

# Collection Analysis with Tableau

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LIBRARY ASSESSMENT WORKSHOP  
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# Collection Analysis-Challenges

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- Collecting and combining various data sources
  - Integrated Library System (ILS)(.txt,.xls API, SQL)
    - Circulation statistics
    - Expenditures
    - fund codes
  - COUNTER usage reports (.xls)
  - Impact Factors (.xlsx)
    - Journal Citation Reports, Scimago (.txt, .xls)
  - Collections Budget (.xls)
  - INN-Reach data
  - Interlibrary Loan Data
- Presenting quantitative data in a format that is easily understood
- Publishing data and findings; making data and analyses more accessible

# Collection Analysis in Excel

Serials Review 2013 - Excel

FILE HOME INSERT PAGE LAYOUT FORMULAS DATA REVIEW VIEW ACROBAT

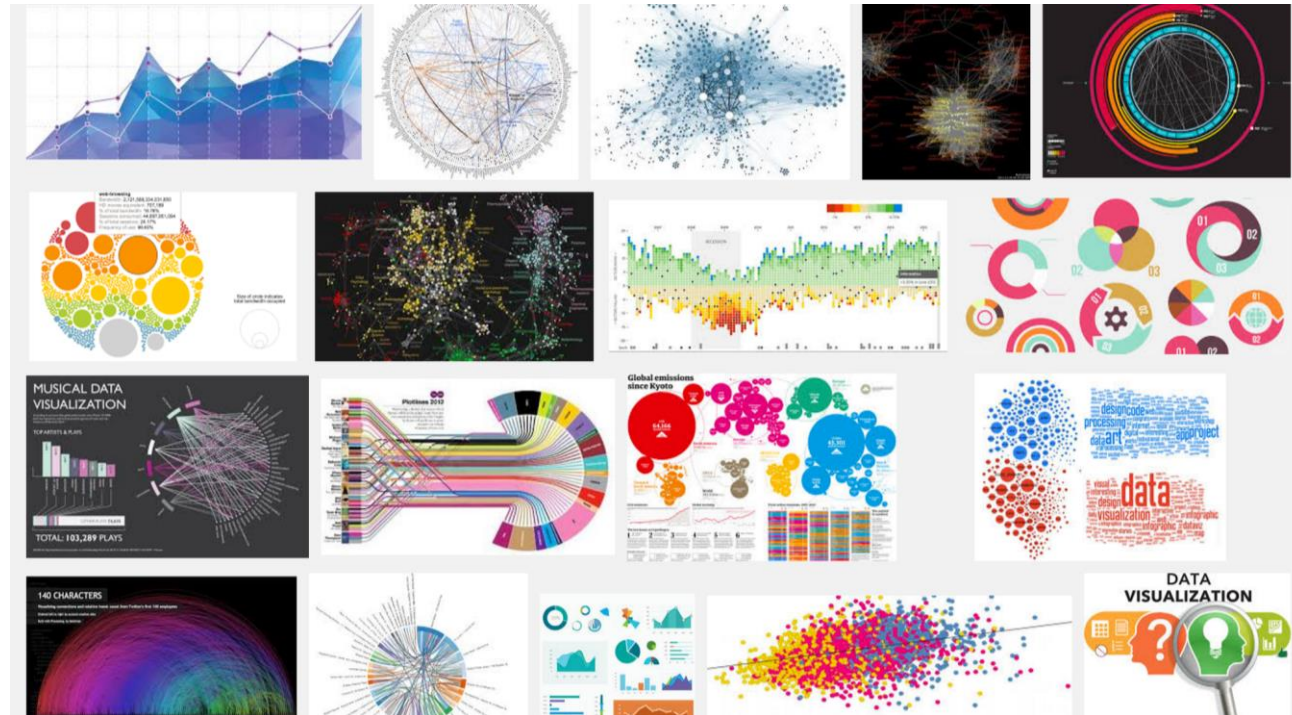
Clipboard Font Alignment Number Styles

A1910

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	T
1	Cancel	FUND	TITLE *(blue lines = e-journals)	22	CALL #	LOCATION	FORMAT	ord type	RECORD #	VENDOR	Paid FY12	Sub per.	Paid FY13	Sub per.	LAST PAID	Search Chinook (by ISN, print & online)
2		antsu	A.S.A. monographs	0066-9679	Class Sep	lib	print	s.o.	o6927592	coutt	91.95	v.47	170.54	v.48,v.49	\$ 170.54	<a href="#">Search Chinook</a>
3		antsu	American antiquity	0002-7316	E51 .A52	per	print	sub	o6600529	sbuks	228.58	12 V 77	249.85	2013	\$ 249.85	<a href="#">Search Chinook</a>
4		antsu	Ancient Mesoamerica [electronic resource]	<a href="http://libre">http://libre</a>	F1434 .A56 Inter	web	e	s	o5890160	sbuks	\$389.50	12 V 23	\$408.98	13 V 24	\$408.98	<a href="#">Search Chinook</a>
5		antsu	Anthropologica	0003-5459	E78.C2 A53	per	print	sub	o6613408	sbuks	136.75	12 V 54	139.15	13 V 55	\$ 139.15	<a href="#">Search Chinook</a>
6		antsu	Anthrozoös [electronic	<a href="http://libre">http://libre</a>	QL85 .A57 Inter	web	e	s	o692170x	sbuks	\$429.48	2012	\$407.95	2013	\$407.95	<a href="#">Search Chinook</a>
7		antsu	Archaeology in Montana	0044-8591	CC21 .A82	per	print	sub	o4092260	sbuks	46.9	2012	46.9	2013	\$ 46.90	<a href="#">Search Chinook</a>
8		antsu	Archaeology in Oceania	0003-8121	DU1 .A72	per	print	sub	o6606209	sbuks	182.88	2012	194.5	2013	\$ 194.50	<a href="#">Search Chinook</a>
9		antsu	Arctic anthropology	0066-6939	GN1 .A7445	per	print	sub	o6258724	sbuks	250.5	2012	263.25	2013	\$ 263.25	<a href="#">Search Chinook</a>
10		antsu	Asian ethnology	1882-6865	GR330 .F6	per	print	sub	o464511x	sbuks	106.73	2011 V 70	106.85	12 V 71	\$ 106.85	<a href="#">Search Chinook</a>
11		antsu	Cambridge anthropology : a journal of the Department of Social Anthropology,	0305-7674	GN1 .C29	per	print	sub	o1075779	sbuks	209.5	2012	219.18	2013	\$ 219.18	<a href="#">Search Chinook</a>
12		antsu	Cambridge archaeological	0959-7743	CC1 .C35	per	print+internet	sub	o5890421	sbuks	349.93	12 V 22	378.05	2013 V 23	\$ 378.05	<a href="#">Search Chinook</a>
13		antsu	Collaborative			web	e	s	o7497660	sbuks	\$98.15	2013			\$98.15	Record
14		antsu	Collection Puruṣārtha / Centre d'études de l'Inde et		GN635.S57 P8	nor	print	s.o.	o1106909	harra	50.56	v.29	53.12	v.30	\$ 53.12	supressed
15		antsu	Contributions to Nepalese	0376-7574	DS493 .C68	per	print	sub	o1653623	sbuks	82.41	2012	82.78	011 V 38	\$ 82.78	<a href="#">Search Chinook</a>
16		antsu	Cultural survival quarterly	0740-3291	GN357 .C9	per	print	sub	o6623384	sbuks	85.5	2012	87.9	2013	\$ 87.90	<a href="#">Search Chinook</a>
17		antsu	Ethnology	0014-1828	GN1 .E85	per	print	sub	o6626270	sbuks	70.73	2011 V 50	82	2013 V 51	\$ 82.00	<a href="#">Search Chinook</a>
18		antsu	Expedition	0014-4738	CC21 .P557	per	print	sub	o6626476	sbuks	35.88	2012	35.88	2013	\$ 35.88	<a href="#">Search Chinook</a>
19		antsu	Idaho archaeologist	0893-2271	E61 .I3	per	print	sub	o6629374	sbuks	39.38	2012	41.78	2013	\$ 41.78	<a href="#">Search Chinook</a>
20		antsu	Journal of anthropological	0091-7710	GN1 .S64	per	print	sub	o6630650	sbuks	76.88	2012	76.88	2013	\$ 76.88	<a href="#">Search Chinook</a>
21		antsu	Journal of California and Great Basin anthropology	0191-3557	E78.C15 J62	per	print	sub	o6633547	sbuks	73.48	011 V 31	86.17	12 V 32 # 1	\$ 86.17	<a href="#">Search Chinook</a>
22		antsu	Journal of ethnobiology	0278-0771	GN476.7 .J68	per	print	sub	o6616732	sbuks	94.3	2012	107.63	2013	\$ 107.63	<a href="#">Search Chinook</a>
23		antsu	Journal of Mediterranean archaeology [electronic	<a href="http://libre">http://libre</a>	DE1 .J69 Intern	web	e	s	o5335498	sbuks	\$246.00	012 V 25	\$246.00	13 V 26	\$246.00	<a href="#">Search Chinook</a>
24		antsu	Journal of Middle Atlantic	0883-9697	E78.M65 J68	nor	print	s.o.	o6931583	coutt	34	v.27 2011			\$ 34.00	<a href="#">Search Chinook</a>
25		antsu	Journal of South Asian and Middle Eastern studies	0149-1784	DS41 .J63	per	print	sub	o6636366	sbuks	35.88	2012	35.88	2013	\$ 35.88	<a href="#">Search Chinook</a>

# What is Data Visualization?

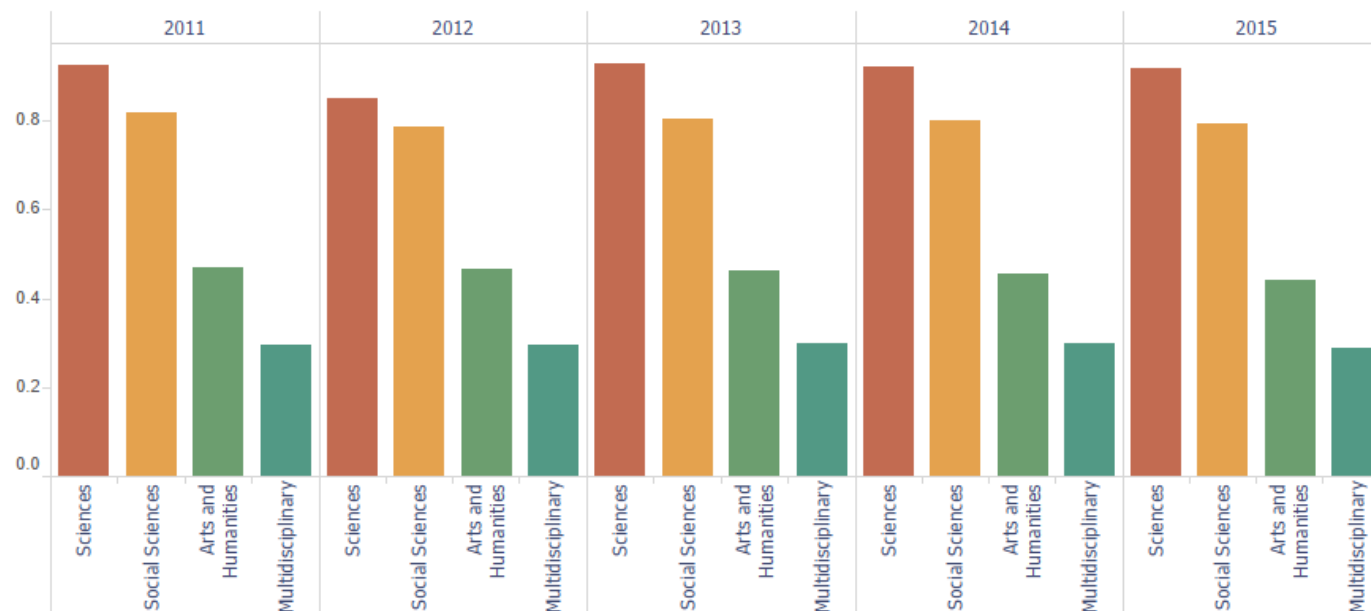
- Visual representation of abstract data to help:
  - Explore: Identify trends and patterns in data
  - Explain: Understand complex data more easily



# Tableau Software-Data Visualization



Bar Chart



**View Data**

SJR Impact Factor

**Organize Data By**

Discipline

**Filter for Use**

Include all Records

**Year Aggregation**

Individual Years  
 Average of Selected Years

**Years Selected**

(All)

**Journals by Data - (Applies View Data and Years Selected)**

- \* Select 1 or multiple journals to filter bars for only those journals
- \* Click this header to reset journal filter.

Journal	Publisher	Platform	View Data
CA: A Cancer Journal for Clinicians	John Wiley and Sons	Wiley Online Library	37.38
Cell	Elsevier	ScienceDirect	23.59
The Quarterly Journal of Economics	Oxford Journals	Oxford	22.54
	Oxford University Pre..	Oxford	22.54
The Journal of Finance	John Wiley and Sons	Wiley Online Library	17.14
Econometrica	John Wiley and Sons	Wiley Online Library	16.30
Immunity	Elsevier	ScienceDirect	13.28
The Lancet Oncoloav	Elsevier	ScienceDirect	11.22

**Broad Disciplines**

(All)

**Detailed Subjects**

(All)

**Subject Specialist**

(All)

**Color Ramp**

0.2886 0.9287

# Excel v. Tableau?

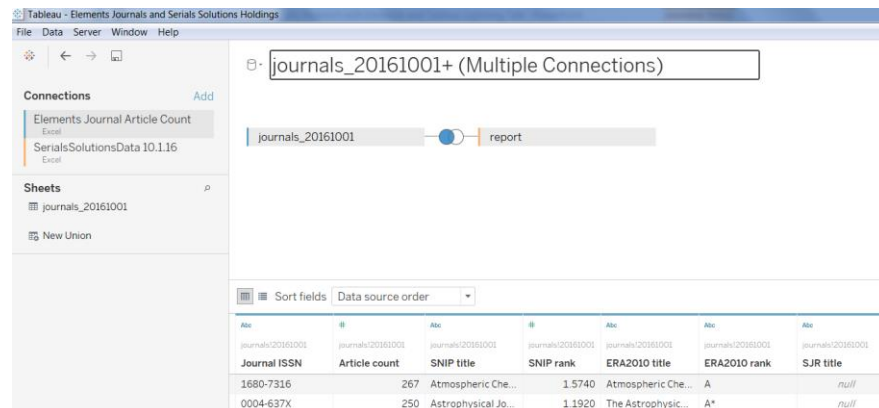
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	Excel	Tableau
Combine multiple data sets	Manually or using a formula like VLOOKUP	Link and create relationships between data sources
Updating data	New version needs to be manually uploaded	Data sources can be refreshed
Filters, Slicers, Sort	Yes	Yes
Graphs, charts	Yes	Yes
Publishing/Distribution	Static, interactive spreadsheets	Dynamic, interactive online dashboards

# Tableau Software-Connecting Data

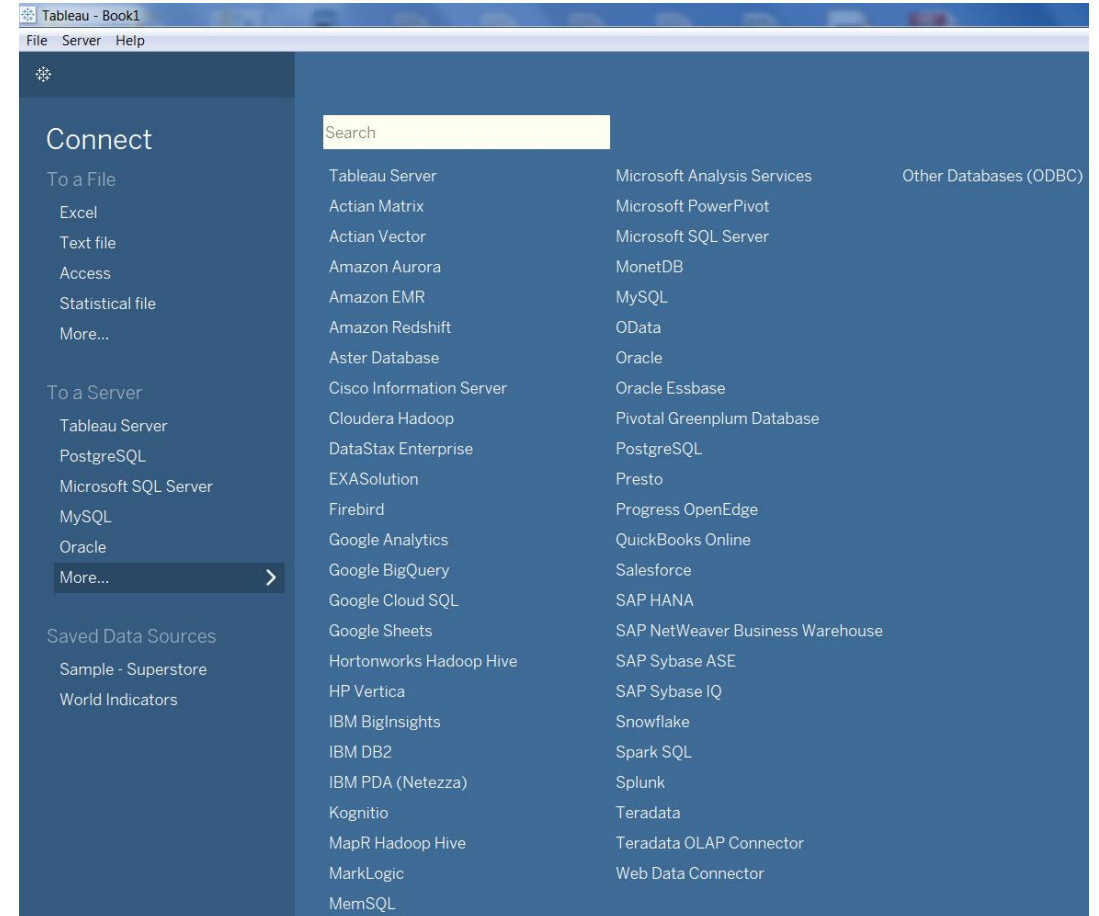
## Integrate and analyze various data sources:

- Excel spreadsheets from Elements (faculty publication data)
- Excel spreadsheets containing library holdings (ILS data)
  - Better yet, connect directly to ILS data using PostgreSQL database (Sierra DNA)
- Excel spreadsheets exported from citation databases such as Web of Science or Scopus



The screenshot shows the Tableau interface with a data source named 'journals\_20161001+ (Multiple Connections)'. Below the connection name, there is a table with the following data:

Journal ISSN	Article count	SNIP title	SNIP rank	ERA2010 title	ERA2010 rank	SJR title
1680-7316	267	Atmospheric Che...	1.5740	Atmospheric Che...	A	null
0004-637X	250	Astrophysical Jo...	1.1920	The Astrophysic...	A*	null

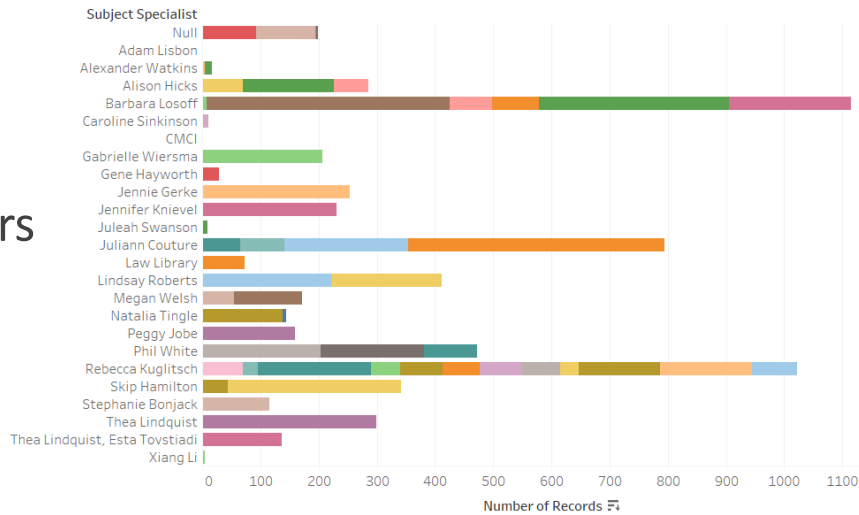


The screenshot shows the 'Connect' menu in Tableau, listing various data sources. The menu is organized into sections: 'To a File', 'To a Server', and 'Saved Data Sources'. The 'To a File' section includes Excel, Text file, Access, Statistical file, and More... The 'To a Server' section includes Tableau Server, PostgreSQL, Microsoft SQL Server, MySQL, Oracle, and More... The 'Saved Data Sources' section includes Sample - Superstore and World Indicators. The 'More...' option is highlighted, showing a list of additional data sources including Tableau Server, Actian Matrix, Amazon Aurora, Amazon EMR, Amazon Redshift, Aster Database, Cisco Information Server, Cloudera Hadoop, DataStax Enterprise, EXASolution, Firebird, Google Analytics, Google BigQuery, Google Cloud SQL, Google Sheets, Hortonworks Hadoop Hive, HP Vertica, IBM BigInsights, IBM DB2, IBM PDA (Netezza), Kognitio, MapR Hadoop Hive, MarkLogic, MemSQL, Microsoft Analysis Services, Microsoft PowerPivot, Microsoft SQL Server, MonetDB, MySQL, OData, Oracle, Oracle Essbase, Pivotal Greenplum Database, PostgreSQL, Presto, Progress OpenEdge, QuickBooks Online, Salesforce, SAP HANA, SAP NetWeaver Business Warehouse, SAP Sybase ASE, SAP Sybase IQ, Snowflake, Spark SQL, Splunk, Teradata, Teradata OLAP Connector, and Web Data Connector.



# Tableau Dashboards for Collection Analysis

- Most Cited Journals by Journal Title
- Most Cited Journals by Department
- Journals with most articles by CU authors
- Top Publishers for books and journals
- Books by CU authors
  - Group by academic department
  - Group by subject librarian
- Journals with high use, zero use
- Circulation of approval v. firm ordered books



Title	Primary group	Subject Specialist
25 years of nonlinearity in oceanography from the Lagrangian per...	Aerospace Engineering Sciences	Rebecca Kuglitsch
36 Botched Executions	Sociology	Jennie Gerke
50 Writers An Anthology of 20th Century Russian Short Stories	Germanic and Slavic Languages and ...	Thea Lindquist, Esta Tovstiadi
100 Notes on Violence	English	Skip Hamilton
1990's China: The Winds of Change	History	Thea Lindquist
2005: Geochronology of high-latitude lake sediments	Geological Sciences	Phil White
2666: La autoría en el tiempo del límite	Spanish and Portuguese	Alison Hicks
iLa lucha y conducción grupal! A workshop for youth members of ..	Communication	Juliann Couture
'A Good Work Among the People': The Political Culture of the Bos..	History	Thea Lindquist
'Alte Liebe' and the Birds of Spring: Text, Music, and Image in Ma..	College of Music	Stephanie Bonjack
'Belebte Schraube ohne Ende.' Zur Vorgeschichte der Doppelhelix	Germanic and Slavic Languages and ...	Thea Lindquist, Esta Tovstiadi

Subject Specialist	Primary group	Count
Null	Center for Advanced Decision Support for Water and E...	3
	CIRES	1
	Herbst Humanities Program	1
	Institute of Arctic & Alpine Research	101
	Institute of Cognitive Science (ICS)	1
	Media Studies	91
	Organisation	1
Adam Lisbon	Asian Languages and Civilizations	2
Alexander Watkins	Art and Art History	12
	Critical Media Practices	5
Alison Hicks	French & Italian	59
	Spanish and Portuguese	156
	University Libraries	70
Barbara Losoff	Chemistry and Biochemistry	210
	Ecology and Evolutionary Biology	327
	Integrative Physiology	80
	Molecular, Cellular & Developmental Biology (MCDB)	73
	Psychology and Neuroscience	417
	Speech, Language, and Hearing Sciences (SLHS)	8
Caroline Sinkinson	Program for Writing and Rhetoric	10
CMCI	College of Media, Communication & Information	1
Gabrielle Wiersma	Economics	207
Gene Hayworth	Film Studies	29
Jennie Gerke	Sociology	254
Jennifer Knieval	Philosophy	231
Juleah Swanson	Journalism	9
Juliann Couture	Anthropology	441
	Communication	213
	Ethnic Studies	75
	Women and Gender Studies	66
Law Library	School of Law	73
Lindsay Roberts	Linguistics	191
	School of Education	221
Megan Welsh	Classics	118
	Religious Studies	54
Natalia Tingle	Advertising, Public Relations and Media Design	7
	Leeds School of Business	138
Peggy Jobe	Political Science	160
Phil White	Environmental Studies Program	91
	Geography	178
	Geological Sciences	203
Rebecca Kuglitsch	Aerospace Engineering Sciences	78
	Applied Mathematics	158
	Astrophysical and Planetary Sciences	139
	Atmospheric and Oceanic Sciences	32
	Chemical and Biological Engineering	65



# Tableau Dashboards for Collection Analysis

- Collections Budget

- Track expenditures by fund, subject, format, resource type

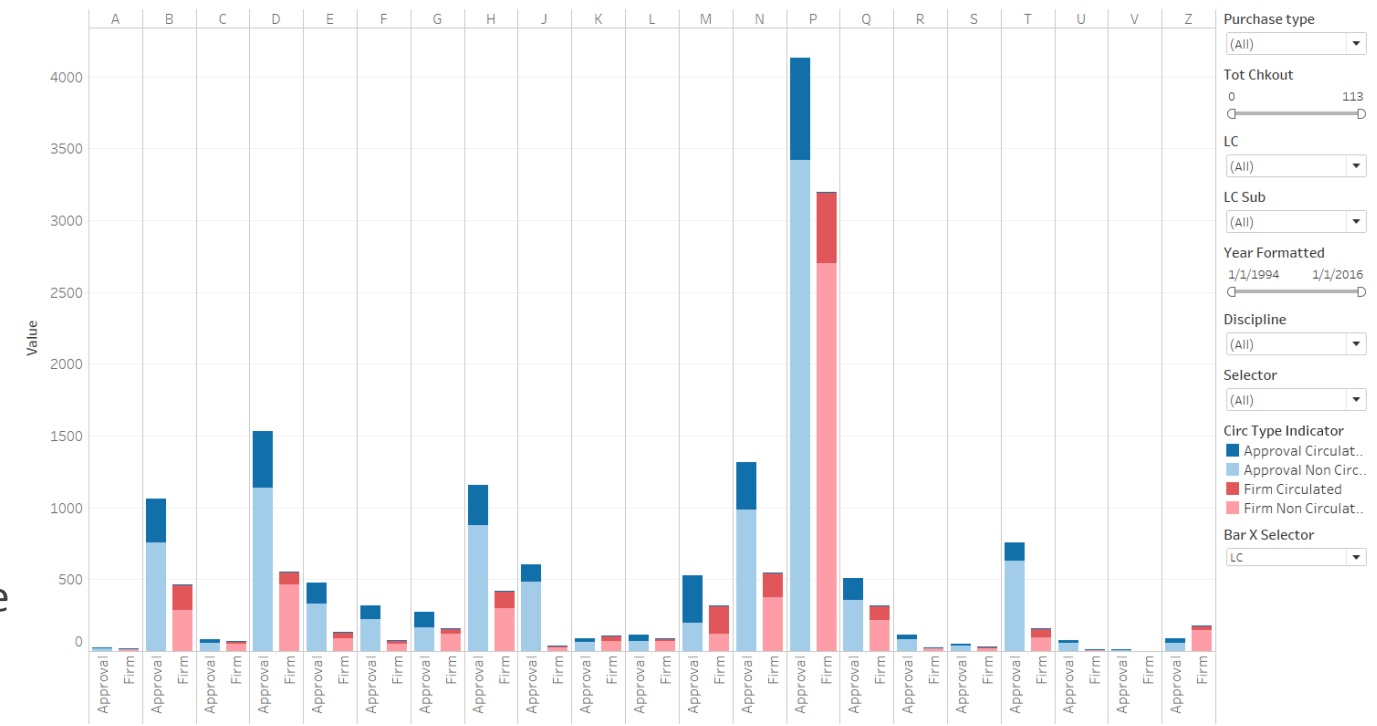
- Collection Statistics

- Track collection growth
- Analyze usage statistics
  - Rate the performance of books within LC ranges, by publisher, age
  - EXZ Proxy and COUNTER reports for e-resource usage

- INN-Reach and Interlibrary Loan Data

- What are we borrowing?
- In which areas are we borrowing more than we are purchasing?
- Does this indicate a gap in our collection?

FY16 Comparative Analysis of Approval and Firm Orders



# Next Steps-Measuring our Impact

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- Combining collections data with different types of library data
  - Reference Questions
  - Gate Counts

Partnering and sharing data with others on campus:

- Faculty Affairs
  - access to faculty information system and Elements gives us a list of all of our faculty's publications, courses taught
- Institutional Research
  - Connect to demographic data about our users, particularly students to connect student success with use of library resources

# Questions?

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# Thank you!

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