



8:30am – 10:00am

# Short Talk Series

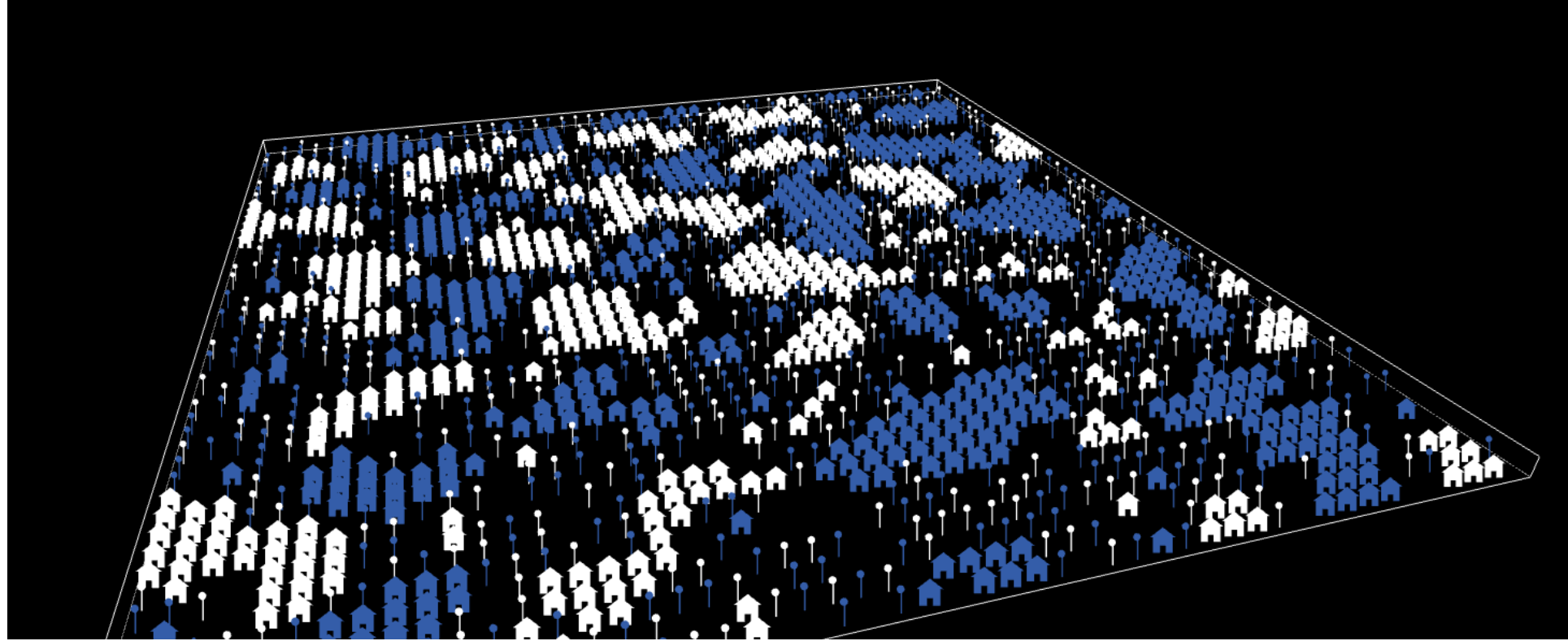


8:30am – 10:00am

# Conspiring together for good: Institutional science and religion

Milton Friesen

Program Director, Cardus Social Cities



# CONSPIRING TOGETHER FOR GOOD

*INSTITUTIONAL SCIENCE AND RELIGION*

# Who Am I?

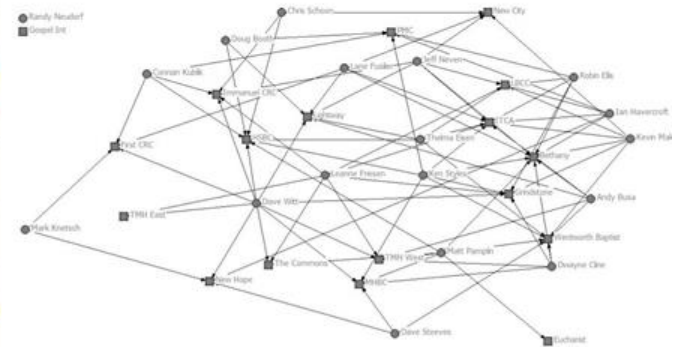


UNIVERSITY OF  
**WATERLOO**

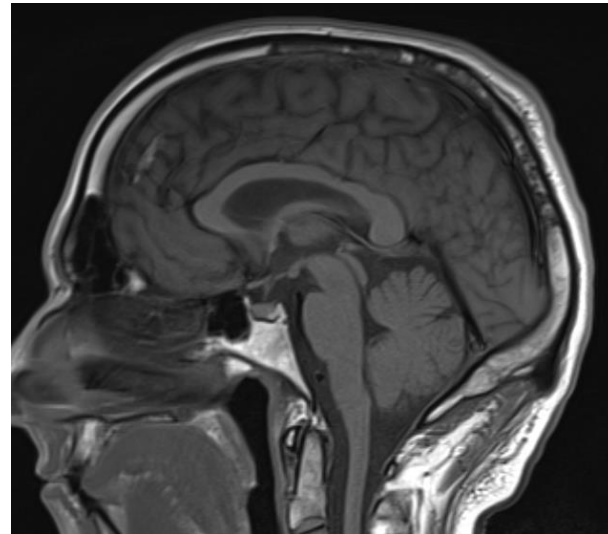
CARDUS  
SOCIAL CITIES

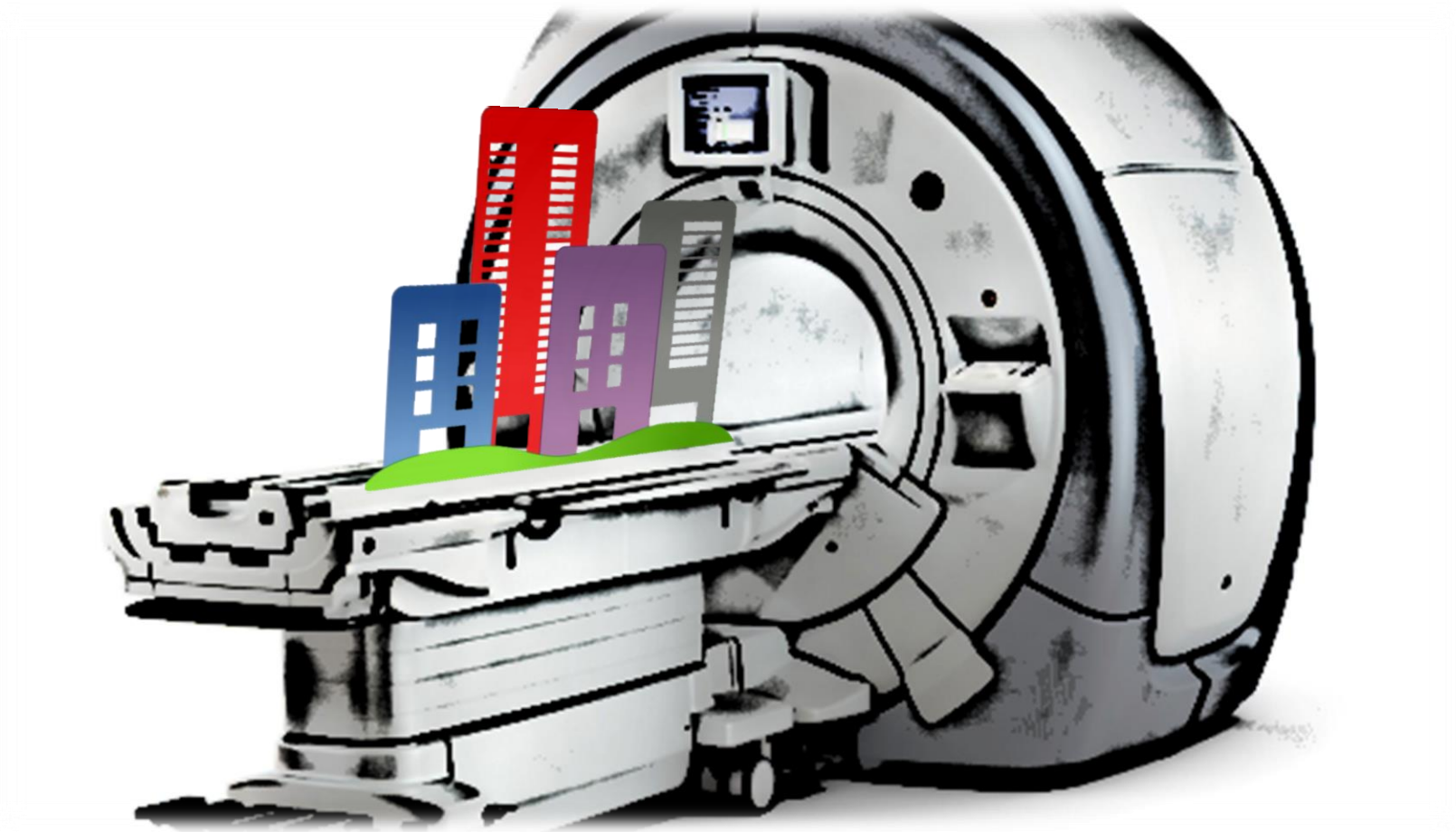
## **SOCIAL MRI FOR CITIES**

*Correlations between spatial movement and social capital*



## SPATIAL + SOCIAL DATA





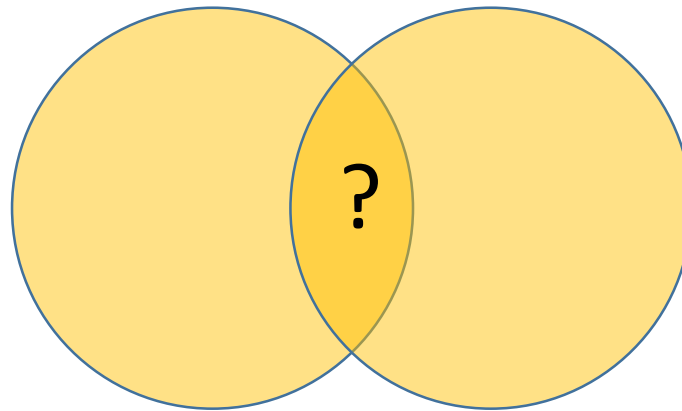


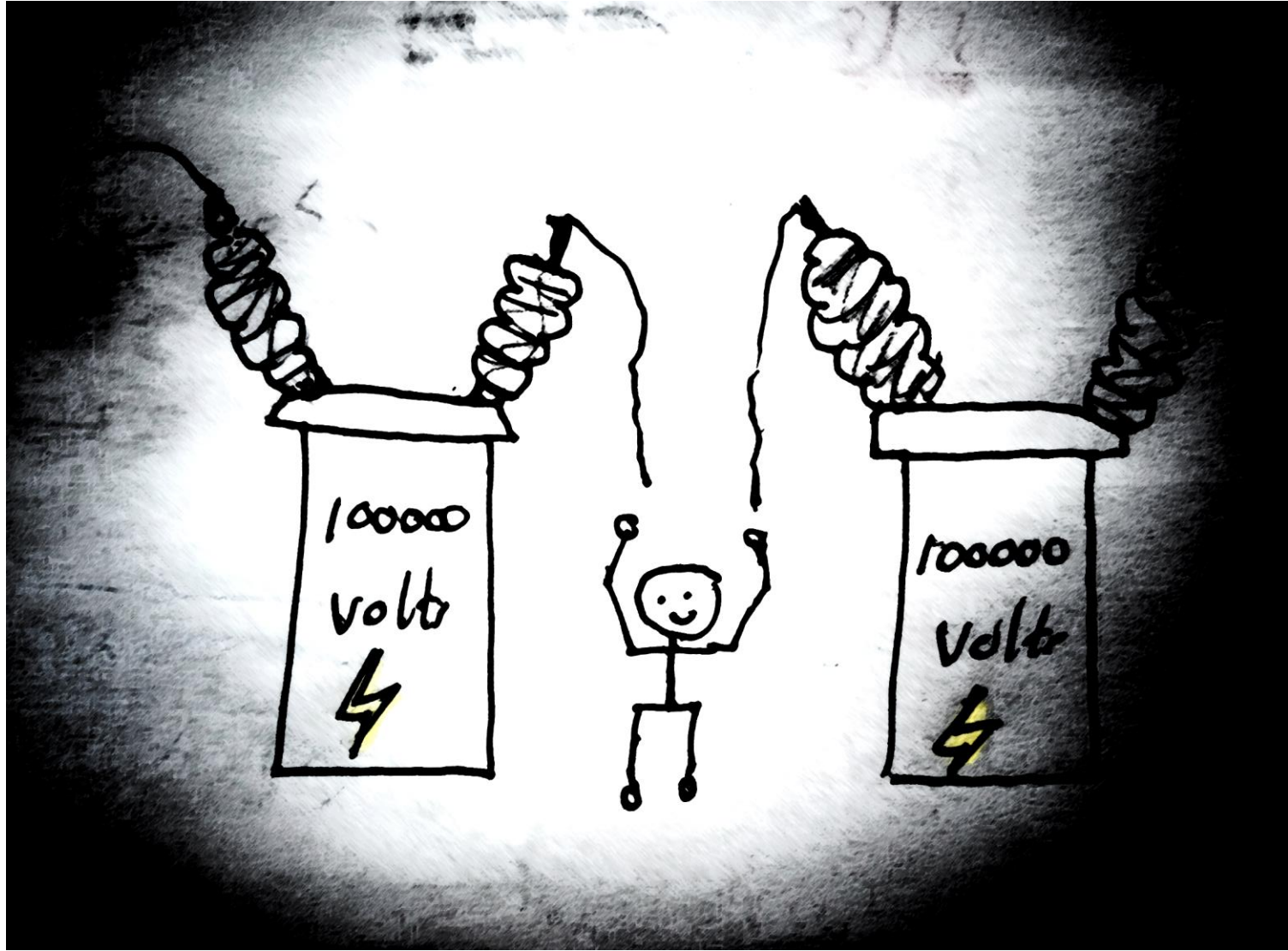


# What Am I Proposing?

**The institutions of science and the institutional forms of religion  
each have common good responsibilities.**

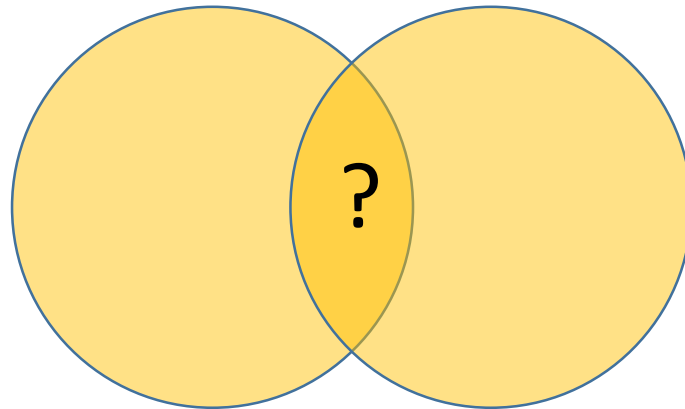
**Those common good institutional responsibilities overlap.**





# What I'm Not Proposing

**Not a debate on content, authority, nature of belief, proof, etc.**



# What Schelling Saw

**1970s: Micro-motives lead to  
Macro-structures**

**You don't have to not like someone, you just need to  
have a slight preference for someone who is like you.**

# Show Me



The screenshot shows a web browser window with the title "NetLogo Home Page" and the URL "https://ccl.northwestern.edu/netlogo/". The page features a green header with the "NetLogo" logo and a decorative graphic of red arrows. A left sidebar contains navigation links for Home, Download, Help, Resources, Extensions, FAQ, References, Contact Us, and Donate. Below these are sections for Models (Library, Community, Modeling Commons) and User Manuals (Web, Printable, Chinese, Czech, Japanese, Spanish). A "Donate" button is at the bottom of the sidebar. The main content area includes a description of NetLogo as a multi-agent programmable modeling environment, a list of links for more information and videos, and buttons for "Download NetLogo" and "Go to NetLogo Web". A grid of 18 small model thumbnails is displayed below, followed by a "NetLogo news (via Twitter)" section with a link to "@NetLogo".

**NetLogo**

Home  
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Models:  
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User Manuals:  
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NetLogo is a multi-agent programmable modeling environment. It is used by many tens of thousands of students, teachers and researchers worldwide. It also powers [HubNet](#) participatory simulations. It is authored by [Uri Wilensky](#) and developed at the [CCL](#). You can download it free of charge. You can also try it online through [NetLogo Web](#).

What can you do with NetLogo? Read more [here](#). Click [here](#) to watch videos.

Join mailing lists [here](#).

**Download NetLogo** **Go to NetLogo Web**

NetLogo comes with a large library of sample models. Click on some examples below.

NetLogo news (via [Twitter](#))  
[Tweets by @NetLogo](#)

File Edit Tools Zoom Tabs Help

Interface Info Code

Edit Delete Add abc Button slower ticks: view updates continuous Settings...

### Institutional Segregation Using a Schelling Preference Structure

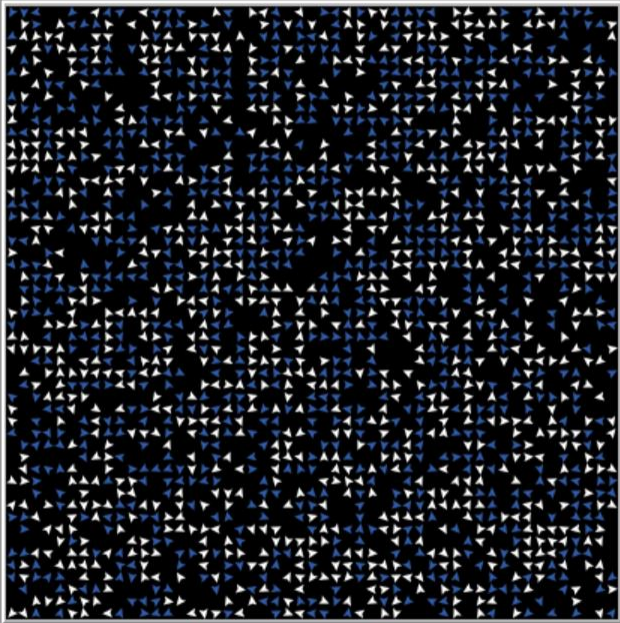
Proximity can be thought of as geographic, relational, or conceptual.

Higher % preference = more steps to static and larger homogenous areas.  
Lower % preference = fewer steps to reach static and fragmented landscape.

Blue is one type and white is another.  
Individuals are unhappy if alone but once they find enough others like them, they transform into an "institution" and are static and happy.

Some begin happy and thus are "institutions" from the start -hence the little houses formed on set-up.

setup go once go visualization Institutions



Number-unhappy

Percent Similar

The "x" means the condition of being near same type of institution has not been met.

num-unhappy	N/A
% unhappy	0
# agents	1811
% similar	0

%-similar-wanted 50% Preference to be near same type of agents

Social or physical density of agents

Command Center observer>

- Higher % preference = more steps to static and larger homogenous areas.
- Lower % preference = fewer steps to reach static and fragmented landscape.
- Blue is one type and white is another.
- Individuals are unhappy if alone but once they find enough others like them, they transform into an "institution" (house) and are static and happy.



```
set color one-of [blue white] ;;
```

# 2

normal speed  
ticks: 16  
view updates  
continuous  
Settings...

### Institutional Segregation Using a Schelling Preference Structure

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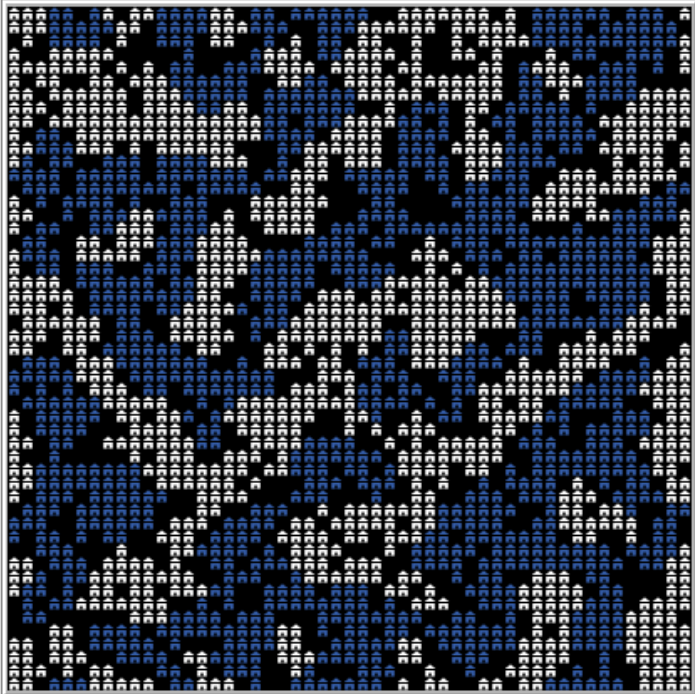
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setup go once go

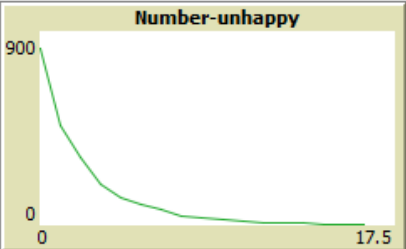
visualization  
Institutions

%-similar-wanted 50 % Preference to be near same type of agents  
density 75 % Social or physical density of agents



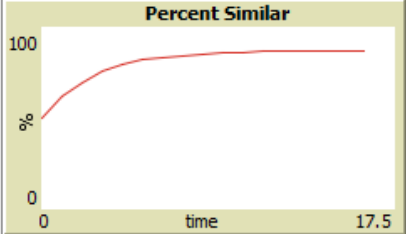
The "x" means the condition of being near same type of institution has not been met.

#### Number-unhappy



num-unhappy	0
% unhappy	0

#### Percent Similar



# agents	1950
% similar	87.4



## Simple rule leads to a fully segregated landscape

- Not dislike, just preference for
- Significant over-simplification
- Illustration of how mutual disregard can occur

What if we add more types?

```
set color one-of [blue white red ] ;;
```

# 3

normal speed  view updates  Settings...  
Add  ticks: 41

### Institutional Segregation Using a Schelling Preference Structure

Proximity can be thought of as geographic, relational, or conceptual.

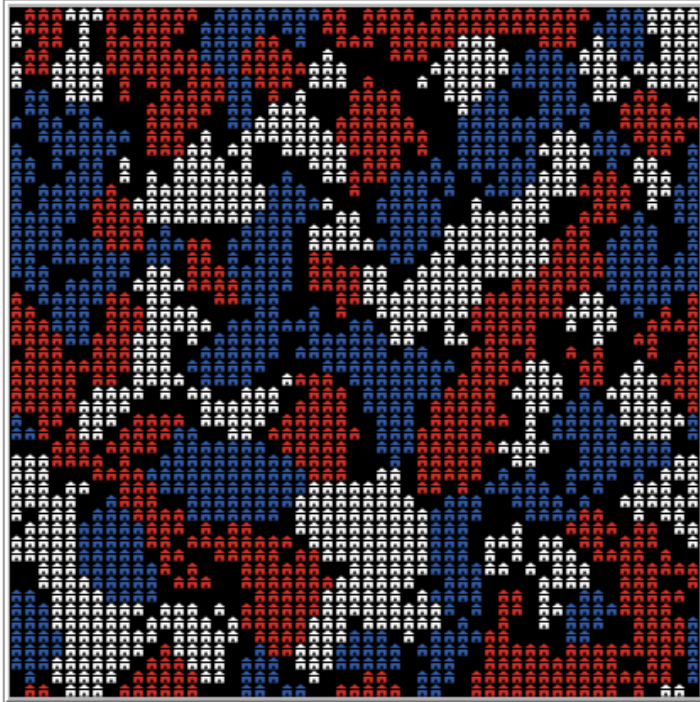
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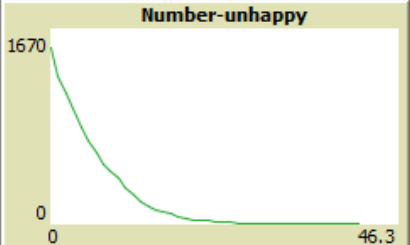
visualization

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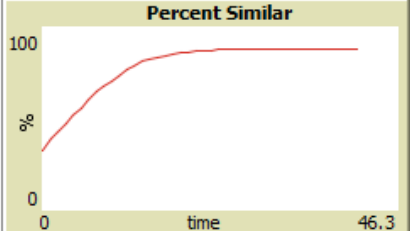
The "x" means the condition of being near same type of institution has not been met.

#### Number-unhappy



num-unhappy	0
% unhappy	0

#### Percent Similar



# agents	1981
% similar	88.2

```
set color one-of [blue white red green ] ;;
```

# 4

normal speed  
ticks: 61

view updates  
continuous

### Institutional Segregation Using a Schelling Preference Structure

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setup go once go

visualization Institutions

%-similar-wanted 50 % Preference to be near same type of agents

density 75 % Social or physical density of agents

The "x" means the condition of being near same type of institution has not been met.

**Number-unhappy**

1910

0

73.8

num-unhappy 0

% unhappy 0

**Percent Similar**

100

0

73.8

%

time

# agents 1971

% similar 90.3

```
set color one-of [blue white red green yellow ] ;;
```

# 5

+ Add  | normal speed |  view updates | Settings... | continuous

**ticks: 136**

### Institutional Segregation Using a Schelling Preference Structure

Proximity can be thought of as geographic, relational, or conceptual.

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visualization  
Institutions

%-similar-wanted 50 %  
density 75 %

Preference to be near same type of agents

Social or physical density of agents

The "x" means the condition of being near same type of institution has not been met.

num-unhappy 0  
% unhappy 0

# agents 1944  
% similar 92.3

```
set color one-of [blue white red green yellow orange] ;;
```

# 6

normal speed  
ticks: 301

view updates  
continuous

### Institutional Segregation Using a Schelling Preference Structure

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Higher % preference = more steps to static and larger homogenous areas.  
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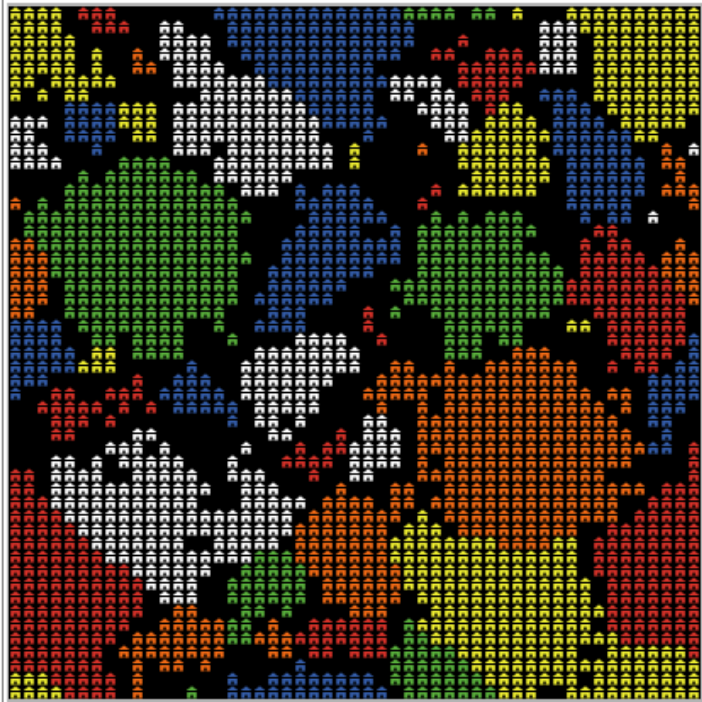
setup go once go

visualization  
Institutions

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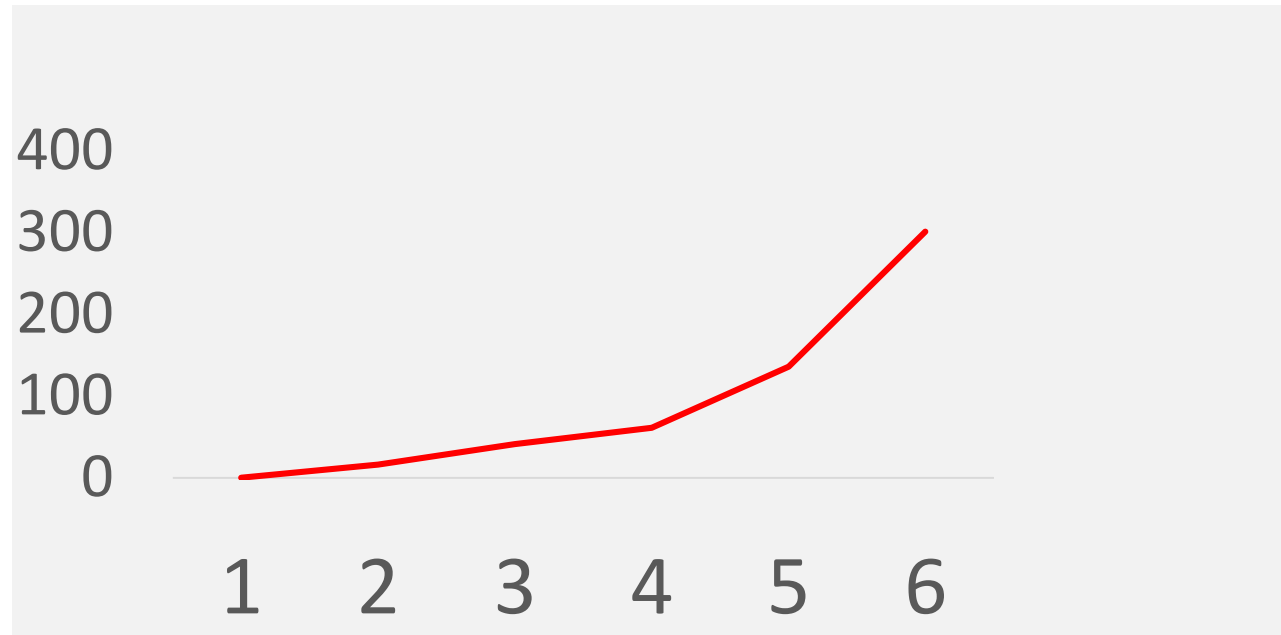
Number-unhappy

Percent Similar

num-unhappy 0  
% unhappy 0

# agents 1932  
% similar 94.5

Time Steps to Segregation



Number of Different Agent Types

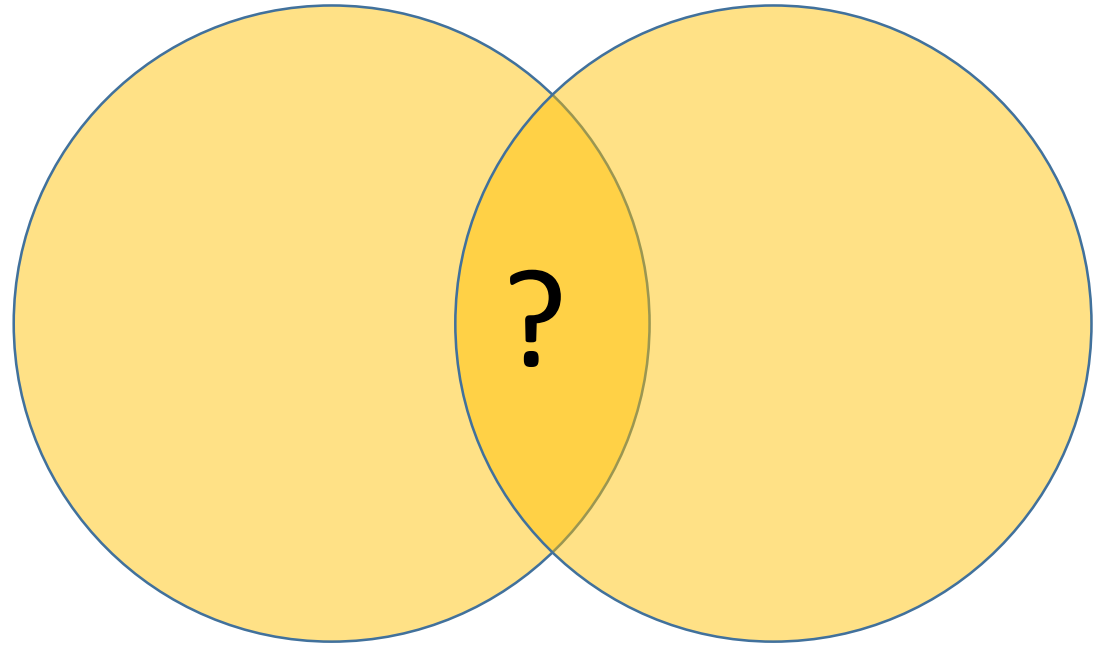
# Possibilities

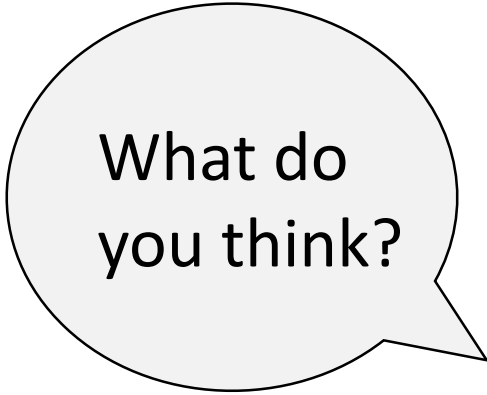
- 1. Perhaps institutional diversity is a good thing**
- 2. Feeding what we like may end up dividing the landscape**
- 3. We don't need to assume antagonism to explain difference**
- 4. We don't need to assume dislike to explain boundaries**
- 5. We could explore structures that naturally and steadily change the preference mix**



# Consider

- 1. Institutional science and religion both have PR challenges**
- 2. Both lament illiteracy within respective domains**
- 3. Both are deep and persistent aspects of human experience**
- 4. Both have common good obligations in Canadian society**
- 5. We can't solve most pressing challenges without SIGNIFICANT cooperation – wicked problems, super wicked problems – across a very wide range of cultural and civil society institutions**





What do  
you think?

# Conspiring Together for Good

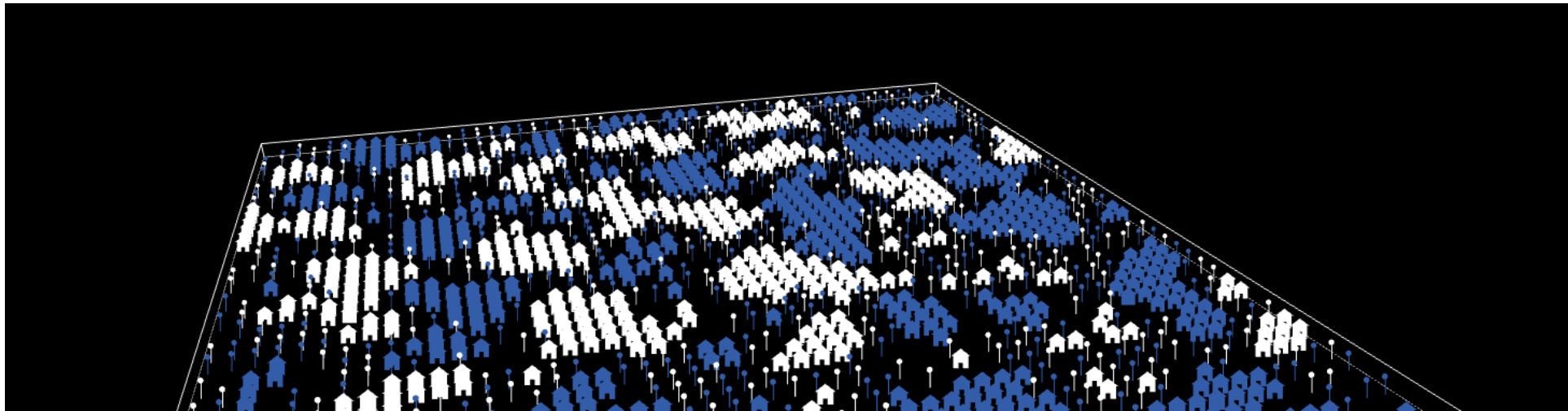
*Institutional Science and Religion*

Milton Friesen

mfriesen@cardus.ca  
milton.friesen@uwaterloo.ca  
289-880-2200

Discussion Paper

Model Available



# Science Communication in Canada

Who, What, Where, Why, and How

Tim Lougheed  
stormchild@sympatico.ca

Alexandre Schiele, PhD  
schiele.alexandre@courrier.uqam.ca

# Mapping the science writers & communicators in Canada

57

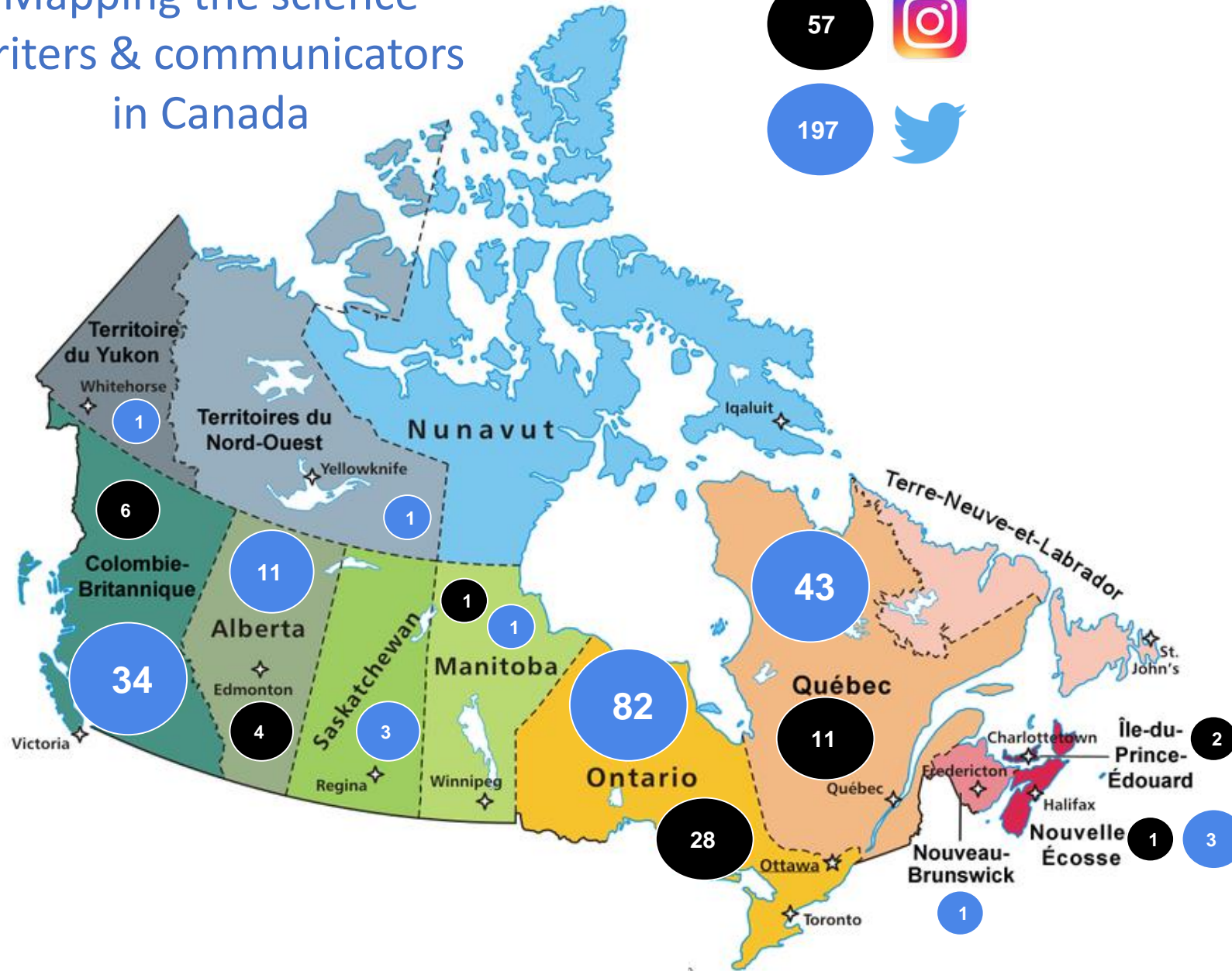


197

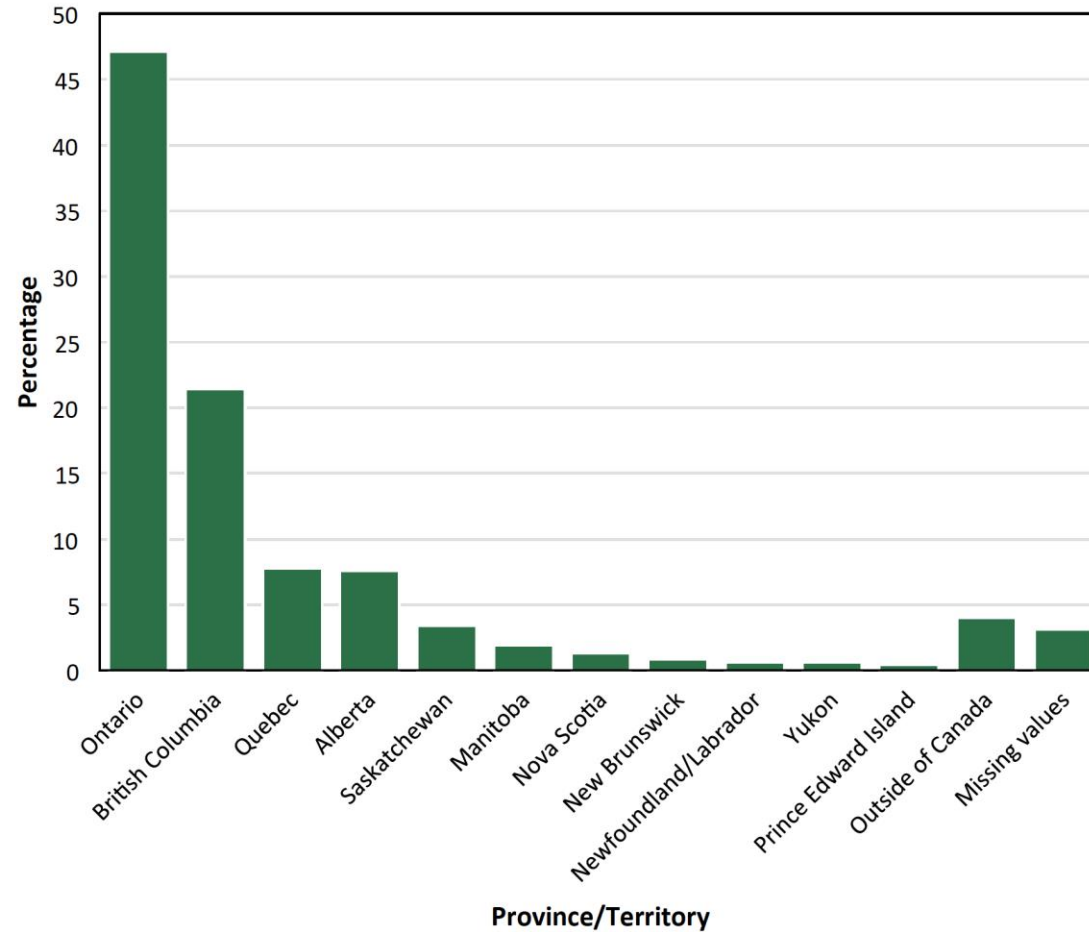


4

15

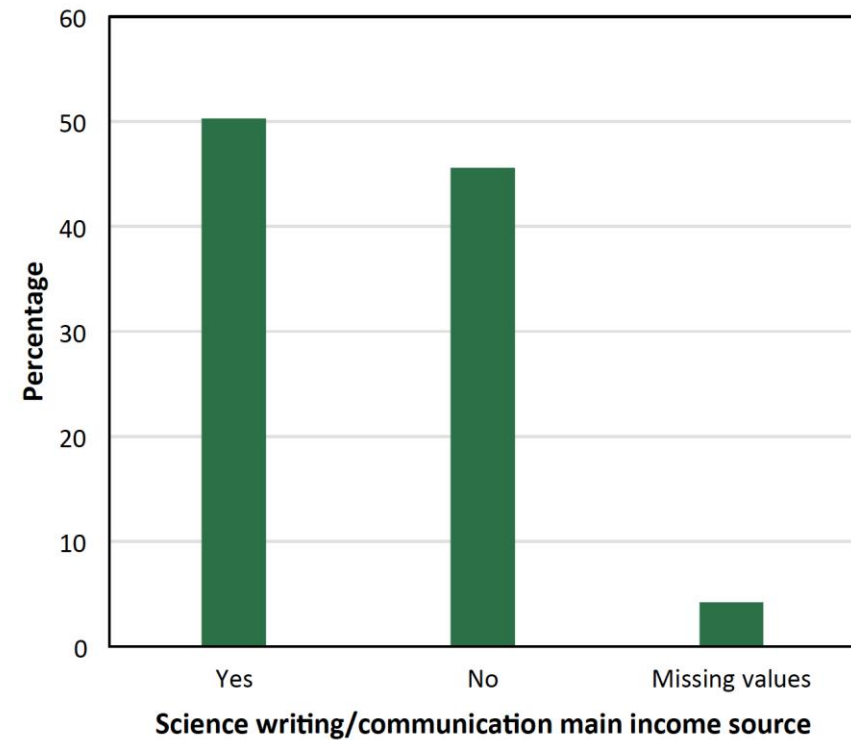
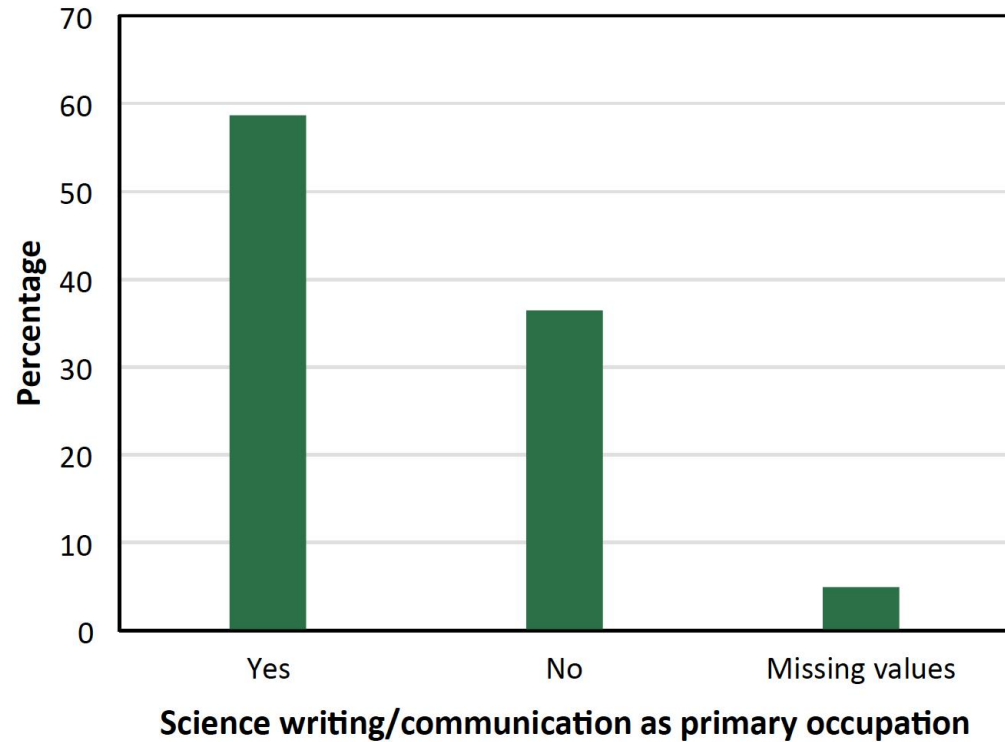


# Where



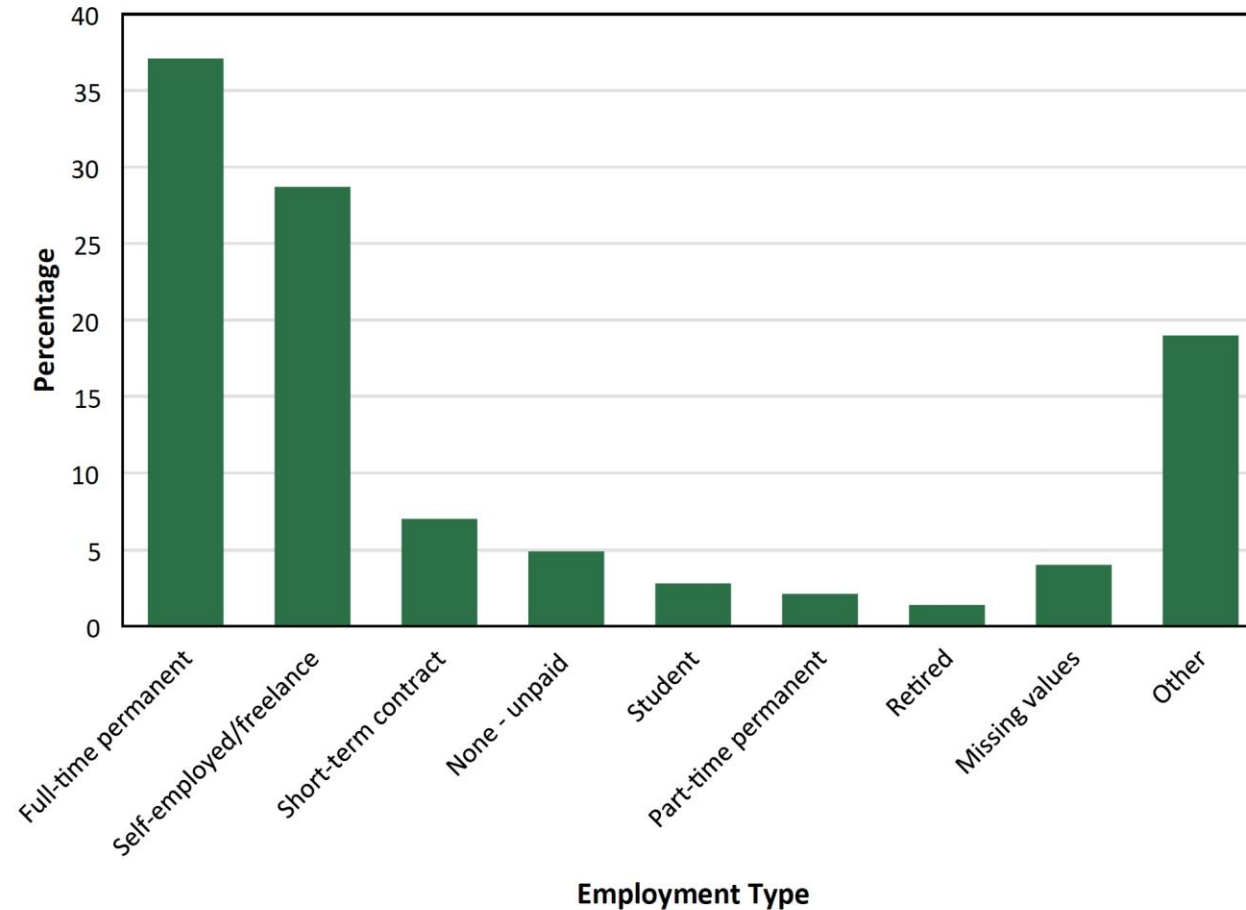
More than 75% of science communicators live in four provinces

# Who: occupation & income



About half of science communicators regard it as their real job

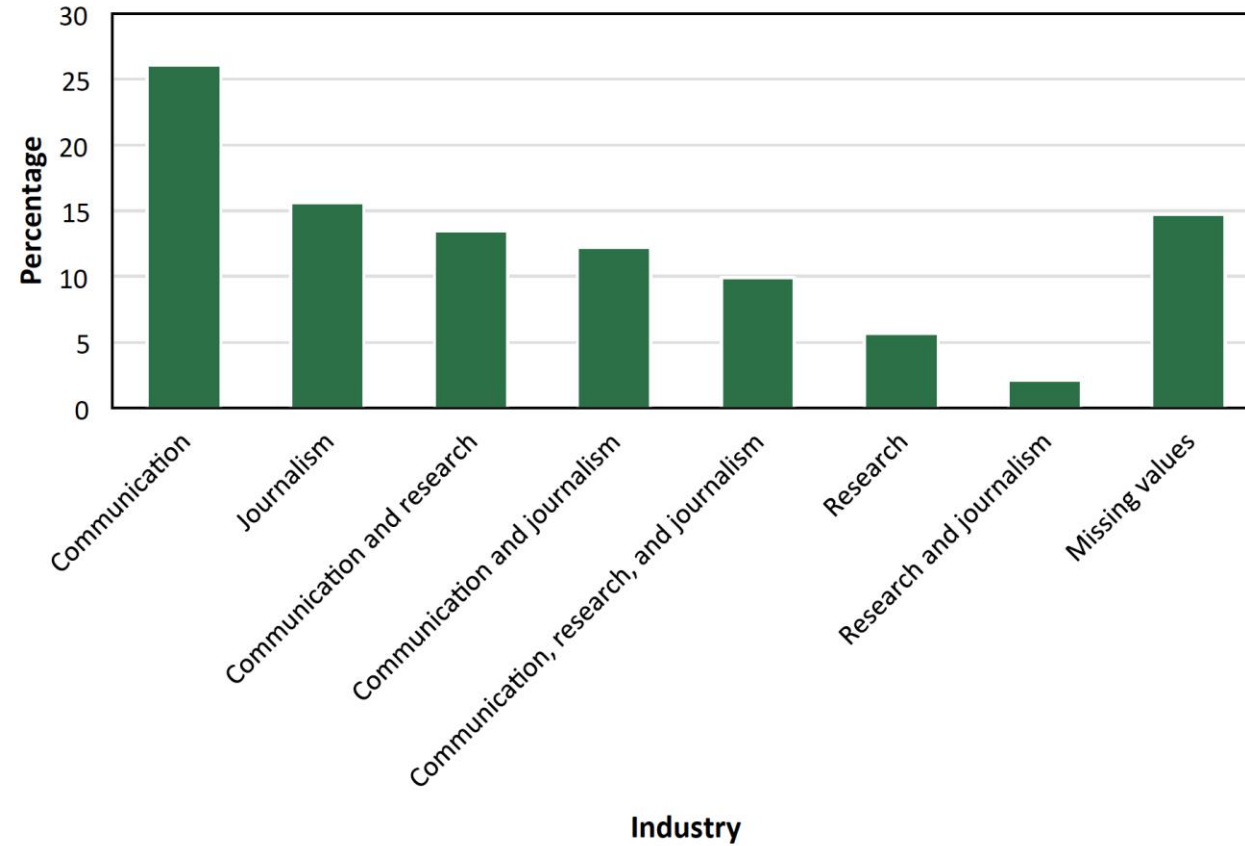
# Who: employment status



About a third of science communicators have full-time permanent jobs

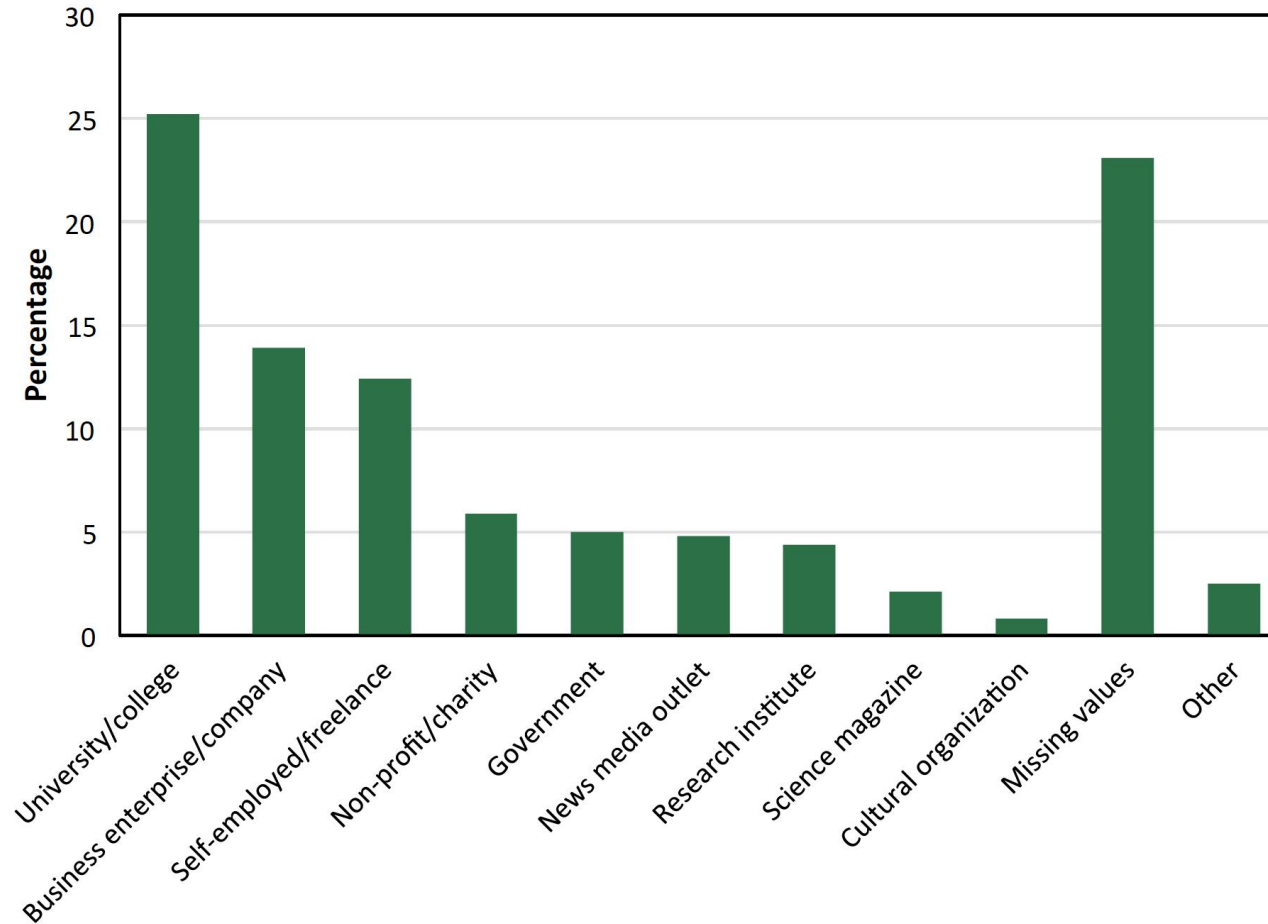


# What: self-identified sector



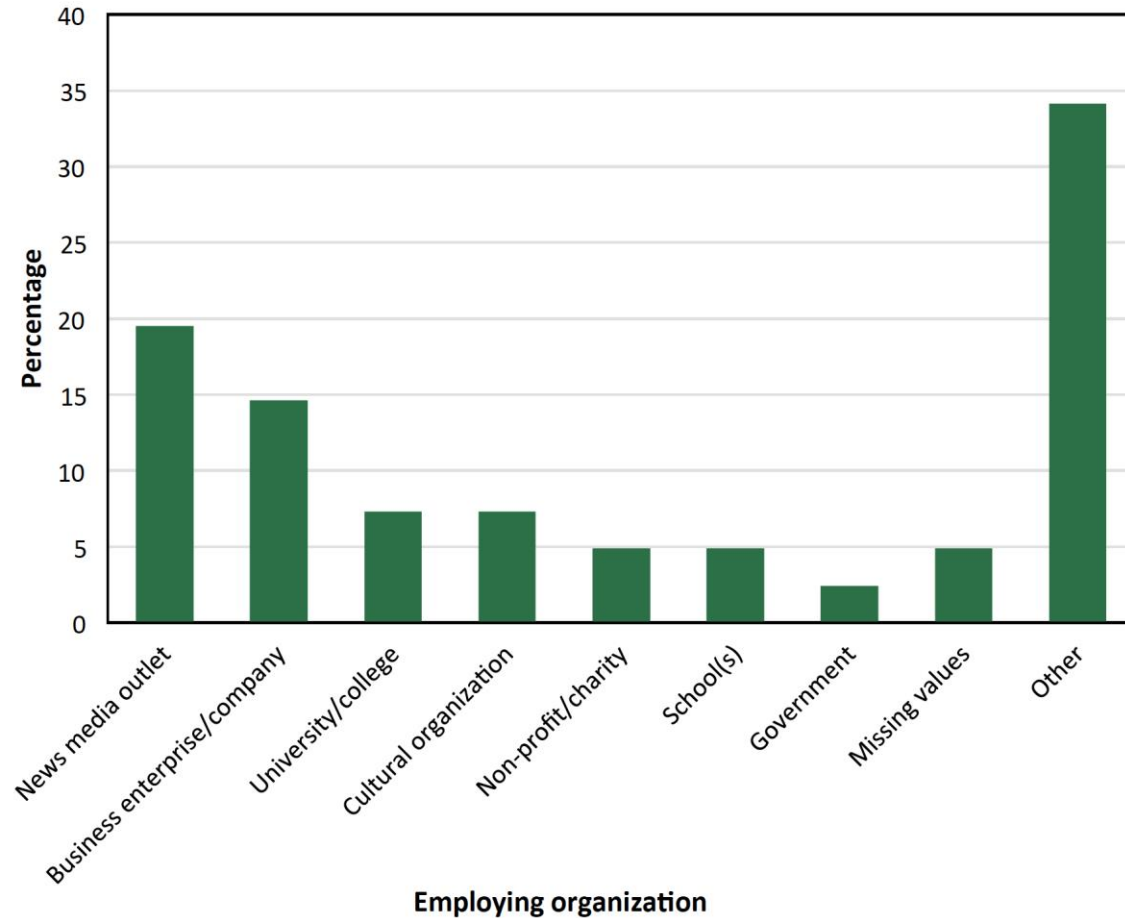
“Journalism” makes up less than a third of science communication

# What: employers



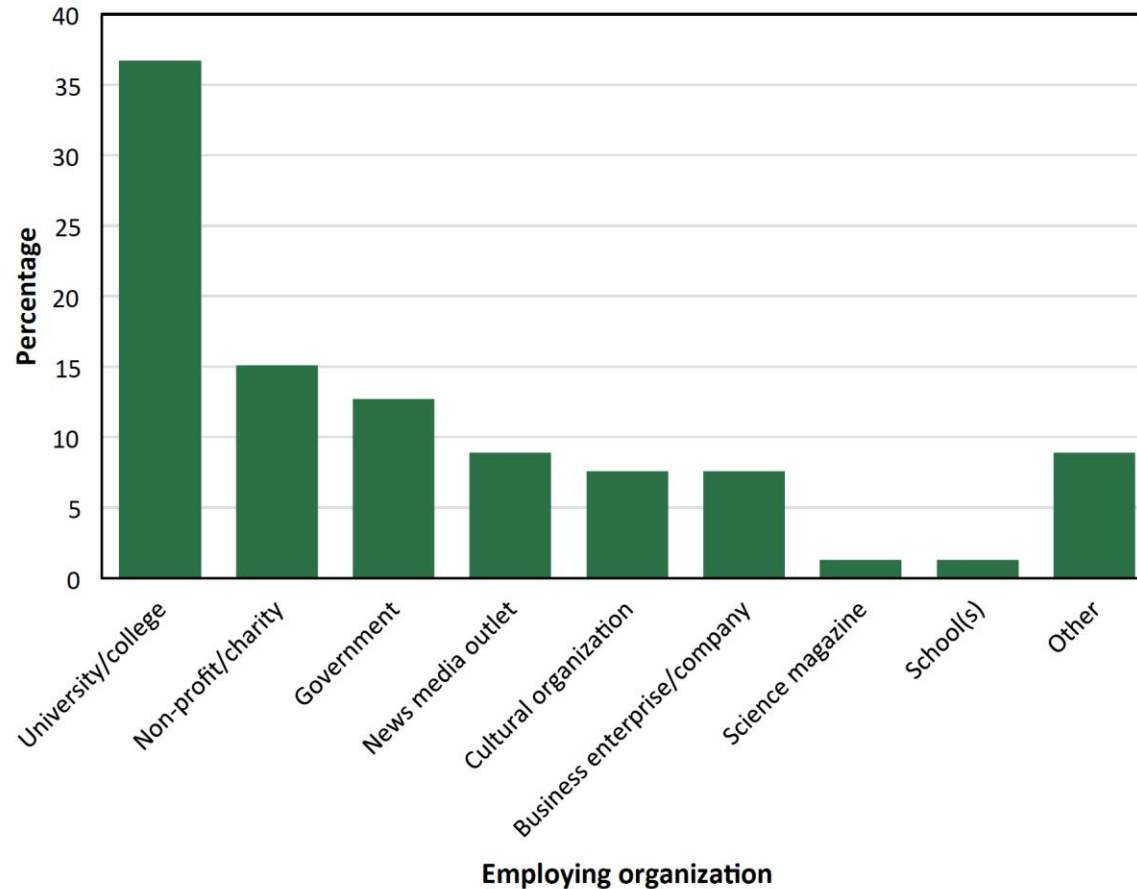
“Media” employ fewer than 10% of all science communicators

# What: freelance employers



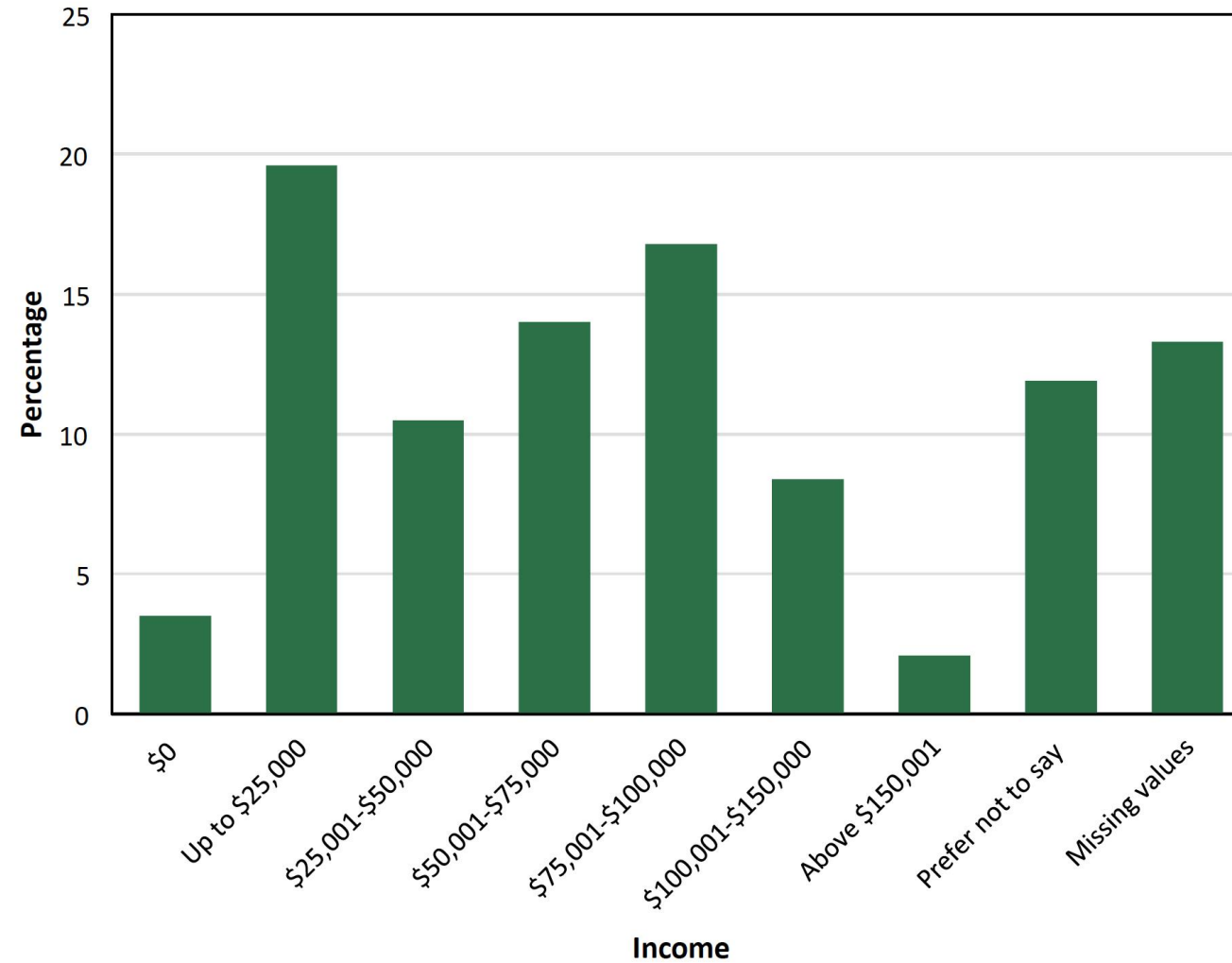
”Media” employ fewer than 20% of freelance science communicators

# What: permanent/contract employers

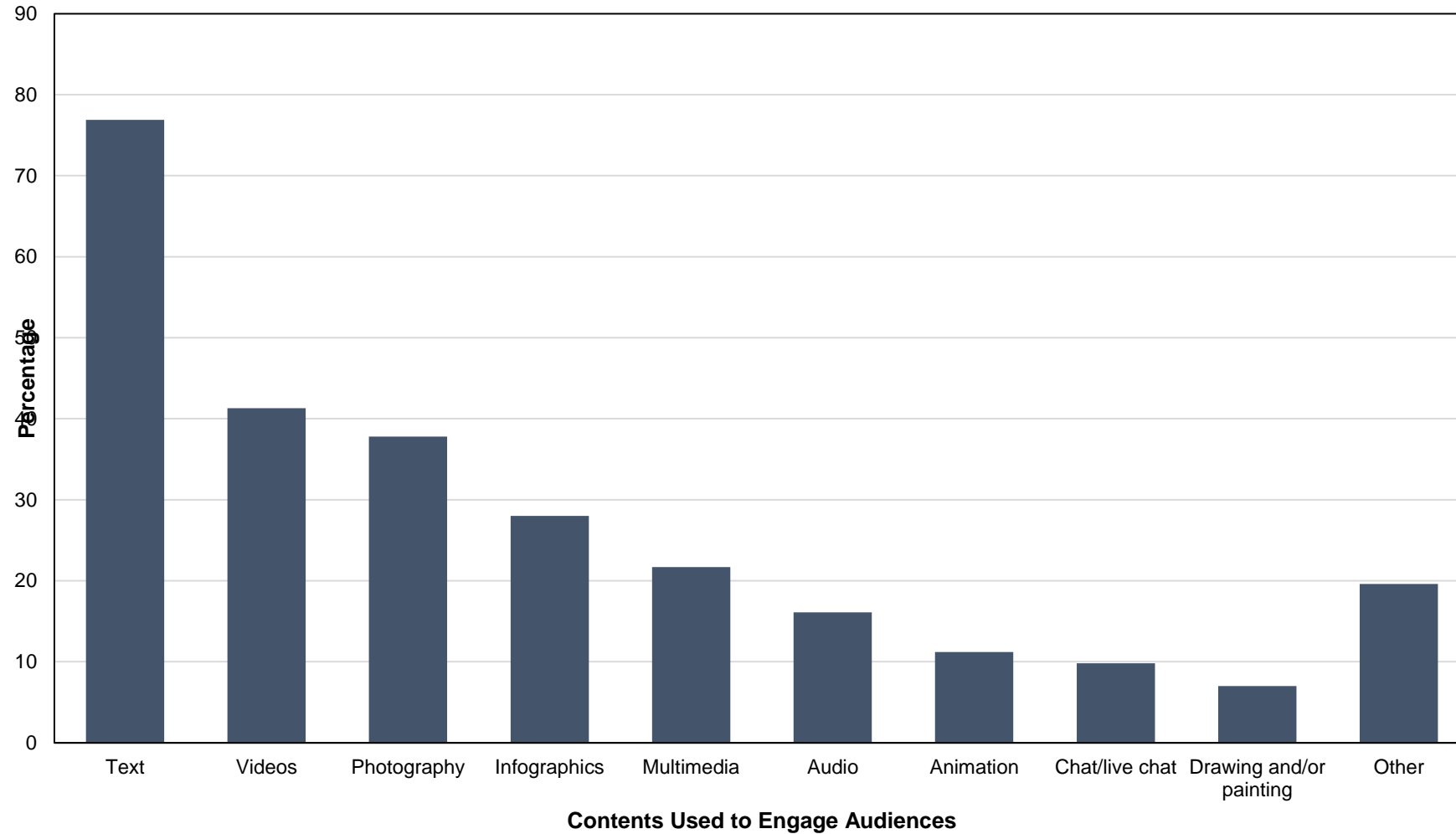


“Media” employ fewer than 10% of science communicators permanently or on contract

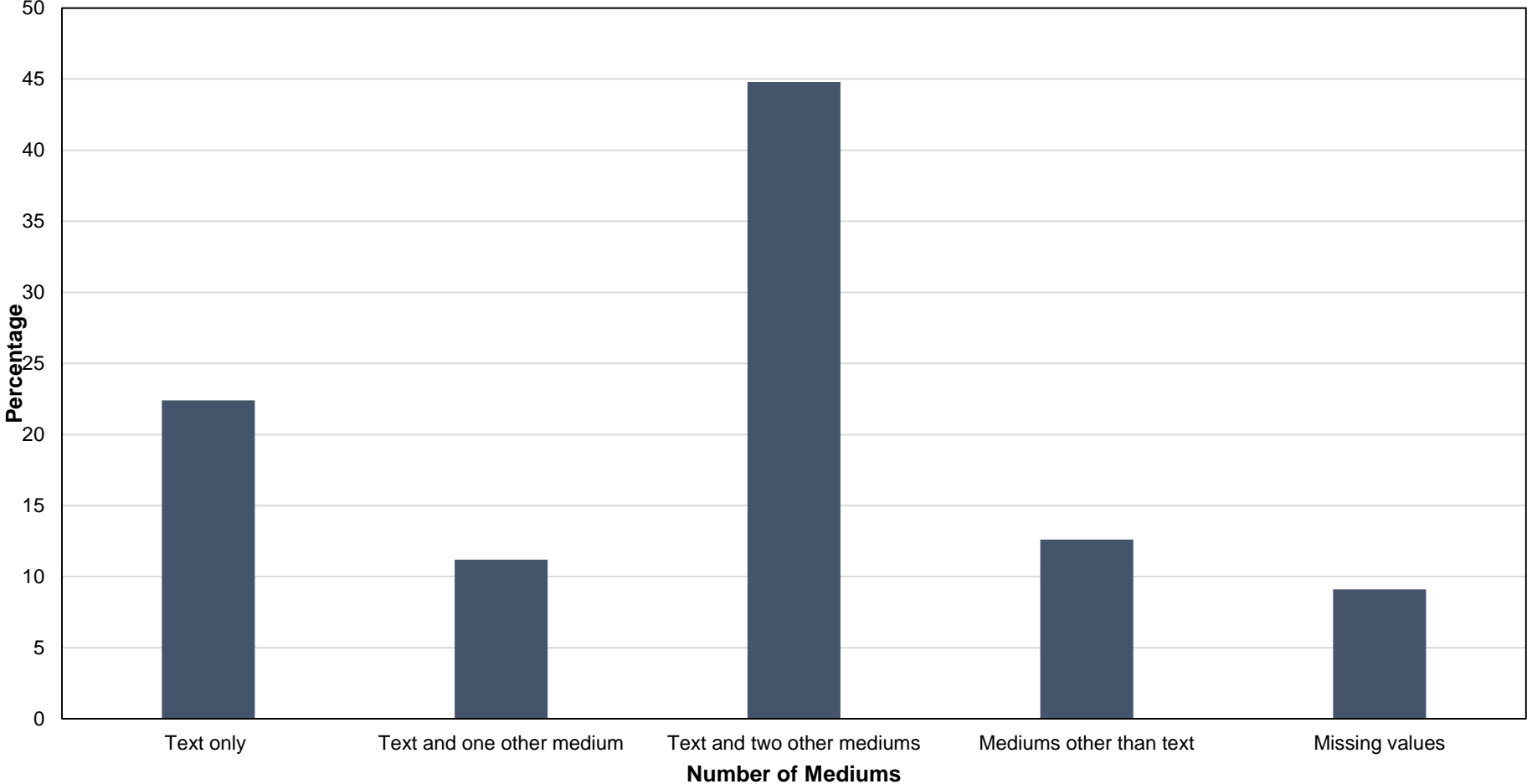
# Why: follow the money



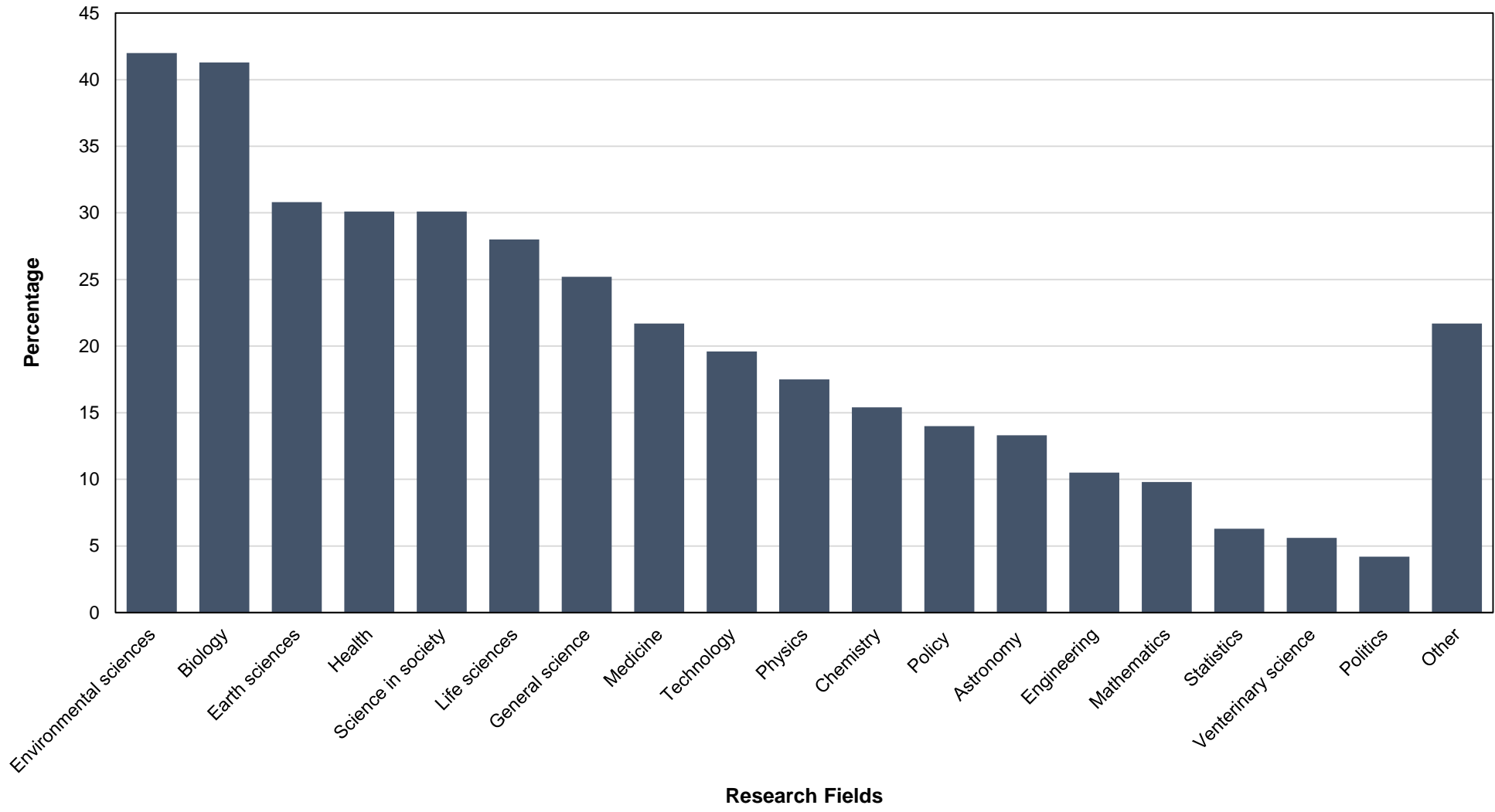
# How: Main mediums



# How: Number of mediums

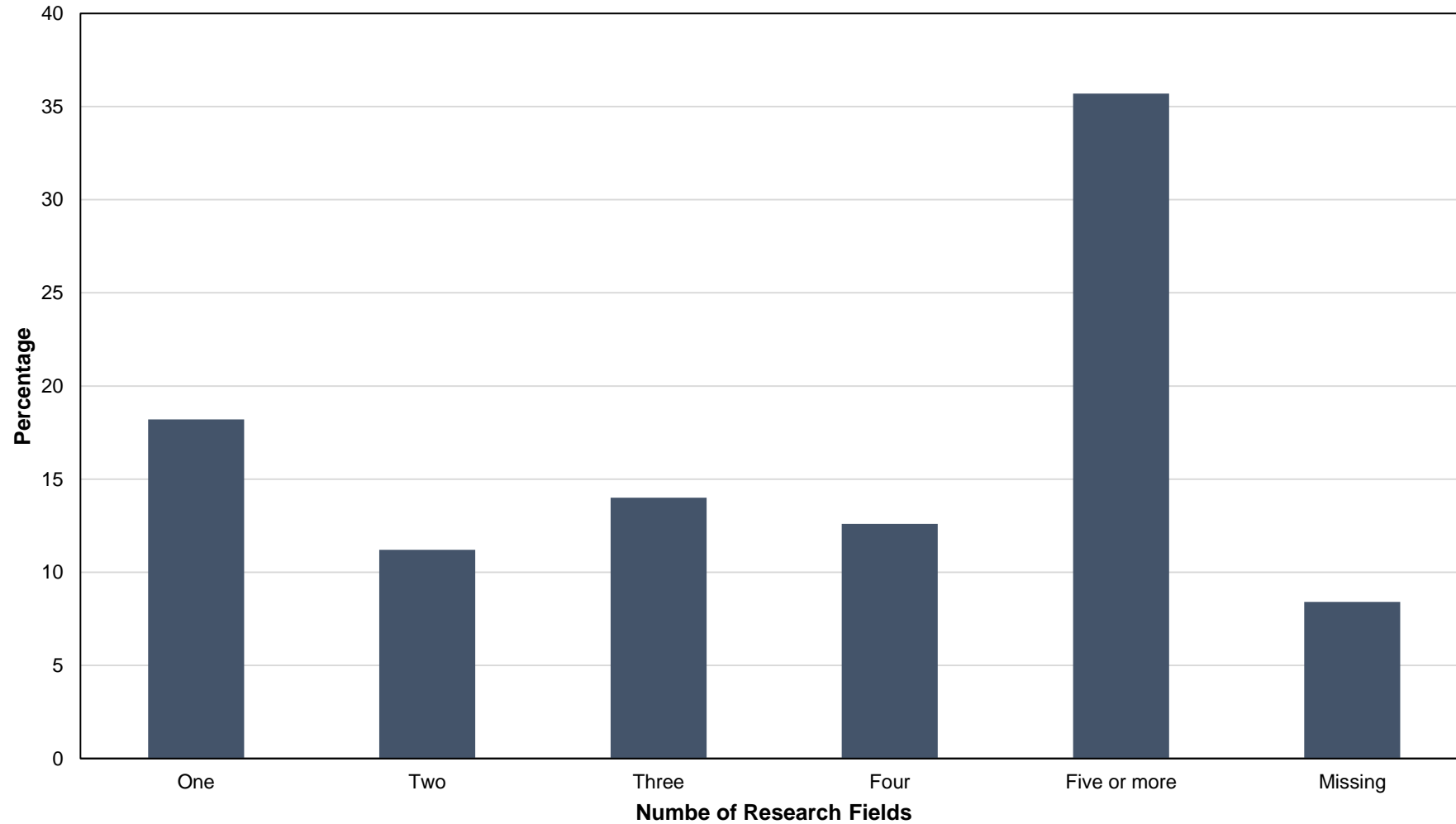


# What: Topics

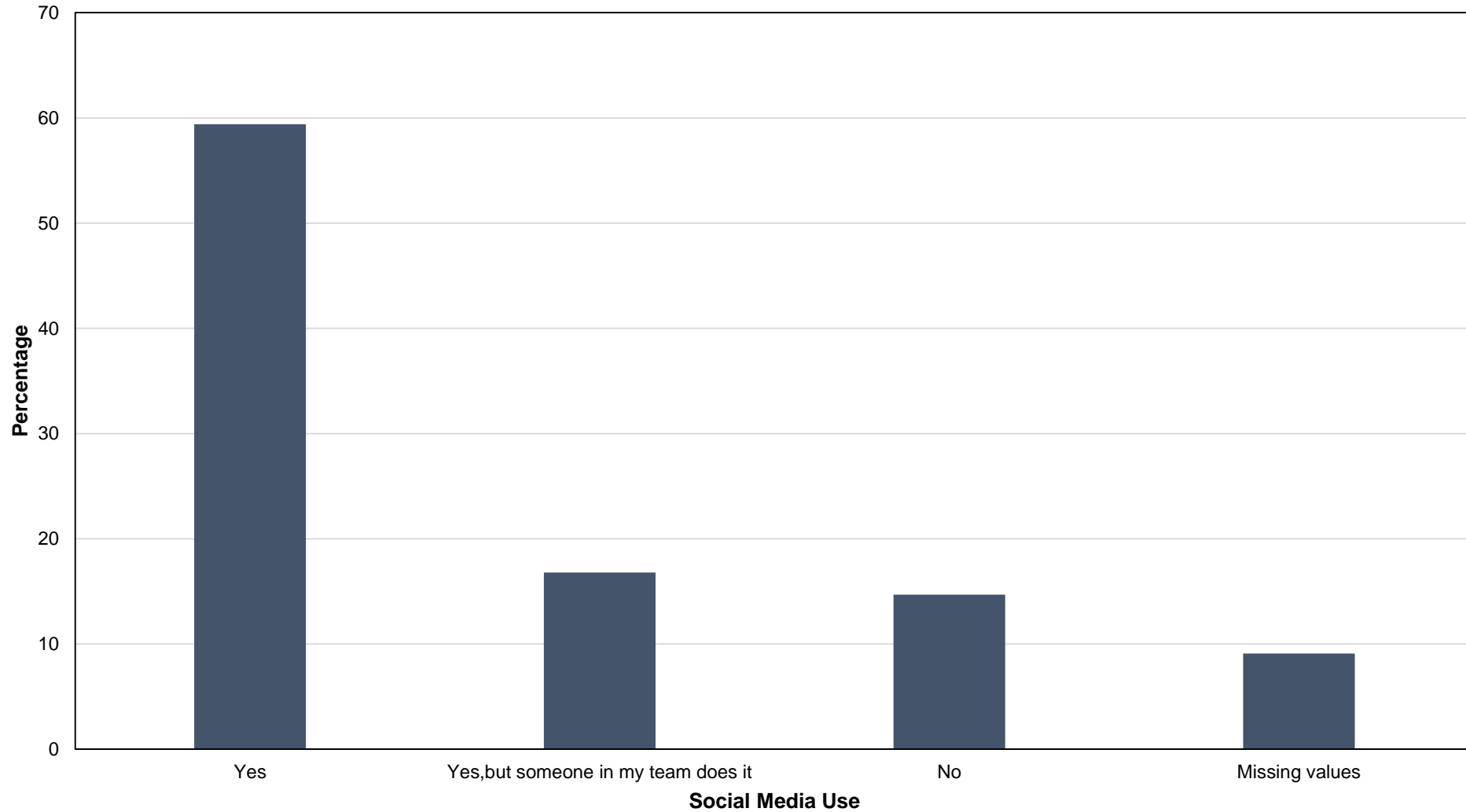




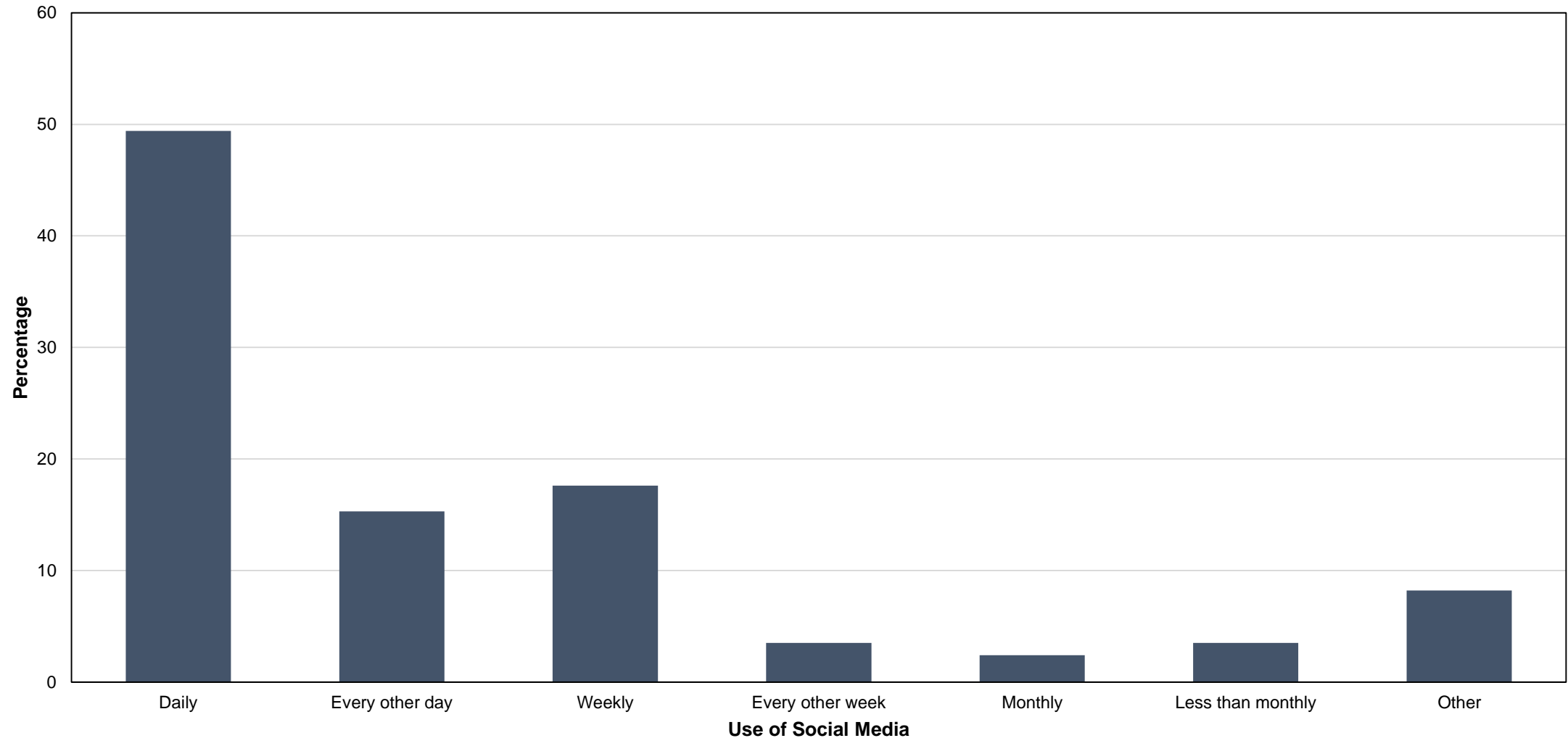
# What: Number of topics



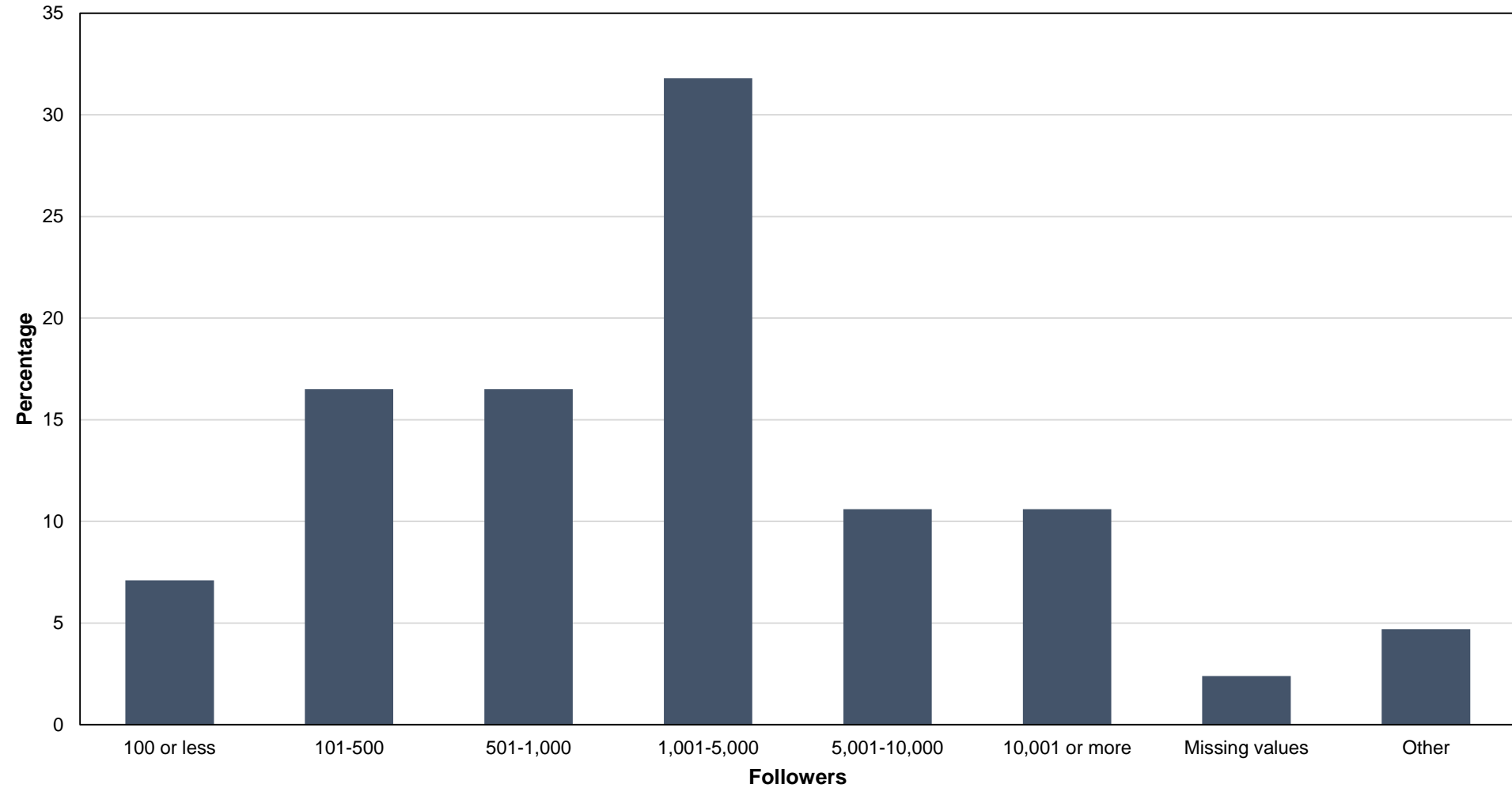
# How: Online presence



# How: Frequency of social media use



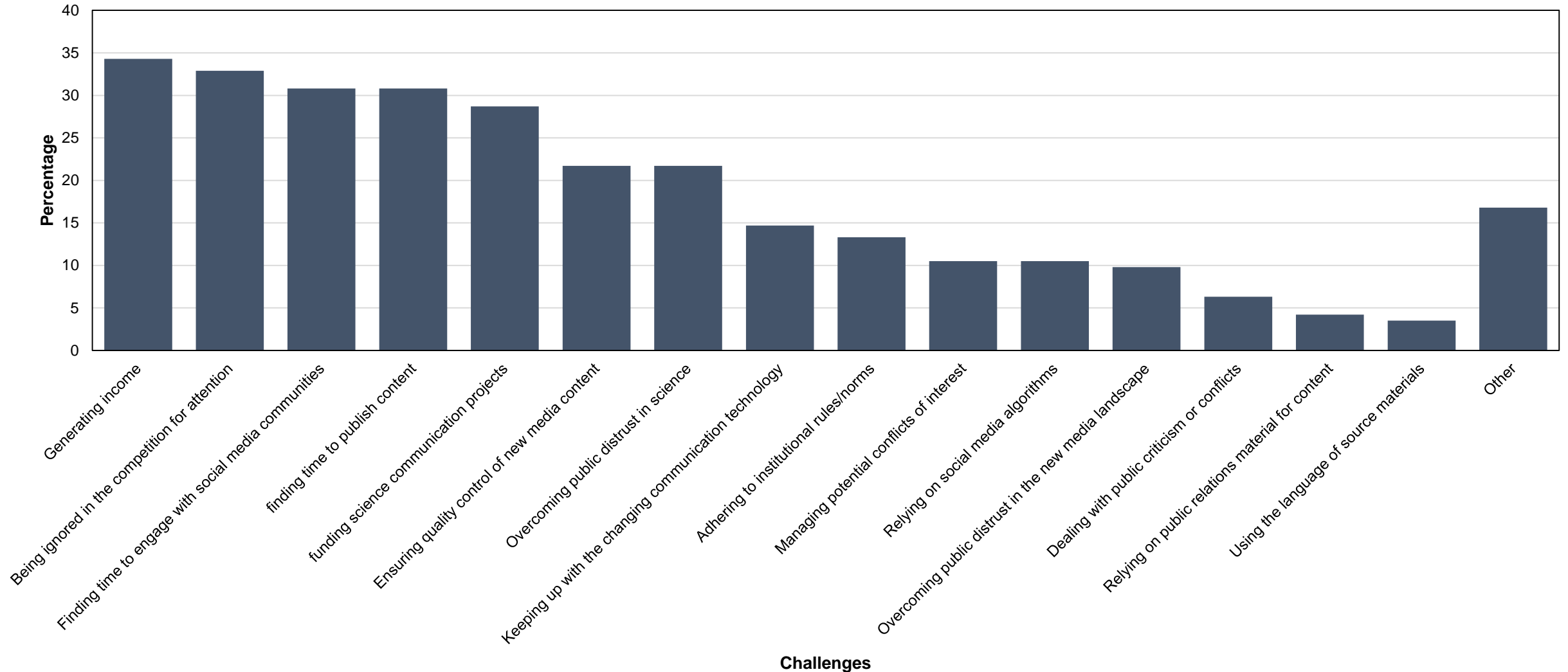
# Number of followers



# Social mediums

Channel	1 (mostly used)	2	3	4	5	6	7	8	9 (least used)	
Twitter	52 64.2%	15 18.5%	7 8.6%	3 3.7%	0 0.0%	1 1.2%	3 3.7%	0 0.0%	0 0.0%	Total: 81
Facebook	24 36.4%	33 50.0%	7 10.6%	1 1.5%	1 1.5%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	Total: 66
Youtube	1 2.3%	4 9.3%	18 41.9%	12 27.9%	3 7.0%	1 2.3%	1 2.3%	3 7.0%	0 0.0%	Total: 43
Instagram	2 6.1%	9 27.3%	14 42.4%	8 24.2%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	Total: 33
Google +	0 0.0%	3 17.6%	1 5.9%	4 23.5%	4 23.5%	2 11.8%	1 5.9%	2 11.8%	0 0.0%	Total: 17
Tumblr	0 0.0%	0 0.0%	2 15.4%	0 0.0%	3 23.1%	5 38.5%	2 15.4%	1 7.7%	0 0.0%	Total: 13
Pinterest	1 8.3%	0 0.0%	0 0.0%	3 25.0%	3 25.0%	1 8.3%	2 16.7%	2 16.7%	0 0.0%	Total: 12
Snapchat	0 0.0%	0 0.0%	0 0.0%	1 10.0%	2 20.0%	0 0.0%	4 40.0%	2 20.0%	1 10.0%	Total: 10
Other	2 6.7%	6 20.0%	6 20.0%	8 26.7%	0 0.0%	1 3.3%	0 0.0%	0 0.0%	7 23.3%	Total: 30

# Key challenges



# THE **CO**NVERSATION

**How a new model of journalism is  
connecting science and the public**

**LISA VARANO, AUDIENCE DEVELOPMENT EDITOR  
THE CONVERSATION CANADA**  
[lisa.varano@theconversation.com](mailto:lisa.varano@theconversation.com)



CANADIAN SCIENCE POLICY CENTRE

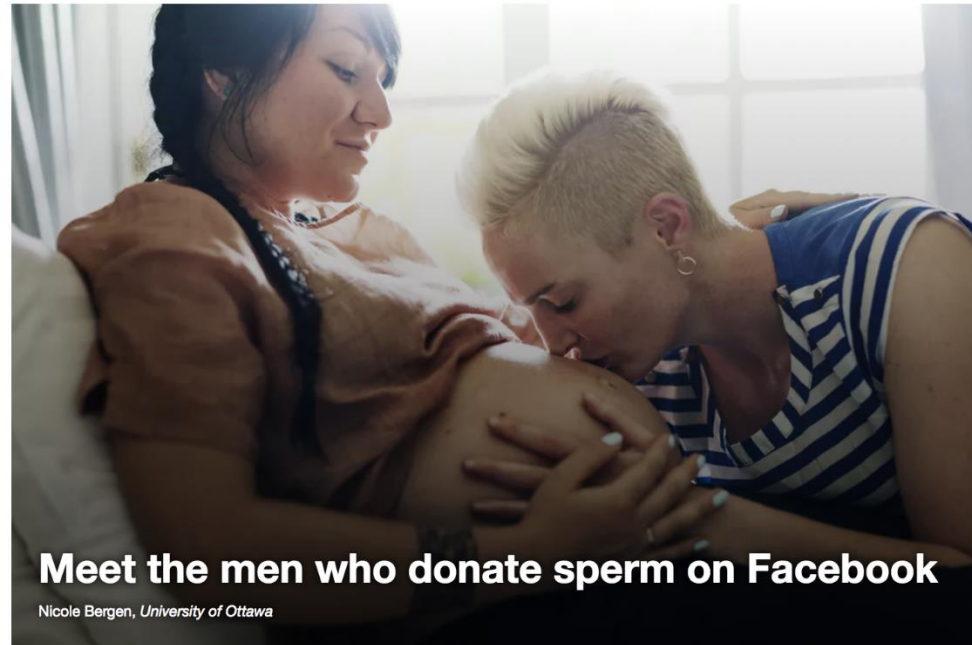
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THE CONVERSATION

Academic rigour, journalistic flair

Search analysis, research, academics...

Arts Business + Economy Culture + Society Education Environment + Energy Health + Medicine Politics Science + Technology



News, analysis and commentary website

THE CONVERSATION



# Academic rigour, journalistic flair

Collaboration between **academics** and **journalists**:

- Written by academic experts
- Edited by journalists
- Aimed at the general public

# A GLOBAL NETWORK

Founded in Australia in 2011

Canadian edition launched in June 2017

Brought to Canada by UBC journalism professors  
Alfred Hermida and Mary Lynn Young

Also in US, UK, France, Spain, Indonesia, Africa

# OUR NONPROFIT MODEL

Funding from 26 Canadian universities + several partners

## Founding Members



## Members



# OUR FIRST YEAR

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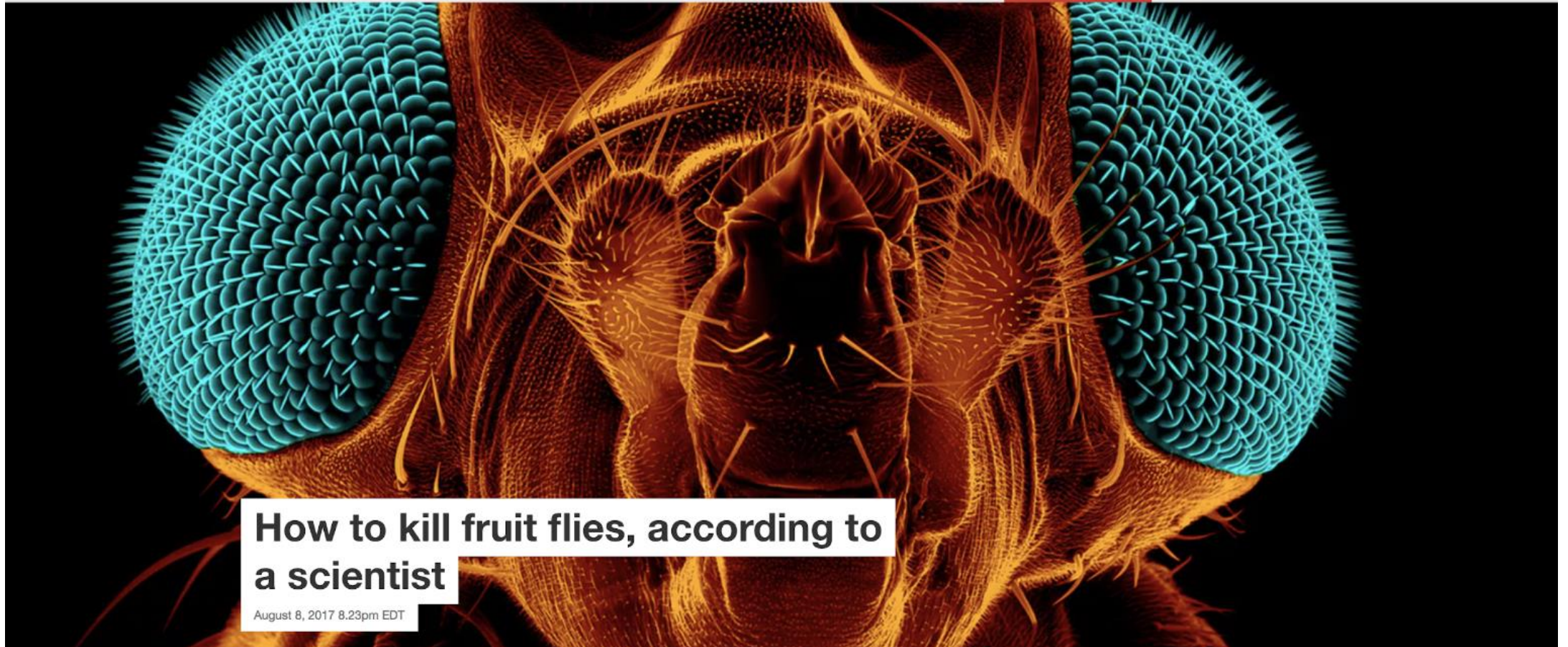
# SCIENCE IS POPULAR

THE CONVERSATION

Academic rigour, journalistic flair

Q Search analysis, research, academics...

Arts Business + Economy Culture + Society Education Environment + Energy Health + Medicine Politics Science + Technology



How to kill fruit flies, according to a scientist

August 8, 2017 8.23pm EDT

THE CONVERSATION

# REACH



445,770 page views

#2 most-read story

Republished by The Weather  
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Prof. Thomas Merritt, Laurentian University

# OUR AUTHORS

Authors must have expertise in the subject they are writing about.

To submit an article, you must be:

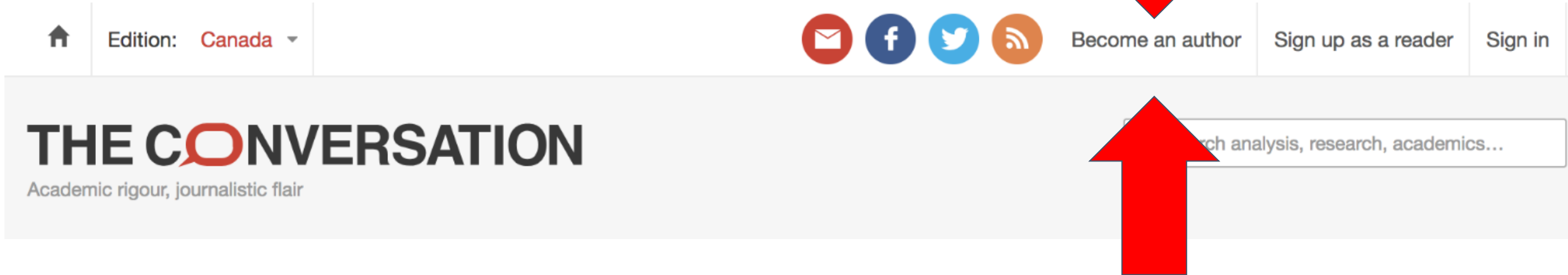
- A current researcher or academic with a Canadian university (professors, postdocs, PhD students)
- Master's students must have a professor as a co-author



# WHY WRITE?

- We help translate academic knowledge – from experts to the public
- Get access to an analytics dashboard
- Use this data to demonstrate “knowledge mobilization” when applying for grants

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1. Register at **TheConversation.com**

1. Pitch a story idea from your dashboard

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**For more information:**

[ca@theconversation.com](mailto:ca@theconversation.com)





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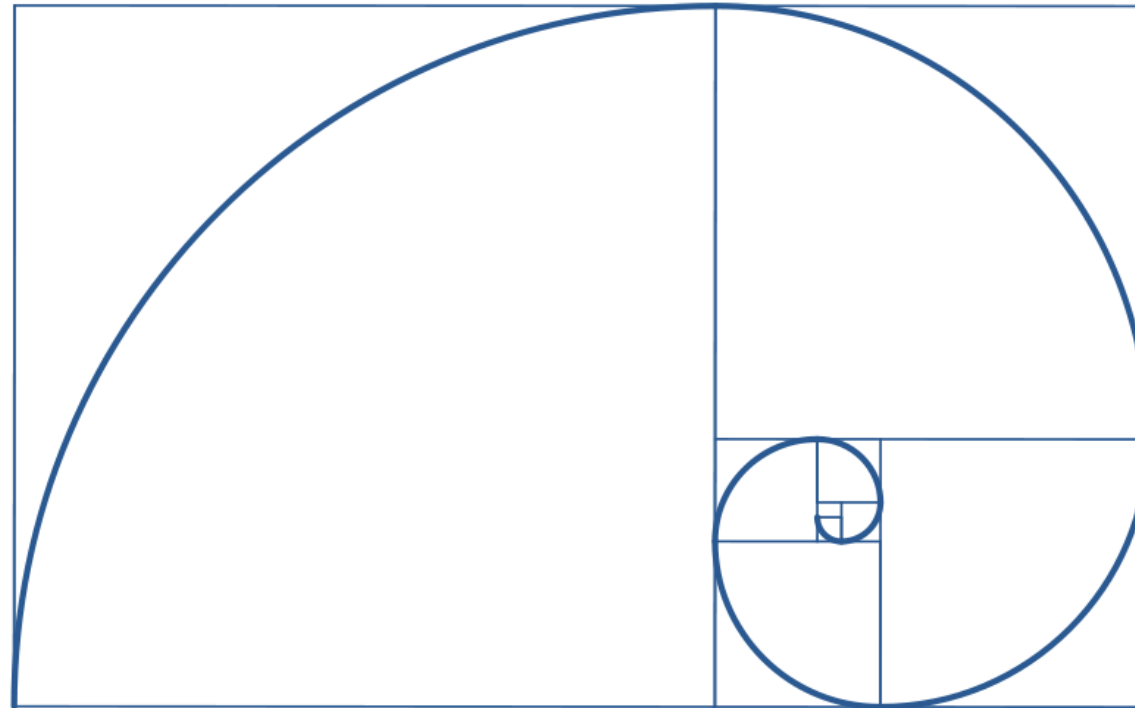
# Putting Our Minds Together:

*Research and Knowledge Management Strategy*



- **Climate for research use**

- **Push and pull efforts**



- **Linkage and Exchange**

- **Research production**



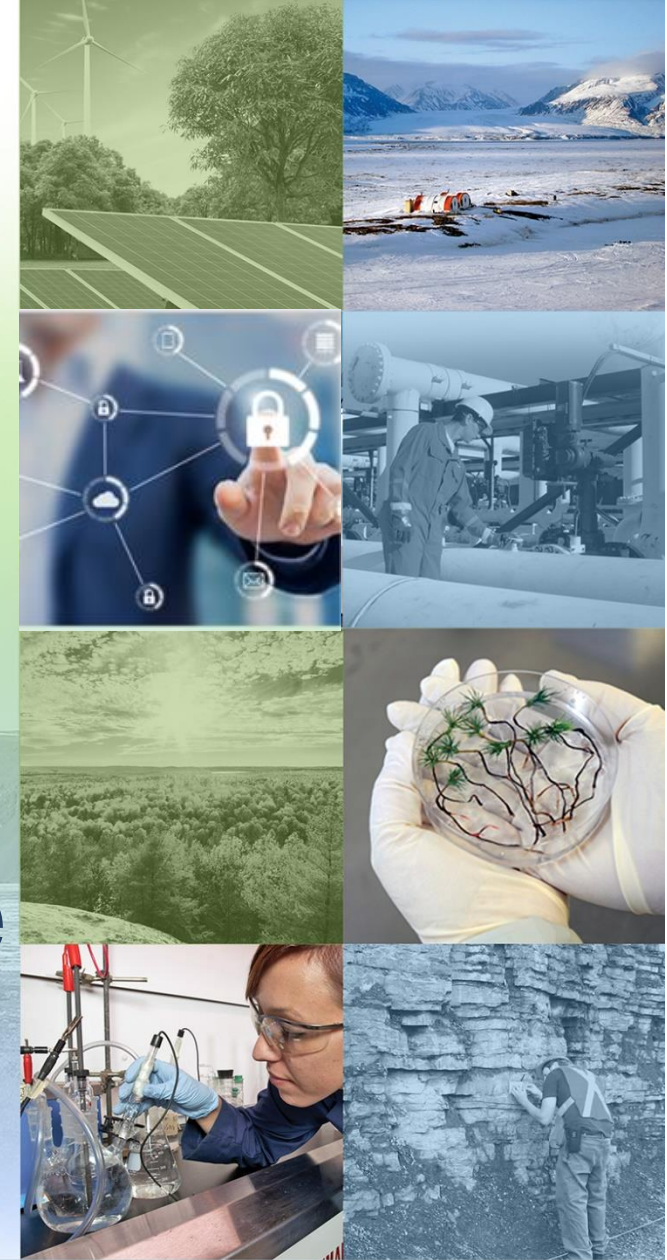


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# Using AI to create geospatial knowledge

Canadian Science Policy Conference  
November 2018



# Who we are and what we do

- CCMEQ produces and disseminates geospatial data



- Specifically, we produce “foundational” data, also known as topographic data

- Our challenge is to turn data into useful information for decision-makers

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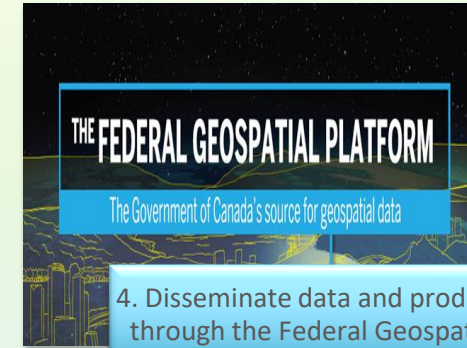
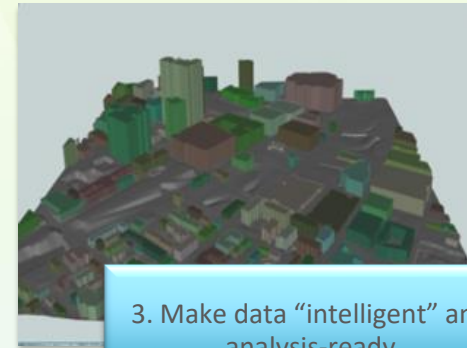
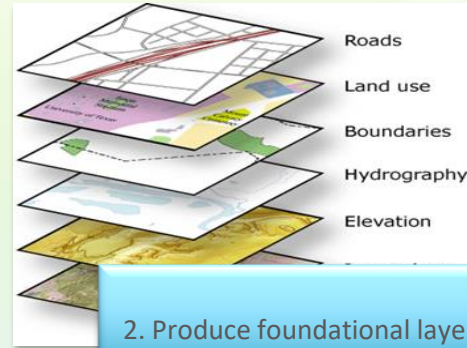
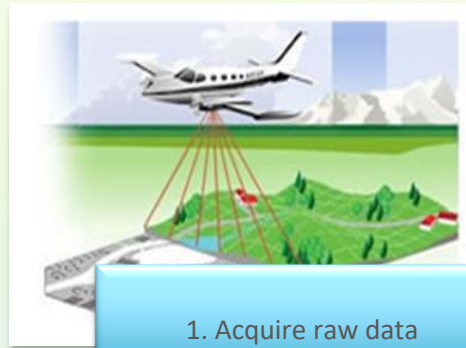
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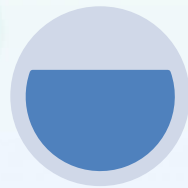
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# 2018 Business Model

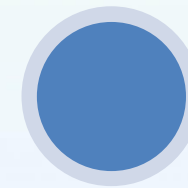
## Data – Expertise – Systems



**Invest in Technology:** Ensure use of best of class technology (i.e.: cloud computing and storage, user-friendly interface, content management system, speed/real-time, etc.)



**Unlock Data Asset:** Increase the richness and currency of data available to users. Increase the quality and reach of value added products and services. Close existing data gaps.



**Change Culture:** Update geospatial Policy, build geospatial data skills, provide training and demonstrations. Integrate geospatial analysis in department-wide decision-making

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# How does it all come together?



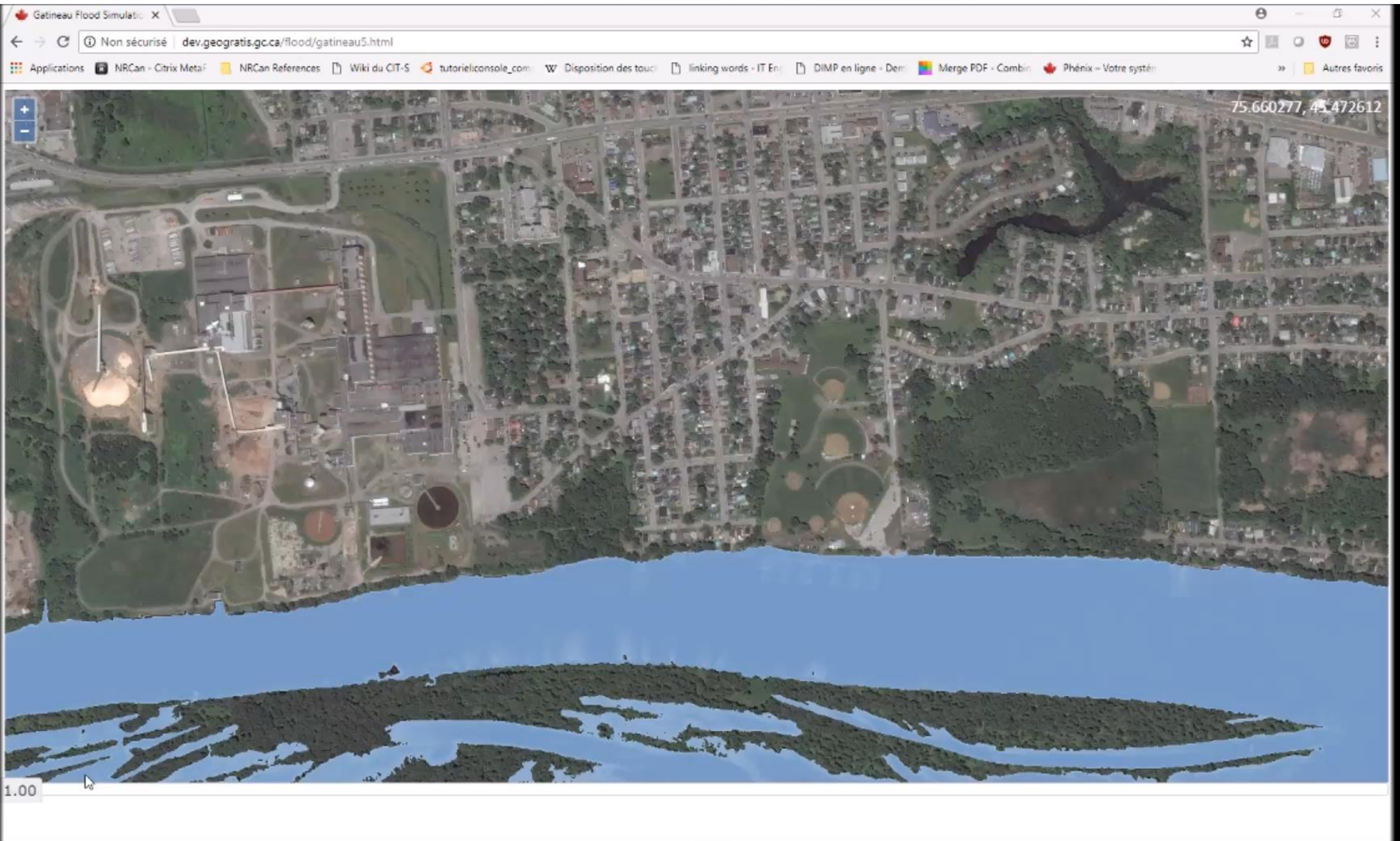
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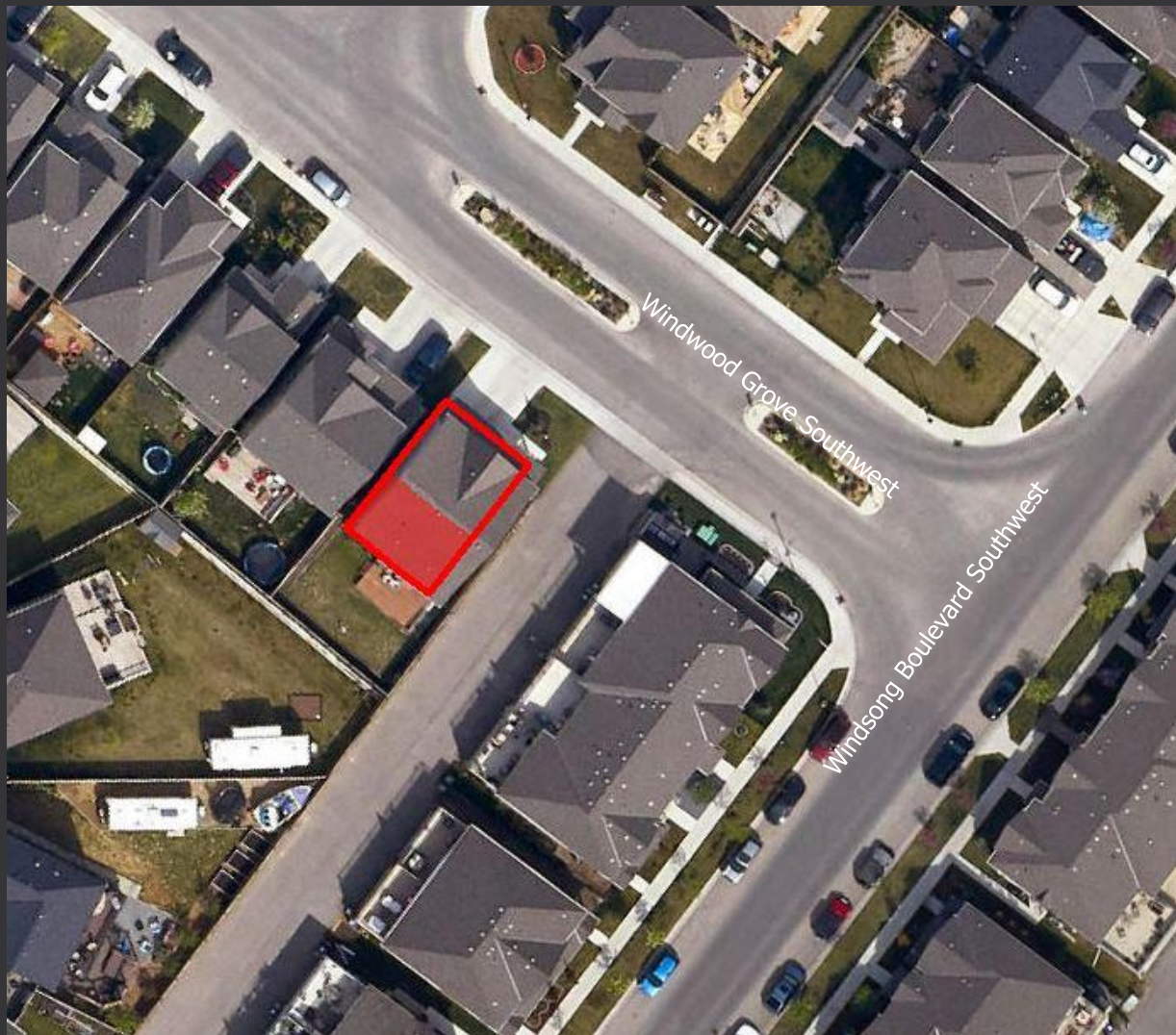




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**ROOF AREA**

Total : 131 m<sup>2</sup>

South Facing : 60 m<sup>2</sup>

**POTENTIAL ENERGY SAVING**

6000 kWh per year



**POTENTIAL MONEY SAVING**

408\$ per year





## NEIGHBORHOOD OF 91 HOUSES

### ROOF AREA

Total : 11449 m<sup>2</sup>

South Facing : 3131 m<sup>2</sup>

### POTENTIAL ENERGY SAVING

313100 kWh per year

### POTENTIAL MONEY SAVING

21291\$ per year

---

	2000 kWh
	3000 kWh
	4000 kWh
	5000 kWh