



# Geothink Research Themes

## Theme 1: Anywhere, Anyone, Anytime

We believe that Web 2.0 and its associated technologies will dramatically shift the way cities talk to their constituents and others. People can communicate with cities from anywhere, outside of a jurisdiction, and at any time, for example, which means outside formal venues like city council meetings. Anonymity implies that you do not know the identity of the contributor. It challenges our traditional definitions of community, citizen, and participation. We will evaluate the processes of technology development and that impact on the city and the citizen.

## Theme 2: Spatial Authenticity, Accuracy, and Standards

The moment you bring up volunteered geographic information (VGI) (e.g., with Open 311), you worry about the quality of data. This theme considers questions of data structures, standards, and documentation practices used by public agencies. The research produced by this theme also will affect consensus on terminology, data standards, and dissemination regarding opening up government data and accepting VGI.

## Theme 3: Laws, Norms, Rights and Code

Data related to governance is not simply a technical matter. Issues that are policy and legal in nature will be a primary focus as we try to understand the way Geoweb 1) fits in existing law and policy, and 2) shapes new policies and law. Specific legal domains of interest are privacy, intellectual property, access to information, access to justice, and the interplay between norms, codes and technology with regards to governance.

## Theme 4: Open Everything

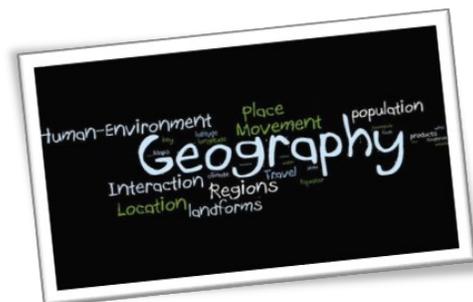
We will track municipal open data engagement over time, theorize about the impacts of open data on governance, and from a practical perspective understand and develop best practices. We also have the opportunity to document best practices and track the evolution of open data practices over time.

## Theme 5: Social Justice

We will explore aspects of Geoweb - Society relationships as they pertain to social justice. We will identify the success and failures of Geoweb for community development. Using a case study approach we will use participatory research to identify emerging concepts of place, the intersection of community, engagement and social justice, and the accessibility to Geoweb.

## Theme 6: Geoweb Political Economy

This theme will focus on understanding the political economy of the Geoweb as it concerns ownership structures, institutions, and policies. Power relationships between actors and processes of inclusion and exclusion among social media owners and users also will be our focus.



# Partner Spotlight: City of Edmonton

*I spoke to Marc St. Martin at the City of Edmonton, one of Geothink's municipal partners.*

**Marc St. Martin, City of Edmonton**

I am the Program Manager for the Corporate and Departmental Initiatives. While provincial and federal open government initiatives focus on transparency and accountability, our [Open City Initiative](#) is also focussed on openness, collaboration, and to promote innovation with Edmontonians. I am striving to strengthen the information management practices in the City and deliver more data to the public. Our goal is to increase the number of open datasets and drive a culture shift in the value proposition of open data.

**What kind of demand do you see for open data?**

We have large volume of internal and external data requests monthly. People want more transparency, engagement, collaboration, and involvement in decision-making. They want more informed data, more communication channels

and, of course, accountability through Open Data.

**How do you tackle engagement with your citizens to meet these demands for open data?**

We have a variety of methods of engagement. We have a suggestion box online, hackathons that get citizens engaged in building apps with our data, and we conduct surveys to explore citizen's open data preferences. The new [Open Lab](#) Initiative, is a new avenue to engage with citizens. Open Lab, which gathers all the talent in the City together, develops solutions to municipal challenges through open data collaboratively.

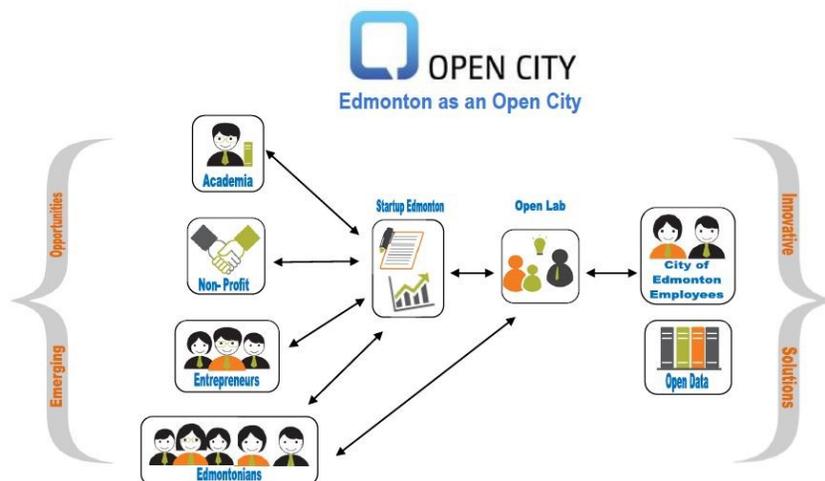
We are getting a lot of recognition around efforts on open data usage. We are also getting a lot of support from the Mayor's office, with a lot of effort being put into the Open City concept. Political support from upper levels is crucial, as

it helps us drive the culture change we need here.

**What kind of culture change are we talking about here?**

Our current approach is to educate and increase awareness on the value of open data. The Open City Policy actually helps our city colleagues to see the value of open data from a different perspective. There is also a parallel here in Yvonne Chen's work on Open Lab, which promotes data literacy among citizens.

Employees in our municipal government are starting to become more data literate. Internally, we have created an Open Data Working Group, with members coming from decision-making positions in various departments. We are empowering individuals to educate others in their departments. We have what we call 'Data Stewards', which allows us to go through our processes of releasing data quicker.



**It sounds like you have a lot of people involved. What happens in the process of releasing open data?**

The members of the Open Data Working Group act as facilitators. We have a dashboard that displays internal and external requests for data. With this dashboard, we rank the requests based on a number of factors, including how easy it is to release and the potential political impact. This allows us to prioritise data release.

Then we delegate someone in our Group to identify the Data Steward, the owner of the dataset. The Data Steward works with our team to go through a checklist of requirements, such as data accuracy, legality, and other issues, before it comes back to the Open Data Working Group. When the Group receives it, they look at the data in terms of the pipeline for data release and make the final decision to release. As you can see, the approval of the Open City policy is not only seen as a document, but seen as a phi-

losophy that influences the way Edmonton does business. It has fuelled an ongoing internal culture shift, and it has helped to develop the commonality that the organization so clearly needed. Open City shines a light on the interdependencies that already existed, helping the organization to move forward as one city.

One of the members of our Working Group has even gone and created a sub-committee on open data in their own department, due to the scale of their department and operations. This is comprised of all the Data Stewards that have been appointed over time. Again, this is evidence of the culture shift that we are seeking here in Edmonton.

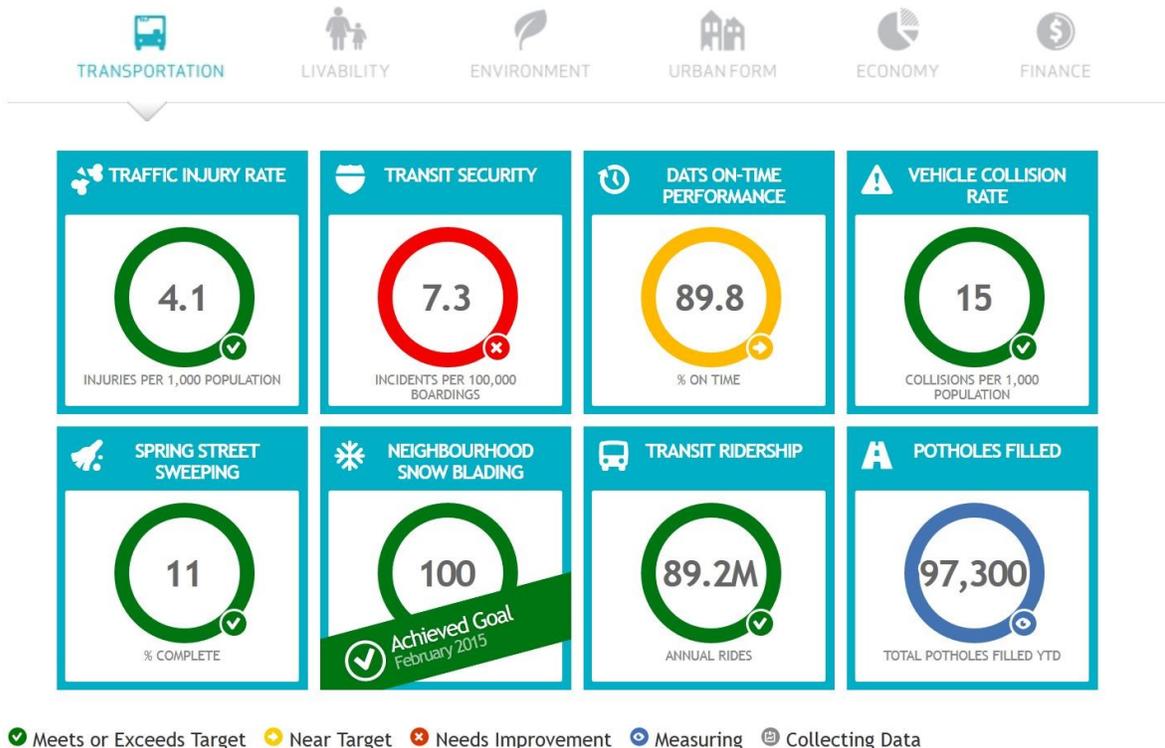
The Open Data Working Group also works to approve the protocols and standards we use in data creation and release so that we have consistency across departments. This helps ensure that each open dataset made available will have the same look and feel. We

spent a large part of last year cleaning up our previously released open data to bring it up to our new standards.

**How do Edmonton's open data catalogue and the Citizen Dashboard interact? Are they separate products?**

Correct, they are separate. The Citizen Dashboard is pulling data from a dataset residing in the open data catalogue. The data feed that populates the Citizen Dashboard is automated.

It took quite a lot of effort to get the Dashboard up. The Citizen Dashboard was started years back and had a lot of support various groups such as our Insight community as well as from inside government. We also have a new Mayor since 2013, who has put transparency at the forefront of his agenda. He instructed his staff to use the Citizen Dashboard as a way to make sure we deliver our report card to our citizens and remain more accountable in our day-to-day operations.



For the catalogue, we have 525 datasets. 78 datasets link out to feed into our Citizen Dashboard. These numbers will grow of course.

**Why not just provide the raw data?**

People tend to understand data based on its visualisation. Citizen Dashboard and other visualisations make the data in our catalogue speak. Providing digestible information, as opposed to raw data, is actually the key to our operation. One of my jobs in information management is to provide information, make it as accessible as possible and make it effective and efficient to the public. This goes back to our mandate and to our principles laid out in our Open City Initiative. We are very excited about the work we are doing on data visualisation and analytics here, to shift ourselves from navigating through datasets, to navigating through visualisations.

**What kind of challenges do you see for Edmonton’s plans for open data?**

I’ve mentioned the facilitation of the culture shift that we need. There is often a fear of the unknown that slows down progress on this front. The other is measuring success. This is one of our biggest challenges – how do we measure the effectiveness of open data? We only hear about it through the grapevine – through hackathons, through feedback in various channels, but it is not really a true picture.

We are developing some light measures and have some internal expectations on KPIs (Key Performance Indicators). But when it comes to the big picture, however, we don’t get any of that.

**Any advice for other Canadian municipalities out there?**

Keep sharing, learning from each other and supporting project development. Remember to focus on the small wins.

*Thank you to Yvonne Chen who facilitated and participated in this interview. Yvonne is our primary contact at the City of Edmonton.*

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*“providing **digestible information**...is the key to our operation”*

*“we are [shifting] ourselves from navigating through*




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***Two key challenges for Edmonton:***

*Facilitating a shift in culture requires overcoming a fear of the unknown*

*Evaluating the effectiveness of through indicators and developing a bigger picture on outcomes*

# Farewell to Nova Scotia Community Counts

*Written with a contribution from Dr. Peter Johnson (University of Waterloo)*

As some of you may be aware, our Geothink partner, Nova Scotia Community Counts (featured here in a prior issue) is no longer functioning.

Nova Scotia Community Counts was a longstanding program that was administered by the Nova Scotia Department of Finance and Treasury Board beginning in 2005, lasting until its recent cancellation in April 2015 due to a reduction in government budget.

The goal of Nova Scotia Community Counts was to provide open statistical information on Nova Scotian communities and 15 other levels of geography (such municipalities, school boards, district health authorities and watersheds). Community Counts provided a common platform for data from many sources, in a way that now mirrors what is generally considered as government open data. Data on the Community Counts website was compiled from various sources within the Government of Nova Scotia, including the Departments of; Education, Environment, Finance and Treasury Board, Health and Wellness, Fisheries and Aquaculture, and Justice, providing a central public-facing repository of provincial data. Nova Scotia Community Counts also

provided data from Statistics Canada, including the Census of the Population (1991-2011) and National Household Survey (2011), Canadian Centre for Justice Statistics, Canadian Community Health Survey, Labour Force Survey, and tax-filer data. A significant innovative advantage of the Community Counts approach is that it takes complex, difficult to access (and for many years, expensive) federal data, and tailored it for community use.

Datasets on the website were based on a total of 16 levels of geography, such as provincial, county, community, economic region, and district health authority levels. Data can be accessed in a variety of formats – tables, charts, maps and profiles. The Community Counts website also contained a tool called the Map Centre, consisting of up to 40,000 maps that can be custom generated for users to view data and up to 75 community assets.

Community Counts was used by government, business, community groups, non-profit organizations, colleges and universities, and the broader public. It assists users with activities such as policy development, program evaluation, community planning, and decision-making in general.

The programme also provided direct outreach to its users. Since 2005, many training sessions were held across the province, with over 500 individuals taking Community Counts training. As a single-point information source, it provided stakeholders with reliable data that could be accessed in a timely and efficient manner. In this way, Nova Scotia Community Counts made a decade-long contribution to improving data accessibility, and also increasing engagement of citizens with data at the grassroots level.

In my own conversations with Malcolm Shookner, he also emphasised how raw data is much less important than actionable information. While Community Counts is no longer able to push this vision of data in government services, as you will see in my other conversations, Geothink partners are continuing with this idea of putting information, as opposed to data, first.

Our best wishes to Malcolm Shookner and his future endeavours.

# Undergraduate and Co-op Projects

## Mavis Chan: Undergraduate co-op student at the University of Waterloo, working at Nova Scotia Community Counts

*Mavis Chan, an undergraduate from the University of Waterloo majoring in Environment and Business, is currently doing her co-op at Nova Scotia Community Counts under the supervision of Malcolm Shookner. She conducted research on the uses and benefits of the Community Counts programme (featured in an earlier newsletter) to individuals who have used the website.*

*Mavis is supervised by Prof. Peter Johnson (University of Waterloo). Malcolm Shookner was Chief Statistician and Manager at Nova Scotia Community Counts. Nova Scotia Community Counts was rendered inoperative recently with Nova Scotia's recent budget. Although it is now defunct, the findings from NSCC should still be relevant to us. See [page 6](#) for more details.*

In this study we aim to determine the impacts and benefits from individuals who use the Community Counts program. We also seek to understand the additional value generated from Community Counts' role as a data "infomediary" to determine how to improve data literacy in the emerging field of open data. We ask several research questions to focus our findings, including, "How do individuals use Community Counts?" and "what are the benefits, specifically broken down into various types, derived from not only providing a common platform for data but also by supporting users through meaningful data delivery?"

[Nova Scotia Community Counts](#) is a program administered by the Nova Scotia Department of Finance and Treasury Board to provide statistical information on Nova Scotian communities and 15 other levels of geography, e.g. municipalities, school boards, district health authorities and watersheds. Its common platform for data from many sources has become a model for what is now called open data. Data on the Community Counts website is compiled from Statistics Canada's Census of the Population, (1991-2011), National Household Survey, Canadian Centre for Justice Statistics, Canadian Community Health Survey, Labour Force Survey, and tax-filer data. Data is also derived from various sources within the Government of Nova Scotia, including the Departments of, Education, Environment, Finance and Treasury Board, Health and Wellness, Fisheries and Aquaculture, and Justice. The Community Counts website also contains a tool called the Map Centre, consisting of up to 40,000 maps that can be custom generated for users to view thematic data and over 75 community assets.

The program is used by government, business, community groups, non-profit organizations, colleges and universities, and the broader public. It assists users with activities such as policy development, program evaluation, community planning, and decision-making in general. Since Community Counts' inception in 2005, many training sessions have been held across the province, and feedback has been continually obtained to better

meet user needs. As a single-point information source, it provides stakeholders with a reliable source of data that can be accessed in a timely and efficient manner.

Community Counts is not an official open data platform, as datasets provided are not directly generated from the source. Data presented on the site is reformatted from various other sources, thus Community Counts' predominant role is to communicate the data in a meaningful way rather than provide the raw data itself. Nonetheless, data on Community Counts' website is available for public use. Thus, it is similar to the concept of open data, as it consists of government data that may be extracted, analyzed and distributed for public value.

To determine the uses and benefits derived from the Community Counts program, a voluntary response user survey was disseminated to 270 of Community Counts users. This was sent out by email three times between October 2014 and January 2015. Of the total sampling frame of 270 Community Counts users, 29 users responded (10.7% response rate). Data coding was done to observe trends between users of various sectors, types of work, and types of data they used.

Of the survey respondents, the most common users work in the Provincial Government Sector and in Policy Development as seen in Figure 2 and Figure 3 [below](#).

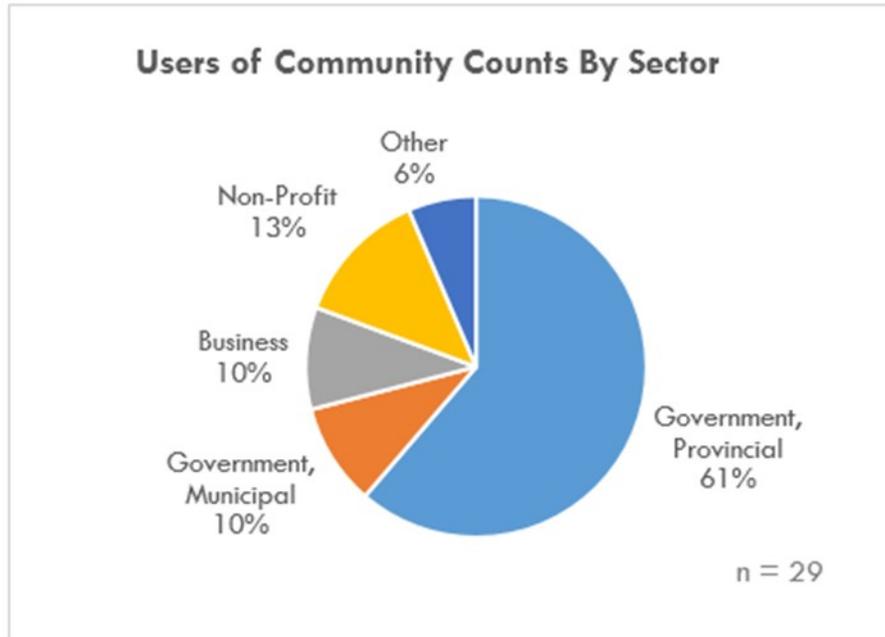


Fig. 1 - Community Counts Users by Sector

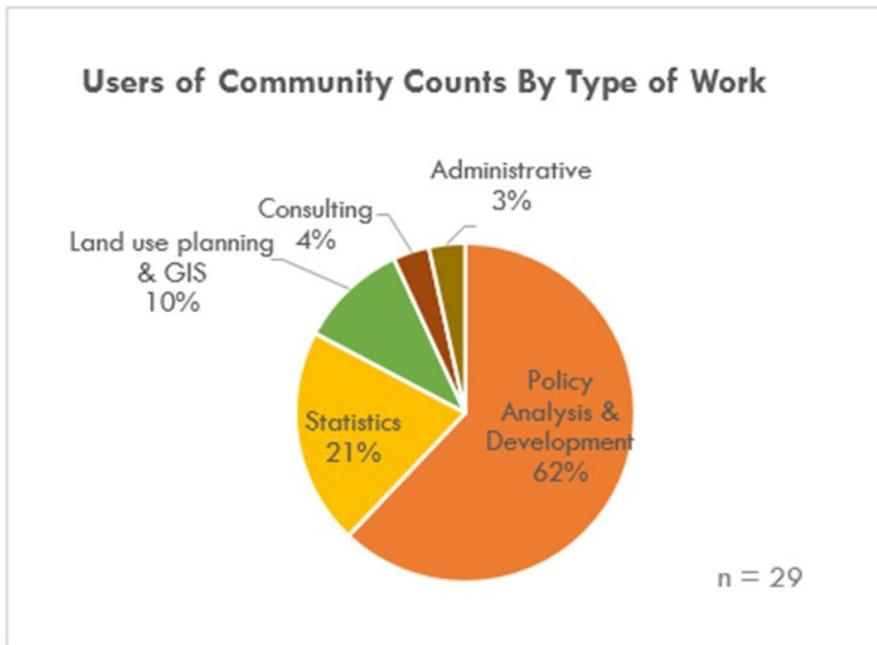


Fig. 2 - Community Counts Users by Type of Work

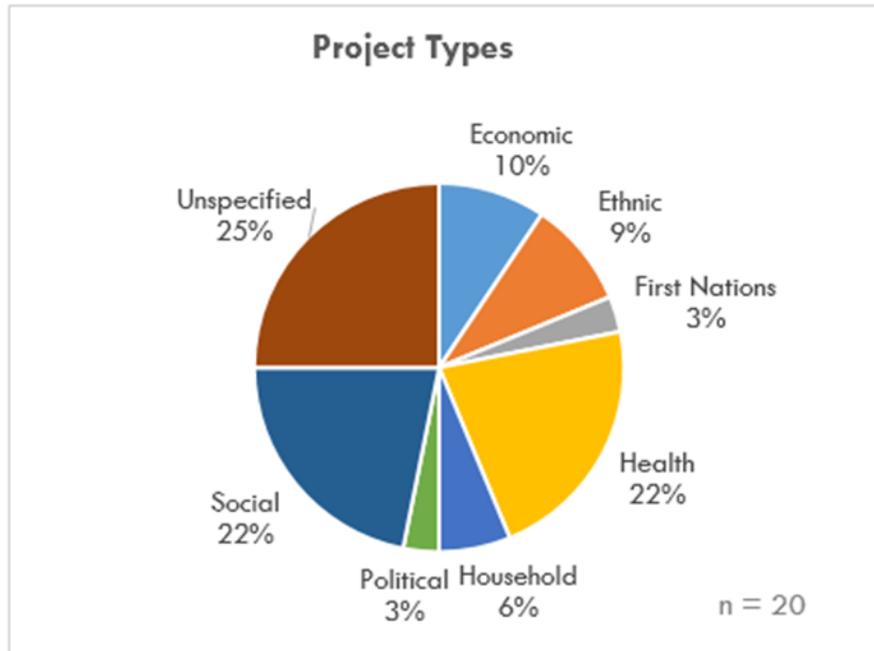


Fig. 3 - Community Counts Project Types

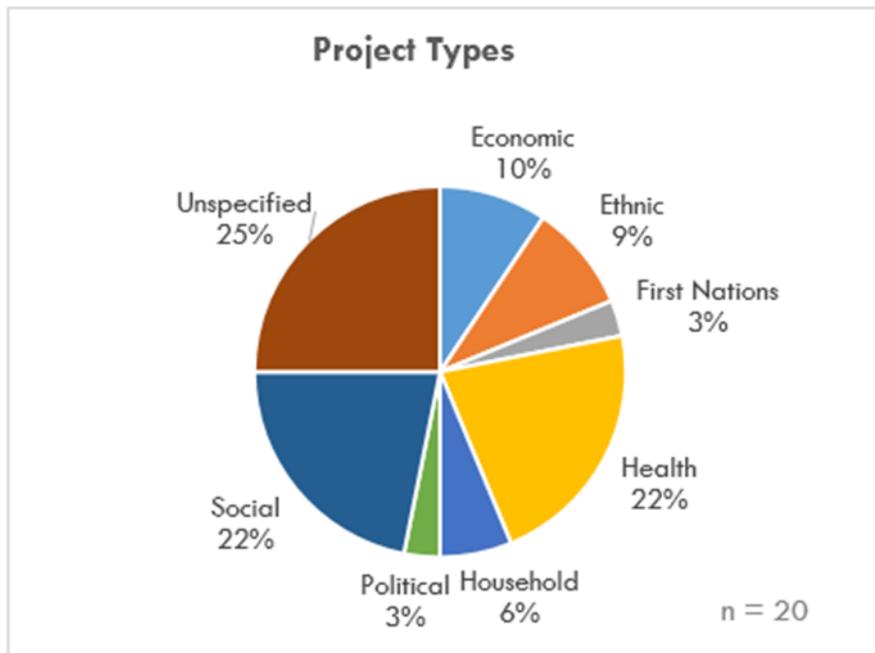


Fig. 4 - Type of Datasets Used

I also determined the most common types of data used on the Community Counts website based on the types of projects conducted by users and the datasets they used. Of the survey respondents, the most common projects using Community Counts were based in health and social program planning and the most frequently used datasets were in the demographics and income-related topics. This is seen in Figure 3 and Figure 4 above. Users also provided recommendations on the additions or changes they would like to see to the website, whether on the data or formatting of the interface. From these results, my team could see the needs of our users and how to improve Community Counts as a resource.

Afterwards, I conducted semi-structured interview with 15 key informants selected from a subset of these users, including individuals from various sectors and fields. I asked informants to specify the benefits and impacts resulting from their use of Community Counts. These were divided into three categories: Economic, Social, and Technical as seen in Figure 6 below. In addition, informants were

asked to quantify the benefits of Community Counts, but limited responses were given on the numerical value of using Community Counts.

Extrapolating from the qualitative benefits stated by informants, one can see that Community Counts plays a significant role towards not only providing data, but also assisting individuals in using data. This is an interesting observation, as a lack of awareness from the general public towards the emergence and benefits of open data, specifically from individuals of the non-technical community, is a challenge in the open data sphere. Data literacy, which is the understanding of how to access and utilize open data, has not kept up with the rate of information release. This undermines the social benefit of open data.

Specific ways in which Community Counts has assisted individuals in using data and served as a data “infomediary” include:

- 1) Providing data tailored to the local demographic

- 2) Allowing users to compare data between jurisdictions
- 3) Helping general users engage in discussion over the data
- 4) Providing a central, reliable, and accessible source of data
- 5) Working collaboratively with stakeholders to meet new data requests

**Providing data tailored to the local demographic**

By providing data tailored to the local demographic, users across sectors have found the program equally or more useful than sources that only provide national or provincial-level data. Users were able to gain a local context of the community and find specific information tailored to local communities.

**Allowing users to compare data between jurisdictions**

Secondly, by enabling access to data on all jurisdictions across the province on 16 geographic levels, users can make standard comparisons them. This leads to improved legibility as users know the data



Fig. 6 - Benefits of Community Counts classified into three categories

### Helping general users engage in discussion over the data

Third, Community Counts presents data in a variety of formats (tables maps, charts), which helps engage users without a background in statistics and allows them to adapt the information for their own use. Key informant interviewees mentioned that community members engaging with governments, who often discuss issues based on emotion and a bias from their own industry perspective, can use Community Counts to approach discussions with a more objective and fact-based point of view.

### Providing a central, reliable, and accessible source of data

Fourth, by serving as a central, reliable, and easily accessible source of statistical data, Community Counts helps users save time and money, thus incentivizing data use with economic benefits.

### Working collaboratively with stakeholders to meet new data requests

Finally, the Community Counts' administrative team maintains friendly connections with users, offers free training, and provides personal assistance for users who run into problems. This enables collaborative learning and encourages users to continue using the website.

Community Counts thus serves as a catalyst in promoting data literacy by presenting data in a way that is legible, usable and comprehensible to others. Open data providers can learn from Community Counts' success in this regard.

Through my literature review conducted on open data best practices, I found various additional key factors contributing to open data project success. Based on findings in academic literature on municipal

government open data projects, these factors include top-down leadership from inside or outside of government, cross-organizational support, and community engagement. Financial and human resource capacity also play a significant role to open data project success, but additional resources may not be needed if existing bodies of knowledge and resources are in place.

Nova Scotia Community Counts' own program demonstrates several of the characteristics seen to contribute to successful open data programs. Community Counts' early success was due to strong leadership from Dennis Pilkey, its former Director of Statistics. Launching the program in 2005, he initiated the project by communicating its benefits to Deputy Ministers across the Government of Nova Scotia. Upon gaining the support from upper management, Community Counts has since been able to maintain a reputable status internally. This has helped with raising awareness of its usage to various public servants across the Government of Nova Scotia and to external users. Community Counts' success is also attributed to support from the Departments of Health and Justice, who were the first cross-organizational bodies that requested for the publicizing of data. Support from various cross-organizational agencies within the Government of Nova Scotia contributed to its ability to provide data for a diverse range of users. Feedback from these departments provided insight on additional data that users preferred to see on the website. Furthermore, Community Counts is known for its success in establishing a collaborative culture in which feedback, continually obtained to determine user needs, is critical to engaging a wide array of individuals from the non-technical community.

Opening up data has many challenges for both data providers and data users, especially when massive amounts of data are released at once. This means that much of the public are unaware of open data and those that wish to utilise it may be overwhelmed by the sheer amount. Community Counts has been a success case for going beyond empowering the technical community to use the data for software applications. It has been able to engage the wider non-technical community, serving as a catalyst to data literacy and playing the role of a data infomediary. Community Counts users have been able to utilize data for a variety of purposes, in program planning, policy development, mapping assets, engaging the public, and more. If organizations looking to implement open data projects utilize the similar strategies as demonstrated by Community Counts to engage users in data, it would play a significant part in shaping the future of open data and helping users realize its value.

*Thank you to Malcolm Shookner of Community Counts and Dr. Peter Johnson for their guidance on conducting this research and sharing it with the wider open data community.*

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# Undergraduate and Co-op Projects

**Paulina Marczak: Undergraduate co-op student at the University of Waterloo, working at Open North**

*Paulina Marczak, an undergraduate from the University of Waterloo majoring in Geography and Environmental Management, was on co-op at OpenNorth, one of Geothink's partner organisations, this winter. Supervised by Stéphane Guidoin and James McKinney, she conducted research towards a white paper on the use of best practices for standards in countries' open data portals, as well as authoring a report on the state of legislative openness in Canada.*

*Paulina is supervised by Prof. Peter Johnson (University of Waterloo). Stéphane is the Director of Products and Services at OpenNorth, and James is the Executive Director.*

## **What baseline standards and best practices for open data should Open Government Partnership members adopt?**

The Open Government Partnership (OGP) was established in 2011, creating an international platform for individuals passionate about making their governments more open, accountable, and responsive to citizens. To date, there are [65 member countries](#), including Canada, spanning all continents.

There are five themed working groups that help contribute to peer exchange and learning across the Partnership. The [Open Data Working Group](#) is one, with aims to support governments in implementing their open data commitments, as well as offer participants access to experiences and best practices on open

data issues. The standards stream of this group is co-lead by OpenNorth; its objective is to promote the use of open data standards to improve transparency and increase the interoperability of open data activities across multiple jurisdictions.

Directly from the work plan of the Standards stream of the OGP Open Data Working Group, the research question is, "What baseline standards and best practices for open data should OGP members adopt?"

To answer this question, they investigated what standards currently exist, and what their current level of adoption and implementation is by OGP countries. This was done primarily by automated harvesting of information from open data catalogues.

They also investigated how the differences and disparities between jurisdictions, including developed and developing countries, impact the adoption or implementation of standards. To develop a global view and identify gaps and overlaps in standardization, an [inventory](#) of current practiced standards for 9 major sections of standards was completed, listed below.

- 1.Licenses, dedications and metadata about licenses (e.g. Creative Commons)
- 2.Catalogue and dataset metadata (e.g. DCAT)
- 3.Character encodings (e.g. UTF-8)

4.Data formats and serializations (e.g. CSV, Linked Data)

5.URL structures

6.Data delivery (e.g. API standards)

7.Definition and organisation of datasets and distributions within data catalogues

8.General purpose data standards (e.g. ISO 8601)

9.Domain specific data standards (e.g. IATI)

Following this, a diverse group of candidates from both government and civil society in select member countries were interviewed from a structured set of questions. These questions included various topics, including licensing, metadata, character encoding, data serializations, URL structures, organization of datasets and distributions within data catalogs, data standards, and procedures for open data publishing, to seek to understand interviewees' choices with respect to standards as well as potential and real barriers to adoption and implementation.

Preliminary recommendations for standardization of portals include recommendations such as using pre-existing, instead of custom, terms for metadata properties of datasets and distributions in the portals, to removing rows with explanations inside CSV files and instead having it as metadata.

We are currently in the process of identi-

ifying final recommended standards and conclusions after compiling the results from interviewed countries. Please refer to the [OGP ODWG Standards Resources](#) webpage for updates.

This work, and collaboration within the OGP working group, will help OpenNorth ensure that its work takes into account the differences and disparities between jurisdictions – especially in the Global South – that make the global adoption and implementation of standards challenging.

### Legislative Openness in Canada

This report was a follow-up to the interest generated among provincial and territorial legislative staff at the first annual Legislative Communication Conference ([LEGCOMM](#)) held in Montreal in 2014, and is inspired by the [Global Legislative Openness Survey](#) of the Open Government Partnership's [Legislative Openness Working Group](#).

To date, the responses of five legislatures have been completely processed, analyzed, and confirmed: British Columbia, Saskatchewan, Manitoba, Prince Edward Island and Newfoundland and Labrador.

The objective of this survey was to measure, from a citizen's perspective, the availability and accessibility of legislative information on the websites of Canadian legislatures, to identify good practices for disseminating information, and to serve as a basis for conversations with legislatures about opportunities for improvement. Secondly, the research will establish the feasibility of launching third-party services like [OpenParliament](#) and [OpenHouseNS](#) to help citizens track

the activity of each legislature.

The report (a first draft of which can be found [here](#)) covered five main sections, including copyright, information records and dissemination, how easily accessible the information is, discovery of information, and specific types of information. An additional section was included regarding innovative practices to share between legislatures. The final version should be out soon, as all the legislatures validate their information.

Preliminary findings for each section are as follows:

- 1 Copyright
  - Most survey respondents indicated licensing to be completely free and open for any type of use
  - Copyright was actually found to be more restrictive, generally for non-commercial use under Crown Copyright
- 2 Information Records and Dissemination
  - Most legislative information was found to be published online in either PDF or HTML documents, while some documents were not published online, although this was rarely the case
  - Most information was accessible online for at least 10 years, although progress has to be made for certain documents that are only present as "live versions"
  - Timeliness of posting information prior to an event varies widely between legislatures, this conclusion is conditional upon further monitoring
  - Most information was available within a week of an event happening, transcripts are reliably the quickest

type of information published

### 3 Accessibility of Information

- Most legislatures had some sort of interlinking, or using a hyperlink to connect information with other relevant information on a different part of the website
- Most legislatures had plain language summaries of roles and functions in legislature, as well as rules and procedures and summaries of bills
- Summaries of plenary debates or committee meetings are not posted on any legislative website

### 4 Discovery of Information

- Alert services are not frequently used to disseminate news of an event, but there is interest by some legislatures in establishing this service
- Most legislatures use social media to engage users

### 5 Specific Types of Information

- Voting procedures vary by legislature, there is no clear pattern on how often votes are recorded until legislatures respond
- Specific members' votes are available in plenary sittings (the whole legislature) in three legislatures, while specific voting records of committee members are only available in British Columbia.
- Some legislatures inform the public as to why committees meet in public

The survey was disseminated to participating legislatures and additional was found by manually researching legislative websites.

Copyright information in particular was

found to be extremely restrictive, although many legislatures indicated that it to be freely licensed. The classification of this copyright as being “open” raises some concern over the understanding of open licensing. It is interesting to note the difference in opinion of an open license between the surveyed responses and the official [definition](#). There is debate on the degree of freedom actually allowed with these licenses when inspected on the official website. The following graph provides an overview of existing copyright in legislatures.

There exist many types of legislative information, but they are oftentimes not

easily accessible. For example, most legislatures indicate that they openly license their data, but their copyrights are far more restrictive than this implies. As well, transparency may be an issue when users cannot generally search for the voting patterns of individual legislative members. This is especially concerning as having these public voting records of legislative members contributes to a more fair and accountable government.

Going forward, it will be in each legislature’s best interest to share information, continue with innovative practices, and communicate between them to achieve the highest possible data quality and

practices for legislature and civil society alike.

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<b>Format</b>	HTML	HTML	HTML	HTML	HTML	PDF	HTML	HTML, PDF	HTML, PDF

SK, NS, NT, NU: Not validated; has default crown copyright

# Geothink Pre-AAG Workshop

On 20 April 2015, Geothink hosted a workshop at the [Association of American Geographers](#) conference in Chicago. At the workshop, presentations were done by researchers followed by a discussion. Plans were furthered on publishing of books.

Two books are in the works. The first is an empirical book devoted to findings. The second is a compilation of essays on the future of the geospatial web and open data. All our partners are welcome to contribute to the writing.

Below I have briefly summarised the presentations at the workshop (given in chronological order).

## **Piotr Jankowski: Limits to Citizen Participation**

Cities have taken interest in and begun promoting various forms of public participation in their planning processes. The sourcing of geospatial data and tools supporting public participation in city planning has enjoyed much interest, bordering sometimes on hype in anticipation of more pervasive, sustained, broader, and qualitatively better involvement of citizens in city planning and decision making. Yet, these developments beg a question of whether the very idea of lay citizen involvement in traditionally technocratic processes has inherent limits constraining a priori hopes for pervasive, sustainable, and broad public participation? Can we expect technological developments in information delivery and processing, automated analytic methods, and networking including social networking play a role in the future of public participation in city planning?

## **Ashley Zhang, Rob Feick, Stephane Roche: Closing the loop? Opportunities and Barriers to Crowdsourced Local Government Geodata**

Despite frequent expressions enthusiasm for governments to capitalize on citizens' capacity to generate spatial data, it is not clear to what extent these data and the processes by which they are generated can be aligned with local governments' needs, capacities and responsibilities. While many municipalities have embarked on open data initiatives to broaden data access, there are relatively few examples where increased citizen use of government geodata is accompanied by procedures that allow citizens to enrich these data or easily alert municipal staff to possible errors. We explore the potential to 'close the loop' by surveying municipal staff for their perspectives on key opportunities and challenges in government adoption of citizen-generated data with a particular focus on spatial data quality issues.

## **Scott Bell: Opportunistic Natural Elements of Spatial Behaviour Using Mobile Technology**

We describe a pilot experiment using an established smartphone data collection system. Just prior to deployment, city transit employees were locked out, and the student study population - disproportionately dependent on public transit - were left to find other methods of transit to and from school. During the experiment, transit services resumed, providing an opportunistic experiment in changing spatial behaviour due to changing services. While our primary contribution is a

demonstration of the utility of mobile technology for natural experiments in spatial behaviour, we also report preliminary findings related to the behaviour patterns during and after the transit lock-out.

## **Renée Sieber: Open Data Standards: Information Gain or Loss?**

Google's partnership with Portland, Oregon in the creation of the GTFS standard for public transit is the archetypal example of civic standards. GTFS structured Portland's data and created a durable standard that was quickly adopted by many other cities. It appears to be a win-win but what is lost and gained in this standardization of city data? In this research, I am interested in the following questions: What are the challenges and opportunities to standardizing municipal data? It is conceivable that there is significant information loss and across-city homogenization of services as cities move to standards. How does a standard evolve and who is involved in that creation of that standard? Perhaps the participation of a large firm is required for this success but we know of the numerous trade-offs found in other instances of public-private partnerships. Can standards erect barriers to entry? Standards may privilege the technologically-enabled at the expense of other potential users of open data. Lastly, what new opportunities in terms of data types exist for standardization? Concepts like smart cities and the Internet of Things essentially depend on the interoperability afforded by standards. At what cost?

**Teresa Scassa, Alexandra Diebel:**  
**Open or Closed? Licensing Real-time GPS Data**

While many major municipalities have chosen to treat real-time GPS data (such as real-time bus locations) as “open data”, the particular nature of real-time GPS data requires a different mode of access for developers than static data files. This, in turn, has created a disconnect between the “openness” of the underlying data, and the sometimes restrictive terms of use which govern access to the real-time data through transit authority APIs. This paper explores the implications of these terms of use, and, the extent to which streaming data can ever be truly open data. While the focus is on the transit data context, the lessons from this area will have much broader implications, particularly for open data in the emerging ‘smart cities’ environment.

**Elizabeth Judge, Tenille Brown:**  
**Law's Understanding of the Virtual Environment: Tort Liability in the Geoweb**

This paper addresses the ways in which legal institutions and legal practice regulate the virtual environment, with a focus on the legal regulation of the geoweb. The paper posits that the geoweb is a constructed environment, which exists both through legal norms and apart from legal process. The paper looks at the regulation of this geoweb environment, reflecting on the ways in which there has been a reactionary approach by law to the challenges posed by the rapidly changing geoworld. We argue this illustrates a trajectory seen in other online environments (e.g. e-commerce) in which the law initially treats the virtual as a distinct space requiring different laws, then as analogous to the physical, and, for many online environments, as an environment to be even-

tually subsumed within the established legal framework.

Using legal geographies as an area of research to systematically tackle (understand, theorize, provide insights into) technology based geographies, this paper will explore how the practice of law bears upon understandings of the geoweb as it becomes an increasingly tangible environment.

**Pamela Robinson:**  
**Smart City Planning**

In North America, forward-looking and progressive land use planning is typically centrally “organised” by a sub-state/local government informed expert advice with democratic decision-making. When new infrastructure is laid, typically it is subject to public consultation and legislative oversight such as an environmental assessment. In the new smart city, private firms are laying thousands of kilometres of fibre optics cable, installing new proprietary signal and sensor technology, and selling beyond-big data crunching software; all with real future land-use outcomes yet outside the purview of democratic planning. In light of this digital urban prospecting, this paper asks: Who is planning the smart city?

**Alexander Aylett:**  
**Seriously Smart and Seriously Green: effectively enabling deeply sustainable urbanism through new media technologies**

Our engagement with sustainability has been limited to a technocratic focus on energy systems, building efficiency, and transportation.

This definition of “urban sustainability” overlooks key facets of a city’s ecological footprint (such as food systems, resource consumption, production related green-

house gas emissions, air quality, and the urban heat island effect). It also ignores the ability of non-state actors to contribute meaningfully to the design and implementation of urban policies and programs. This position paper looks at what a more complete approach to smart+green cities would look like, and lays out a series of key challenges that must be met if we are going to build cities that are seriously smart and seriously green.

**Jon Corbett:**  
**How Do We Directly Link Project-Associated Transformations to Digital Participatory Tools?**

Disturbingly low employment rates of individuals with intellectual disabilities (ID) are evident throughout Canada. Through a community-based participatory research project aimed at helping transform employment practices for individuals with ID, we have designed and implemented a web-based interactive Employment Mapping Tool (EMT). Information on the map is crowdsourced by a network of stakeholders (including self-advocates with ID, service providers and government) who already collaborate to address employment practices for individuals with ID. This is clearly a social justice issue as we aim to use the EMT to directly address issues of exclusion in the workplace. However, we need greater reflection on what we mean by social justice and exclusion, as well as to understand how any project-associated transformations can be linked directly (or causatively) to digital participatory tools, maps and processes.

**Renee Sieber, Muki Haklay:**  
**The Past and Future of Urban Citizen Science**

Urban citizen science should be understood with the wider context of citizen science, especially the type that intersects with volunteered geographic information (VGI) and urban sensing. Just as instrumental sensing is not free from understanding the process of data creation/contribution, its ontology and epistemology, and its transformation into useful science, citizen science is even more complex because of the agency of participants, the science with which participants engage, and exogenous factors which make citizen science compelling for scientists. We therefore need to understand how useful information came into being and what it means. This will force us to re-examine some of the basic concept of science and its power, as well as better understanding of urban space/place. By understanding the origins and meaning of this information we can then understand the future geography of urban citizen science.

**Pamela Robinson, Lisa Ward Mather:**  
**Match.com: Open Data meet the Public Librarian**

In these early years of the open data movement, advocates are convincing public officials to liberate data and cajoling governments to take steps to provide data in useful formats. While governments release open data catalogues questions arise about how to keep these data current and whose responsibility it is to steward the data? And once these data are released will people be able to find, understand, and use it?

Meanwhile, the local public library is reimagining its future beyond books, bricks, and mortar to be a site for makers and hackers with their bits and bytes. Libraries today offer physical places for

people to access learning. Librarians are expert curators of information, facilitators of research and knowledge building. These characteristics make public libraries important yet ignored potential partners in the open data movement and this paper explores their future.

**Cheryl Power, Elizabeth Judge:**  
**Legal requirements and Best Practices for Accessing and Licensing Data & Research Results in Spatial Epidemiological Research**

An important aspect of spatial-epidemiological research methods are the legal requirements and best practices for accessing and licensing the data and research results. The combination of public health data (including genomic data) using clinical data systems and geospatial capacity can further investigations into disease. However, researchers may face legal obstacles in accessing this data for study and various licensing schemes for downstream use of the resulting research. Given the complex relationships between public health and spatial epidemiological science, it is necessary to investigate novel, potentially interoperable licensing schemas to best integrate these disparate pieces and to maximize the public health benefits. Our paper will discuss how researchers can identify discrete aspects of their research as data, knowledge, and information, respectively, and the legal consequences of that characterization: what data sources are protected as intellectual property, what aspects of the research are protected, whether the receipt of government funding affects this process, and what licensing mechanisms are available for the data sources and research results. The paper seeks to inform the development and application of practical measures for data-sharing and IP licensing, including within publicly funded institutions.

**Harrison Smith:**  
**Cartographies of Sharing: Situating the Geoweb in the Sharing Economy in Canada**

The purpose of this research is to critically assess the discourse and emergent regulatory issues surrounding the sharing economy and to describe its emergence in Canada. The sharing economy is particularly relevant to the geoweb as it capitalizes on web 2.0 mapping interfaces, including its crowdsourcing of the processes of production, distribution, and consumption. Geospatial media, coupled with the larger social practices of production that typically accompany the geoweb, are in many respects necessary for the sharing economy's development, and as such can be a key application of the geoweb, and encompass a variety of markets. To date, scant academic or policy research has assessed the state of the sharing economy in Canada, but Canadian cities have already begun to experience regulatory pressures and challenges from emerging sharing economy platforms such as the ride sharing service Uber and the hospitality service Airbnb. The increase in services and the wildly hyped financialization of several sharing economy companies by Silicon Valley companies and venture capital firms call for a timely interrogation of the particular regulatory challenges, and political and economic processes of the sharing economy. This will in turn allows for a more thorough understanding of how the geoweb is changing existing power structures within municipalities, as well as creating new kinds of economic markets and opportunities.

## Feedback from AAG attendees

For more feedback from AAG, visit Drew Bush's post on the Geothink website. Some attendees have also written about the conference on their own websites.

Thank you to all our partners and collaborators that were able to attend. As always, your contributions and involvement are highly valued. If you find any of the above summaries interesting and wish to learn more or get involved, please do not hesitate to contact the relevant researcher directly.

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*"The Public Participation GIS and Citizen Science sessions that I've attended, and the OpenStreetMap Studies sessions were all very interesting and stimulating, and helped to progress the thinking in these areas"*

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*"The Geothink community was in full force and we gave some excellent presentations that definitely put us on the map...I have also been given the opportunity to further develop my paper into a journal article for peer-review by the invitation of a member of the audience, and so I will continue to develop this research for Geothink and the larger academic community "*

*Harrison Smith*

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*"[The poster] was quite an important piece for me, as it juxtaposed two of our very recent 'results' with those of a former student, all meant to better frame future VGI and Geoweb research"*

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*Having recently finished the analysis of my data, this conference offered the first opportunity to present my research findings among experts and scholars—making this opportunity unique*

*Andrea Minano*

# Student Spotlight: Amy Conroy



Amy Conroy works as a Research Assistant for Professor Teresa Scassa at the University of Ottawa. She is also working towards completion of her PhD in Law at the University of Ottawa. As a graduate student, she has been involved in research in several areas of the law, including privacy, intellectual property, and healthcare law. She joined the Geothink team in May 2014 and is excited to be part of an interdisciplinary project.

Amy is especially eager to have the opportunity to learn more about the intersection of law and technology and about the benefits and challenges of the era of big data in which the government plays a crucial role.

Amy's work with Professor Scassa has so far involved research and writing on the concept of transparency in the context of the growing open government movement. More specifically, the work examines the conflict between the values of transparency and personal privacy and how these concepts play into the law as it relates to the developing open government movement. A second ongoing project aims to set out best practices for public servants involved in the decision-making process relating to the release of government-held information. This work also aims to address the need for balance between personal privacy and openness with respect to government-held data.

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# Student Spotlight: Laura Garcia



Laura is a lawyer from Bogota, Colombia. In 2013, she graduated from law from Los Andes University in Bogota. Before coming to Canada, she did an internship at the legal department of the National Copyright Directorate of Colombia; she worked as a pro-bono lawyer at a legal clinic and as a legal advisor at a company of architectural and engineering designs. In 2014, she finished a LLM with concentration in Law and Technology at the University of Ottawa.

Currently, she is a first year PhD student at the same university.

She is interested in the interaction between law, society and technology. Specifically, in locational and geospatial privacy in the context of Geoweb Tools and their interaction with the data aggregated by citizens, and by Open Government initiatives. Laura is interested in how the geographic data mapped with Geoweb tools, should be managed by public and private sector actors in order to preserve the locational and geospatial privacy of citizens.

Laura works as a research assistant with Professor Judge at the University of Ottawa. She is working on an annotated bibliography on scholarship from law and other disciplines on privacy in geospatial data, privacy in open data generally, privacy in public places, privacy in locational data, and privacy in locational applications (GPS, mobile applications).

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# Geothink Canada Newsletter

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## Upcoming Events and a Call for Your Participation

For us to have the broadest impact with Geothink, we would greatly appreciate your input. This can mean providing monthly contributions to our social media outlets, writing blog posts, research updates, and being involved in future events.

## Notices

Please email Jing ([jing.teo@mcgill.ca](mailto:jing.teo@mcgill.ca)) to notify us of any changes to contact details.

## Events

### Geothink Annual General Meeting

Location: University of Waterloo  
Date: 18-19 June

### Geothink Summer Institute for students

Location: University of Waterloo  
Date: 15-17 June  
Website: [summerinstitute.geothink.ca](http://summerinstitute.geothink.ca)

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