How to Get Started with Tableau & Sample Dashboards

April 5, 2018
1:45 PM – 2:45 PM

2018 BRINGING ADMINISTRATORS TOGETHER CONFERENCE

Conference Sponsors: The Office of the Chancellor, Budget & Financial Administration / Human Resources, the Office of the Provost and Vice Chancellor for Academic Affairs, the Office of the Vice Chancellor for Research, and the Office of Business and Financial Services
Workshop Presenter(s)

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Please ...

• Turn off cell phones.
• Avoid side conversations.
• Raise your hand with questions at any time throughout the presentation. There will also be extra time for questions at the end.
• Sign the attendance roster.
• Complete the evaluation at the end of the workshop.
Workshop Objectives

• Understand how to get Tableau and where you can find training resources
• Learn how Tableau can benefit your college or unit
• Demonstrate how to create basic visualizations and dashboards and publish them to Tableau server
• Generate visualization ideas based on sample dashboards
Topics

• Cost
• Training
• Preparing & Importing Data
• Creating Simple Visualizations
• Creating Dashboards
• Publishing Dashboards
• Example Projects
Cost

• Regular license
  – $1200 per license for Tableau Desktop Professional
  – $300 per year for maintenance (to upgrade version, etc.)

• Subscription
  – $70 user/month (Billed Annually)

• Free 14-day trial available at: https://www.tableau.com/products/desktop
Training

- Free training videos are available at: https://www.tableau.com/learn/training
- Set up your free UIC Lynda account (http://go.uic.edu/Lynda) to access Tableau training and tutorials (https://www.lynda.com/Tableau-training-tutorials/2048-0.html)
- The Illinois Higher Education Tableau User Group (led by AITS) has quarterly meetings available via webinar and an online forum: https://community.tableau.com/groups/illinois-education-tableau-user-group
Preparing & Importing Data

• Tableau can connect to many different file and server types that contain data (including directly to the EDW).
• However, Excel data is the most common and easiest to work with so that is what we will focus on here.
Preparing & Importing Data

• The easiest data to work with in Tableau is unformatted, row-oriented data without extra headers, spacing, or text.

### Tuition Comparison, 2017-18

<table>
<thead>
<tr>
<th>Institution</th>
<th>Year</th>
<th>Amount</th>
<th>Tuition Type</th>
<th>Year</th>
<th>Amount</th>
<th>Tuition Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chicago State</td>
<td>2017</td>
<td>$23,616</td>
<td>In-State</td>
<td>2018</td>
<td>$35,400</td>
<td>Out-of-State</td>
</tr>
<tr>
<td>Chicago State</td>
<td>2017</td>
<td>$35,400</td>
<td>Out-of-State</td>
<td>2018</td>
<td>$23,616</td>
<td>In-State</td>
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<td>In-State</td>
<td>2018</td>
<td>$35,400</td>
<td>Out-of-State</td>
</tr>
<tr>
<td>UIC</td>
<td>2017</td>
<td>$24,920</td>
<td>In-State</td>
<td>2017</td>
<td>$40,360</td>
<td>Out-of-State</td>
</tr>
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<td>UIC</td>
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<td>2018</td>
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<td>Out-of-State</td>
</tr>
<tr>
<td>UIC</td>
<td>2018</td>
<td>$40,360</td>
<td>Out-of-State</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: https://public.tableau.com/profile/aacpdata#!/vizhome/Pharm_D_TuitionTrends/TuitionData
Preparing & Importing Data

- We have found it easiest to prepare our data in Excel so that it is formatted correctly for Tableau.
- However, Tableau has a “Data Interpreter” that can attempt to clean up your data if it contains extra headers, spacing, or text, or multiple tables in one sheet.
- You can also pivot your data within Tableau so that column-oriented data is manipulated into row-oriented data.
Preparing & Importing Data

- At this step, you can also change data types (for example, from a string or text value to a number), join multiple data sources together, or filter your data sources.


Creating Simple Visualizations

• Now that your data has been imported, creating your first visualization is as simple as drag-and-drop.

• Columns from your data are divided by Tableau into dimensions (year, category, school, etc.) and measures (price, sales, tuition amount, number of students, etc.)

• You can also create calculated fields based on your existing columns.
Creating Simple Visualizations
Creating Simple Visualizations

- **Dimensions**
  - Group
  - Tuition Type
  - Year
  - Measure Names

- **Measures**
  - Amount
  - Number of Records
  - Measure Values

- **Columns**
  - Group

- **Rows**
  - Year

- **Filters**
  - Tuition Type

- **Marks**
  - Automatic

- **Sheet**
  - Year
    - 2013
    - 2014
    - 2015
    - 2016
    - 2017

- **Filter [Tuition Type]**
  - Select from list
    - In-State
    - In-State + Fees
    - Out-of-State
    - Out-of-State + Fees
Creating Simple Visualizations

Sheet 1

<table>
<thead>
<tr>
<th>Year</th>
<th>All Peers</th>
<th>Big 10 Schools</th>
<th>IL Schools</th>
<th>Regional Peers</th>
<th>UIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>Abc</td>
<td>Abc</td>
<td>Abc</td>
<td>Abc</td>
<td>Abc</td>
</tr>
<tr>
<td>2014</td>
<td>Abc</td>
<td>Abc</td>
<td>Abc</td>
<td>Abc</td>
<td>Abc</td>
</tr>
<tr>
<td>2015</td>
<td>Abc</td>
<td>Abc</td>
<td>Abc</td>
<td>Abc</td>
<td>Abc</td>
</tr>
<tr>
<td>2016</td>
<td>Abc</td>
<td>Abc</td>
<td>Abc</td>
<td>Abc</td>
<td>Abc</td>
</tr>
<tr>
<td>2017</td>
<td>Abc</td>
<td>Abc</td>
<td>Abc</td>
<td>Abc</td>
<td>Abc</td>
</tr>
</tbody>
</table>

Sheet 1

<table>
<thead>
<tr>
<th>Year</th>
<th>Amount</th>
<th>Number of Records</th>
<th>Measure Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>28,021</td>
<td>17,609</td>
<td></td>
</tr>
<tr>
<td>2014</td>
<td>24,565</td>
<td>17,975</td>
<td></td>
</tr>
<tr>
<td>2015</td>
<td>24,332</td>
<td>18,440</td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td>25,568</td>
<td>19,008</td>
<td></td>
</tr>
<tr>
<td>2017</td>
<td>25,730</td>
<td>19,559</td>
<td></td>
</tr>
</tbody>
</table>
Creating Simple Visualizations

• Tableau will automatically suggest chart types based on the data types you have dragged into the view. Click one to change your data table into the selected graph type.
Creating Simple Visualizations

- You can also change the chart type via the marks card, as well as change colors, size, shape, add text labels, or add tooltips.
Creating Dashboards

• Dashboards can contain multiple visualizations, plus text and images.
• Again, you can simply drag & drop each item onto the dashboard.
Creating Dashboards

Average Tuition Costs for IL Residents, 2017-18

Tuition Costs & U.S. News & World Report Ranking by School

*Tuition Scholarship is granted to all Rockford out-of-state applicants who are offered admission throughout the application cycle.
Publishing Dashboards
Publishing Dashboards

Publish Workbook to Tableau Server

Project
College of Pharmacy - Student Affairs - UIC

Name
Tuition by Residency Dashboard

Description

Tags
Add

Sheets
1 of 3 selected Edit

Permissions
Permissions are locked by the site administrator or project leader

Data Sources
1 embedded in workbook Edit

More Options
- Show sheets as tabs
- Show selections
- Include external files

Publish
Example Dashboards

COLLEGE OF PHARMACY
CHICAGO ROCKFORD

Click arrow below to go to individual dashboards.

Category | Dashboard | Tuition | Admin Affairs | HR | Finances by School | UIC Only Financials
--- | --- | --- | --- | --- | --- | ---
Administration | Reputation | Alumni | Fundraising
Clinical Affairs | Clinical Affairs
Clinical Education | Experiential Education | Residency Matches | Clinical Education Programs
Diversity & Inclusion | UPHARM | Diversity & Inclusion
Professional Development | Professional Development
Research & Graduate Education | Graduate Programs | Graduate Program Metrics | Research | Faculty
Rockford | Rockford & RPHARM
Student Affairs | PharmD Admissions | Enrollment | PharmD Multicenter Locations | Tuition by Residency | PharmD Graduate Outlook | PharmD Graduate Outcomes

Data Metric Dashboard

This dashboard was created in order to assess various measures of performance from the strategic plan related to alumni, faculty and other employees, and students and in order to measure compliance with ACPE standards. Data was compiled from AACU, University of Illinois, and other internal and external sources. Questions and comments about data or any other aspect of this dashboard should be directed to the College of Pharmacy Dean’s Office. Peer comparisons are made between UIC and the various peer groups listed on this page unless noted otherwise on a specific dashboard page.

pharmacy.uic.edu
go.uic.edu/PharmFBChicago
go.uic.edu/PharmFBRockford
go.uic.edu/PharmTwitter
go.uic.edu/PharmYouTube
go.uic.edu/PharmInstagram

Peer List with 2016 US News & World Report Ranking

Select group: All Peer Schools

| North Carolina | 1 |
| Minnesota | 2 |
| California-San Francisco | 3 |
| Michigan | 3 |
| Texas at Austin | 3 |
| UIC | 6 |
| Kentucky | 6 |
| Ohio State | 6 |
| Florida | 9 |
| Maryland | 9 |
| Pittsburgh | 9 |
| Purdue | 9 |
| Washington | 9 |
| Wisconsin | 9 |
| Arizona | 16 |
| Iowa | 17 |
| Utah | 17 |
| Nebraska | 25 |
| Rutgers | 30 |
| St. Louis | 44 |
| Butler | 47 |
| Drake | 47 |
| Midwestern | 60 |
| Southern Illinois | 70 |
UIC alumni are among the largest alumni body of any COP in the nation. Our over 9,500 living alumni are making an impact in Illinois and throughout the world. Our alumni are well-placed in almost any major chain, pharmaceutical company, or government agency including:

60 Company Presidents
23 Company VPs
29 C-Suite Executives

Alumni Count by State

Alumni Count by Country
2018 BRINGING ADMINISTRATORS TOGETHER CONFERENCE

Research Ranking by Source

Research Metrics by Year

UIC Ranking by Department

Postdoc Support by Department
The concentration in rural pharmacy services, RPHARM, uniquely prepares individuals who enjoy small-town life for a satisfying, service-oriented rural pharmacy career. Students who choose RPHARM receive education and mentoring focused on the healthcare needs of small communities.

Graduates serve as leaders in their local communities, becoming involved in the town, school and business communities. Rural pharmacists are vital, respected members of the local healthcare delivery team. They choose rural pharmacy to make a difference in their patients’ lives.

How many students are in the program?

- **22** Alumni
- **31** Current Students

Where are our alumni practicing?

- 70% - HHS Designated Health Professions Shortage Area
- 70% - Rural Location
- 71% - Community Pharmacy
- 29% - Rural Hospital

Map of Alumni Practice Locations

Map of Matriculant Locations

© OpenStreetMap contributors
Average Tuition Costs for CA Residents, 2017-18

- CA Private: $51,606
- Non-CA Private: $38,076
- CA Public: $33,522
- Non-CA Public: $36,625
- UIC Chicago: $40,380
- UIC Rockford*: $24,920

Tuition Costs & U.S. News & World Report Ranking by School

- UIC Rockford*: $24,920
- California-San Francisco: $32,958
- California-San Diego: $34,086
- UIC Chicago: $40,380
- West Coast: $41,160
- Loma Linda: $43,500
- California Health Sciences: $45,000
- Touro-CA: $45,800
- Keck Graduate Institute (KGI): $46,000
- Marshall B. Ketchum: $47,530
- California Northstate: $48,310
- Western: $48,665
- Southern California: $54,924
- Chapman: $72,465
- Pacific-CA: $73,716

*Tuition Scholarship is granted to all Rockford out-of-state applicants who are offered admission throughout the application cycle.

Navigate to: Introduction
July 1, 2017 - February 7, 2018 Applicants by State
State color indicates the applicant saturation (applicants per state COP).
Hover over a state to see numbers and exact percentages.

PharmCAS Total Applicants
Number of COPs

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Tableau Server - Service

https://www.aits.uillinois.edu/services/reports_and_data/Tableau_Server_service
Tableau Server - Environments

• Two servers
  – PRODUCTION
    • tableau.admin.uillinois.edu
      – Make visualizations available to your clients or public
  – QA/TEST
    • tableau-test.admin.uillinois.edu
      – Test your visualization in a server environment (sharing, embedding, etc.)
Tableau Server – Requesting a Project

Request a Project/Schedule
Submit a Tableau Project [Request Form].

Tableau Requests
Use this form to:

- request a new Tableau project
  A project allows you to publish Tableau workbooks and dashboards to a defined group of users

- request a new schedule
  A schedule determines when the data for the workbook or dashboard is refreshed

- modify an existing project
  Change the properties of an existing project

Tableau Environment:*
- Test
- Production

Request Type:*
- New Project
- New Schedule
- Modify Existing Project

Click the Save button to continue.
Tableau Server – Requesting a Project

Fields currently in the form. *required

• Requesting Unit's Campus:*
• Requesting Unit's Name:*
• Project Name:*
• Project Description:
• Publishers Active Directory Group(s):*
• Viewers Active Directory Group(s):
• Request non-default viewer permissions
• Additional notes:
### Tableau Server – Security/Access

<table>
<thead>
<tr>
<th>User / Group</th>
<th>Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Users (3948)</td>
<td>None</td>
</tr>
<tr>
<td>GG-PHARM-Tablea...</td>
<td>Publisher</td>
</tr>
<tr>
<td>GG-PHARM-Tablea...</td>
<td>Viewer</td>
</tr>
</tbody>
</table>

- Viewers can view workbooks/sheets in the project
- Publishers can publish, edit and view workbooks/sheets in the project

- Accepts responsibility that any workbooks/sheets published to this project will not share confidential and sensitive information with anyone, including colleagues, unless there is a business reason and they are an authorized viewer of the data.
More Resources and Answers

https://answers.uillinois.edu/ua/search.php?q=tableau
For accessible dashboards, please pay attention to colors, alternate text and make data available in an alternate form.
Workshop Summary

• Tableau is an intuitive drag-and-drop data visualization tool that can provide new and innovative ways to explore and share your financial, HR, alumni, student, or research data. We hope after this workshop you have a framework to quickly get started with Tableau and some ideas on how to visualize and share your data.
Thank you...

Any Questions?