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# GeoEthics

Conceptualization of a Geospatial Software Institute

**Geospatial Fellows Meeting**

**October 13, 2020**



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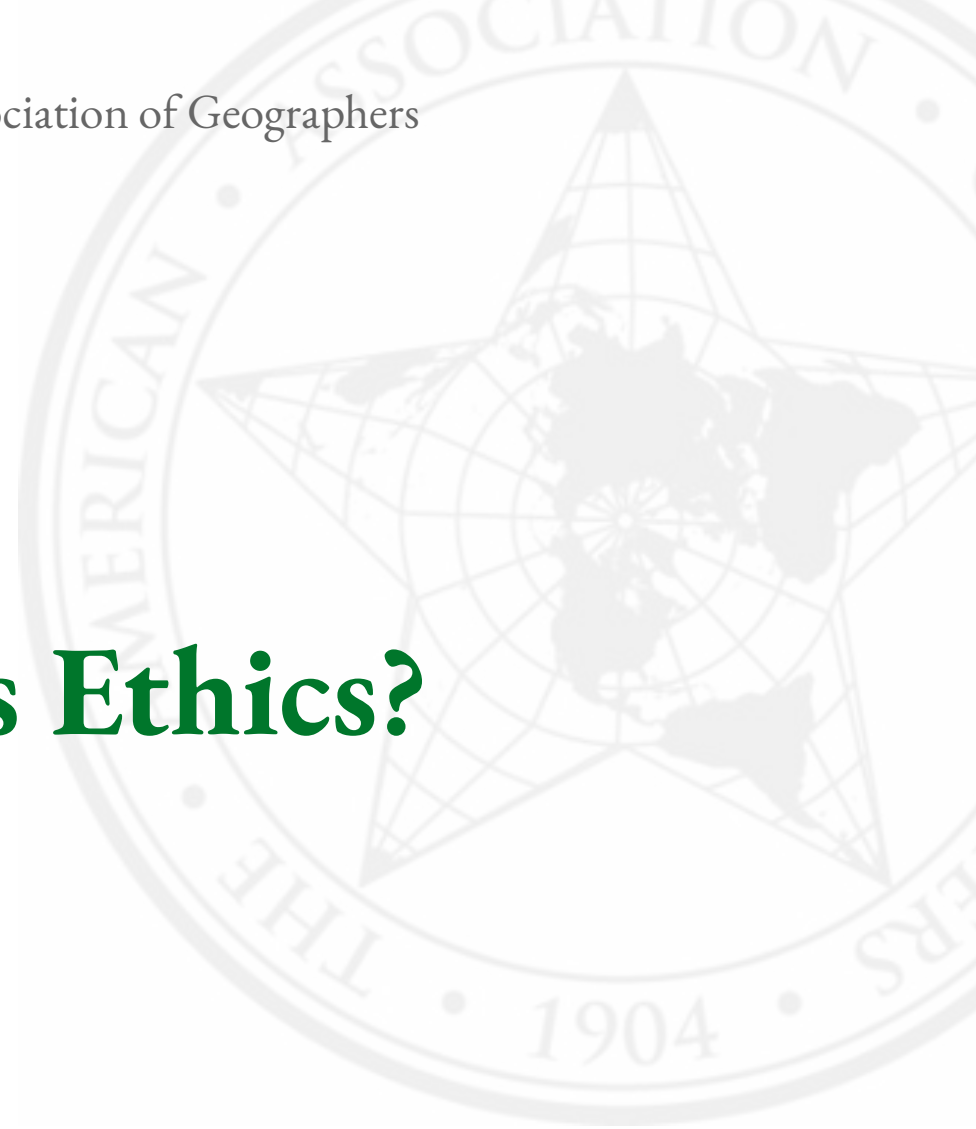
## Overview

1. What is ethics?
2. AAG and GeoEthics
3. Academic and Private Geospatial Data
4. GSI goals and ethics
5. Join or spearhead activities



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# What is Ethics?



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## Ethics

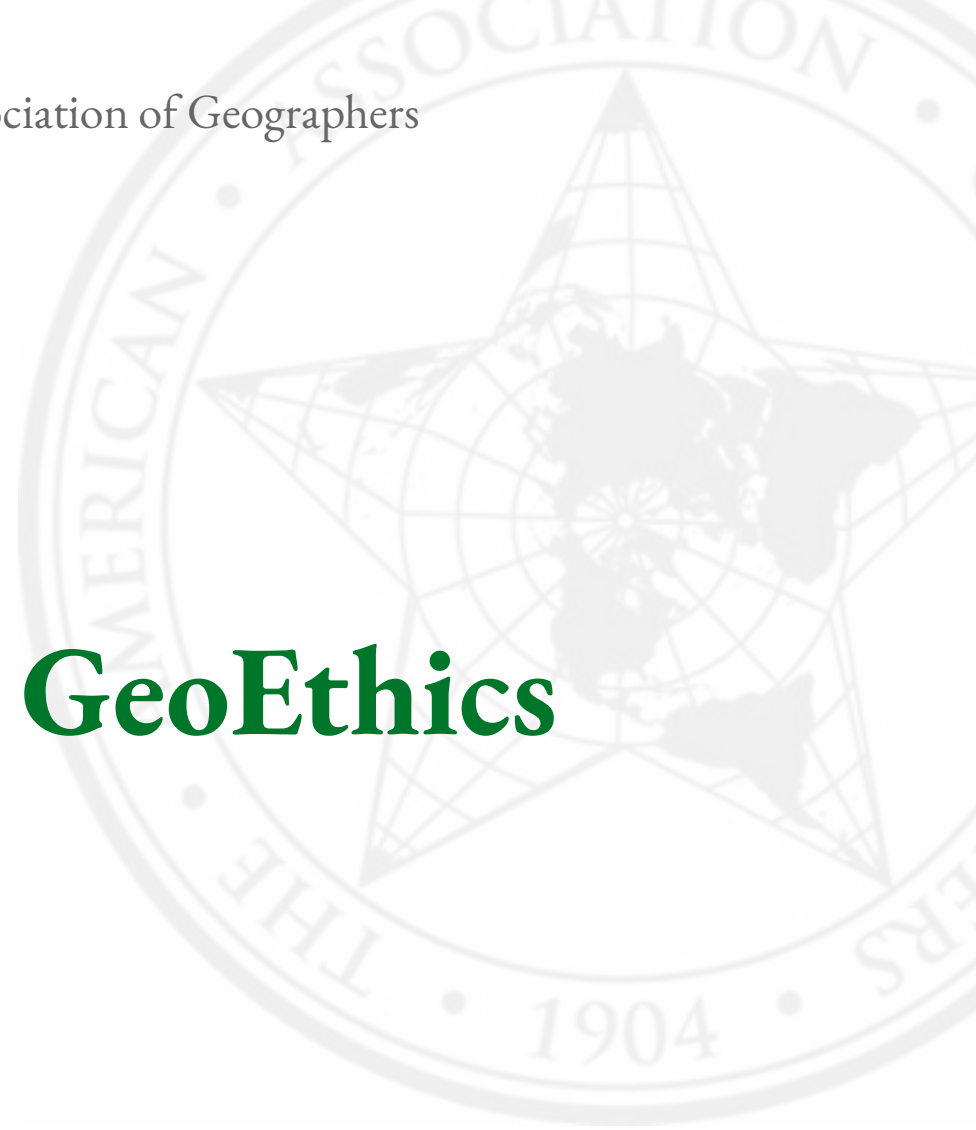
Merriam-Webster

**“a set of moral principles”**



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# **AAG and GeoEthics**





**Three-Year  
Strategic Plan  
2020–2022**

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# Three-Year Strategic Plan 2020-22 : GeoEthics

- » **Platform Identification** — Upon reviewing and assessing the report, staff will identify the platform, which will ultimately fulfill our requirements.
- » **Process and Implementation** — Working with our chosen platform vendor, we will set timelines and milestones and work efficiently and iteratively towards a final launch.

## **FORMALIZING GEOETHICS, MEMBER STANDARDS AND PRACTICES**

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**Situation:** The past three decades have seen an exponential trend towards using and collecting geographic information to support economic sectors, the environment, society, and the sciences. These datasets are now so massive that they are increasingly fed into artificial intelligence algorithms to generate new insights. At the same time, there is growing consensus for the need to bridge disciplines and promote collaborations in order to solve pressing societal and scientific challenges. The use of geographic information and methods often sits at the center of these collaborations. Together, these challenges are generating a new wave of concerns around ethics and biases in geospatial data collection and manipulation.

Even at a consumer level, location-enabled technologies have become an essential part of our daily life. In turn, our geographic information has now become essential to the business model of many service companies. This dependency causes concern today because the foundation of this relationship is lacking geo-ethical standards and practice. The general public lacks understanding about the high personal value their geographic data carries, and are often unaware with who and for what purpose they are sharing their real-time location.

**Opportunity:** As concerns about privacy emerge around location services, as questions about the role of geography in military actions continue, as big data and geospatial services come to market, we have an opportunity to show leadership on an issue that has reach to a broader and general audience. AAG has an



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## Professional Conduct Policy and Procedures

2020

confidential material, and should be released only for reasons outlined in such documents as the Family Educational Rights and Privacy Act (U.S. Department of Education 2008).

### V. Relations with People, Places, and Things

Geographical research necessarily involves interactions with peoples, places, and things. In conducting research, geographers should make every effort to ensure their work is conducted honestly. Under no circumstances should they fabricate or falsify research results, or plagiarize the work of others. In addition, geographers should comply with government requirements for the protection of researchers, human subjects, the public, and the environments in which they work. Geographers whose research involves human subjects should seek review and approval from their Institutional Review Board (IRB) and comply with their IRB's expectations for informed consent, modification of research practices, and reporting of adverse events. The IRB process varies somewhat by institution, but should include review and disclosure of funding sources, review of downstream dissemination, and disclosure of uses of collected data. The IRB process cannot treat all ethical challenges that may arise in a given research project. Thus, geographers should take responsibility for examining and addressing ethical issues that lie outside the IRB process, and for making their IRBs aware of particular ethical issues associated with geographic research and the use of geospatial data. Finally, geographers should familiarize themselves with relevant documents on which the IRB process is based. Of particular importance is the Belmont Report: Ethical Principles and Guidelines for the Protection of Human Subjects of Research (U.S. Department of Health, Education, and Welfare 1979).

Consistent with these guidelines, research should be conducted only after careful consideration of three fundamental principles:





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ANNUAL MEETING



Author Meets Critics: Louise Amoore's Cloud Ethics: Algorithms and the Attributes of Ourselves and Others (2020, Duke University Press)

**Type:** Panel  
**Theme:**  
**Sponsor Groups:** Political Geography Specialty Group  
**Poster #:**  
**Day:** 4/6/2020  
**Start / End Time:** 1:30 PM / 2:45 PM  
**Room:** Plaza Ballroom E, Sheraton, Concourse Level  
**Organizers:** Nathaniel O'grady  
**Chairs:** N



# AMERICAN ASSOCIATION of GEOGRAPHERS

ANNUAL MEETING



Where is Artificial Intelligence? Geographies, Ethics, and Practices of AI I.

**Type:** Paper  
**Theme:**  
**Sponsor Groups:** Urban Geography Specialty Group, Digital Geographies Specialty



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ANNUAL MEETING



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# AMERICAN ASSOC of GEOGRAPHERS

ANNUAL MEETING

Ethics and Biases in Geographical Sciences

**Type:** Panel  
**Theme:**  
**Sponsor Groups:**  
**Poster #:**  
**Day:** 4/6/2020  
**Start / End Time:** 1:30 PM / 2:45 PM

Ethics in Multispecies Research: Reflections from the Field

**Type:** Panel  
**Theme:**  
**Sponsor Groups:** Animal Geography Specialty Group, Cultural Geography Specialty Group, Qualitative Research Specialty Group  
**Poster #:**  
**Day:** 4/8/2020  
**Start / End Time:** 8:00 AM / 9:15 AM  
**Room:** Tower Court C, Sheraton, IM Pei Tower, Second Floor Level  
**Organizers:** Heather Rosenfeld, Lauren Van Patter  
**Chairs:** Heather Rosenfeld

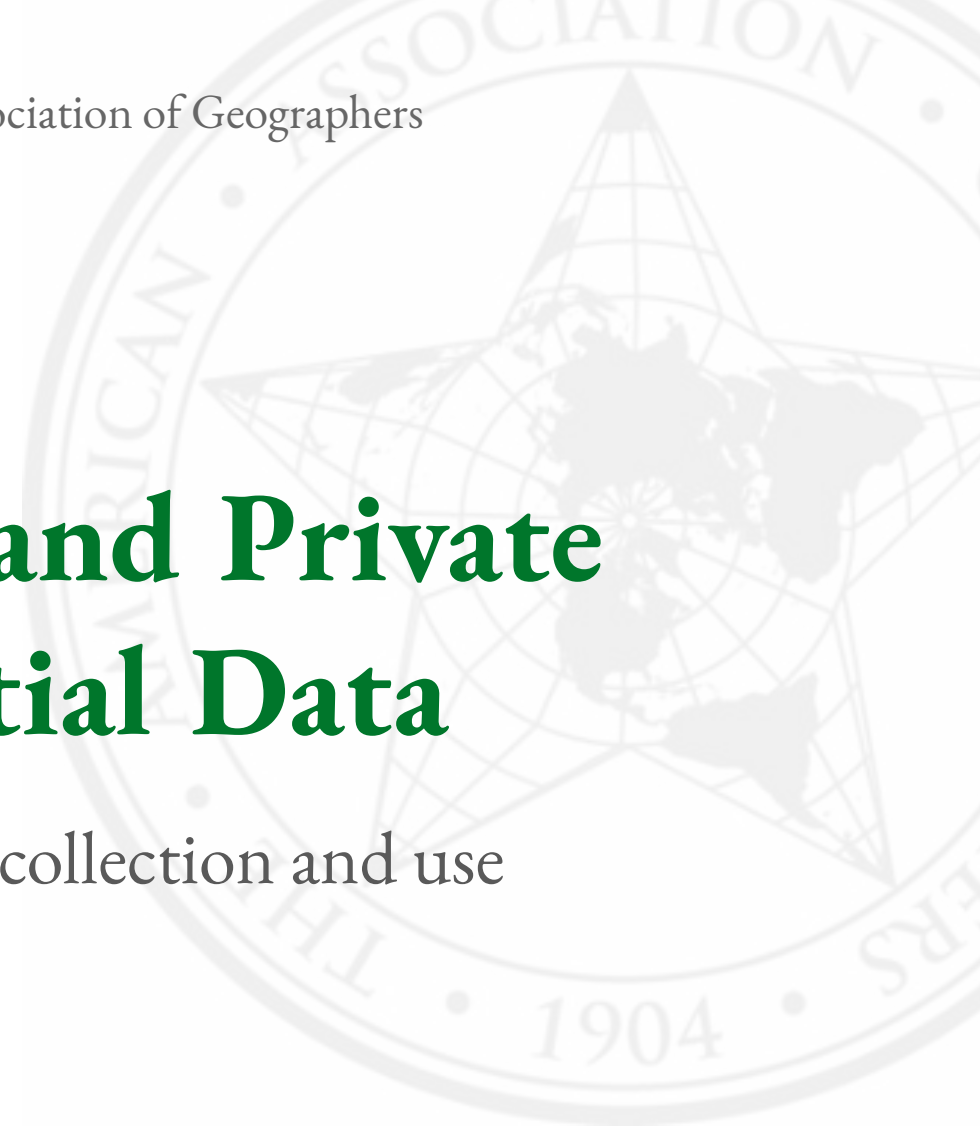
resolutions sit at the center of this paper session. Papers in it might address the topics:  
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# Academic and Private Geospatial Data

Convergence of collection and use





**Junghwan Kim** University of Illinois Urbana-Champaign

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## **Academic and Private Geospatial Data**

Protections for human subjects in research in Academia

- National Research Act (1974)
- Belmont Report (1978)
- The Common Rule (1991)
- Health Insurance Portability & Accountability Act (1996)

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## **Academic and Private Geospatial Data**

### Reproducibility of Scientific Research

- It is important to share methods,  
but also to share the (raw) data
  - NIH data sharing policy since 2003
  - NSF data management plans since 2011
  - White House Open Data Policy since 2013



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# Academic and Private Geospatial Data

Recent data sharing practices in academia

Johnston and Bishof (2015)

Barksy (2017)

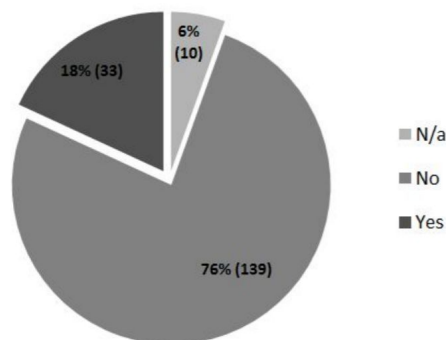
A Review of Data Management Plans (DMPs) from Successful National Science Foundation Grants from the University of Minnesota Twin Cities, 2011-2014

*University of Minnesota Libraries Project Report*

Contributors: Lisa R. Johnston, Carolyn Bishoff (University of Minnesota Libraries)

Date: February 27, 2015

Does the DMP mention private data? (n=182)



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OF BRITISH COLUMBIA

**Three UBC Research Data Management (RDM) Surveys:  
Science and Engineering, Humanities and Social Sciences,  
and Health Sciences**

**Summary Report**

UBC Library & UBC Advanced Research Computing  
July 2017

Contact: Eugene Barsky, Research Data Librarian, [eugene.barsky@ubc.ca](mailto:eugene.barsky@ubc.ca)  
Analysis assistance by Dmitriy Ryabika, Research Analyst, Office of the Vice President  
Research

# Academic and Private Geospatial Data

## Data sharing practices in academia

- In current environment, confidential data are only available to research community after lengthy and complicated process. Or not at all...
- Methods
  - Negotiating new data use agreements
  - De-identification of data
  - Geomasking
  - Aggregating data

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## Academic and Private Geospatial Data

Data collection and sharing practices in *private* sector

- Collection of data is automated
- Data sharing practices are based on corporate values
- Corporations conduct research on human subjects  
unregulated by the National Research Act (1974)

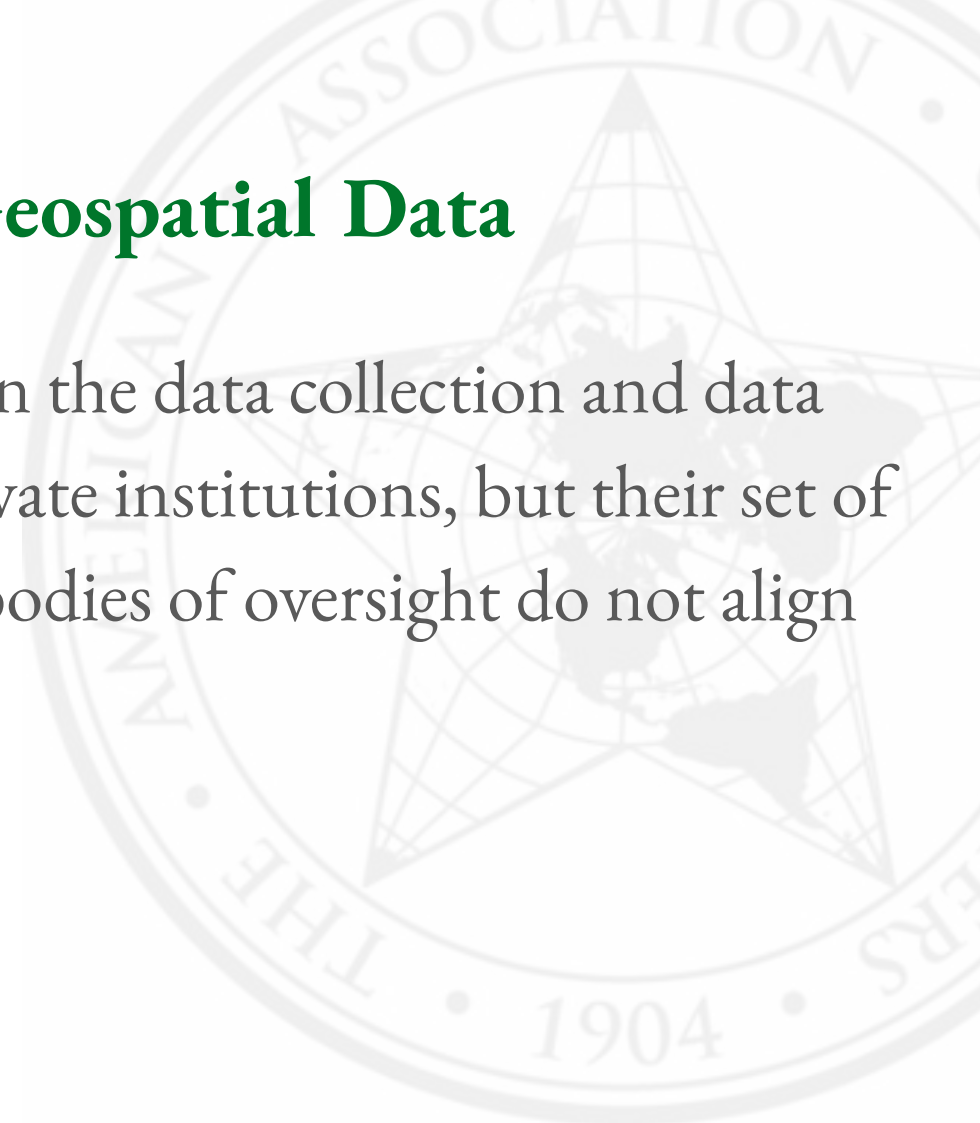


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## **Academic and Private Geospatial Data**

There is a convergence between the data collection and data use between academic and private institutions, but their set of moral principles (ethics) and bodies of oversight do not align

*Murky territory*



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# GSI Goals



# Goals

- Reproducible, transparent, and scalable geospatial software: Enable researchers to harness the geospatial data revolution for discovery and innovation by combining geospatial software and data at scale, in reproducible and transparent ways
- Geospatial digital workforce: Increase the nation's workforce capability and capacity to utilize geospatial big data and software for knowledge discovery supported by critical spatial thinking, and to further innovate geospatial software and advance related sciences
- Ethical and open geospatial software: Promote a culture of ethical and open geospatial software driven by diverse communities
- Structured guidance for computational reproducibility: Establish structured guidance for computational reproducibility in scientific research and education that are dependent on geospatial software
- High-performance and data-intensive geospatial software: Further the convergence of high-performance geospatial software with advancements in data-intensive and high-performance computing

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# **Join or spearhead activities on GeoEthics**



# Summer Series on questions of Geoethics and Human Rights highlighted by COVID-19 Conditions

 Staff  June 25, 2020  Recent News

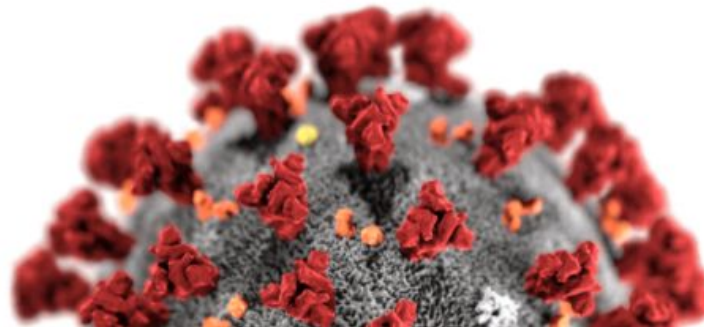


 Print  PDF

## Introduction

*By Coline Dony and Emily Fekete*

This series developed from discussions that took place at the AAG's Virtual Annual Meeting, April 6-10, 2020, during publicly available [panels of the breaking theme](#)



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# Participatory Forum of October 1, 2020



**Ranu Basu**  
York University



**Junghwan Kim**  
University of Illinois at  
Urbana-Champaign



**Libby Lunstrum**  
Boise State University



**Sara Koopman**  
Kent State University



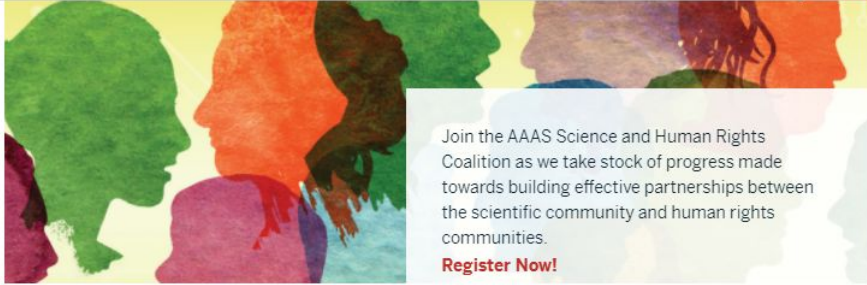
**Sheryl Luzzadder-Beach**  
University of Texas-Austin



**Emily Fekete**  
AAG



**Coline C. Dony**  
AAG



Join the AAAS Science and Human Rights Coalition as we take stock of progress made towards building effective partnerships between the scientific community and human rights communities.

[Register Now!](#)

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# Science, Technology and Human Rights Conference 2020

October 22-23, 2020 | Virtual



On October 22-23, 2020, the AAAS Science and Human Rights Coalition will host its first-ever virtual conference. Open to all who are interested in building connections across science, technology and human rights, the virtual format will include new opportunities for engagement.

**#aagSEATTLE**  
**AAG 2021 Annual Meeting**  
Wednesday, April 7 - Sunday, April 11

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**Thank you!**

