### Business Sources from the Federal Government: Exciting and New

### Federal Depository Library Program: FDLP Academy March 26, 2020: Webinar

Presenter: Jennifer C. Boettcher, Georgetown University



Jennifer C. Boettcher and Leonard M. Gains. <u>Industry Research Using the Economic</u> <u>Census</u>. Greenwood : Phoenix, AZ. 2004

> M.B.A., Georgetown University, Washington, D.C., 2005 M.L.S., State University of New York, Albany, N.Y., 1992 B.A., University of New Hampshire, Durham, N.H., 1987

ALA RUSA BRASS Member since 1991

ALA GODORT member since 1990

**Georgetown University 1997-present** 

Founder of Business Information Finders (BIF) and Capital Area Business Academic Librarians (CABAL) in DC

2013 Emerald Research Grant: Zombie List (reanimated business sources)

Seeking contributors: <u>https://boettcher.georgetown.domains/HisBusColl</u>

2010 Gale Cengage Learning Award for Excellence in Business Librarianship



### Librarian & Information Scientist

#### • As a Librarian, I

- Understand the source
- Know how to find the source
- Know the related subjects
- Know how it's connected to other sources
- Know how to read it
- Make connections between publisher and researcher

- As a Librarian, I don't
  - Publish the primary source
  - Have your context or expertise
  - Do statistical analysis
  - Interpret the data
  - Do data entry
  - Have legal expertise

These are my views and do not reflect those of Georgetown or GPO.

## Outline

- Public Domain
- Open Government
- Questions
- Government and Business
- Economic Census
  - General
  - Georgraphy
  - NAICS/NAPCS
  - 2017 Developments
- Questions

- Starting Points
- Major Sources
  - Social Science
  - Natural Science
- Non Federal Sources
  - Sub-national
  - International/NGO
- Fun
- Next Steps
- Questions

# Copyright provides the owner of copyright with the exclusive right to

- **Reproduce** the work in copies
- Prepare derivative works based upon the work
- **Distribute** copies of the work to the public by sale or other transfer of ownership or by rental, lease, or lending
- **Perform** the work publicly live or by means of a digital transmission

- **Display** the work
- Distribution of Public Domain collections called "collective works" or compilations
- Copyright also provides the owner of copyright the right to authorize others to exercise these exclusive rights, subject to certain statutory limitations.

### Public Domain= No Copyright Restrictions

- **Public Domain is not protected by intellectual property laws, like copyright**. Anyone can use a public domain work without obtaining permission, but no one can ever own it.
  - Example: no longer protected **due to age** of creative work.

Works produced for the U.S. Government by its officers and employees should not be subject to copyright. The provision applies the principle equally to unpublished and published works. <u>17 USC 105</u>

REMEMBER: Public domain data must be attributed.

### It should be Public Domain, but I can't get it

- Privacy Concerns
  - Personally Identifiable Information (PII) and personnel
  - Health Insurance Portability and Accountability Act (<u>HIPAA</u>)
  - Family Educational Rights and Privacy Act (FERPA)
- Security Concerns
  - Generally military and intelligence related classified
  - Controlled Unclassified Information (CUI)
- Financial Concerns
  - Contains propriety data or trade secrets
  - Requires cost recovery
  - Contracts with creator don't allow it, licensing issues
  - Civil litigation or law enforcement
  - Unpublished information and data concerning oil wells

### Administrative Data and the Freedom of Information Act (FOIA) 5 U.S.C. § 552, 1966

#### Why FOIA Requests?

- Know what you are looking for!
- What to ask for
  - Anything unpublished by US government
  - Controlled Unclassified Information (CUI),
    - replaces "For Official Use Only" and <u>other categories</u>
- Who can ask,
  - OPEN Government Act of 2007, citizen journalist

#### **Other potential access problems**

- Not widely distributed/web
- Contracted or grant work
- Lack of supposed interest, **DoJ**
- Lack of funding, **Census**
- Not kept, Record Retention

Read this from Archives

File here <u>FOIAonline</u>

Oversight: Office of Government Information Services

### Open Government

- Free
- Transparent
- Accountable
- Accessible to citizens
- Engage all citizens
- Data is Machine Readable,
  - API v Human
- When in doubt openness prevails

### Open policy in the Federal Government

- Federal government policy
  - Passed by Congress
  - Implemented by Executive Branch
  - Refined by Courts
- Policy on information collection (priorities)
  - Mandated by law (in CFR) Public Law No: 115-435 (signed 1/14/19)
  - Implemented by regulations (Federal Register) 82 FR 52213
  - Directed by memorandum (Presidential) M-13-13
  - Standard of practice: Data plans (<u>Agencies</u>)

### Public Domain Vs. Open Access

- Public Domain
  - US Law
  - Federal Government products
  - can be retrieved by FOIA
  - Some sub-nationals
  - Some countries

- Open Access
  - Decision of publisher/owner
  - Because of ownership of copyright
  - License (CC, GNU, etc)
  - Some NGOs
  - Principles
    - Reuse and redistribution of the data
    - Allows derivative works as Open only
    - No restrictions on who can access and use
    - Electronically transferable
    - Machine-readable





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#### **Use Cases and User Stories**

- Entrepreneurs opening their first business
- Existing business owners looking to expand their markets or better understand them
- Grant writers needing data for their proposal
- Academics doing research for their class
- Regional planners researching business gaps
- Emergency managers and staff doing preparedness, response, and recovery work



### Doing business WITH the U.S. Federal Government

#### **Procurement/Contracts**

- <u>Authoritative site for Assistance</u> <u>Listings, Wage Determinations, and</u> <u>Contract Opportunities</u> (beta.sam.gov)
  - Old: Federal Business Opportunities (FedBizOpps.gov) to Replace the *Commerce Business Daily* (CBD)
  - Old: Catalog of Federal Domestic Assistance (CFDA)

#### **Disasters Assistance/Grants**

- **Disaster Assistance**
- Federal and State Benefits
- <u>Search CFDA</u>

### Federal Government Information for Business

#### **Executive Branch**

- Regulations
- Data, API
- Data, Statistics or Indicators
- Press releases or Trade press or Bulletins
- Handbooks or Fact Books
- Departments' Reports
- Industry Reports or Surveys or Reviews
- State of the Industry and Outlooks
- Geographic specific
- New Technology and direction

### **Congressional Branch**

- Forthcoming laws
- Committee reports/prints
- Congressional Research Section
- Library of Congress, Reading Rooms
- Government Publishing Office

### **Judicial Branch**

- Interpreting laws
- Courts, transcribes
- Courts, defendants



**Knowledge Management Cognitive Pyramid** 

Adaptations of DIKW pyramid by US Army Knowledge Managers, from https://en.wikipedia.org/wiki/DIKW\_pyramid

### The Economic Census (EC)

- NAICS: Nearly every 2- thru 6-digit code covered by the Census Bureau
  - Excludes Agriculture and other types of business (see <a href="https://www.census.gov/programs-surveys/economic-census/guidance/understanding-naics.html#par\_textimage">https://www.census.gov/programs-surveys/economic-census/guidance/understanding-naics.html#par\_textimage</a> )
- Geography: National, state, metro, county, place, and ZIP Code levels
- Other characteristics, including business size and Franchise status
- Over 200 data variables shown (common and sector-specific ones)
- Product Lines data (revenue by products sold or manufactured or services provided)

See <a href="https://www.census.gov/programs-surveys/economic-census.html">https://www.census.gov/programs-surveys/economic-census.html</a> and <a href="https://www.census.gov/data/academy/webinars/2019/2017-econ-census.html">https://www.census.gov/data/academy/webinars/2019/2017-econ-census.html</a> for more information, including release schedule for 2017 and what's new.

Note: Census also have programs related to the EC, including the *Economic Census of Island Areas*, the *Survey of Business Owners* (and the *Annual Survey of Entrepreneurs / Annual Business Survey*) and the *Commodity Flow Survey* 

DATA FROM THE NATION'S BUSINESSES STATS ON EVERY INDUSTRY AND GEOGRAPHY

#### ONE VALUABLE RESOURCE FOR YOUR BUSINESS

THE ECONOMIC CENSUS. SEE HOW IT ALL ADDS UP. Learn more at census.gov/EconomicCensus



Slide provided by Census, 2019

### Series and Reports

Geographic Area Series All Geographic data Puerto Rico & Island Area Industry Series (US only) Product Lines NAPCS X NAICS Establishment and Firm Size **Concentration Ratios** Legal Form of Organization Subject Series (ST) **Miscellaneous Subjects Business Expenses** First Look

Franchise Statistics Report **Comparative Statistics Report** between 12 & 17 **Nonemployer Statistics** Annual Business Survey (ABS) Survey of Business Owners (SBO) Annual Survey of Entrepreneurs (ASE), Business Research and Development and Innovation Survey for Microbusinesses (BRDI-M) Commodity Flow Survey Materials Consumed Mining and Manufacturing

## **Nonemployer Statistics**

#### **Includes the Gig workers**

#### Nonemployer Businesses

Includes key statistics for businesses with no paid employees (such as independent contractors and sole proprietors (Nonemployers)) from the 2012 thru 2016 Nonemployer Statistics programs and the 2007 and 2012 Economic Census. (These variables are related to the Industry selected.)

Businesses w/o paid employees account for 75% of all businesses 3.5% of all sales

Excluded from other census reports

Updated annually







#### **Gig Economy**

### Geographic/TIGERweb



### What is new with 2017 Geography?

https://www.census.gov/programs-surveys/economic-census/geographies/change-notes.html

- Metro Areas the Core Based Statistical Areas in 15 states had some type of change
- Counties Alaska, South Dakota, and Virginia had changes to 1 or more counties
- Economic Places every state had places with area gain, loss, and/or code or name changes. There are 442 new Economic Places being recognized and 171 places that are being dropped for 2017, primarily due to population decline
- Offshore for drilling and mining along the coasts. <3 miles with state data
- For example: North Carolina has 474 Total Places

Gains	Losses	Name Change
245 area size	109 area size	3 name changes
22 places	6 places	

### Which Industry?





February 26, 2020 OMB asked for permission to kill the Standard Industrial Classification (**SIC**). Long live the North American Industry Classification System (**NAICS**) 85 FR 11120, parts V and VI

V. OMB Statistical Policy Directive No. 8, Standard Industrial Classification of Establishments The ECPC is soliciting public comments at the request of OMB on the advisability of formally updating Statistical Policy Directive No.
8, Standard Industrial Classification of Establishments, and seeking comments on the proposed text of the update.

VI. OMB Statistical Policy Directive No. 9, Standard Industrial Classification of Enterprises The ECPC proposes elimination of Statistical Policy Directive No. 9, Standard Industrial Classification of Enterprises.

### **NAICS Sectors**

11 Agriculture, Forestry, Fishing and Hunting 21 Mining 22 Utilities 23 Construction 31-33 Manufacturing 42 Wholesale Trade 44-45 Retail Trade 48-49 Transportation and Warehousing 51 Information 52 Finance and Insurance

53 Real Estate and Rental and Leasing 54 Professional, Scientific, and Technical Services 55 Management of Companies and Enterprises 56 Administrative and Support and Waste Management and Remediation Services 61 Education Services 62 Health Care and Social Assistance 71 Arts, Entertainment, and Recreation 72 Accommodation and Food Services 81 Other Services (except Public Administration) 92 Public Administration



## North American **Industry** Classification System

Level	Code	Description
Sector	52	Finance and Insurance
Subsector	524	Insurance Carriers & related activities
Industry Group	5241*	Insurance Carriers
Industry	52411	<b>Direct Life Health &amp; Med Ins Carriers</b>
U.S. Industry	524113	Direct Life Insurance Carriers

\* Mexico & Canada Compatible

### What and why NAPCS?

#### What is the purpose of NAPCS?

Comprehensive demand/market-oriented classification framework for services and goods.

NAPCS was developed as a reference classification to facilitate the analysis of economic data based on markets rather than production processes and allows comparisons of products among the three North American countries.

#### What is the relationship between NAPCS and NAICS?

- NAPCS, a product classification system, and NAICS, an industry classification system, are independent but complementary.
- A product produced/sold/distributed by multiple industries carries the same title, definition, and code in NAPCS, regardless of its industries of origin.
- Products can be linked to the industries that produce/sell/distribute them, and industries can be linked to the products.

#### What else can NAPCS be used for?

BEA's National Accounts (NIIP), Harmonized Commodity Description and Coding System (HS) 2012 and Extended Balance of Payments Services (EBOPS) 2010.

### North American **Product** Classification System 2017 (NAPCS 2017) version Beta 1.0

#### **Hierarchical Structure**

#### **Example (library services)**

Level	Digits	Agreggation level	Categories
1	2	Section	24
2	3	Subsection	61
3	5	Division	172
4	7	Group	276
5	9	Subgroup	497
6	11	Trilateral product	1167

New Product-, Merchandise-,
and Services- Lines

North American Product Classification System 2017 (NAPCS 2017) version Beta 1.0				
Code	Product title			
24	Home entertainment, recreation and culture products, including household pets and related products			
241	Home entertainment, recreation and culture products			
24110	Other home entertainment, recreation and culture products			
2411001	Other home entertainment, recreation and culture products			
241100101	Gambling products			
241100102	Leisure, recreational, and athletic instructional programs			
241100103	Library and archive services			
24110010301	Library and archive services			

### Subject Series NAPCS x NAICS

- Used to be
  - Merchandise Line
  - Product Line
  - Revenue Line
  - Service Line

Product Lines: NAICS x NAPCS for the U.S. and States where applicable	November 2020
Product Lines: NAPCS x NAICS for the U.S.	

https://www.census.gov/programs-surveys/economic-census /guidance/series/subject-summary.html

### Other Changes with the 2017 Economic Census

- New disclosure rules -- new privacy rules will result in the establishment count being suppressed when fewer than 3 establishments in that industry in that geography.
  - You will be seeing a lot more of D Withheld to avoid disclosing data for individual companies; data are
    included in higher level totals
- Local areas published by sector Place-level data will no longer be available for the Manufacturing sector and the NAICS and geographic levels published for other sectors may be adjusted based on data quality and privacy issues.
  - Fewer geographic details
- Introduction of the Annual Business Survey (ABS) -- The Survey replaces three existing surveys: the five-year Survey of Business Owners (SBO) for employer businesses, the Annual Survey of Entrepreneurs (ASE), and the Business Research and Development and Innovation Survey for Microbusinesses (BRDI-M).

#### Ways to Access Data

- <u>QuickFacts</u>
- <u>My Congressional District</u>
- <u>Global Market Finder</u>
- <u>Census Business Builder</u>
- <u>OnTheMap</u> and <u>OTM for Emergency Management</u>
- <u>American FactFinder</u> [going away]
- USA Trade Online
- data.census.gov
- <u>DataFerrett</u> [gone away]
- Application Programming Interface (API)

			Search				
BROWSE BY TOPIC	EXPLORE DATA		LIBRARY	SURVEYS/ PROGRAMS	INFORMATION FOR	FIND A CODE	ABOUT US
Explore Data Main		Relat	ed Sites				
Census Academy		Softw	are				
Combining Data		Table	s				
Data Tools and Apps	)	Traini	ng and Workshops				
Develop		Visua	lizations				

Businesses 🗨	Q Largo CDP, Maryland	Q Prince George's County, Maryland ⊠	Q Maryland
Population estimates, July 1, 2017, (V2017)	x	912,756	6,052,177
Businesses	3		
Total employer establishments, 2016	×	15,042	138,4801
Total employment, 2016	×	256,974	2,282,725 <sup>1</sup>
Total annual payroll, 2016 (\$1,000)	×	11,937,666	121,952,023 <sup>1</sup>
Total employment, percent change, 2015-2016	×	2.5%	1.9%1
Total nonemployer establishments, 2016	×	76,805	487,540
All firms, 2012	794	77,204	531,953
Men-owned firms, 2012	345	37,899	276,630
Women-owned firms, 2012	408	34,395	209,119
Minority-owned firms, 2012	733	59,172	203,394
Nonminority-owned firms, 2012	28	16,219	314,902
Veteran-owned firms, 2012	72	7,644	50,976
Nonveteran-owned firms, 2012	689	67,290	462,232



https://www.census.gov/programs-surveys/economic-census/guidance/finding-data.html

Slide provided by Census, 2019

Ease of

Use

### What is not covered in the Economic Census

NAICS	Industry categories excluded from the economic census	Coverage in CBP
11	Agriculture, Forestry, Fishing and Hunting	CBP (except 111,112)
482	Rail Transportation	
491	Postal Service	
525	Funds, Trusts, and Other Financial Vehicles	CBP (except 5251)
6111	Elementary and Secondary Schools	CBP (private schools only)
6112	Junior Colleges	CBP (private schools only)
6113	Colleges, Universities, and Professional Schools	CBP (private schools only)
8131	Religious Organizations	СВР
81393	Labor Unions and Similar Labor Organizations	СВР
81394	Political Organizations	СВР
814	Private Households	
92	Public Administration	

### **Economic Indicators from Census**

**County Business Patterns** Annual Survey of Manufacturers Advance Monthly Retail Sales Monthly Wholesale Trade Manufacturers' Shipments, Inventories and Orders **Quarterly Services Survey** Value of New Construction Put in Place Housing Completions Housing Vacancies and Homeownership US International Trade in Goods and Services **Quarterly Financial Report E-Commerce Monthly** Census of Governments – Public Sector **Public Education Finances** 







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### Where to start for Open Data

- United States <u>https://www.data.gov</u>
- International <u>http://data.un.org</u>
   <u>Advanced</u>
- States <a href="http://copyright.lib.harvard.edu/states">http://copyright.lib.harvard.edu/states</a>
- Inter-university Consortium for Political and Social Research repository <u>https://www.icpsr.umich.edu/icpsrweb/ICPSR/</u>
  - <u>Themes</u>

# Major Sources of Social Science Information from the US Government

- <u>Census</u> (Demographics, Public Finance, Manufacturing, Retail, Wholesale, Construction, all other industries)
- Labor
- <u>Companies</u>
- <u>Economic</u>
- Federal Budget Projections
- <u>Taxes</u>
- <u>Spending</u>
- <u>Social Security</u>

- Justice
- Banking
- Mortgage
- <u>Trade</u>
- <u>Transportation</u>
- <u>Telecommunications</u>
- Education
- Libraries and Museums
- Economic Analysis

# Major Sources of Natural Science Information from the US Government

- <u>Agriculture</u> and <u>Fisheries</u>
- <u>Defense</u>
- <u>Health</u>
- Energy
- <u>Environment</u>
- Intellectual Property
- Land Management and Minerals
- <u>Pharmaceuticals</u>
- <u>Science & Engineering</u>
- <u>Weather</u>



https://www.flickr.com/photos/notbrucelee/6897137283/in/photostream
# Problems that come with government Info

- Beggars can't be choosers
  - Too old
  - Not to the geographic level needed, going to get worst
  - Too detailed
  - Have to file a FOIA request

## **States and Cities**

- Public Domain in <u>California</u> and <u>New York City</u>
- <u>https://www.google.com/search?q=site%3A.gov+"open+data"+</u>
  [YOUR STATE HERE]
- Remember to search using site:.gov
- There are a lot of consultants making money on cool visualizations using open data.



https://data.sonomacounty.ca.gov/dataset/SoCo-Data-PNG/3m9t-bc35

### **Major International Data Sources**

#### By topic

http://data.un.org

Social & Economic- World Bank

Financial & Economic- International Monetary Fund

Human body- World Health Org

Labor- International Labour Org

**Telecommunications- International** 

**Telecommunications Union** 

**Governance- Transparency International** 

<u>Developed Countries- Organisation for Economic Co-</u> <u>operation and Development (OECD)</u>

#### **By Country**

#### **National Statistical Offices**

More data available in national language

Some charge for access

Citizens of that country might have free access

National Repositories/Archives

Historical

Datasets

# P.E.S.T. Analysis for Industry\*

Political Legislative Congress.gov Executive **Regulations.com** Judicial United States Courts Socio-cultural Norms & Ratios **IRS's Statistics of Income** Peers and partners **Economic Census** Annual Surveys from Census

Economic

**Sector Inflation** 

**BLS's Producers Price Index** 

Microeconomic trends

FRB's FRED

Census BEA's Interactive Tables

Technology

Patents

**Citation Analysis** 

Tech Transfer

Government funded research to

license

\* Scanning the Business Environment (Aguilar)

## Have Fun

- Create maps of our state with all the geography in it.
  - Make it a puzzle with 3-D printers
  - Bring it to gerrymandering parties
- Invite the Historical Society to track the industries in your communities.
  - Have Wikipedia parties with new data
- Contact the Chamber of Commerce and other clubs
  - give them quiz questions
- Have a release party with your **<u>State Data Center</u>**
- Dedicate a computer just to entrepreneurships with <u>CBB</u> and relevant links.
- Arm citizen journalists with the Census of Government and School data.
- YOUR idea here

## Open Government

#### **US Federal**

- DATA.GOV
- Performance.gov
- <u>Center for Effective Government</u> (formerly OMB Watch)
- Government Accountability Project
- Open Government Foundation

#### International

- <u>Center for Data Innovation</u>
- Data Transparency Coalition
- Open Government Partnership
- Open Knowledge
- Sunlight Labs

## Learning more

#### **Government Sources**

FDLP Academy

Accidental Government Librarian

DigitalGov from Digital Government Division of GSA

Standards for Born Digital images

#### **Numerical Data**

- Inter-university Consortium for Political and Social Research (ICPSR) repository
- <u>API University from OMB</u>
- DataRefuge

Public Knowledge: Access and Benefits (Information Today, 2016) Innovation in Federal Statistics (National Academics, 2017)

# Where to learn MORE

#### **From Librarians**

- <u>ALA 's Government Documents</u> <u>Round Table (GODORT)</u>
- International Association for Social Science Information Services and Technology (IASSIST)
- <u>ACRL/DSS Numeric and Geospatial</u>
  <u>Data Services Discussion Group</u>
- <u>Scholarly Publishing and Academic</u> <u>Resources Coalition (SPARC)</u>

#### **From Federal data**

- <u>Government Printing Office (GPO)</u>
- <u>Association of Public Data Users</u> (<u>APDU</u>)
- <u>Council of Professional</u> <u>Associations on Federal Statistics</u> (COPAFS)
- <u>American Statistical Association</u>
- Project Open Data
- Data Coalition

## Let's discuss

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All links last checked 3/25/20

# Selected Boettcher bibliography

#### **Books**

Jennifer C. Boettcher and Leonard M. Gains. <u>Industry</u> <u>Research Using the Economic Census</u>. Greenwood Press: Phoenix, AZ. 2004.

<u>Reviews</u>

Steven W. Staninger, Susan Riehm Goshorn, and Jennifer C. Boettcher. <u>Key Business Sources of the U.S. Government</u>. BRASS/RUSA: Chicago, IL. 1998. <<u>http://www.ala.org/rusa/sections/brass/brassprotools/br</u> asspres/marketing/marketinggovupdtedl>.

#### Publications

Boettcher, J. C., & Dames, K. M. (2018). <u>Government data as</u> <u>intellectual property: Is public domain the same as open</u> <u>access?</u> Online Searcher, *42*(4), 42-48.

Jennifer C. Boettcher. "Company-Specific Information Found in Federal Government Sources," <u>Online</u>. 29, no. 2 (March/April 2005), 19-24.

Jennifer Boettcher. "Challenges and Opportunities Presented by NAICS," <u>Journal of Business and Finance</u> <u>Librarianship</u>. 5, no. 2 (1999), 3-14.

#### **Free Webinars**

Jennifer C. Boettcher. "Business Sources from the Federal Government: Classic and New." FDLP Academy Webinar. March 28, 2020.

https://www.fdlp.gov/fdlp-academy/fdlp-academy-trainingrepository

Jennifer C. Boettcher. "Industry Research Using the Economic Census." Help! I'm an Accidental Government Information Librarian Webinars. October 4, 2019.

https://youtube.com/watch?v=0RCmwn1fkP4

Jennifer C. Boettcher. "Federal Data Strategies." FDLP. Academy Webinar. February 7, 2019 https://fdlp.gov/federal-data-strategies

Jennifer C. Boettcher. "Understanding the Census of Government: 2nd Largest Industry in the U.S." FDLP Academy Webinar, January 10, 2017.

fdlp.gov/understanding-the-census-of-government-2ndlargest-industry-in-the-us

### One Statistical Office in US: Why Not?

- 1. **Privacy:** The Privacy Act of 1974, Confidential Information Protection and Statistical Efficiency Act of 2002 (CIPSEA), and Statistical Policy Directive No. 1 (2014) require agencies to ensure that the collection and maintenance of citizens' data is accurate, confidential, and within legal restrictions. With different offices having access to those records, there would be less possibility of everything being leaked.
- 2. **Security**: Along the lines of fewer offices having access to data records. The more servers that hold the data, the safer it is. The times when an exchange of information is necessary laws and regulations among departments allow to protect access to data.
- 3. Integrity: The income you report to IRS might be different from what you report to the Census Bureau.
- 4. **Methodology**: Sometimes data must have a higher number of people questioned so the accuracy will be better; different methods of collection or sampling may be required.
- 5. **Popularity**: Anything being done by the government has a political dimension, especially funding for employees and for modernizing and updating technology, attractiveness of the research, and repetition of statistical programs by agencies.

## Vocabulary: Tools, Process, and Products

**Datasets or compilation**: Raw or statistical numbers, can be flat file such as Comma Separated Variable (CSV) or proprietary like Excel

Metadata: Includes field descriptions for the dataset, found in codebooks

Schema: How data is organized or structured using standards, like classification

Application Program Interface (API): Read-only machine to machine querying, generally from JSON or XML files Big data: Raw, unstructured data; normally transactional (example: each check out)

Natural Language Processing (NLP): Use for text analysis, not numeric data

Artificial Intelligence (AI): Includes predictive analytics and machine learning

**Reports**: Usually aggregated statistics based on big data (example: how many checkouts)

**Data Visualization**: Using software to visually communicate relationships and context of data

**Open Data**: Freely accessible data, created for a specific purpose; by-product of decision making or research

### Works produced for the U.S. Government: Lifecycle of Data

Policy Makers who ask the questions about what has to be found or measured

- **Researchers** who design methods or experiments to collect the data and where the data and codebooks are created.
- **Statisticians** who manipulate datasets using models and algorithms to see trends in longitudinal data and to interpret data at a moment of time in cross-sectional studies.
- **Analysts** who see patterns using predictive analytics, seek the emerging relationships between the numbers, transforming data into information by giving it context.
- Other **Data Scientists** will link graphics, statistical downloads, and application programming interfaces (APIs) to the researcher's raw data.
- Writers and Data Visualization Designers, who uses their imagination to apply their knowledge to make data understandable in reports, press releases, and other resources.
- The federal agency will act as **Publishers**, putting the synthesized resources on its website for allprimarily for **decision makers** but also for **citizens**-to read.

## **Funding for Federal Data Collection**

				FY 18		FY19	
	FY15	FY16	FY17	Final	Change from FY17	Request	Change from FY18
Research Agency (amounts in millions of dollars)							
NIH*	30311	32311	34229	37084	8.3%	34767	-6.2%
NSF	7344	7463	7472	7767	4.0%	7472	-3.8%
AHRQ	364	334	324	334	3.1%	256	-23.4%
FDA	2597	2730	2771	2812	1.5%	3524	25.3%
Statistical Agency (amounts in millions of dollars)							
BEA	96.3	105.1	103.8	99.0	-4.9%	98.0	-1.0%
BJS	41.0	41.0	45.5	48.0	5.5%	41.0	-14.6%
BLS	592.2	609.0	609.0	612.0	0.5%	609.0	-0.5%
BTS	26.0	26.0	26.0	26.0	0.0%	26.0	0.0%
Census	1088.0	1370.0	1457.0	2814.0	93.1%	3797.0	34.9%
EIA	117.0	122.0	122.0	125.0	2.5%	115.0	-8.0%
ERS	85.4	85.4	86.8	86.8	0.0%	45.0	-48.1%
NASS	172.4	168.4	171.2	191.7	12.0%	165.0	-13.9%
NCES	232.1	261.0	258.5	258.5	0.0%	261.5	1.2%
NCHS	155.4	160.4	160.4	160.4	0.0%	155.0	-3.4%
NCSES	58.3	58.3	59.7			59.8	
ORES	29.0	25.9	24.0	31.0	29.2%	31.0	0.0%
SOI							
201	36.8	37.8	34.3	33.6	-2.0%	35.2	4.8%

#### AMSTAT image from

http://magazine.amstat.org/blog/2018/05/01/fy18fedbudget

NIH- National Institutes of Health (HHS) **NSF-** National Science Foundation AHRQ- Agency for Healthcare Research & Quality (HHS) FDA- Food & Drug Agency (HHS) BEA- Bureau of Economic Analysis (DoC) BJS- Bureau of Justice Statistics (DoJ) BTS- Bureau of Transportation Stat. (DoT) Census- DoC EIA- Energy Information Admin. (DoE) ERS- Economic Research Service (DoA) NASS- Nat. Agricultural Stat. Service (DoA) NCES- Nat. Center of Education Stat. (DoE) NCHS- Nat. Center for Health Stat. (HHS) NCSES- Nat. Center for Science and Engineering Sat. (NSF) ORES- Off. of Research, Evaluation, and Statistcs (SSA) SOI- Statistics of Income (IRS)

# Future of the Bureau of Labor Statistics



#### Protected

Principal Federal Economic Indicators (PFEI) and programs written into or referenced by law for allocation or other purpose. 85% of budget

In danger: Nat. Longitudinal Sur., JOLTS, Am. Time Use Sur., Employee Benefits Sur., Cen. of Fatal Occupational Injuries, Evaluation \$27M>\$2M Will it move to Commerce?

Whitehouse Plan

**Center for Data Innovation** 

AMSTAT image from http://magazine.amstat.org/blog/2018/05/01/fy18fedbudget

## OMB's Statistical Policy Directive No. 1 Executive agencies must:

- 1. Produce and disseminate relevant and timely information
- 2. Conduct credible and accurate statistical activities
- 3. Conduct objective statistical activities
- 4. Protect the trust of information providers

# Legal issues

#### Data and IP

- <u>https://www.lib.umn.edu/data</u> <u>management/copyright</u>
- <u>https://data.research.cornell.e</u> <u>du/content/intellectual-</u> <u>property</u>
- <u>https://en.wikipedia.org/wiki/</u> <u>Copyright status of work by</u> <u>U.S. subnational governments</u>

#### Licensing Data

- <u>http://opendefinition.org/guide/</u> <u>data</u>
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