enrollment by College

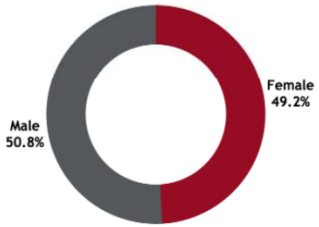



## Full-Time/Part-Time Status

## Race/Ethnicity




## Gender




Undo | Redo | Revert | Refresh | Pause | Original View | Subscribe | Edit | Share | Download | Full Screen

ENROLLMENT TRACKING

- Admissions
  - Class Profiles
  - Admit and Yield Rates
- New and Continuing Student Enrollment
- FTIC Cohorts


# Admissions

## Student Applicants, Admissions, and Enrollment

As of May 7, 2017

| | | Applicants | | | | | | | One Year Change | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Started | Complete | Completio Rate | Admittec | Admit Rate | Enrolled | Yield Rate | Started | Complete | Admittec | Enrolled |
| FTIC | Fall 2016 | 26,216 | 18,284 | 69.7% | 10,934 | 59.8% | 277 | 2.5% | | | | |
| | Fall 2017 | 27,490 | 20,590 | 74.9% | 12,923 | 62.8% | 303 | 2.3% | 4.9% | 12.6% | 18.2% | 9.4% |
| Transfer | Fall 2016 | 6,589 | 3,565 | 54.1% | 3,040 | 85.3% | 16 | 0.5% | | | | |
| | Fall 2017 | 6,160 | 3,441 | 55.9% | 2,889 | 84.0% | 18 | 0.6% | -6.5% | -3.5% | -5.0% | 12.5% |
| Post-Bacc | Fall 2016 | 391 | 155 | 39.6% | 137 | 88.4% | 37 | 27.0% | | | | |
| | Fall 2017 | 341 | 155 | 45.5% | 129 | 83.2% | 28 | 21.7% | -12.8% | 0.0% | -5.8% | -24.3% |
| Readmitted | Fall 2016 | 401 | 134 | 33.4% | 93 | 69.4% | 38 | 40.9% | | | | |
| | Fall 2017 | 433 | 74 | 17.1% | 66 | 89.2% | 26 | 39.4% | 8.0% | -44.8% | -29.0% | -31.6% |
| Master's | Fall 2016 | 5,688 | 2,816 | 49.5% | 1,237 | 43.9% | 70 | 5.7% | | | | |
| | Fall 2017 | 4,720 | 3,406 | 72.2% | 2,130 | 62.5% | 144 | 6.8% | -17.0% | 21.0% | 72.2% | 105.7% |
| Doctoral | Fall 2016 | 3,295 | 1,537 | 46.6% | 512 | 33.3% | 22 | 4.3% | | | | |
| | Fall 2017 | 3,228 | 2,473 | 76.6% | 649 | 26.2% | 54 | 8.3% | -2.0% | 60.9% | 26.8% | 145.5% |
| Special Prof. | Fall 2016 | 1,690 | 1,231 | 72.8% | 1,031 | 83.8% | 115 | 11.2% | | | | |
| | Fall 2017 | 2,178 | 1,584 | 72.7% | 1,117 | 70.5% | 126 | 11.3% | 28.9% | 28.7% | 8.3% | 9.6% |

Select Semester: Fall

Start Year: 2016

End Year: 2017

Most Recent or Select... Date: Select Week Below

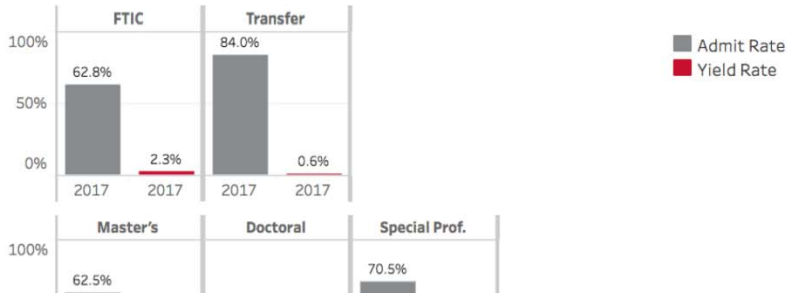
Choose a Sunday: 5/7/2017

College: (All)

Department: (All)

**Semester:** Fall
**Date:** As of May 7, 2017
**College:** All
**Department:** All

### Admit and Yield Rates



# Troubleshooting

- Where things may go wrong
  - Desktop
  - Server
  - Website
- Resources
  - IT team
  - Tableau/Consultant
  - Google
  - Communications/ Marketing
  - You

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