Using ACS data to study the 2016 election in the classroom: A case study from Bucknell University

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Outline

- Background
  - Bucknell University, Organization, Education Goals
- The Project / Classroom
  - Assignments, obtaining data, GIS
- Challenges and Reflections

Background

Bucknell University

- Small liberal arts college in central Pennsylvania
- Organization
  - Library and Information Technology are combined.
  - Digital Pedagogy & Scholarship Department and Research Services provide direct support to faculty and students
- Mission
  - To partner with faculty to drive the effective integration of technology to enhance teaching, learning and research.

Case study : Economics 258 – Intermediate Political Economy

- Student / faculty summer research project began 3 years ago to focus on income inequality
- Research project expanded into a classroom module on the topic
- Students, faculty, and staff worked together to develop the materials
  - Data – elections, ACS, other sources
  - Classroom materials – syllabi, exercises
- Both the research project and the classroom work have continued to evolve over the last 3 years

Multiple education goals

Topical

- income inequality within an economics classroom, both historical and political dimensions need to be addressed

Skill

- using geographic information systems to develop technical literacy and analytic abilities

Data

- information and statistical literacies

Subject expertise

- integration with the economics major

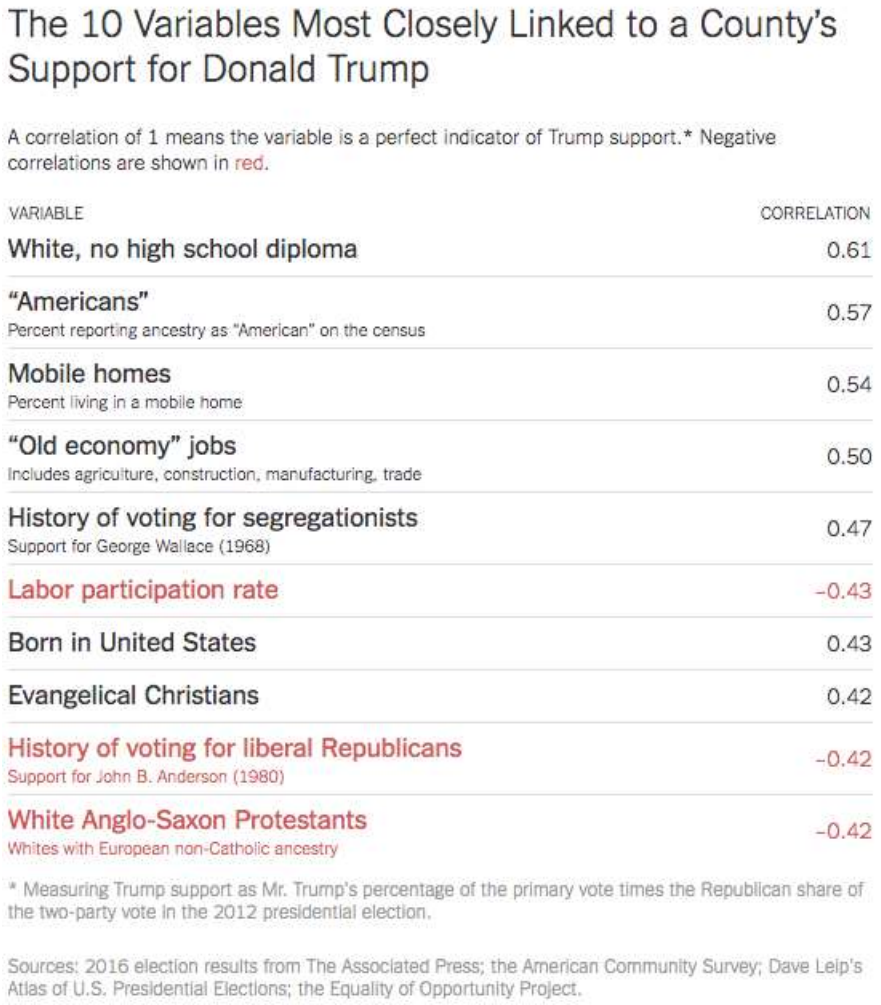
Inspirations

Contemporary events and journalism

- Media visualizations and analysis of voting patterns, inequality, the rise of Trump

Politics and the election of 2016

- National data for both primaries and the general election



The 10 Variables Most Closely Linked to a County's Support for Donald Trump

A correlation of 1 means the variable is a perfect indicator of Trump support.* Negative correlations are shown in red.

VARIABLE	CORRELATION
White, no high school diploma	0.61
"Americans" — Percent reporting ancestry as "American" on the census	0.57
Mobile homes — Percent living in a mobile home	0.54
"Old economy" jobs — Includes agriculture, construction, manufacturing, trade	0.50
History of voting for segregationists — Support for George Wallace (1968)	0.47
Labor participation rate	-0.43
Born in United States	0.43
Evangelical Christians	0.42
History of voting for liberal Republicans — Support for John B. Anderson (1980)	-0.42
White Anglo-Saxon Protestants — Whites with European non-Catholic ancestry	-0.42

* Measuring Trump support as Mr. Trump's percentage of the primary vote times the Republican share of the two-party vote in the 2012 presidential election.

Sources: 2016 election results from The Associated Press; the American Community Survey; Dave Leip's Atlas of U.S. Presidential Elections; the Equality of Opportunity Project.

Methods

Teamwork with faculty

- Helping develop assignments
- Presenting material in classroom and labs

Working with students

- Individual and group sessions with students to help gather and clean data, prepare data for class

Cooperation among departments

- Collaboration between research services and pedagogy and scholarship department
- Sharing expertise in data, statistics, and GIS

To the classroom

The project interaction

- Developing the classroom prompt
- Background reading before class
- Working with GIS to map the data during class session

Class exercise

You will form a group of three (or four) to examine the ARCGIS data that Janine Glathar has prepared for the class. The information she has put together on the Geography of Trumpism comes in part from the ESRI databases and in part from the uploaded primary data from states that have voted so far this primary election season and that have made their data readily accessible via their state websites. There will be four parts to this assignment.

First, you will read the articles below and interpret the information presented in the articles in the context of some of our readings from this semester.

Second, on Tues., April 12, you will work with the data provided by Janine to illustrate some of the correlations identified by the articles below, within at least three or four specific geographic regions in the U.S., connected to the arguments in the articles.

Third, on Thurs., April 14, as a group, you will present your findings to the rest of the class, analyzing the data that you choose in the context of the material in your articles and through the lens of one or more of the heterodox economic theories that we have studied this semester, in the form of a brief (seven minutes) presentation on the data and economic analysis thereof. Your group should also prepare a question or two for the rest of class that draws on your map and relates the information contained therein to our class material.

Finally, each member of the group will prepare a short write-up that analyzes the data from your group from a heterodox point of view. This write-up will be due no later than Tues., April 19.

Key articles:

"The Geography of Trumpism," available at
http://www.nytimes.com/2016/03/13/upshot/the-geography-of-trumpism.html?_r=0

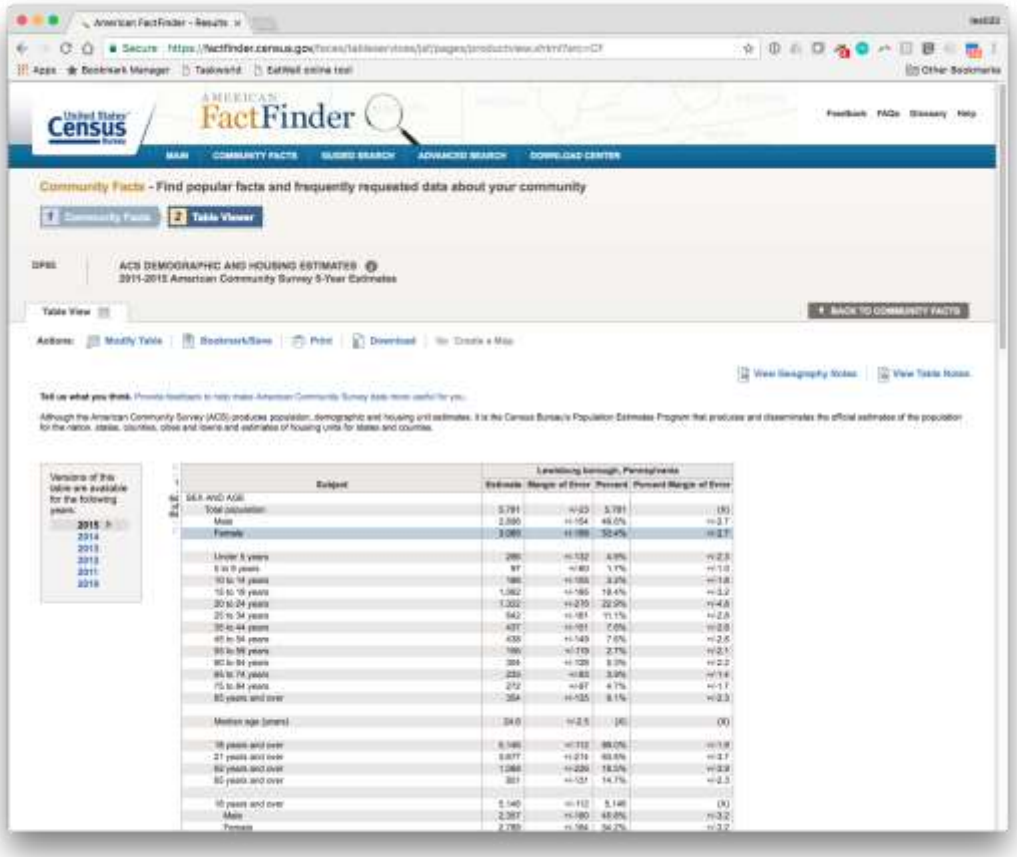
"Donald Trump's Strongest Supporters: A Certain Kind of Democrat," available at
http://www.nytimes.com/2015/12/31/upshot/donald-trumps-strongest-supporters-a-certain-kind-of-democrat.html?_r=1

"Yea, they're angry," available at
https://rwer.wordpress.com/2016/03/19/yea-theyre-angry-7-graphs/

On Trade, Angry Voters have a Point, available at:
http://www.nytimes.com/2016/03/16/business/economy/on-trade-angry-voters-have-a-point.html

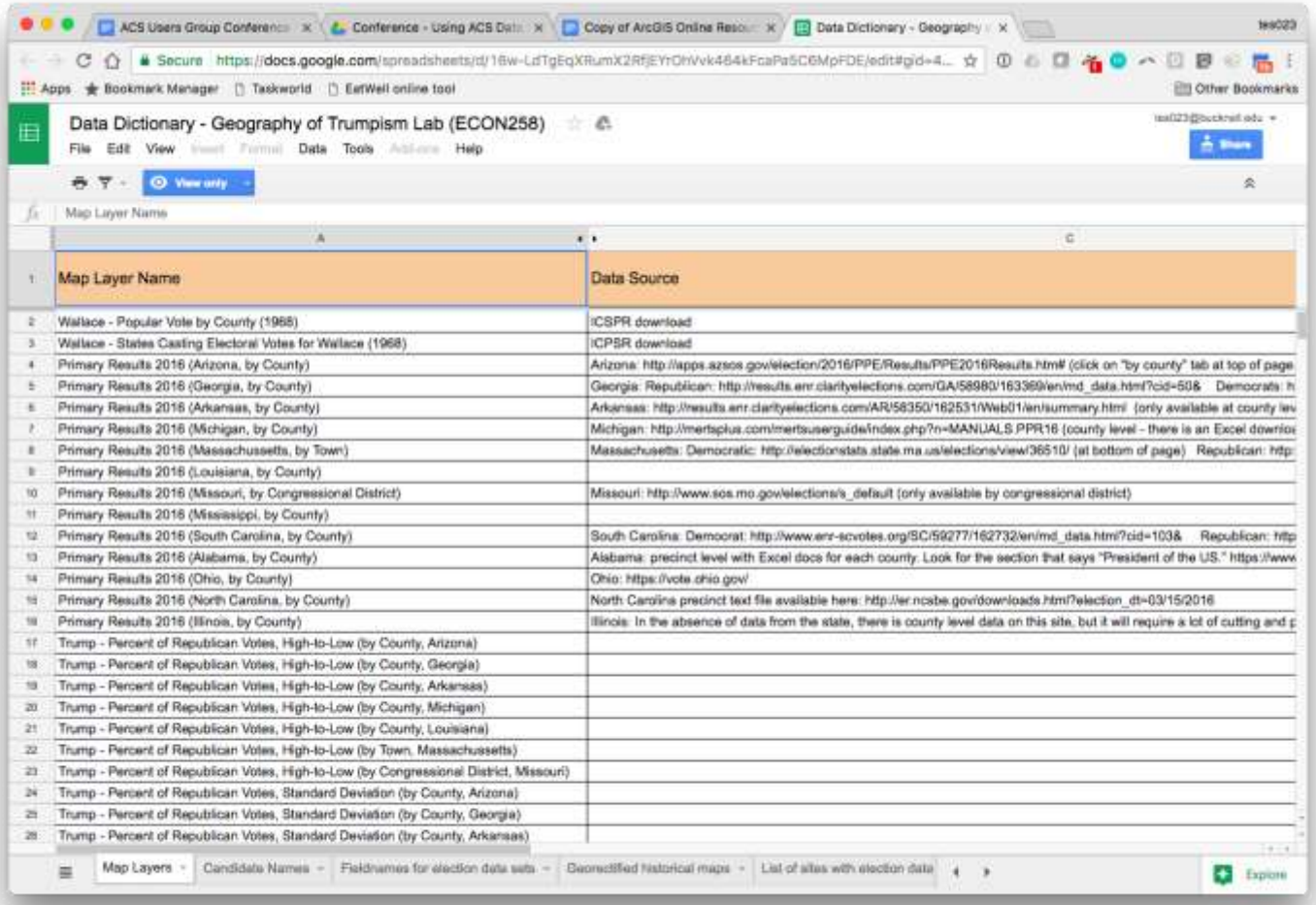
Also look at the data at
http://www.nytimes.com/interactive/2015/05/03/upshot/the-best-and-worst-places-to-grow-up-how-your-area-compares.html

Gathering



- Multiple sources
- ACS
- State governments
- Research organizations
- Academics

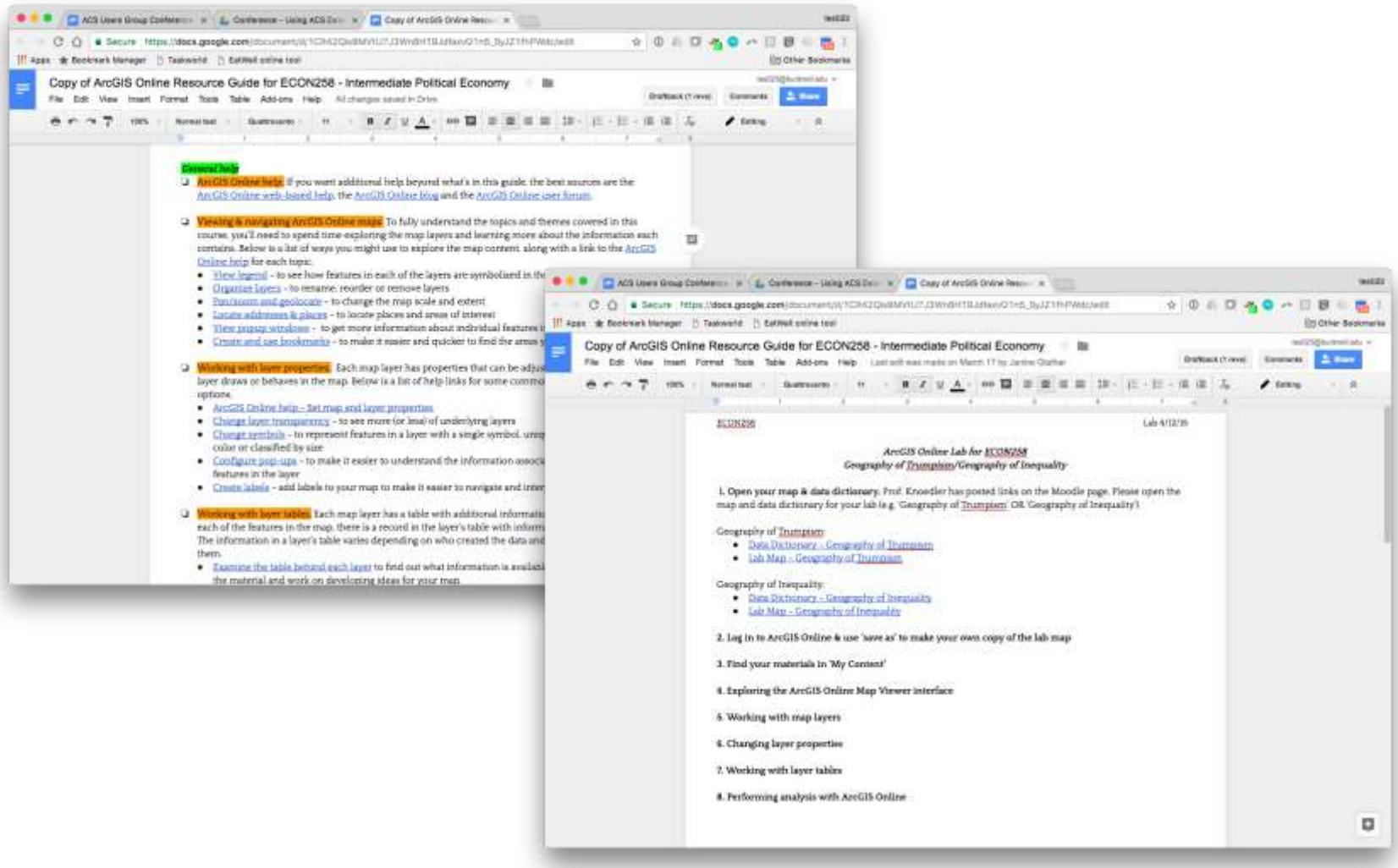
Collating



Data Dictionary - Geography of Trumpism Lab (ECON258)

	Map Layer Name	Data Source
2	Wallace - Popular Vote by County (1968)	ICSPR download
3	Wallace - States Casting Electoral Votes for Wallace (1968)	ICPSR download
4	Primary Results 2016 (Arizona, by County)	Arizona: http://apps.azsos.gov/election/2016/PPE/Results/PPE2016Results.html# (click on "by county" tab at top of page
5	Primary Results 2016 (Georgia, by County)	Georgia: Republican: http://results.enr.clarityelections.com/GA/58980/163369/en/md_data.html?cid=50& Democrats: h
6	Primary Results 2016 (Arkansas, by County)	Arkansas: http://results.enr.clarityelections.com/AR/58350/182531/Web01/en/summary.html (only available at county lev
7	Primary Results 2016 (Michigan, by County)	Michigan: http://mertsplus.com/mertsuserguide/index.php?n=MANUALS.PPR16 (county level - there is an Excel downlo
8	Primary Results 2016 (Massachussetts, by Town)	Massachusetts: Democratic: http://electionstats.state.ma.us/elections/view/36510/ (at bottom of page) Republican: http:
9	Primary Results 2016 (Louisiana, by County)	
10	Primary Results 2016 (Missouri, by Congressional District)	Missouri: http://www.sos.mo.gov/elections/s_default (only available by congressional district)
11	Primary Results 2016 (Mississippi, by County)	
12	Primary Results 2016 (South Carolina, by County)	South Carolina: Democrat: http://www.enr-scvotes.org/SC/59277/182732/en/md_data.html?cid=103& Republican: http
13	Primary Results 2016 (Alabama, by County)	Alabama: precinct level with Excel docs for each county. Look for the section that says "President of the US." https://www
14	Primary Results 2016 (Ohio, by County)	Ohio: https://vote.ohio.gov/
15	Primary Results 2016 (North Carolina, by County)	North Carolina precinct text file available here: http://er.ncsbe.gov/downloads.html?election_dt=03/15/2016
16	Primary Results 2016 (Illinois, by County)	Illinois: In the absence of data from the state, there is county level data on this site, but it will require a lot of cutting and p
17	Trump - Percent of Republican Votes, High-to-Low (by County, Arizona)	
18	Trump - Percent of Republican Votes, High-to-Low (by County, Georgia)	
19	Trump - Percent of Republican Votes, High-to-Low (by County, Arkansas)	
20	Trump - Percent of Republican Votes, High-to-Low (by County, Michigan)	
21	Trump - Percent of Republican Votes, High-to-Low (by County, Louisiana)	
22	Trump - Percent of Republican Votes, High-to-Low (by Town, Massachussetts)	
23	Trump - Percent of Republican Votes, High-to-Low (by Congressional District, Missouri)	
24	Trump - Percent of Republican Votes, Standard Deviation (by County, Arizona)	
25	Trump - Percent of Republican Votes, Standard Deviation (by County, Georgia)	
26	Trump - Percent of Republican Votes, Standard Deviation (by County, Arkansas)	

Teaching


Copy of ArcGIS Online Resource Guide for ECON258 - Intermediate Political Economy
General help
ArcGIS Online help: If you want additional help beyond what's in this guide, the best sources are the ArcGIS Online web-based help, the ArcGIS Online blog and the ArcGIS Online user forum.
Viewing & navigating ArcGIS Online maps: To fully understand the topics and themes covered in this course, you'll need to spend time exploring the map layers and learning more about the information each contains. Below is a list of ways you might use to explore the map content, along with a link to the ArcGIS Online help for each topic:
View legend - to see how features in each of the layers are symbolized in the
Organize layers - to rename, reorder or remove layers
Pan/zoom and geolocate - to change the map scale and extent
Locate addresses & places - to locate places and areas of interest
View popup windows - to get more information about individual features
Create and use bookmarks - to make it easier and quicker to find the areas
Working with layer properties: Each map layer has properties that can be adjus
layer draws or behaves in the map. Below is a list of help links for some commo
options.
ArcGIS Online help - Set map and layer properties
Change layer transparency - to see more (or less) of underlying layers
Change symbols - to represent features in a layer with a single symbol, uniq
color or classified by size
Configure pop-ups - to make it easier to understand the information associ
features in the layer
Create labels - add labels to your map to make it easier to navigate and inter
Working with layer tables: Each map layer has a table with additional informati
each of the features in the map, there is a record in the layer's table with inform
The information in a layer's table varies depending on who created the data and
them.
Examine the table behind each layer to find out what information is availab
the material and work on developing ideas for your mini
Copy of ArcGIS Online Resource Guide for ECON258 - Intermediate Political Economy
ECON258
Lab 4/12/19
ArcGIS Online Lab for ECON258
Geography of Trumpism/Geography of Inequality
1. Open your map & data dictionary. Prof. Knoedler has posted links on the Moodle page. Please open the map and data dictionary for your lab (e.g. 'Geography of Trumpism' OR 'Geography of Inequality')
Geography of Trumpism:
Data Dictionary - Geography of Trumpism
Lab Map - Geography of Trumpism
Geography of Inequality:
Data Dictionary - Geography of Inequality
Lab Map - Geography of Inequality
2. Log in to ArcGIS Online & use 'save as' to make your own copy of the lab map
3. Find your materials in 'My Content'
4. Exploring the ArcGIS Online Map Viewer interface
5. Working with map layers
6. Changing layer properties
7. Working with layer tables
8. Performing analysis with ArcGIS Online

Challenges and reflections

Challenges

- Balancing technology instruction and subject area knowledge
- Preparing data layers and software for use in class
- Time limits – 1 lab session for the topic, creating the data dictionary
- Teaching data and information literacy
  - Evaluating data sources
  - Judging reliability
  - Dealing with statistics
- Too much or too little data

Using the ACS

- Finding data sources that are relevant to the topic
- And can be used in the classroom
- Manipulating data in order to put it in a form that can be easily mapped
- Pruning the level of detail for undergraduate instruction

Reactions and reflections

- Faculty have been pleased to receive help
  - Gathering data
  - Teaching GIS
  - Improving data and information literacy
- Students
  - Have an opportunity to work with GIS and faculty on current research topics
  - Address contemporary issues
  - Presenting on research at conferences
- Staff
  - Are able to teach about cool technologies and data resources

Lessons learned

- Working together across boundaries
  - Student, staff, and faculty
  - Building relationships over time
- Combining research and teaching (liberal arts)
  - Research projects become teaching examples with the right encouragement
- Clear expectations
  - Between faculty, staff, and students
  - Well-documented with regular interactions and meetings

Thanks

- Contact information
  - Todd Suomela - todd.suomela@bucknell.edu
  - @tsuomela
- Thanks to Jan Knoedler and her students