

Yes ! We're Open !

Using Open Data Sources to Promote
Geospatial & Data Literacy

Francine Berish, Peggy Lunn, Jeff Moon



A (very) little about us ...



- Francine
Geospatial Data Librarian
- Peggy
Teacher Resource Centre Librarian
- Jeff
Data Librarian and Academic Director
Queen's Research Data Centre



Learning Outcomes

(What we hope YOU take away...)



- To expand awareness of open data sources among secondary Teacher Librarians
- To explain importance of data literacy as a baseline competency for secondary graduates, regardless of Pathway*
- To identify direct secondary applications for these resources, corresponding post secondary programs, and potential career trajectories



Learning Outcomes

(What we hope WE take away)



- To further understanding of challenges / barriers to use and application in secondary settings
- To learn about existing examples of excellence
- To generate ideas for further exploration, discussion, partnerships, approaches



Why this matters to us....



Peggy

From perspective of an Educator & School Library advocate...

Gaps & Opportunities

Jeff

From perspective of Data Services Librarian and Academic Director, Queen's Research Data Centre

Francine

From perspective of Geospatial Data Specialist and Liaison Librarian, College Reference and Instruction Librarian and offspring of Secondary Teacher Librarian and Geographer Teacher



Who's in the room?



Data, data, everywhere...





Agenda:



- Why worry about data?
- Barriers
- Solutions
- Looking forward



Why worry about data?



- Numbers count!

- 5 strands of Math Curriculum:

- Number sense & Numeration
 - Measurement
 - Geometry & Spatial Sense
 - Patterning & Algebra
 - Data Management and Probability

Why worry about data?

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- Growing demand for new skill-sets
 - big data, data visualization, & statistics



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 - big data, data visualization, & statistics
- More data is available
 - open data movement, government open data policies



Why worry about data?

- Numbers count!
- Growing demand for new skill-sets
 - big data, data visualization, & statistics
- More data is available
 - open data movement, government open data policies
- More questions need answers



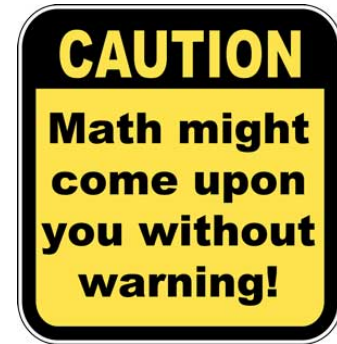
Barriers

- Numerical, Geospatial, & Statistical Literacy

Numeracy is the ability to reason and to apply simple numerical concepts.

e.g. addition, subtraction, multiplication, and division

https://www.google.ca/search?q=numeracy&sourceid=ie7&rls=com.microsoft:en-CA:IE-Address&ie=&oe=&gfe_rd=cr&ei=Qd6LVo7eBeaM8Qelm7mlBg&gws_rd=ssl



Statistical literacy is the ability to understand statistics.

Numeracy is a prerequisite to being statistically literate.

https://www.google.ca/search?q=statistical+literacy&sourceid=ie7&rls=com.microsoft:en-CA:IE-Address&ie=&oe=&gfe_rd=cr&ei=H9-LVqOKN-iM8Qf8hrn4Cw&gws_rd=ssl

(Geo)Spatial literacy is “the ability to use the properties of space to communicate, reason, and solve problems.”

https://apps.carleton.edu/collab/spatial_analysis/SpatialLiteracy/



Barriers

- Numeracy/Statistical Literacy
- Software

	Commercial	Open source
Cost	Expensive	Free
License	Restrictive	Open
Features	Many, powerful	Fewer, less powerful
Support	Corporate	User base
Reputation	Known and accepted	Varies
Administration	Easy, documented	Varies

Barriers

- Numeracy/Statistical Literacy
- Software
- Lack of awareness of sources





Solutions



- Basic numeracy

Increased emphasis in education

- Software

Open Source software, e.g. R, PSPP

- Increasing awareness

CANSIM – Statistics Canada time series

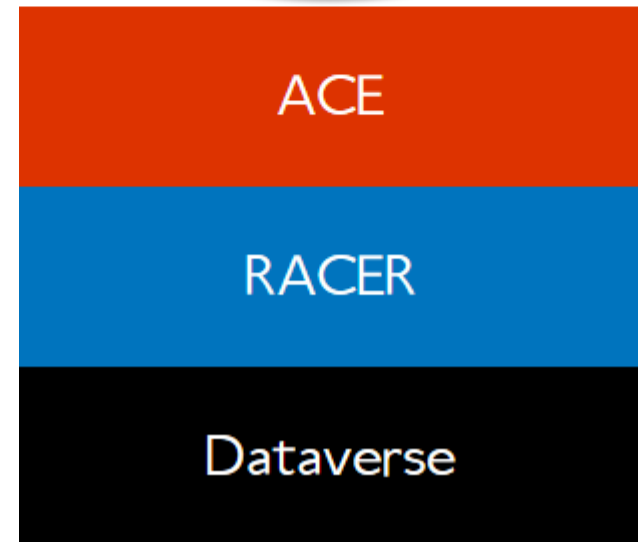
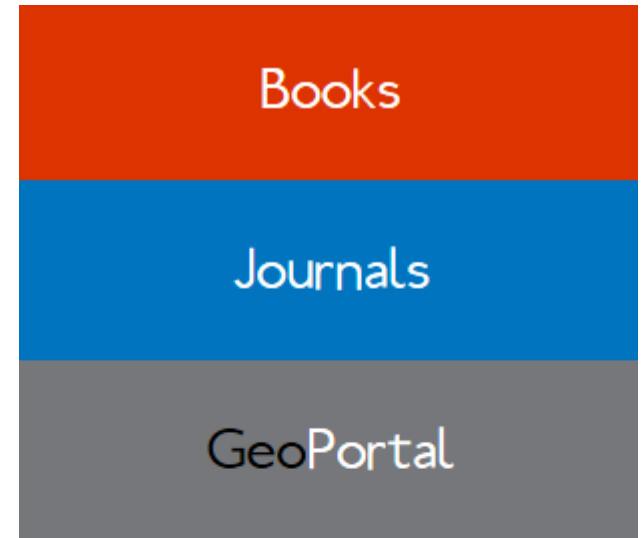
ODESI – Academic Data Portal

Open Data – Federal, Provincial, & Municipal



Scholars Portal

A Service of the Ontario Council of University Libraries





<odesi> consists of two main systems

A powerful data catalogue

<http://odesi.ca>

Nesstar Webview

Exploration/download tool

odesi Français

Browse Contact My List 0

Find data:

Enter Search Term Anywhere

Date: Earliest Present

Collections:

- All of <odesi>
- Statistics Canada (Microdata)
- Statistics Canada (Aggregate data)
- Public Opinion Polls
- Other Data

Additional Collections:

- CORA
- ICPSR

<odesi> contains over 3,535 datasets for the social sciences, with more than 13,000 additional dataset descriptions available for searching.

Learn more

Search

Learning Tools

- Video Tutorials
- User Guide
- FAQ

About

- About <odesi>
- Who can Access it
- Terms of Use

odesi Scholars Portal

ODESI (Click to View Categories)

- Agriculture
- Business and Financial
- Census of Population
- Communications and Information
- Consumer Surveys
- Crime and Justice
- Demographics and Population
- Education
- Elections and Politics
- Geography
- Government Finances and Economic Indicators
- Health and Employment
- Labour Resources and Environment
- Opinion Polls
- Surveys

<odesi>

A data portal for researchers, teachers and students; inspiring, developing and supporting research excellence.

Un portail de données à l'intention des chercheurs, professeurs et étudiants, qui vise à inspirer, à développer et à appuyer l'excellence en matière de recherche.

OCUL Ontario Council of University Libraries

Note: In many cases, it is advisable to weight analysis results before reporting them. Correct weighting requires careful consideration, please always consult the weighting procedures of the study before applying the weights. To apply weights, select the Weight icon and choose the weight variable to be used. All results need careful interpretation. The data collectors and the data producers bear no responsibility for the analysis and interpretation of the data.

Note: Dans la plupart des cas, il est recommandé de pondérer les résultats d'analyse avant d'en rendre compte. Une pondération correcte nécessite une attention particulière, veuillez toujours consulter les procédures de pondération d'une étude avant d'appliquer des pondérations. Pour appliquer les pondérations, sélectionner l'icône de poids et choisir la variable de pondération qui sera utilisée. Tous les résultats nécessitent une interprétation minutieuse. Les personnes chargées de la collecte et de la production des données ne peuvent être tenues responsables de l'analyse et de l'interprétation des données.

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Collections:

All of <odesi>

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- Statistics Canada (Aggregate data) ⓘ
- Public Opinion Polls ⓘ
- Other Data ⓘ

Additional Collections:

(No Direct Download Available)

- CORA ⓘ
- ICPSR ⓘ

Default Collections

All data/statistics in ODESI Nesstar Webview.
Data ready to tabulate online and/or download.

Additional Collections

CORA data in its own Nesstar Webview.
Tabulation, no download.



ICPSR – subscription service. Only top-level metadata indexed. Re-direct to ICPSR site for data download

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- Other Data [i](#)

Additional Collections:

(No Direct Download Available)

- CORA [i](#)
- ICPSR [i](#)

<odesi> Français

Browse Contact My List 0

Find data:

Enter Search Term **1** Anywhere

Date: Earliest Present

Collections:

All of <odesi>

- Statistics Canada (Microdata)
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- Public Opinion Polls
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Additional Collections:

(No Direct Download Available)

- CORA
- ICPSR

Search

<odesi> contains over 3,535 datasets for the social sciences, with more than 13,000 additional dataset descriptions available for searching.

Learn more

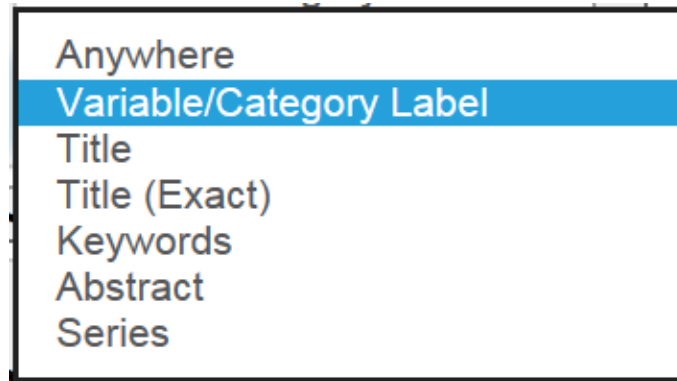
Search by keyword

You can:

Add search rows



Limit searching to specific fields



Use Boolean Operators *within* and *between* search rows:

AND OR NOT NEAR

Find data:

Enter Search Term

Anywhere



Date:

Earliest



Present



2

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Learn more

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Additional Collections:

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- CORA
- ICPSR

Search

Limit searching to specific date ranges

Learning Tools

Video Tutorials

User Guide

FAQ

About

About <odesi>

Who can Access it

Terms of Use

Find data:

Enter Search Term

Anywhere



Date:

Earliest

Present

Collections:

All of <odesi>

Statistics Canada (Microdata)

Statistics Canada (Aggregate data)

Public Opinion Polls

Other Data

Additional Collections:

(No Direct Download Available)

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ICPSR

3

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About <odesi>

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Terms of Use

Limit searching to selected collections in <odesi>

4

The screenshot shows the <odesi> website interface. At the top left is the <odesi> logo and a bar chart. To the right is the language selector 'Français'. Further right is a blue 'Browse' button with an external link icon, which is circled in red. To its right is a red 'Contact' button with an envelope icon, and a black 'My List 0' button with a list icon. Below the navigation bar is the 'Find data:' section, which includes a search input field with the placeholder 'Enter Search Term', a location dropdown set to 'Anywhere', and a plus sign button. Below this are 'Date:' filters for 'Earliest' and 'Present'. The 'Collections:' section has a checked box for 'All of <odesi>' and lists 'Statistics Canada (Microdata)', 'Statistics Canada (Aggregate data)', 'Public Opinion Polls', and 'Other Data', each with an information icon. To the right, 'Additional Collections:' includes 'CORA' and 'ICPSR', both unchecked with information icons. A blue 'Search' button is at the bottom of the search section. On the right side, a text box states: '<odesi> contains over 3,535 datasets for the social sciences, with more than 13,000 additional dataset descriptions available for searching.' Below this is a 'Learn more' button. A separate text box on the right contains the text: 'Browse surveys by jumping directly into Nesstar Webview'. At the bottom of the page are two columns of links: 'Learning Tools' (Video Tutorials, User Guide, FAQ) and 'About' (About <odesi>, Who can Access it, Terms of Use).

<odesi> contains over 3,535 datasets for the social sciences, with more than 13,000 additional dataset descriptions available for searching.

[Learn more](#)

Browse surveys by jumping directly into Nesstar Webview



- [-] ODESI (Click to View Categories)
 - [+] Agriculture
 - [+] Business and Financial
 - [+] Census of Population
 - [+] Communications and Information
 - [+] Consumer Surveys
 - [+] Crime and Justice
 - [+] Demographics and Population
 - [+] Education
 - [+] Elections and Politics
 - [+] Geography
 - [+] Government Finances and Economic Indicators
 - [+] Health
 - [+] Labour and Employment
 - [+] Natural Resources and Environment
 - [+] Public Opinion Polls
 - [+] Social Surveys
 - [+] Trade
 - [+] Travel

- [+] -- Agriculture
- [+] -- Communications et information
- [+] -- Démographie et population
- [+] -- Éducation
- [+] -- Emploi et main-d'oeuvre
- [+] -- Enquêtes auprès des consommateurs
- [+] -- Enquêtes sociales
- [+] -- Finances publiques et indicateurs économiques
- [+] -- Géographie
- [+] -- Industries et Finance
- [+] -- Justice et criminalité
- [+] -- Recensement de la population
- [+] -- Ressources naturelles et environnement
- [+] -- Santé
- [+] -- Sondages d'opinion publique



**data portal for researchers, teachers and students;
iring, developing and supporting research excellence.**

onnées à l'intention
à développer et à

English



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French





ODESI (Click to View Categories)

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- Sondages d'opinion publique
- Voyages

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- Elections and Politics
- Geography
- Government Finances and Economic Indicators
- Health
- Labour and Employment
- Natural Resources and Environment
- Public Opinion Polls
 - CANADA
 - Angus Reid Institute (ARI)
 - Canadian Perceptions of India and Trade 2015 NEW
 - Centre for Research and Information on Canada (CRIC)
 - Gallup Canada Inc.
 - Institute for Social Research (ISR)
 - Ipsos Reid
 - Listening to Canadians (LTC)
 - Voice of the People (VoP)
 - INTERNATIONAL
 - Angus Reid Global
 - Christmas or Holiday Season?
 - Drone Awareness and Perceptions
 - Public Opinion and the Snowden Affair
 - Social Surveys
 - CANADA
 - INTERNATIONAL
 - Globalization of Personal Data (GPD)
 - Privacy and Surveillance: GPD Follow-up
- Trade
- Travel

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CASE STUDY: ODESI Data Portal



Search <http://odesi.ca> for any of these polls:

[The Globalization of Personal Data \(GPD\) Project International Survey on Privacy and Surveillance, 2006 \[Seven-Country\]](#)

[The Globalization of Personal Data \(GPD\) Project International Survey on Privacy and Surveillance, 2006 \[Japan\]](#)

[The Globalization of Personal Data \(GPD\) Project International Survey on Privacy and Surveillance, 2006 \[China\]](#)

[Privacy and Surveillance: June 2012 Globalization of Personal Data Follow-up](#)

[Privacy and Surveillance: February-March 2014 Globalization of Personal Data Follow-up: United Kingdom Data](#)

[Privacy and Surveillance: February-March 2014 Globalization of Personal Data Follow-up: United States Data](#)

[Privacy and Surveillance: February-March 2014 Globalization of Personal Data Follow-up: Canada Data](#)

[Public Opinion and the Snowden Affair, 2013: United Kingdom Data](#)

[Public Opinion and the Snowden Affair, 2013: United States Data](#)

[Public Opinion and the Snowden Affair, 2013: Canada Data](#)

[Drone Awareness and Perceptions: A Three Country Study, 2014: United Kingdom Data](#)

[Drone Awareness and Perceptions: A Three Country Study, 2014: Canada Data](#)

[Drone Awareness and Perceptions: A Three Country Study, 2014: United States Data](#)

[Christmas or Holiday Season?, 2013](#)

[Canadian Perceptions of India and Trade 2015](#)

Canadian Election Studies – 1965 to 2011

**FULL ACCESS to these files via
ODESI**

**Angus Reid Institute section will be
growing over next while...**

**Canadian Opinion Research
Archive (CORA)**

<http://www.queensu.ca/cora/>



Let's try this out...

Let's see what we can find in CORA to answer the question:

How does a person's
POLITICAL PARTY PREFERENCE
influence their views on
DEMOCRACY IN CANADA?

First, we have to change the search criteria in ODESI

Find data:

Enter Search Term

Anywhere



Date:

Earliest



Present



Collections:



All of <odesi>

- Statistics Canada (Microdata)
- Statistics Canada (Aggregate data)
- Public Opinion Polls
- Other Data

Additional Collections:

(No Direct Download Available)

- Statistics Canada (Master File)
- CORA
- ICPSR

Search

Why search ODESI for
CORA-only files?

<http://odesi.ca>



Let's try another question

This time looking at a specific survey among those open to us via ODESI...

How does a person's

EDUCATION

Influence their

BEHAVIOUR ON THE INTERNET?

We'll use one of the 'open' surveys in the nugget list...

CASE STUDY: ODESI Data Portal



Search <http://odesi.ca> for any of these polls:

[The Globalization of Personal Data \(GPD\) Project International Survey on Privacy and Surveillance, 2006 \[Seven-Country\]](#)

[The Globalization of Personal Data \(GPD\) Project International Survey on Privacy and Surveillance, 2006 \[Japan\]](#)

[The Globalization of Personal Data \(GPD\) Project International Survey on Privacy and Surveillance, 2006 \[China\]](#)

[Privacy and Surveillance: June 2012 Globalization of Personal Data Follow-up](#)

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Learn more

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- All of <odesi> Statistics Canada (Microdata) Statistics Canada (Aggregate data) Public Opinion Polls Other Data Additional Collections: (No Direct Download Available) CORA ICPSR

Search

Privacy and Surveillance: February-March 2014 Globalization of Personal Data Follow-up: Canada Data

Explore & Download

- Abstract Study Description Documentation All Survey Variables 87 Add to My List

Abstract

Privacy and Surveillance: June 2012 Globalization of Personal Data Follow-up is a study (conducted in June 2012) by the Vision Critical division of the polling company Angus Reid Global as a follow-up to an earlier international multidisciplinary and collaborative research initiative – The Globalization of Personal Data (GPD) Project.

Initiated and sponsored by Angus Reid Global, the 2012 follow-up online survey queried citizens in Canada, the United States and the United Kingdom regarding their interactions with, and attitudes toward, surveillance and privacy (including knowledge and use of the internet (in particular social media), global positioning systems (GPS) used in automobiles and mobile phones, radio frequency identification (RFID) tags on consumer products, closed circuit television (CCTV) in public spaces, biometrics for facial and other bodily recognition, data mining of personal information). Citizens were also queried regarding their attitude towards the obligations/roles of common institutions in protecting privacy including employers and governments, commercial organizations, police and intelligence agencies, and airport security. The study was conducted on behalf of the international scholarly research group based out of the Surveillance Studies Centre at Queen's University (http://www.sscqueens.org/). It re-asked many of the same categories of questions as the earlier Globalization of Personal Data (GPD) Project, allowing for a comparator of awareness of and attitudes towards surveillance and privacy between 2005 and 2012.



<odesi> is best viewed using Chrome or Firefox



DESCRIPTION TABULATION

Privacy and Surveillance: February-March 2014
Globalization of Personal Data Follow-up: Canada
Data

Metadata

- + Study Description
- + Data Files Description
- + Other Documentation

Privacy and Surveillance: June 2012
Vision Critical division of the police and collaborative research initiative

Initiated and sponsored by Ang
States and the United Kingdom
knowledge and use of the inter
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spaces, biometrics for facial an
regarding their attitude toward
governments, commercial orga
on behalf of the international s
(http://www.sscqueens.org/).
Personal Data (GPD) Project, a
between 2005 and 2012.

[User Guide and Codebook](#)

[Tables - Canada \(Excel\)](#)

[Tables - Canada \(PDF\)](#)

[Tables - Canada \(CSV\)](#)

[SPSS syntax file - Canada](#)

[Tables - US \(Excel\)](#)

[Tables - US - worksheet 1 \(CSV\)](#)

[Tables - US - worksheet 1 \(PDF\)](#)

[Tables - US - worksheet 2 \(CSV\)](#)

[Tables - US - worksheet 2 \(PDF\)](#)

[SPSS syntax file - US](#)

[Tables - Canada, US, UK \(Excel\)](#)

[Tables - Canada, US, UK \(CSV\)](#)

[Tables - Canada, US, UK \(PDF\)](#)

[SPSS syntax file - UK](#)

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protecting privacy including employers and
port security. The study was conducted
nce Studies Centre at Queen's University
ons as the earlier Globalization of
udes towards surveillance and privacy



DESCRIPTION TABULATION ANALYSIS

Privacy and Surveillance: February-March 2014 Globalization of Personal Data Follow-up: Canada Data

Metadata

Variable Description

Variable Description

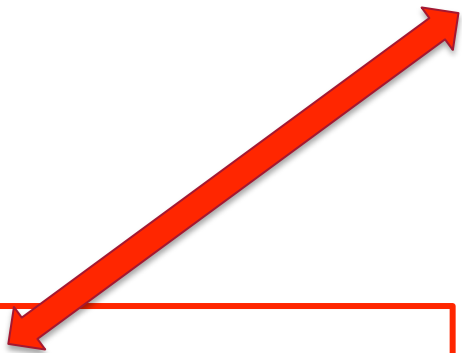
Demographic and Geographic Variables

- PROVINCE
- Gender
- First character of Postal Code
- Did you vote in the last FEDERAL election in May 2011?
- Who did you vote for in the last FEDERAL Election?
- Age_Rollup_broad
- Income
- Education
- PanelistCulture

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Actions Taken to Protect Personal Information

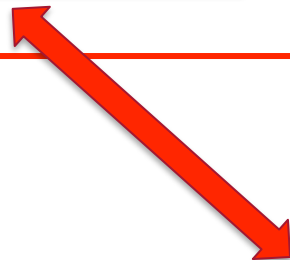
- Refused to give information to a business because you thought it was not needed
- Refused to give information to a government agency because you thought it was not needed
- Asked a company to remove you from any lists they use for marketing purposes
- Asked a company not to sell your name and address to another company
- Asked a business you were thinking of dealing with about policies on the collection of consumer information
- Asked a company to see what personal information besides billing information they had about you in their consumer record
- Purposefully gave incorrect information about yourself to a marketer
- Purposefully gave incorrect information about yourself to a government agency
- Read the on-line privacy policies at websites when making a purchase from a private company
- Read the on-line privacy policies at government websites when sending them information electronically
- Purposefully gave incorrect information when using a website



Variable Description

Demographic and Geographic Variables

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- First character of Postal Code
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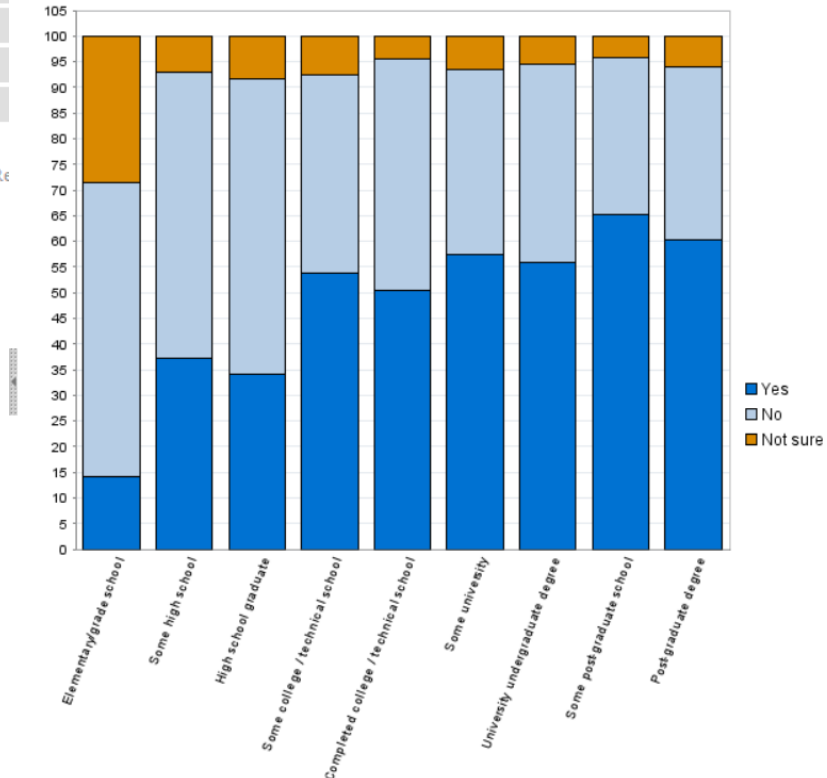
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Dataset: Privacy and Surveillance: February-March 2014 Globalization of Personal Data Follow-up: Canada Data

February-March 2014 Globalization of Personal Data Follow-up: Canada Data

Purposefully gave...elf to a marketer: Categories Education: Categories Type: Column percentage

Education	Elementary/grade school	Some high school	High school graduate	Some college / technical school	Completed college / technical school	Some university	University undergraduate degree	Some post-graduate school	Post-graduate degree	Total
Purposefully gave incorrect information about yourself to a marketer										
Yes	42.9	39.8	35.3	53.2	44.8	49.1	52.6	44.9	52.0	44.6
No	42.9	49.6	55.8	39.2	47.1	42.6	41.9	46.9	44.9	47.6
Not sure					8.1	8.3	5.6	8.2	3.1	7.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
N=	310	108	234	49	98	1,502				



- You can also:
- Subset
 - Regroup variables
 - Create new variables
 - Apply weights
 - Download data
 - Generate a direct link
 - Save output to Excel or PDF

Overview of Nesstar Webview options



Tables, charts, graphs...



Apply sample weight(s)



Subset



Download datasets



Save to Excel or PDF



Link to current view



Change languages



Looking forward



- Improved numeracy & statistical literacy
- More open source software in the classroom
- Greater data awareness & access
 - DLI model for Secondary sector?
 - Open Data movement
- Students see interesting career opportunities
 - Big data; data visualization; statistics...

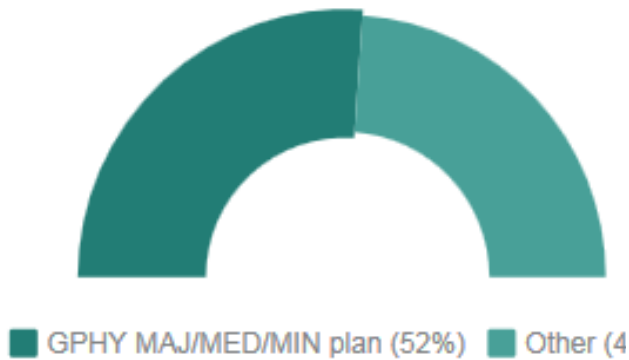


Over to Francine...

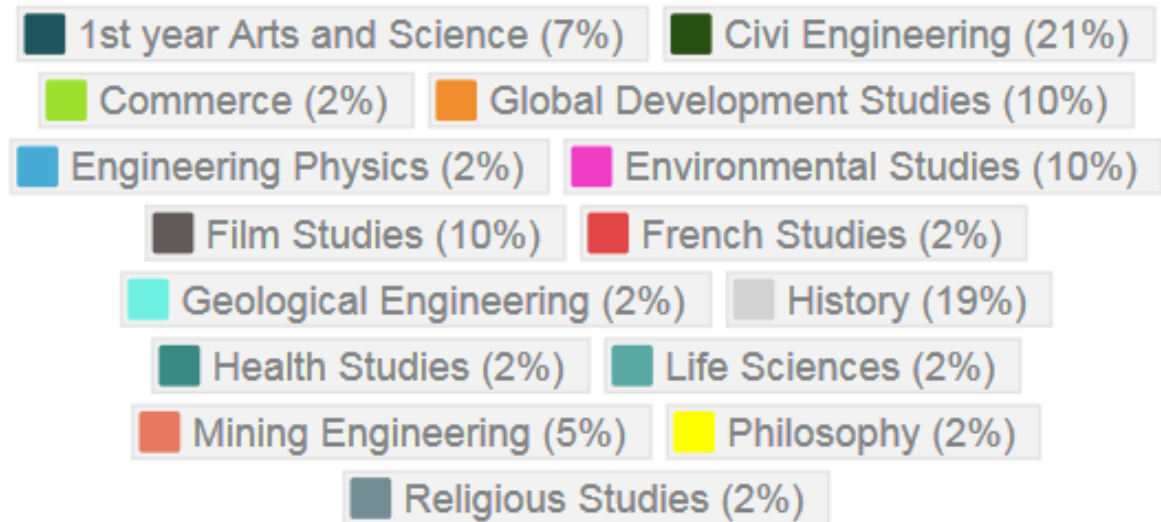


The current state of affairs

The makeup of undergraduate geography



200 Level Geography





The current state of affairs

Demonstrating the makeup of undergraduate geography with Piktochart



GPHY MAJ/MED/MIN plan (63%) Other (37%)

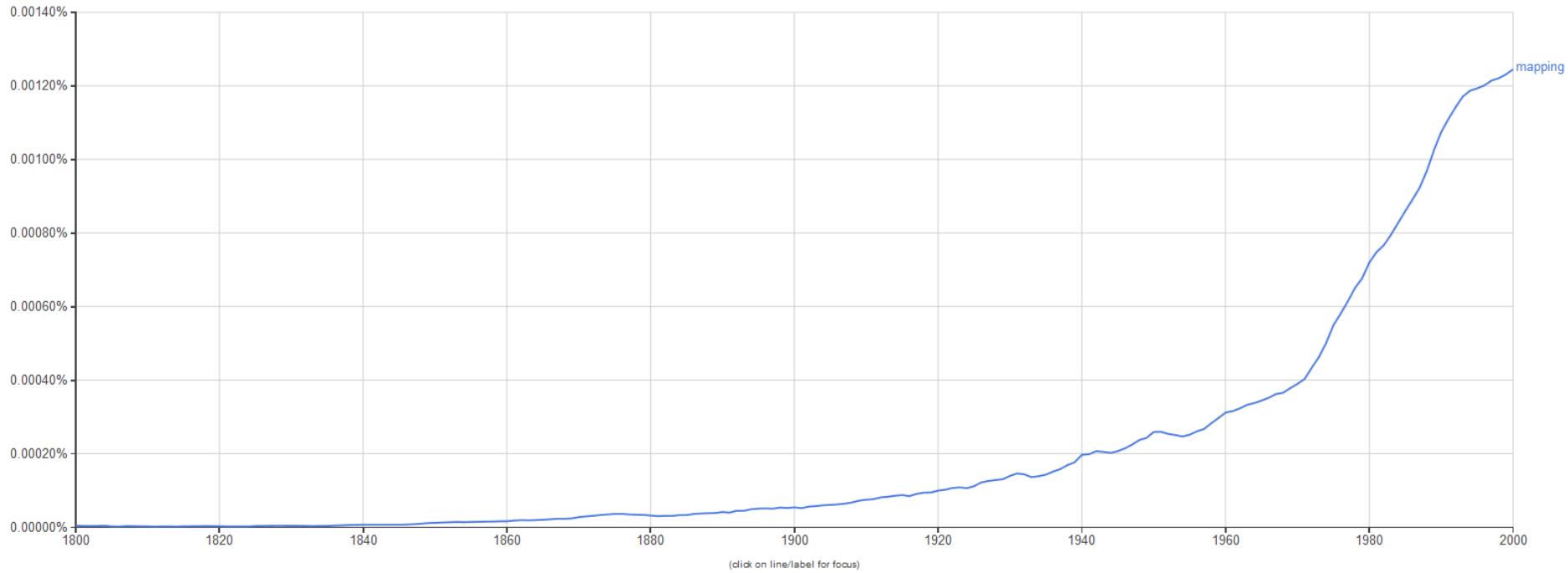
300 Level Geography



- PHE - 2 (7%)
- Dev Studies/Geography - 3 (10%)
- Dev Studies/History - 1 (3%)
- Health Studies - 9 (30%)
- Health Studies/Life Sci.. (3%)
- Health Studies/Psych - 1 (3%)
- History - 1 (3%)
- History/Health Studies - 1 (3%)
- General Arts - 1 (3%)
- Environmental Science - 3 (10%)
- Environmental Science/W.. (3%)
- Kinesiology - 3 (10%)
- Life Sciences - 2 (7%)
- Civil Engineering - 1 (3%)

Google Books Ngram Viewer

Graph these comma-separated phrases: case-insensitive
between and from the corpus with smoothing of [Search lots of books](#)





Geoliteracy



- Increasing popularity of information visualization
- Inclusion of geoliteracy in the curriculum
- Expectations of digital learning environment
- Wide usage of Google Maps
- Coverage of geographic concepts across different subject specializations at Colleges and Universities

Despite these trends, students are still arriving at post-secondary institutions needing to develop these concepts

Challenges



Beyond students registered in Geography, as the makeup of classes is diverse.

From the conversations we have had with teachers and teacher-librarians in our area, overwhelmingly OSAPAC licensed software like ArcView 9.2 is not being used.

OSAPAC listings are infrequently updated, making access to tools difficult from School Board libraries.

ArcGIS is not mac-compatible.

"In our last remaining desktop lab, even after ArcGIS was installed as part of the image, for about 4 months every time I wanted to use it with a class they were unable to open it which required another request (we call them HEAT requests) to IT for fixing (sometimes taking a week or more to resolve)."

Licensed software requires installation in Desktop labs.



James Boxall@JamesGIS

@QueensTRC great! looking a paper linking new research/efforts in geoliteracy, libraries & the geolibrary history (Eratosthenes ;)



What challenges do
you face?



From challenge to opportunity



- Some teachers are overcoming the challenge by utilizing alternate tools that are web-based and/or freely accessible
- Levering less challenging parts of the Esri OSAPAC license
- Geoliteracy is an everyone skill
- My role as geospatial data librarian has two aspects
 1. liaison responsibilities
 2. offering a **discipline agnostic** geospatial data services

Integrating geospatial literacy...



[HOME](#) [DATASETS](#) [METADATA](#) [VOCABULARY](#)

Catalog of Open Data Portals

This catalog is created and maintained through the efforts of OpenGeoCode.Org and Crowdsourcing. If you'd like to contribute, email your list of open data portals to: portal@opengeocode.org, or post the submission here:

URL: Country: Gov:
Title: Category: License:

[Download Catalog as CSV file \(CC0\)](#)

Data Portal Transparency Portal GIS/Gazetteer Census/Demographics Climate Health Education Commerce Agriculture/Food All

[List View](#) | [Map View](#)

United Nations

• Division			
UN Data	United Nations Data Mart	Data Portal	(Attribution)
UN Data	UN databases	Data Portal	(non-commercial)
World Bank	The World Bank for Developers	Data Portal	(Attribution)
UNESCO	UNESCO Institute for Statistics	Data Portal	
UNSD	United Nations Statistics Division	Census/Demographics	
UNESCO	UNESCO Atlas of the World's Languages in Danger	Census/Demographics	
ESA	Department of Economic and Social Affairs	Census/Demographics	(Non-Commercial Use)
UNECA	UN Economic Commission for Africa - African Centre for Statistics	Census/Demographics	
UNEGN	United Nations Group of Experts on Geographical Names	GIS/Gazetteer	

Integrating geospatial literacy...

Kingston Hybrid Map

This map is a blend of the 2013 orthophoto and the topographic basemap for the City of Kingston, Ontario. The semi-transparent topographic basemap provides a reference to the locations being viewed on the orthophoto.



Integrating geospatial literacy...

City of Toronto Demographics Open Data Progress Portal CIC Statistics Canada Contact Acknowledgements Help

TORONTO

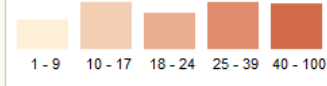
NEIGHBOURHOODS

GRAPH DATA PDF

INDICATORS OVERLAYS AREAS

Total Population
Off On

Histogram
Measure: Quantile Colour: Red



1 - 9 10 - 17 18 - 24 25 - 39 40 - 100

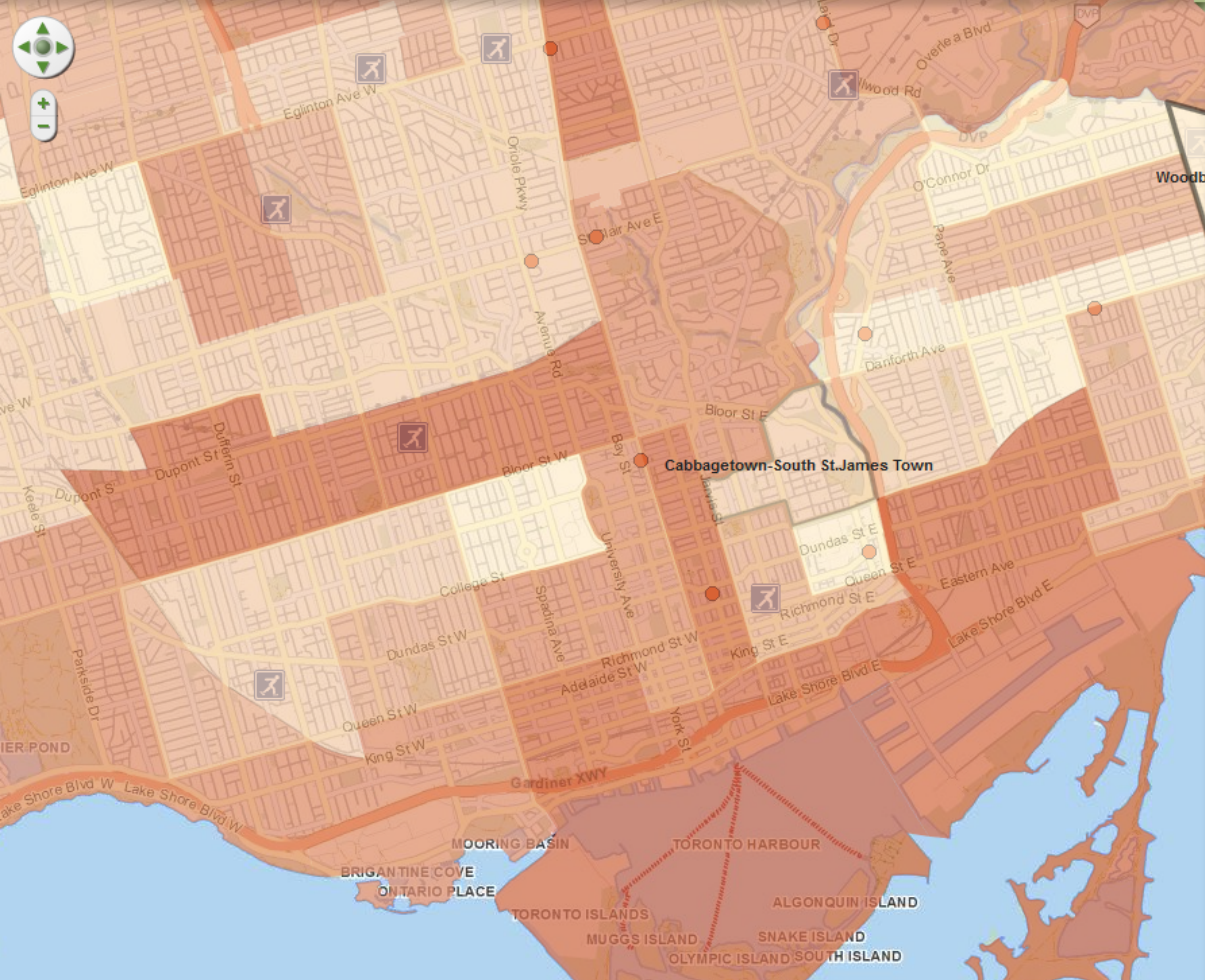
Reference Layers
Filter Layer List

CIVICS

- Aboriginal Organizations
- City Wards
- Faith Organizations
- Find Help 211
- Neighbourhood Improvement Areas
- Penal Institutions
- Places of Worship
- Priority Areas 2005-2013

HEALTH

- Arenas



Integrating geospatial literacy...



- Open Data
- Data Catalogue
- Formats and Glossary
- Terms of use

Data Catalogue

Enter search phrase 🔍

By accessing the data catalogue, you agree to the [Open Data license](#).

	HTML	XML	CSV	KML	DWG	Other
▶ Academic & Cultural						
▶ Community development						
▶ Government administration						
▼ Health						
Pharmacies	✓	✓	✓			
▼ Land Planning						
Addresses	✓	✓	✓			✓
Urban Boundaries	✓	✓	✓			✓
Municipalboundaries	✓	✓	✓			✓

Integrating geospatial literacy...



make maps

features

pro pricing

mobile

support

blog

Paste your location data below to map it:

Example Address	City	State	Zip	Name	Phone Number	Group	URL
1 Crossgates Mall Road	Albany	NY	12203	Apple Store Cross Gates	(518) 869-3192	Example Group 1	http://www.apple.com/retail...
Duke Rd & Walden Ave	Buffalo	NY	14226	Apple Store Buffalo	(716) 835-2200	Example Group 2	http://www.apple.com/retail...
630 Old Country Rd.	Garden City	NY	11530	Apple Store Roosevelt Field	(516) 248-3347	Example Group 3	http://www.apple.com/retail...
160 Walt Whitman Rd.	Huntington Station	NY	11746	Apple Store Walt Whitman	(631) 425-1563	Example Group 3	http://www.apple.com/retail...

click to copy/paste, or drop your file here

(Don't forget to include some header columns - You can also try our [Spreadsheet Template](#), or hit "Map Now" and try it out with our example data.)

Validate & Set Options

or

Map Now



Mobile Maps

We have native and cross platform apps for many GPS enabled mobile phones and tablets including:





Integrating geospatial literacy...

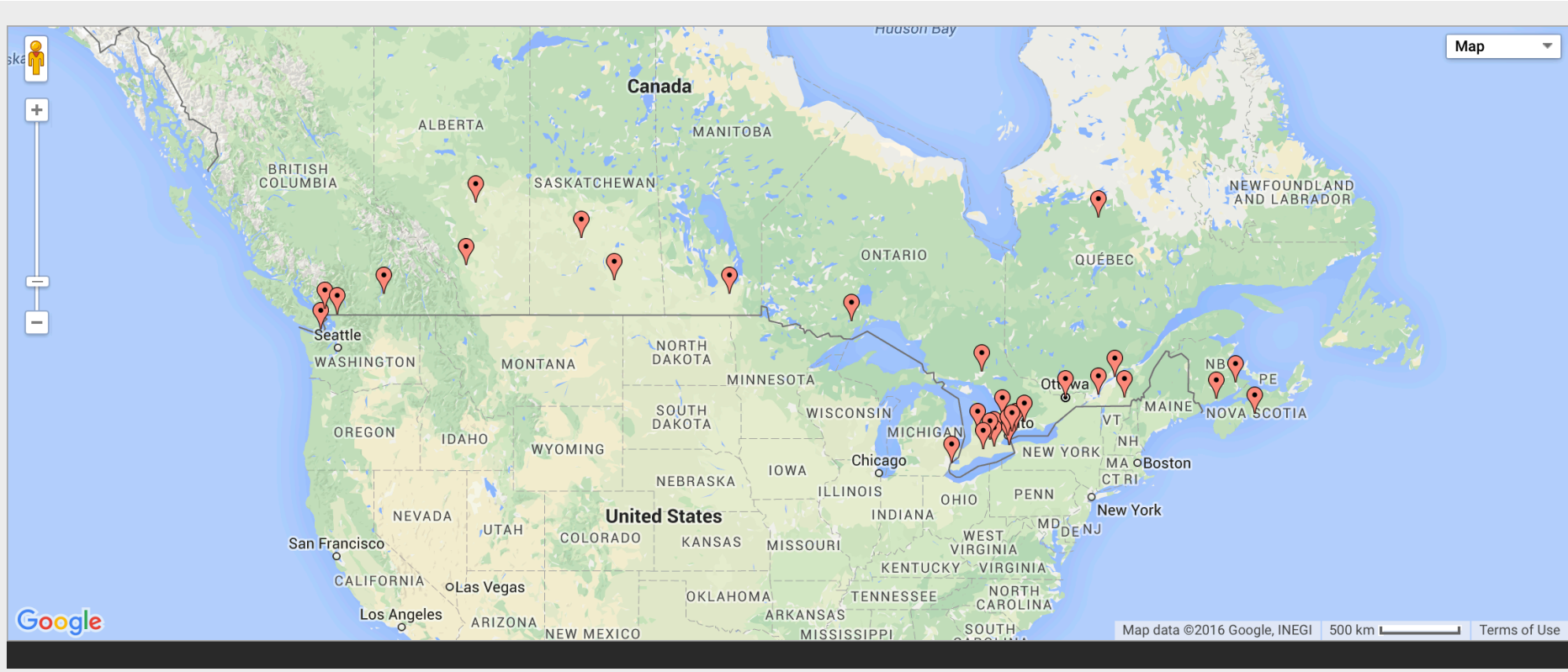


1. Explore the relationship to the location of fire stations and major roadways
2. Is the relationship between climate and population settlement patterns?
3. Is there a relationship between the location of malls and the income of surrounding neighbourhoods?





BatchGeo Demo Time



Licensed software accessible board-wide

ArcGIS Online



Home ▾ OLASC16_demo

Details Add ▾ Basemap Analysis

Save ▾ Share Print Direct

About Content Legend



Contents

World Boundaries and Places

Topographic

Browse Living Atlas Layers

Show Esri Layers Only
 Within map area

All Categories

- Historical Maps
- Demographics & Lifestyle
 - Income
 - Spending & Behaviors
 - Population & Housing Segmentation
 - Business & Jobs
 - Poverty & At Risk
- Landscape
 - Climate & Weather
 - Ecology
 - Species Biology
 - Disturbance & Impact
 - Elevation
 - Land Cover
 - Natural Hazards
 - Oceans
 - Soils & Geology
 - Subsurface

World Topographic Map



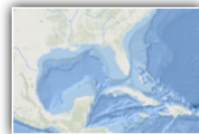
Add layer to map ▾

World Imagery



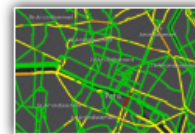
Add layer to map ▾

World Ocean Base



Add layer to map ▾

World Traffic Service



Add layer to map ▾

1 2 3 4 5 6 7 8 9 10 11 12 13

Licensed software accessible board-wide

ArcGIS Online

A screenshot of the ArcGIS Online web interface. The top navigation bar includes "Details", "Add", "Basemap", and "Analysis". A secondary bar contains "Save", "Share", "Print", "Directions", "Measure", and "Bookmarks". On the left, a "Contents" panel shows a list of layers, with a "2014 C" layer selected. A red box highlights the "Add" dropdown menu, which includes options like "Search for Layers", "Browse Living Atlas Layers", "Add Layer from Web", "Add Layer from File", and "Add Map Notes". The main map area displays a street map with a red polygon highlighting a specific area. A red box highlights a popup window for the area ID "35200855". The popup contains text describing the number of households (820) and the median household income (\$93,681) for that area, comparing it to the Canadian median (\$66,338). Below the text is a bar chart showing household counts by income range. The popup also includes "Zoom to" and "Get Directions" buttons.

Search for Layers

Browse Living Atlas Layers

Add Layer from Web

Add Layer from File

Add Map Notes

35200855

There are 820 households in this area. The median household income in this area is **\$93,681** per household, per year. In comparison, the median household income for Canada is \$66,338 a year.

Hover or click on the chart to view counts of households by income ranges under \$100,000.

Income Range	Household Count
0 - \$10,000	45
\$10,000 - \$20,000	85
\$20,000 - \$30,000	65
\$30,000 - \$40,000	55
\$40,000 - \$50,000	45
\$50,000 - \$60,000	35
\$60,000 - \$70,000	25
\$70,000 - \$80,000	15
\$80,000 - \$90,000	35
\$90,000 - \$100,000	65

Zoom to Get Directions

Licensed software accessible board-wide



Invite or Add Members to Queen's University

CANCEL

2 Invite members one by one or in a batch by email.

Leaves it to the member to decide whether to link to an existing ArcGIS account or create a new one. Select any role without administrative privileges for the member to be a part of.

One at a time | From a file

Upload a CSV file that contains a list of members to invite to your organization. Note that the CSV file must contain a header (first line) with these field names: Email,Role.

File: No file selected.

Message Members Will Receive: Francine Berish has invited you to join an ArcGIS Online Organization, Queen's University.

Licensed software accessible board-wide



- GIS & You
- Products & Services
- Training & Events
- Resources**
- Support
- Company
- Blog

Resources

- Share
- Share
- Share
- Email

Resources

Education Resources

Overview

Lesson Planner

Data Sources

Books

Lesson Planner

Search for lesson packs (lesson plan, background, tutorial, presentation, assignment and data), videos and Web sites that can be incorporated into your teaching. Sort and filter to narrow your results.

Enter Keywords On or After this Date Resource Types

Geographic Focus Grades Platforms

Subject Areas Sort: Title Order: Ascending Find

Reset

Use the filters above to explore curriculum-focused lesson packs as well as videos and other supplementary resources.



Take-home tools

- <http://opengeocode.org/opendata/>
- Esri Canada Lesson Planner <http://www.esri.ca/en/resources/lesson-planner>
- Esri Education & Research Blog <http://www.esri.ca/en/blog/education-research>
- Esri Open Data <http://opendata.arcgis.com/> very compatible with ArcGIS Online
- <https://batchgeo.com/> allows you map using a copy and pasted excel file
- Google Earth Pro is now FREE
<https://support.google.com/earth/answer/176160?hl=en>





Thank you