

Trust in Vis

Start of Block: Consent Block

Consent Form Consent Form for Participation in a Research Study Principal Investigators: Dr. Carolina Nobre, Assistant Professor at University of Toronto and Dr. Cindy Xiong, Assistant Professor at University of Massachusetts Amherst Study Title: Data Communication and Trust in Science Supported By: University of Toronto, University of Massachusetts Amherst, and Harvard University

WHAT IS THIS FORM? This form is called a Consent Form. It will give you information about the study so you can make an informed decision about participation in this research. We encourage you to take some time to think this over and ask questions now and at any other time. If you decide to participate, you will be asked to sign this form and you will be given a copy for your records.

WHAT ARE SOME OF THE IMPORTANT ASPECTS OF THIS RESEARCH STUDY THAT I SHOULD BE AWARE OF? Whether or not you take part is up to you. You can choose not to take part. You can agree to take part and later change your mind. Your decision will not be held against you.

WHY ARE WE DOING THIS RESEARCH STUDY? The purpose of our study is to explore how people process information in the age of misinformation. Particularly, we are investigating aspects of trust in visualizations.

WHO CAN PARTICIPATE IN THIS RESEARCH STUDY? Any person who is at least 18 years of age may participate in this research study.

HOW MANY PEOPLE WILL PARTICIPATE? We expect about 1000 people will be in this research study.

WHAT WILL I BE ASKED TO DO AND HOW MUCH TIME WILL IT TAKE? We will be shown different visualizations and you will be asked questions regarding the visualization, your understanding, impressions, etc. . We expect this research study to take around 15 minutes. At the end of the survey, you will be given the choice to opt-in to a follow up study on the topic. This is completely optional and will not interfere with the current study.

WILL BEING IN THIS RESEARCH STUDY HELP ME IN ANY WAY? You are not likely to have any direct benefit from being in this research study. The potential benefits to you from participation may include learning about how data visualization research is conducted, and you may learn about issues of current interest in data visualization.

WHAT ARE MY RISKS OF BEING IN THIS RESEARCH STUDY? Your participation in this study does not involve any risks other than what you would encounter in daily life. The effects of participating should be comparable to those you would experience from viewing a computer monitor and using a keyboard. You may withdraw at any time.

HOW WILL MY PERSONAL INFORMATION BE PROTECTED? Efforts will be made to limit the use and disclosure of your personal information, including research study records, to people who have a need to review this information. We cannot promise complete secrecy. Organizations that may inspect and copy your information include the IRB and other representatives of this institution.

Data Sharing: De-identified data from this study will be shared among the UMass Amherst and University of Toronto research teams, as well as the research community at large to advance science and health. We will remove or code any personal information that could identify you before files are shared with other researchers to

ensure that, by current scientific standards and known methods, no one will be able to identify you from the information we share. WHO CAN I TALK TO IF I HAVE QUESTIONS? If you have questions about this project or if you have a research-related problem, you may contact the Principal Investigator, Dr. Carolina Nobre, at cnobre@cs.toronto.edu.

WHAT HAPPENS IF I SAY YES, BUT I CHANGE MY MIND LATER? You can decide not to participate in this research or you can start and then decide to leave the research at any time and it will not be held against you. To do so, simply exit the experiment. Any data already collected will not be saved. **By clicking “I agree” below you are indicating that you are at least 18 years old, have read this consent form, and agree to participate in this research study. Please print a copy of this page for your records.**

☐ I consent

☐ I do not consent

consent-time Timing

First Click

Last Click

Page Submit

Click Count

End of Block: Consent Block

Start of Block: Module1 - COVID-19

covid-vaccine Have you already received a Covid-19 vaccination?

☐ Yes

☐ No

Display This Question:

If Have you already received a Covid-19 vaccination? = Yes

covid-vaccine-doses How many doses of the Covid-19 vaccine did you receive?

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4 or more
-

covid-infection Have you been verifiably infected with Covid-19?

- ☐ Yes
- ☐ No
-

covid-time Timing

First Click

Last Click

Page Submit

Click Count

End of Block: Module1 - COVID-19

Start of Block: Module Bar Chart - Initial Impressions - Look

intro-prompt In the next question, you will be shown a visualization **for 15 seconds**, and then asked to give your opinion on the visualization.

When you are ready to start, please proceed to the next question.

Page Break

JS

intro-vis

intro-vis-time Timing

First Click

Last Click

Page Submit

Click Count

End of Block: Module Bar Chart - Initial Impressions - Look

Start of Block: Module Bar Chart - Initial Impressions - Ratings

JS

initial

Please rate your opinion of the visualization.

For each scale, **move the slider towards the adjective that best describes the visualization**. The more appropriate the adjective, the closer you should put your slider to it.

JS

affect-science

Unscientific

Scientific

Click to write Choice 1




JS

affect-clarity

Confusing


Clear

Click to write Choice 1	
-------------------------	--

JS

affect-aesthetic

Ugly Pretty

Click to write Choice 1	
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initial-time Timing
First Click
Last Click
Page Submit
Click Count

End of Block: Module Bar Chart - Initial Impressions - Ratings

Start of Block: Module - Tour

JS

tour

tour-time Timing
First Click
Last Click
Page Submit
Click Count

End of Block: Module - Tour

Start of Block: Module VLAT Simple

JS

simple-vlat-vis

Using the **static** (no mouseover or interaction) version of the visualization above, please answer the following questions:



simple-vlat-1

How many weeks had higher **unvaccinated** Covid-19 case counts than the week of Dec 13, 2021?

- ☐ 5
 - ☐ 6
 - ☐ 8
 - ☐ I don't know
-



simple-vlat-2

What is the **max number** of case counts (per 100K) of **vaccinated** people who caught Covid-19?

- ☐ 3300
 - ☐ 8000
 - ☐ 8600
 - ☐ I don't know
-

simple-vlat-time Timing

First Click

Last Click

Page Submit

Click Count

End of Block: Module VLAT Simple

Start of Block: Module VLAT Moderate

JS

moderate-vlat-vis

Using the static (no mouseover or interaction) version of the visualization above, please answer the following questions:

JS X→

moderate-vlat-1

By **approximately** how much did the number of cases in **unvaccinated** people increase from the week of December 13, 2021 to the week of December 20, 2021 (per 100K people)?

- ☐ Less than 2000
 - ☐ Between 2000 and 4000
 - ☐ More than 4000
 - ☐ I don't know
-

JS X→

moderate-vlat-2

Approximately how many **unvaccinated** people caught Covid-19 (per 100K people) during the week of January 10, 2022?

- ☐ 6500
- ☐ 7500
- ☐ 8500
- ☐ I don't know

moderate-vlat-time Timing

First Click

Last Click

Page Submit

Click Count

End of Block: Module VLAT Moderate

Start of Block: Module VLAT Complex

JS

complex-vlat-vis

Using the static (no mouseover or interaction) version of the visualization above, please answer the following questions:

JS X→

complex-vlat-1

Among **vaccinated** people, which age group sees the largest **increase** in case count between November 2021 and January 2022?

- ☐ Ages 80+
- ☐ Ages 50-79
- ☐ Ages 18-49
- ☐ I don't know

complex-vlat-time Timing

First Click

Last Click

Page Submit

Click Count

End of Block: Module VLAT Complex

Start of Block: Module - Explore



explore

Please explore the interactive visualization above for **15 seconds**. The survey will auto advance to the next question after 15 seconds.

explore-time Timing

First Click

Last Click

Page Submit

Click Count

End of Block: Module - Explore

Start of Block: Module - Data Trust



data-trust

Disregard the visualization for this question. To what extent do you agree or disagree with the following statements about the **data** used in the visualization above?

	Strongly Disagree	Disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Agree	Strongly Agree
The data is accurate	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The data is complete and does not leave out important information	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The data is unbiased and trustworthy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I understand the meaning of this data well	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The data source was clearly displayed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I trust this data	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

data-trust-exp If you have any additional thoughts/comments, please enter them here.

data-trust-time Timing

First Click

Last Click

Page Submit

Click Count

End of Block: Module - Data Trust

Start of Block: Module - Vis Trust



Assume you trust the data used in the visualization. To what extent do you agree or disagree with the following statements about the **visualization** presented above?

	Strongly Disagree	Disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Agree	Strongly Agree
The visualization transparently includes all important elements of the data	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I find it easy to understand this visualization	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I like this visualization	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would likely share this visualization with my family, friends or on social media	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would likely use this visualization and its information in my daily life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I trust this visualization	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



vis-trust-exp

Tell us a bit more about why you [\\${vis-trust/ChoiceGroup/SelectedAnswers/11}](#) with the statement **"I trust this visualization"**.

vis-trust-time Timing

First Click

Last Click

Page Submit

Click Count

End of Block: Module - Vis Trust

Start of Block: Module - Interpersonal trust

interpersonal-trust Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people?

Most people cannot be trusted Some people can be trusted Most people can be trusted

1 2 3 4 5 6 7

2



interper-trust-exp If you have any additional thoughts/comments, please enter them here.

interper-trust-time Timing

First Click

Last Click

Page Submit

Click Count

End of Block: Module - Interpersonal trust

Start of Block: Attention check



attention-check There are many important issues facing our country today. Research shows that issues people think are important can affect their views on other issues. We also want to know if you are paying attention. Please ignore the question and put “crime” in the top position and unemployment in the bottom position. Leave the rest of the issues in the same order.

_____ Health care

_____ Unemployment

_____ The federal budget deficit

_____ The coronavirus pandemic

_____ Crime

_____ Education

_____ Relations with other countries

attention-check-time Timing

First Click

Last Click

Page Submit

Click Count

End of Block: Attention check

Start of Block: Module - Trust in science



trust-in-science On a scale of 0 to 10, how much do you personally trust each of the following institutions? 0 means you do not trust an institution at all, and 10 means you trust it completely.

	0 - Do not trust at all	1	2	3	4	5	6	7	8	9	10 - Trust it completely
Political parties	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The government	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The police	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The legal system	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The news media	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Business and industry	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Scientists/Science	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Doctors	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

trust-science-exp If you have any additional thoughts/comments, please enter them here.

trust-science-time Timing
First Click
Last Click
Page Submit
Click Count

End of Block: Module - Trust in science

Start of Block: Module - Need for cognition



cognition The next questions will be about your motivation to engage in cognitive activity. For each sentence below, please select how uncharacteristic or characteristic (5-point scale) this is for you personally.

	1- extremely uncharacteristic of me	2	3	4	5- extremely characteristic of me
I would prefer complex to simple problems.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I like to have the responsibility of handling a situation that requires a lot of thinking.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Thinking is not my idea of fun.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would rather do something that requires little thought than something that is sure to challenge my thinking abilities.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I really enjoy a task that involves coming up with new solutions to problems.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would prefer a task that is intellectual, difficult, and important to one that is somewhat important but does not	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

require much
thought.

need-cognition-time Timing

First Click

Last Click

Page Submit

Click Count

End of Block: Module - Need for cognition

Start of Block: Module - Politics

political_views Below is a seven-point scale on which the political views that people might hold are arranged from extremely liberal—point 1—to extremely conservative—point 7. Where would you place yourself on this scale?

- ☐ Extremely liberal
- ☐ Liberal
- ☐ Slightly liberal
- ☐ Moderate; middle of the road
- ☐ Slightly conservative
- ☐ Conservative
- ☐ Extremely conservative
- ☐ Do not know/Refused

Display This Question:

If isCovidData = 1

covid_information During the peak of the pandemic, how often did you actively seek information on Covid-19 from any sources including TV, newspapers, radios, online and social media, or personal conversations?

- ☐ Once a day
 - ☐ Several times a week
 - ☐ Once a week
 - ☐ Less than once a week
 - ☐ Never
-

politics_time Timing
First Click
Last Click
Page Submit
Click Count

End of Block: Module - Politics

Start of Block: Module - Demographics

Gender Lastly a few questions about socio-demographic characteristics. To which gender do you most identify?

- ☐ Man
 - ☐ Woman
 - ☐ Non-binary / third gender
 - ☐ Other
 - ☐ Prefer not to disclose
-



Age In what year were you born? Please enter all four digits.

State In what state do you currently live?

Education What is the highest level of school you have completed or the highest degree you have received?

- ☐ Maximum 12 grade no diploma
- ☐ High school graduate - High school diploma or equivalent (for example: GED)
- ☐ Some college but no degree
- ☐ Associate degree in college - Occupational/vocational program
- ☐ Associate degree in college - Academic program
- ☐ Bachelor's degree (For example: BA, AB, BS)
- ☐ Master's degree (For example: MA, MS, MEng, MEd, MSW, MBA)
- ☐ Professional school Degree (For example: MD, DDS, DVM, LLB, JD)
- ☐ Doctorate degree (For example: PhD, EdD)
- ☐ Other

Parents_education Have one or both of your parents completed a bachelor's degree?

- ☐ One
- ☐ Both
- ☐ None

Language What language do you speak at home?

- ☐ English
 - ☐ Spanish
 - ☐ Chinese
 - ☐ Other, please specify: _____
-

Ethnicity Which of the following categories do you identify with?

- ☐ American Indian or Alaska Native (For example, Navajo Nation, Blackfeet Tribe, Mayan, Aztec, Nome Eskimo Community, etc)
- ☐ Asian (For example, Chinese, Filipino, Asian Indian, Vietnamese, Korean, Japanese, etc).
- ☐ Black or African-American (For example, African American, Jamaican, Haitian, Nigerian, Ethiopian, Somalian, etc)
- ☐ Hispanic, Latino/a, or Chicano/a (For example, Mexican or Mexican American, Puerto Rican, Cuban, Salvadoran, Colombian, etc).
- ☐ Middle Eastern or North African (For example, Lebanese, Iranian, Egyptian, Syrian, Moroccan, Algerian, etc).
- ☐ Native Hawaiian or Pacific Islander (For example, Native Hawaiian, Samoan, Chamorro, Tongan, Fijian, Marshallese, etc).
- ☐ White (For example, German, Irish, English, Italian, Polish, French, etc).
- ☐ Other race, ethnicity, or origin (please specify)

- ☐ Mixed race, ethnicity (please specify)

- ☐ Prefer not to disclose

Income In which of these groups did your total family income, from all sources, fall last year before taxes?

- ☐ None or less than \$4,999
- ☐ \$5,000 -\$9,999
- ☐ \$10,000 -\$19,999
- ☐ \$20,000 -\$29,999
- ☐ \$30,000 -\$39,999
- ☐ \$40,000 -\$49,999
- ☐ \$50,000 -\$59,999
- ☐ \$60,000 -\$69,999
- ☐ \$70,000 -\$79,999
- ☐ \$80,000 -\$89,999
- ☐ \$90,000 -\$99,999
- ☐ \$100,000 -\$109,999
- ☐ \$110,000 -\$119,999
- ☐ \$120,000 -\$129,999
- ☐ \$130,000 -\$139,999
- ☐ \$140,000 -\$149,999
- ☐ \$150,000 and over
- ☐ Do not know
- ☐ Prefer not to disclose

Religion To what extent do you consider yourself a religious person?

- ☐ Very religious
- ☐ Moderately religious
- ☐ Slightly religious
- ☐ Not religious at all
- ☐ Prefer not to disclose

Interview Would you be interested in participating in a qualitative interview for this study? You would be paid \$15 for about 30 minutes of your time.

☐ Yes, you may contact me on this email address:

☐ No

demographics_time Timing

First Click

Last Click

Page Submit

Click Count

End of Block: Module - Demographics

Start of Block: Module - Disclaimer

Q225 **Disclaimer:** The data used for the visualizations in this study was actually sourced from CDC data on Covid Cases related to Vaccination Status and Age. This study intends to measure the impact of data topic on trust. The link below provides the actual data used for the visualizations in this study.

[Source: Center for Disease Control and Prevention \(CDC\)](#)

End of Block: Module - Disclaimer

Start of Block: Completed

Q91 Thank you for participating in our survey! Please proceed to the next page (blue arrow below) to be redirected back to Prolific and register your submission.

End of Block: Completed
