Research Dossier: Max Liboiron

Overview

My core research goal is to create theories and infrastructures for bringing anti-colonial research methods into an array of disciplines and spaces to foster research "otherwise." I am best known for founding CLEAR, a plastic pollution laboratory whose methods foreground humility and good land relations and bring theory and practice together at the multiple scales at work in research labs: the interpersonal, the institutional, and the disciplinary. I have also influenced national and international policy on both plastics and Indigenous research and invented open-source technologies and protocols for community monitoring of plastics. I am a key figure--meaning that I am invited to comment on and represent these fields--in Science and Technologies Studies (STS), discard studies, and plastic pollution environmental science.

In this dossier I will narrate the ways I endeavour to change research culture and practices *through* research in ways that are valued by the MUNFA Collective Agreement as articulated in section 12.13.b. I will begin by describing my key multi-project research foci, then outline specific key research metrics from section 12.13.b. in the Collective Agreement.

Sources of information and data

The information in this dossier comes from multiple sources, including:

- Almetric, a semi-public software that collects and collates information about published research outputs (mainly peer reviewed papers, but sometimes grey literature). Rather than only considering citations and their sources, Altmetric also includes data on online mentions (mainly news outlets and social media), public policy, Wikipedia, the Open Syllabus Project, and blogs. I use three metrics from them.
    - The Attention Score combines and weighs three elements: the *volume* of mentions (one per unique source), the *sources* of the mention (news sources are weighed more than blog posts), and the *author* of the source (which is how they account for bias, devaluing authors that often share to conspiracy sites and up-valuing doctors sharing to doctor-specific website, for example).
    - Comparison scores compare how a research output does against other research published around the same time and from similar or the same source (e.g. other peer reviewed articles in the same journal that were also published in May-June 2020).

    - Where in the World? Is a mapping function that pulls information from Twitter and Mendeley only, where the location of users is pulled exclusively from user bios. It does not track IP addresses.
- **Web of Science Author Metrics** include several tools that analyze results from articles within its corpus, which is skewed heavily towards the sciences and covers only peer reviewed articles. It tracks the number of lifetime citations and h-indices for articles within its corpus as well as a collection of visualization tools to analyze a particular author's corpus, including their citations.
- **Google Scholar metrics** analyze a wider range of publications, including blog posts, grey literature, book chapters, and other items that people have cited. It offers the number of citations per text, an h-index, and raw count of citations. When I use these figures, I am using them from Google Scholar, not Scopus, since Scopus contains roughly half of my research outputs.
- **WordPress Stats and Insights** track traffic to websites I oversee (mostly CLEAR's website and *Discard Studies*). I three types of data:
    - Visitors are counted when a user or browser comes to the website for the first time and must stay on the site for at least 10 seconds. The same visitor returning every week is only counted once.
    - File downloads: counts the number of times a file hosted on the website has been either opened within the browser or downloaded.
    - Views by Country tracks IP address when users allow website cookies. If a visitor location cannot be detected, they are not reflected in the data.
- **Informal Twitter Survey:** In early August 2022, I posted a question on Twitter, asking instructors who used my work to tell me: 1) the discipline(s) the course(s) was in, 2) the country they taught in, and 3) if they wanted to "leave a comment for the promotion committee about how/why/where you teach the work". Data was collected using a Google Form. Participants knew these data were going be shared with a promotion committee at Memorial. I use these figures and quotes below. For transparency, the raw data from the survey is in Appendix 17.

Table of Contents

Major research projects

Introduction: Science Otherwise

I am a methodologist. **My primary research interest in is *how* research is done**, and what the impactions, impacts, ethics, premises, and politics of those methods are. I work to expose and then challenge many of the extractive, colonial, sexist, and masterful norms of dominant research culture and instead conduct "science otherwise" to use a term coined by feminist STS scholar Susan Leigh Starr. In all aspects of my research, I work to ensure research practices—whether they are fancy statistics or taking out the laboratory trash—are mindful of the land relations they are always already part of, and endeavour to create or maintain good land relations in these acts. Core among these land relations are the legacies of colonialism: process that continuously provide non-Indigenous access to Indigenous land for non-Indigenous goals, including benevolent goals such as conducting environmental research. Too often, “good” research practices and dominant research ethics reinscribe colonial land relations, even if they achieve other forms of good. These are the power relations I attend to in my research.

I theorize and apply this work at multiples sites and scales: intellectual infrastructure such as author order, instrumentation, and research policy; social relations such as lab meetings, partnership models, and data agreements; and of course, in research methodology. Each project, partnership, and project in my work is a case study for both theorization and application of "science otherwise."

One of the anonymous respondents to my informal survey described this enmeshed relationship between different disciplines and between theory, practice, and ethics:

> *"Max Liboiron's work at the intersections of science and culture, Indigenous studies and ethics, has been fundamental to recent approaches to the environmental crisis. This is not hyperbole. Rather, in my work and in my experience as an Indigenous faculty member at a Research 1 university,* ***I have seen firsthand how Dr. Liboiron's interventions have already made an impact on how we discuss the relationships between science, the environment, and human and more-than-human relations.*** *This is no small feat, and it is something that may not show up in citations or peer-reviewed engagement with their work. But it is clear to me that* ***not only has Dr. Liboiron started to shape new conversations around pollution and its effects, but also on how we as residents of a particular landscape must engage more thoughtfully and ethically with the world*** *around us. The impact of these conversations is broad. What is more, these conversations influence how we live, more than how we research. And it is because of this broad and deep*

impact that I have an immense amount of gratitude for their work, their advocacy, and their commitment to foregrounding ethical relations as part of our engagement with academic study."

Another noted:

> *"Dr Liboiron's work helps me, my collaborators, and my students articulate our methodologies, and demonstrates by doing how to critically and relationally engage as Indigenous scholars in the practice of dominant science while acting to the greatest extent possible as anti-colonial scyborgs within the institutions where we work. My students who are new to critically engaging with dominant science commonly say that* ***Dr Liboiron's books & articles are among the most transformational they have ever encountered. Those that come from Indigenous & community-oriented traditions say that this work is permission to be/write/study on their own terms****."*

> *"Dr. Liboiron transforms the ways my students understand plastics and pollution, as well as relationships to land and environment. Their work and related coverage of their work also help to show students radically different ways of doing science and working with others.* ***I couldn't do the work I do without Dr. Liboiron's scholarship.****"*

I foreground these accounts of my work because they are the accounts that matter—if promotion is about influence and impact of research, as well as the reputation and circulation of work that come from having "superior" influence and impact, then those in a position to be impacted are the ideal spokespeople for these evaluations. Secondly, one of the challenges of the genre of the promotion dossier is narrating a list of projects and accolades, where even if they were fluid in practice, in narration they are split apart—these testimonies help bring back the spirit and relations that my research aims to create in the first place.

I begin by organizing my research into themes, narrating them using MUNFA Collective Agreement terms of merit, including "depth" (12.13.b. & 12.17.a.), "breadth" (12.13.b. &12.17.a.), "integrity" (12.17.a.), "superior record" (12.17.c.i.) and "international reputation" (12.17.a.). In each case, I note which aspects of the projects have occurred since becoming an Associate Professor (Sept 1, 2020-present). There is considerable overlap and cross-pollination, so some descriptions refer back to other projects to help give a sense of the interwoven nature of the work.

Project focus 1: CLEAR lab

Description of CLEAR

CLEAR is not just the space where I do research: **CLEAR is a research project in and of itself. Part interdisciplinary lab, part methodology incubator, and part safer space for underrepresented researchers**, CLEAR plays a role in developing and fostering anticolonial relations in all aspects of research. This requires significant structure and facilitation, which in turn require strategies and methods. Sometimes our work results in peer reviewed publications on methods such as equity in author order (Liboiron et al., 2017) or community peer review (Liboiron, Zahara, and Schoot, 2018), in open access manuals for creating ethical lab collectives such as the CLEAR lab book (downloaded 7k times), or, more recently and since I've becoming an Associate Professor, in films about how we run lab meetings using anti-oppressive facilitation techniques (Couple3, 2021). A methodological focus has resulted in research outcomes at multiple scales. For instance, a few years ago, when I asked CLEAR members what they thought was most valuable about the lab, they said: "it's a safe place to eat lunch." This is a **research outcome** that results from decentering knowledge systems that systematically create unsafe and unwelcoming spaces for the mainly gender minority and BIPOC junior scholars and their diverse ways of knowing, doing, and being in the academy.

Depth & Breadth: STS

There is an existing literature in Science and Technology Studies on laboratory culture and its impact on how and what kind of knowledge is produced, including critiques of the power dynamics of normal science. My work directing CLEAR **leverages these critiques and insights to transform how research is done**. Applying theory to lab activities then creates more nuanced theory, since the degree of accountability and jurisdiction (ability to exercise agency) is much more acute in your own lab than if you are studying a third party. For example, CLEAR was invited to contribute to an edited volume on maintenance, care, and purity (during my tenure as Associate Professor). Many other chapter authors critiqued scientists for purity discourses and practices in their research, as well as maintenance practices premised on purity. After discussing with CLEAR wet lab members, we agreed that while contamination protocols (mostly keeping plastic dust out of samples) are paramount in our bench work, we neither believe that purity is possible nor strive to achieve it so much as use it as an orienting trope for patience with samples, bodily comportment to mitigate contamination, and statistical models to understand multiple sources of plastics at various stages of research (Liboiron et al., in press). The way practice drives theory is also paramount in my book *Pollution is Colonialism*, detailed below.

Depth & Breadth: Development of new methods and tools

One way to understand "depth of knowledge" and (12.13.b.) "intellectual maturity" (12.17.a.) is not just through the content of knowledge produced, but in **how innovative knowledge production requires new tools**. In the case of CLEAR's work, because we are critiquing and changing dominant research practices, we have

needed to invent, adapt, and use new or unusual methods for research. These tools are also our intellectual production. Each method/tool outlined below has been developed or published since I became an Associate Professor.

Collective Consent

Dominant ethics regimes and leadership models focus on the coordination and consent of individuals. The underlying theory is that a mass of individual consent creates a group. However, **at CLEAR we have several methods and instances for facilitating and maintaining *collective* consent** and use them to choose our collective lab values (documented in Couple3, 2021) and in choosing author order (Liboiron et al. 2017, updated in Couple3, 2021). We also use the method outside of CLEAR in our **community peer review protocol.** When I began our peer review process, it was to report research findings to communities most impacted (in our case, the rural communities who caught, ate, and sold the fish we monitored for plastics) and ensure the results would not cause harm, as determined by the community. As with all consent processes, this meant creating an overt ability to refuse to allow our work to be published (Liboiron, Zahara and Schoot, 2018). Since becoming an Associate Professor, **this protocol has matured significantly and now starts with invitations and obtaining research questions from communities and is structured using Indigenous Data Sovereignty** where Indigenous partners own, control, and have access to data from their lands (details below) (see presentations by Pijogge and Liboiron 2020, 2021). This is a much more robust model of ongoing collective consent--and thus the ability to redirect and refuse the research--that has a significantly greater impact on the way the research is conducted and thus on findings. I discuss Indigenous Data Sovereignty in more detail below.

Participatory statistics

Since becoming an Associate Professor, I have started working with **participatory statistics, where community members analyze the data together using local knowledge and research priorities to refine research questions, query relationships, and test hypothesized correlations**. These sessions must be facilitated by a researcher who can: 1) translate common language into statistical queries and then translate results back in a way accessible to those without statistical training; and 2) conduct statistical queries quickly, in real time, during community meetings. **I used participatory statistics for the first time in 2022 for the white paper, *Comparative Food Pricing in Newfoundland and Labrador using Citizen Science*** (under community review). We held three community meetings online (during COVID) that included the citizen scientists who were part of data collection, members of the Nunatsiavut Government, Justice Coop, Food First NL who were part of the research design and guiding team, and members of the interested public (these meetings were advertised on social media and were open to all). I used a data visualization tool (Tableau) to show some of the basic relationships in the data (mainly descriptive statistics via time plots and

comparisons between places). Community members then began asking questions and/or posing hypotheses about the data, which I input into the dataset using Tableau and to a lesser extent, R. Participants then discussed results, often offering further queries or ways to cut the data. The final white paper is based on their questions and queries. I will be using the same technique with our plastic pollution data in Nunatsiavut this fall.

Participatory budgeting

Another new methodology I've committed to since becoming an Associate Professor **is participatory budgeting, where those receiving or who are impacted by funding make consensus-based decisions about funding priorities and distribution.** Administration is a key site for research ethics, and as such is understood as an important location to apply theory to practice. In my OFI phase 2 grant, **I used participatory budgeting with twelve research partners (Indigenous Nations and groups participating in the Aboriginal Aquatic Resource Oceans Management (AAROM) program) to decide how to allot our $480k budget**. The approach was so successful that I **used it again in my SSHRC Partnership Grant phase 2 planning** this summer, again with positive results. The success of this technique is **being written up as a case study** in an in-progress paper entitled, "Infrastructural Theories of Change" that theorizes the intersection of scales of agency, the politics and power relations of administrative infrastructure, compromise, and Indigenous sovereignty. Had the technique failed, it may have also been a case study in the same paper.

Open Science Hardware & Protocols

Most of my Open Science Hardware tools were developed while I was an Assistant Professor, but for the past year I have been working with Marine Institute student Janine O'Rielly on **DAISI (Drill-Assisted Ice Sampling Instrument), an open-source process for sampling ice for microplastics aimed to replace the $10k Kovacs Corer** that is the scientific standard. The licence and instructions for use will be published on the lab website, and an article is in preparation for submission to *The Journal of Open Hardware.* DAISI was funded by an OFI Seed grant.

I have also a **publication in preparation for an open-source process for digesting biotic samples** for plastic pollution research. Usually digestion chemicals are highly toxic, and so dangerous to users, expensive to dispose of, and can cause environmental harm. We have developed a method using over the counter drain declogger for similar results with lower risk (though the digestor is still toxic). The publication requires final edits and an author order meeting before submission to *POLS One* this October.

Impacts of CLEAR open technologies

While my earlier open technologies were developed while I was an Assistant Professor, activities such as media interviews, presentations, and publication that popularize them are only now bearing fruit. My open-source surface water trawls, LADI and BabyLegs, as well as my bench protocols for identifying plastics, **have**

been used in several published scientific studies, mainly in regions and contexts where researchers do not have access to research funding:

- Bashir, A., & Hashmi, I. (2022). Detection in influx sources and estimation of microplastics abundance in surface waters of **Rawal Lake, Pakistan**. Heliyon, 8(3), e09166. Used LADI.
- Nuamah, Francis, Samuel Kofi Tulashie, and Joseph Sefah Debrah. (2022). Assessing contamination of microplastics in **the Ghanaian coastal sea using a self-constructed LADI trawl**. *Marine Pollution Bulletin* 182: 114006. Used LADI.
- Gharuri, Clare. (2021). Case study: **Belize** – Towards Expansion of No-Take Areas in the MPA System. *The Commonwealth Blue Charter Case Study Series*. Used LADI.
- Camins, Elsa, William P. de Haan, Vanessa-Sarah Salvo, Miquel Canals, Amandine Raffard, and Anna Sanchez-Vidal. (2020). Paddle surfing for science on microplastic pollution. *Science of The Total Environment* 709: 136178. Used LADI and BabyLegs.
- Wilson, Alex. (2021). Queering Land-Based Education During Covid19. *Journal of Global Indigeneity*, 5(1), 1-10.
- Khan, H. M. S., & Setu, S. (2022). Microplastic ingestion by fishes from **Jamuna River, Bangladesh.** *Environment and Natural Resources Journal (EnNRJ)*, 20(2), 157-167.
- Lee, Huan Chiao, Mohammad Mansoob Khan, Nor Asmaa'Jaya, and David J. Marshall. (2022). Microplastic accumulation in oysters along a Bornean coastline (**Brunei, South China Sea**): Insights into local sources and sinks. *Marine Pollution Bulletin 177*: 113478.
- Blankson, Emmanuel R., Patricia Nakie Tetteh, Prince Oppong, and Francis Gbogbo. (2022). Microplastics prevalence in water, sediment and two economically important species of fish in an urban riverine system in **Ghana**. *PLOS one* 17(2): e0263196.

Impacts of CLEAR in STS, Environmental Sciences, and Geographic theory

CLEAR has been used as an extended example, case study, or field site in 30 works (see CV). Only a selection are detailed here. These papers engage in CLEAR's work in an extended manner, not merely as a citation or passing mention. Usually, **CLEAR is held up as a model for something the authors are advocating for (anticolonial research, equitable research spaces) or one or more of our methods are used as evidence for an argument** (not as a method in and of itself):

- Mahony, Martin. (2022). **Geographies of science and technology** II: In the critical zone. *Progress in Human Geography*, 46(2), 705-715.
- Posey, Julianna, and Erin Lavik. (2021). Storytelling for **social justice and engagement: a materials science class**. *Journal of Chemical Education* 99(1): 472-479.

- Kawa, Nicholas C., Mark Anthony Arceño, Ryan Goeckner, Chelsea E. Hunter, Steven J. Rhue, Shane A. Scaggs, Matthew E. Biwer S. Downey, J Field, K. Fremillion, J McCorriston. (2021). **Training wicked scientists for a world of wicked problems.** *Humanities and Social Sciences Communications*, *8*(1), 1-4.
- Kravitz, Ben, and Tina Sikka. (2021). Conducting more **inclusive solar geoengineering research**: A feminist science framework. arXiv preprint *arXiv*:2109.04217.
- Packer, Melina. (2021). Chemical Agents: The Biopolitical Science of Toxicity. *Environment and Society,* 12(1): 25-43.
- Ruddy, Evie, and Laura Horak. (2021). Orienting Toward Social Justice: **Trans, Anti-Racist, Anti-Colonial, Feminist, Queer, and Crip Approaches to Ethical Practices in the Digital Humanities**. *Canadian Society of Digital Humanities Annual Conference* (online).
- Kaşdoğan, Duygu. (2020). Feminist Laboratuvarda Bilim, Emek ve Politika. *Praksis*, (52), 157-180.
- Bosworth, Kai. (2020). **Feminist Geography** in the Anthropocene: Sciences, bodies, futures. In *Routledge Handbook of Gender and Feminist Geographies*. Routledge: 445-454.
- Fried, Samantha Jo. (2020). How Climate Science Could Lead to Action, *American Scientist* 108(1): 34.
- Albornoz, Denisse, Katherine Reilly, and Marieliv Flores. (2019). **Community-Based Data Justice**: A Model for Data Collection in Informal Urban Settlements. *Development Informatics Working Paper*, (82).
- Black, CarrolAnne. (2019). ***Gender Equity in Ocean Science:*** *Amplifying Voices, Increasing Impact*. Department of Fisheries and Oceans, Canada.

Most of these studies are in the field of Science and Technology Studies (STS), the social study of science and technology. In addition to being used as an exemplar in theory, CLEAR's work doing "science otherwise" has been **recognized in STS by the inaugural award of the Making and Doing Prize from the Society for the Social Studies of Science (4S)** (2015), an invited **keynote for the inaugural Indigenous STS conference** at the University of Alberta (2018), an **invitation to be part of an edited collection on *Unsettling STS*** (in press), and most notably, an **invitation to present on "the future of feminist STS" for *Catalyst* journal's 10th anniversary. The other panelists included Donna Haraway and Banu Subramaniam**. The invitation was a surprise and an honour, to say the least.

Impacts of CLEAR in research culture

The CLEAR lab book has been **downloaded at least 7,000 times** (we only have data from 2019 onward for downloads), and the CLEAR lab book page is one of our most viewed pages. In the instructor survey from Twitter, **over 15% of respondents taught CLEAR's lab book**. Respondents are using the lab book in Sociology,

Art/Design, Education, Anthropology, Biology/Life Sciences, Chemistry, Engineering, Information/data sciences, Indigenous Studies, STS, Geography, Mathematics, and Environmental Studies. Some respondents wrote:

> *"I am using the lab manual as required reading to kick off a discussion* ***on research integrity in a PhD level course on professional ethics.****"*
>
> *"Dr. Liboiron's work serves as an example that I repeatedly turn to in* ***training STEM graduate students****. I run a training program that teaches researchers how to addresses historical bias and legacies of oppression in scientific practices. Their work and the materials coming out of the CLEAR lab have been an invaluable resource that resonates with participants. I have* ***trained over 200 researchers at UC Davis*** *including graduate students, postdocs, and faculty and exposed them to Dr. Liboiron's work."*
>
> *"All Dr. Liboiron's work has been a key reference in my research for more than ten years. Pollution is Colonialism and CLEAR lab book have now become key in my interdisciplinary teaching, no matter the subject. I teach their work as a rol[e] model on how to think and practice thinking, writing, researching, citing, reading or living with others and in good relations. Their work has become an incredibly productive reference in postgraduate settings, artistic environments and institutions, where there is no syllabus and yet, Liboiron's work becomes an incredible inspiration and 'resource' to think/do (everything) differently and in better relations.* ***Their work has changed us****, and I can't express my gratitude for it."*

Some researchers have taken up our work in the development of the following lab structures, social science research designs, and/or guiding documents (mainly lab manuals) for other groups and institutions. The following list is based on personal communication and where CLEAR has been cited as a model or in a method section in published literature or on websites:

- Agro-ecology Research-Action Collective (ARC), interdisciplinary collective based in the US, Canada, and Mexico
- Carceral Ecologies Lab, UCLA
- Center for Interdisciplinary Environmental Justice (CIEJ), interdisciplinary collective based in San Diego, CA, San Francisco, CA, El Paso, TX, and Guerrero, MX
- Couple 3, Filmmaking Handbook, independent film production company, New York City
- Environmental Data & Governance Initiative (EDGI), collaborative authorship guide
- GenderSci Lab, Harvard University

- Moore Institute for Plastic Pollution Research, California
- More-Than-Human Lab, Te Herenga Waka (Victoria University of Wellington), Aotearoa (New Zealand)
- Political Ecology Lab, UC Davis
- Science and Society Collective, University of Ottawa
- Solar Ecology Collaborative Research Lab, College of Earth and Mineral Sciences, Penn State
- Transgender Media Portal, Carleton University
- Gender and Politics Lab, Memorial University
- Beresford, Melissa, Amber Wutich, Margaret V. du Bray, Alissa Ruth, Rhian Stotts, Cindi SturtzSreetharan, and Alexandra Brewis. (2022). Coding Qualitative Data at Scale: Guidance for Large Coder Teams Based on 18 Studies. *International Journal of Qualitative Methods* 21: 16094069221075860.
- Bittner, Amanda. (2021). Teaching Research Design: The Gender and Politics Lab and Reflections on the Lab Model for the Social Sciences. In *The Palgrave Handbook of Political Research Pedagogy*: 205-214. Palgrave Macmillan.
- Boulicault, Marion, Annika Gompers, Katharine MN Lee, and Heather Shattuck-Heidorn. (2022). A Feminist Approach to Analyzing Sex Disparities in COVID-19 Outcomes. *IJFAB: International Journal of Feminist Approaches to Bioethics* 15(1): 167-174.
- Oldach, Eliza, Helen Killeen, Priya Shukla, Ellie Brauer, Nicholas Carter, Jennifer Fields, Alexandra Thomsen, C. Cooper, L Mellinger, K Wang, and C. Hdendrickson. (2022). Managed and unmanaged whale mortality in the California Current Ecosystem. *Marine Policy* 140: 105039.
- Smaranda, Sirbu. (2022). *Witchcraft Futuring: The Knowledge Below the Surface*. Thesis: Linnaeus University, Faculty of Arts and Humanities, Department of Design

Impacts of CLEAR research on EDI

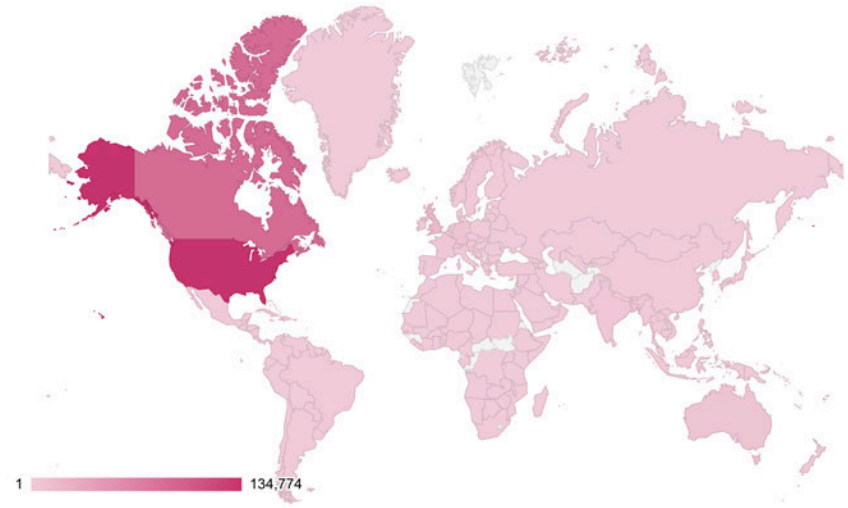
One of the unanticipated impacts of my work in making CLEAR an engine for methodological interventions in research space is **how that research has been taken up in equity, diversity, and inclusion (EDI) work**. For example, one of the case studies above is a white paper for **DFO on gender equity in ocean research** (Black 2019), which discusses CLEAR as a positive example. Several survey respondents noted using CLEAR's publications for EDI, including how they "Used lab guidelines in **DEI training for lab scientists**" in a "US Government facility, non-academic." Dr. Kim Clark (who included her name in her response) wrote, "as **Assistant Dean (Equity, Diversity, Inclusion & Decolonization) in the Faculty of Social Science at Western University**, among other things I gather and share resources to help members of the FSS community deepen the principles of EDI-D through all of our activities. I have shared several of the blog posts from Max Liboiron's CLEAR lab… We are also working on a Faculty-wide EDI-D webpage where links to some of these

thought-provoking resources will provided for those who want to learn more about the range of points where and ways that principles of decolonization can be integrated into their work. "

CLEAR's international reputation and circulation

You can see the range of countries represented above in terms of where our open hardware is used (**Ghana, Pakistan, Bangladesh, USA**), locations of labs that use our methods (mainly **Canada, USA, and Mexico**), and where the CLEAR lab book is taught (primarily the **US, UK, Canada, and other parts of Europe**).

The CLEAR website hosts most of our methods, papers, open-source materials, and project descriptions. We've had over **305k unique views, with more than half of those in the last three years**. **More than 80% of viewers are outside of Canada.** The largest share of viewers by far are from the United States (31%), followed by Canada (18%), the UK (3%), and then ~1% each from Germany, Australia, New Zealand, France, the Netherlands, and the Philippines.



Country	Views
United States	134,774
Canada	84,945
United Kingdom	15,145
Australia	6,607
Germany	5,973
France	3,822
India	3,090
Philippines	3,039
Netherlands	2,997
New Zealand	2,537
Spain	2,523

Research Dossier Fig 1: CLEAR website views for all time, by country.

Project focus 2: Indigenous sovereignty in research

Policy activities and impacts

A cluster of my professional activities have focused on Indigenous sovereignty in research, the right for Indigenous groups to direct activities that directly impact their peoples and lands. Two of the most notable achievements in this area completed within a month or two of becoming an Associate Professor:

1. 2018-2020 I oversaw the creation of **Memorial University's Research Impacting Indigenous Groups (RIIG) Policy**, a university policy based on the collective consent of Indigenous groups at the start of research. Working with a team from the Vice-President (Research) Office and Indigenous advisors, I consulted with over 2,000 stakeholders and rightsholders, both within the university and without (the average number of consultations for policy creation at Memorial is less than 50). This policy required considerable research, including horizon scans of similar policies worldwide (since Canadian universities and colleges did not have any), an overview of administrative jurisdiction and law, and depended on my expertise as a researcher in general and on research ethics and models of sovereignty in particular. I turned to theories and practices of *sovereignty* and the rights of Indigenous groups to self-determination in research, which required a different approach. The policy is the result.
2. The second university-level research infrastructure for Indigenous sovereignty in research that I put into place is **Memorial's Indigenous Research Agreement (IRA), an Indigenous data sovereignty contract** that confers Indigenous groups the right to control, own, access, and possess data created on their lands or on their peoples. Memorial had three standard contract agreements for governing data transfer, and the IRA became the fourth. This was the first of its kind for universities in Canada or the US (based on consultations with North American experts in Indigenous Data Sovereignty, a horizon scan, and reaching out to higher education institutes that served Indigenous students or advertise their links to Indigenous nations).

While both of the above activities are indeed a type of service, I want to emphasize **that they are also the products of acute expertise, required substantial research, and can be considered research outputs**. Both were created while I held the inaugural Associate Vice President (Indigenous Research) (AVPIR) position, which allowed me to scale up my efforts as a researcher-administrator beyond those usually experienced by an ASM. While the interrelation of teaching and research is often acknowledged in promotion evaluations, I would also submit that research and service is often necessarily intertwined as well. This is recognized, in part, by one of the replies from a scholar who uses my work in their teaching, who stated that "Among other

examples, I use Max's work to illustrate that high-quality data can be collected ethically in ways that *repair relationships*" (emphasis added). Policy and contract outcomes are very much part of that work.

Facilitation as an ethical research role

In 2020, I began the project, **"First Nations Data Sovereignty and Infrastructures for Atlantic AAROMs" within *The Future Ocean and Coastal Infrastructures (FOCI)* project funded by the Ocean Frontier Institute.** This is the project mentioned above that used participatory budgeting to determine how funding would be allotted between **11 partners**:

- Assembly of First Nations,
- Atlantic Policy Congress (APC) of First Nations Chiefs Secretariat,
- Mi'kmaq Confederacy of PEI (MCPEI), Unama'ki Institute of Natural Resources (UINR),
- The Confederacy of Mainland Mi'kmaq (CMM),
- Mi'kmaq Maliseet Aboriginal Fisheries Management Association (MMAFMA),
- Anqotum Resource Management,
- Gespe'gewaq Mi'gmaq Resource Council (GMRC),
- Maliseet Nations Conservation Council (MNCC),
- Mi'kmaq Alsumk Mowimsikik Koqoey Association (MAMKA) east,
- Mi'kmaq Alsumk Mowimsikik Koqoey Association (MAMKA) west, and
- NunatuKavut Community Council (NCC).

This was **my first large-scale research project that solidified my research role as a facilitator, rather than the driver**, of projects relating to Indigenous group's research priorities. In short, the project is premised on Indigenous sovereignty. This approach acutely impacted the types of research questions asked, the methods used, and the personnel trained. My role as a researcher was to create and maintain knowledge infrastructure that both allowed some knowledge to stay local, sacred, and protected while allowing other knowledge to be shared, translated out of place, and circulate. There is a manuscript in preparation called "Infrastructural Theories of Change: The Case of Administrative Activism" that outlines the role of participatory budgeting in changing dominant power relations in research settings.

The **second project that uses a sovereignty and research infrastructure approach is, "Nunavut Arctic College's North by North Research Program: A NAC Case Study Exploring Inuit Qaujimanituqangit in Nunavut Institutional Research**," a **$1.2 million grant** through ArcticNet's North by North Project. While I am the PI on the project, the North by North project requires that 100% of funding be spent in Nunavut and/or on Inuit. The project goal is to investigate research trends, priorities, and outlooks in Nunavut according to Inuit and northern standards, specifically in regard to Inuit Qaujimanituqangit (IQ), or Inuit knowledge. To these ends and at the request of NAC staff, I "trained the trainers" for conducting an extensive systematic literature

review to document the Inuit-researcher relations of *all* research conducted in Nunavut since the 1970s. I have also provided infrastructural support for a project led out of Nunavut called "Tuqqutausimajuviniit Angiramut Utiqtut – Home from the Archives" to **repatriate** archived film and sound recordings made by Western researchers back to communities (repatriation). Jamal Shirley, the director of the Nunavut Research Institute and core partner on the project, notes that “These are archival materials that have never been heard or seen in these communities” (as quoted in *The Gazette*'s "Building Northern Capacity," 2022). We are working together to ensure a copy stays with community, and a digitized copy is held at NAC.

Reconciliation science and mistakes

An opportunity to articulate the tension between colonial norms of science and what anti-colonial science might look like presented itself in 2020, when writing up results of a large-scale collaboration with Evan Edinger, DFO staff, CLEAR alumni, and Dr. Edinger's former students (19 authors in all). Plastic pollution samples from Nunavut and western Greenland had been obtained with permission, but without participation or other forms of input from Indigenous groups whose homelands samples were from. Community peer review was difficult to implement because researchers had no community ties in those regions. The original baseline paper was transformed when I used it as an opportunity to show the processes in normal science that led to these gaps, as well as how we could attempt to address them. I brough on several Indigenous co-authors with expertise in Indigenous research methods and governance in Inuit Nunangat. The resulting paper, "**Abundance and types of plastic pollution in surface waters and the case for reconciliation science in the Eastern Arctic (Inuit Nunangat)"** is fairly odd in that it both presents scientific methods and findings and then analyzes and criticizes those same methods and findings using social science approaches. It ends with theorization of what "reconciliation science" might entail, and list of recommendations for doing science better in the future. **Almetrics for the paper put it in the top 5% of all research outputs scored by Almetrics, and rate it as having a High Attention Score (93th percentile for outputs of the same age, and 94th percentile for outputs of the same age and source)** (see Appendix 7). The paper itself is in Appendix 6.

Research contracts with Indigenous nations

There are two more partnerships and projects on the horizon that are in a similar spirit to the OFI FOCI work and the North by North program. I have a contract with **Miawpukek Mi'kamawey Mawi'omi** (Miawpukek First Nation in southern Newfoundland) and a letter of relationship with the **Prince Albert Grant Council** (a tribal council representing 12 First Nation bands in Saskatchewan) to work on plastic pollution research together. In both cases, I will be using the facilitation model of research to guide ways of working together that foreground local needs, accountabilities, and ways of knowing.

Project foci 3: Plastic pollution science

Partnership with Nunatsiavut Government

Five years ago, I began a partnership with the Nunatsiavut Government (NG) **working side by side with their Northern Contaminants Researcher** Liz Pijogge, to **develop one of the most extensive, multi-media, long-term plastics monitoring programs in the Arctic**. Our research questions, sampling sites, and sampling species/media are based on community priorities expressed both explicitly in conversation and workshops as well as implicitly from activities with the Nain community freezer. This year, we have added **a youth apprenticeship program** through CINUK funding for a young person to stay full-time in their homelands to learn research methods and culture.

While much of this research resulted in much-needed baseline data that would allow us to tell whether there were changes in plastic pollution levels in the province (e.g. Liboiron et al., 2016, 2018, 2019, 2020, 2021, Avery-Gomm et al. 2017, Provencher et al. 2018), we also **created, tested, and nuanced methods to foreground community priorities and participation** in this research, including community peer review (Liboiron, Zahara, and Schoot 2018), open source protocols and hardware (e.g. DAISI), place-specific methods (e.g. McWilliams, Liboiron, and Weirsma 2018), Indigenous Data Sovereignty, community-based monitoring designs (see all presentations with Pijogge and Liboiron 2019-2022), participatory statistics and (ongoing). All data from the Nunatsiavut project goes directly to NG and is currently embargoed. We anticipate it being approved for publication this fall (2022).

This work drew the attention of **The Arctic Council**, "a high-level intergovernmental forum that addresses issues faced by the Arctic governments and the indigenous people of the Arctic." In 2019, Liz Pijogge and I were i**nvited as the two Canadian representatives on their Arctic Monitoring and Assessment Programme (AMAP)'s Marine Litter Expert Group**, which we've served on ever since. The group meets twice a week to: 1) produce knowledge about the state of the knowledge on plastics in the Arctic; 2) decide on best practices and recommendations for future monitoring for the international scientific community, and 3) communicate these results in peer reviewed articles (e.g. Martin et al. 2022, Lusher et al. 2022, Pollet et al. submitted), government reports (AMAP 2021a, 2021b, 2021c), and invited international presentations (e.g. International Symposium on Plastics in the Arctic presentation with Pijogge, 2021). While Pijogge and I participate **as experts in monitoring plastics in fish, mammals, on shorelines, and in water, we are also the sole experts on community-based monitoring, Inuit/Indigenous Traditional Knowledge, and Indigenous partnerships in research** for the entire Expert Group. Thus, we have done significant editing work or even written parts of AMAP reports and articles which we are not listed as authors on, often at our request because much of the research is still in a deficit framing where southern researchers are in the primary

position to solve problems in and for the North. We are working with the Arctic Council to create an Indigenous-led expert working group that can provide this type of expertise more equitably than the current arrangement.

Impacts of plastics pollution research: methods harmonization

As plastic pollution research has grown from its infancy ten years ago when all research was done with whatever tools and measures were at hand to having its own journals today, a **core issue in the field has been the variety of methods used to monitor plastics,** which has resulted in many findings being incomparable between studies. One call in the professional community has been to standardize methods universally so that all studies are directly comparable. I have been one among several voices **opposing this approach, instead advocating for harmonization of methods (where some but not all aspects overlap) and robust transparency in methods** (so it is clear what can be compared and if some parts of a study can be compared while others can't be).

I've advocating for this position mainly because of early experiences attempting to adapt the "universal" shoreline protocol--the most standardized in the field--to rocky shorelines in Newfoundland and Labrador. They simply didn't work, and we found that microplastics, the most common size class of plastics worldwide, was radically underrepresented on our studies of rocky shorelines, and argued that "new protocols and/or technologies will have to be developed to capture microplastics on rocky beaches" (McWilliams et al., 2017). Several years later, a systematic review brought this place-based methodological issue into even sharper relief when we found that after reviewing "361 published shoreline surveys, encompassing 3,284 sample sites, [we] found that only 4% of sites included coarse sediment [rocks], only one study described sampling organic material [the wrack line] for plastic, and only 2.5%of sites are sampled in the presence of ice or snow" (Melvin et al., 2021). In short, standardized methods have consistently assumed--and thus prioritized--landscapes that are not characteristics of Newfoundland and Labrador or the North generally. This issue was central to my expert witness testimony for the Canadian House of Commons in 2019, presentations at The Society of Environmental Toxicology and Chemistry (SETAC) (2019), media interviews about this on Inside/Outside Radio (2020) and New Hampshire Public Radio (NHPR) (2020) and a public article I wrote for *Orion Magazine* (2020). It is also the reason 23 other scientists and I wrote an open access article on "Reporting guidelines to increase the reproducibility and comparability of research on microplastics" (2020) to address necessary differences in methods and still allow comparison between studies. The article includes guidelines, check lists, and other resources for researchers. The paper is ranked in the **top 5% of all research outputs scored by Altmetrics, is the #1 article (of 16) of similar age from *Applied Spectroscopy*, and is one of the highest-scoring outputs from the journal (#6 of 2,121 articles)** (Appendix 8). Finally, I have

impacted plastic pollution methods by creating several open science hardware technologies, detailed above with notation on where and how they have been used by other scientists.

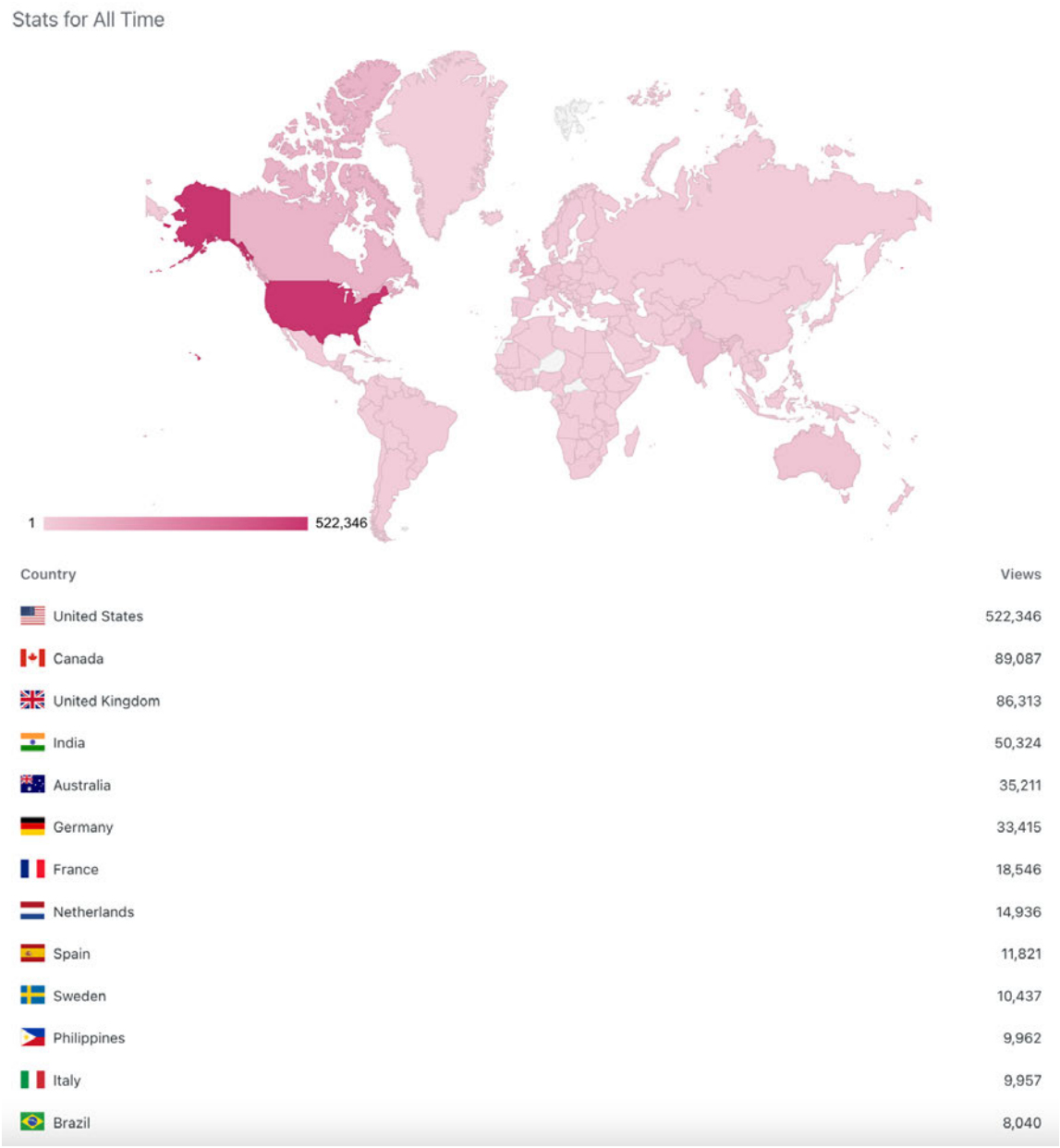
Impacts of plastics pollution research: national and international policy

In the policy realm, I was an invited expert witness to the **Canadian House of Commons Standing Committee on Environment and Sustainable Development** (ENVI) in April 2019. The committee was hearing testimony in preparation for their *Report 21: Turning the Tide on Plastic Pollution in Canada* (released June 18, 2019), where both my oral and written testimony figures heavily in the report. Since becoming an Associate Professor, I have been involved in both formal and informal consultations with Environment and Climate Change Canada and the United Nations' Global Partnership on Marine Litter Action Plan (GPML) (not in CV). In 2022, I was invited by the **United Nations Environmental Programme** to present on “Indigenous plastic pollution research and open data” for the GPML group. In 2021 I was invited to speak to the **European Zero Waste Alliance (mainly environmental ministers and environmental NGOs)** on plastic exports and their relationship to colonialism, including the metrics used for "success" in plastic pollution mitigation, which often means exporting plastics for "recycling" in over-extracted (sometimes called developing) nations. Finally, I am one of the many scientists in the **Scientists' Network for an Effective Plastics Treaty (SNEPT),** which advises various NGOs and stakeholder groups on their activities concerning the new UN Treaty on Plastic Pollution (2022). I've given several interviews on the Treaty, including with CBC's Quirks and Quarks, the *National Observer,* and *Mother Jones.*

Project Foci 4: Discard studies

Discard Studies blog (international following)

From 2011 to 2021, I was the Managing Editor of *Discard Studies*, a blog-based publication platform accessible to waste practitioners, high school students, artists, and a general interest audience as well as being nuanced and precise enough for expert academic audiences. During my tenure I **oversaw the publication of over 700 posts read by nearly 988,000 unique viewers** (stabilizing at about 100k/year). The blog's **main readership is based in the United States** (522k viewers for the blog's lifetime), followed in equal shares by **Canada and the UK (89k and 86k** respectively). **India** is the next largest share (50k), with just over 30k each from **Australia and Germany**.



Country	Views
United States	522,346
Canada	89,087
United Kingdom	86,313
India	50,324
Australia	35,211
Germany	33,415
France	18,546
Netherlands	14,936
Spain	11,821
Sweden	10,437
Philippines	9,962
Italy	9,957
Brazil	8,040

Research Dossier Figure 2: Countries of viewers for the Discard Studies blog.

The blog and my related publications and talks have been **credited with the solidification of the field of discard studies,** which studies the material lives and politics of things thrown away, extinguished, or alienated from a critical social science perspective. My most cited blog post on *Discard Studies* (cited 48 times) is about the field itself, entitled, "The what and the why of Discard studies" (2018).

Discard Studies: Wasting, Systems, and Power (MIT, 2022)

My work in the field of discard studies led to Oxford University Press, MIT Press, and Routledge reaching out requesting that I publish a book on the topic. I declined repeatedly due to time constraints until 2018, when

Dr. Josh Lepawsky (Geography, Memorial University) approached me to write the book collaboratively for MIT Press. Our resulting **fully open access, peer-reviewed book, *Discard Studies: Wasting, Systems, and Power* was published by MIT press in May 2022**. **The initial print run (500 books) sold oul** before the book was even released, even though the book is freely available online. In **three short months since publication, it** has been **downloaded nearly 4.500 times** and **cited seven times**. The book is particularly popular in the UK (appendix 16). According to WorldCat, the book is in 211 libraries, even though the book is open access and freely available online.

Reviews of the book have included those by Alice Mah, Professor of Sociology at University of Warwick, who writes, "Profoundly insightful, important, and provocative, Discard Studies reveals how dominant systems maintain power through discarding and offers an inspiring theory of change." Another by Nancy Langston, Distinguished Professor of Environmental History at Michigan Technological University, writes, "In *Discard Studies*, Liboiron and Lepawksy accomplish the seemingly impossible: a brilliant, entertaining, theoretically engaged, and accessible introduction to a field of vast importance. Read this! Even better, assign it to students."

High impact publications in the field of discard studies

1. A core peer-reviewed publication is "Toxic Politics" (2018), written with Manuel Tironi (based in Chile) and Nerea Calvillo (based in Spain and Poland) for our special issue on discard studies in *Social Studies of Science,* one of the top journals in the field of Science and Technology Studies. That paper is the **second most cited paper in *Social Studies of Science* in last 3 years (cited 193 times) and in the top 5% of papers rated by Altmetrics** (Appendix 9 & 10).
2. More recently, the US-based journal *Art in America*--one of leading art journals in the world--invited me to write about the intersection of environmental art and science with artist Maru Garcîa that brings discard studies into disciplines of visual arts (Garcîa and Liboiron, 2022).
3. Another **invitation was from the World Health Organization (WHO) to co-write a write paper** for the Regional Office for Europe on "How do the cultural contexts of waste practices affect health and well-being?" (2022). This **white paper was contracted in order to impact European Union policy around waste management** in a way that acknowledges how waste is not merely a technical problem, but is always bound up in power relations, cultural norms, and social relationships.

Impact of discard studies research on different fields and disciplines

In many ways, the book brings over a decade of developing the field of discard studies into focus. One survey respondent from the **United States** noted, "Dr. Liboiron's work has **helped to define a field.** They have been

instrumental in underscoring a systems approach to waste and discard." Another respondent added, "Liboiron's work has **transformed plastic studies, environmental studies, and higher education more broadly. They are respected across disciplines**. I cite them prominently in my forthcoming environmental and cultural studies book to define plastics. When talking with my acquisition editor at University of California press who should blurb my book, she said: "Liboiron is really busy—everyone wants them to blurb their books these days." Discard studies and environmental justice studies have a great deal of overlap. Other than Kyle Whyte and Robin Wall Kimmerer, I can't think of a more cited Indigenous scholar today." (this is not the case, by the way: Indigenous scholars such as Kim Tallbear, Vine Deloria Junior, and Greg Cajete are all cited more, though they are also senior to my position. I do have more citations than Zoe Todd somehow, but the margin is less than 100 citations).

I will end this section with a final note on **breadth of interdisciplinary impact.** One survey respondent from the UK described how my work in discard studies was being brought into disciplines of **business and management**:

> *"The University of St Andrews School of Management is - according to the Times Good University Guide 2022 - the **top Management School in the UK**. Dr Liboiron's work is **included on the syllabus of 3 modules in our School of Management** (2 Core and 1 Option) and, as a consequence, students from 5 programmes (approx. 250 students per year) - MLitt in Human Resource Management; MLitt in Marketing; MLitt in International Business; MA (Hons); BSc (Hons) - are taught to critically evaluate the concept of the circular economy through the framing of discard studies. Dr Liboiron's blog post "The what and the why of Discard Studies" has been **core reading for the past 2 years**, in the upcoming semester the newly published Discard Studies book by Liboiron and Lepawsky will be used in its place. "*

Research foci 5: *Pollution is Colonialism*

I have left a discussion of *Pollution is Colonialism* to the end as it is the keystone work that brings all my other foci together, weaving into a sophisticated argument about land relations in research. The book (published since becoming Associate Professor) is **one of the most significant research contributions to date** with far reaching and ongoing impacts for the developing of fields/areas of Science and Technology Studies, anticolonial methodologies in research generally and STEM specifically, and in the ethics of research on Indigenous land. I have included the introduction of the book in the appendix (Appendix 1).

Manuscript framework

Pollution is Colonialism presents a framework for understanding **how land relations are central to all research methods, and thus how research can align with or against colonialism.** Even when researchers are

working toward benevolent goals, I demonstrate that environmental science and activism are often premised on a colonial worldview and access to land. Focusing on plastic pollution, the book models an anticolonial scientific practice aligned with Indigenous, particularly Métis, concepts of land, ethics, and relations, both through the case study of CLEAR and through the medium of the book itself. As such, the **book is as much a theory text as a methodological text**--a heavy use of footnotes annotates the way the text is written to discuss issues of accountability, citational politics, peer review, gratitude in research, extractive reading practices, positionally, and other usually unmarked or under-described methods and ethics in writing. In that way, *Pollution is Colonialism* is a media experiment in making arguments through the content *and* the medium of writing.

Reviews of the book

Pollution is Colonialism has had 15 positive reviews. They are not on my CV, so I list them here:

1. Stanley, Anna, for *Antipode* (2021). (Appendix 3)
2. Arsenault, Kerri, for *Orion* (2021).
3. Bell, Joshua, for *Smithsonian Magazine* (2021)
4. Burke, Katie, for *American Scientist* (2021)
5. Garaerts, Michelle, for *Etnofoor* (2021).
6. Kramer, Caecilie, for *Ethnos: Journal of Anthropology* (2021) (not open access)
7. Stagner, Jacqueline, for *International Journal of Environmental Studies* (2022)
8. Wiebe, Sarah Marie, for *Environmental Politics* (2022).
9. Chhotray, Vasudha, for *Contributions to Indian Sociality* (2022).
10. Fox, Liam, for *Social & Cultural Geography* (2022).
11. Zuroski, Eugenia, for *Interdisciplinary Studies in Literature and the Environment*
12. Jones, Madison, for the Environmental Communication Division of the National Communication Association blog (2022)
13. Rodineliussen, Ramus, for *Anthropology Book Forum* (2022).
14. Svoboda, Michael, for *Yale Climate Connections* (2022).
15. Macklin, Rebecca, for *The Year's Work in Critical and Cultural Theory* (2022).

The UK-based *Journal of Landscape Research* is **hosting a special review forum on the book**, with reviews by Drs. Rosie Alegado (Oceanography, USA), Emma Lee (Indigenous Leadership, Australia), Deondre Smiles (Geography, Canada), and Tim Waterman (Architecture, UK) and a response from me. It should be published in 2022/23.

Other reviews are less formal. In her blurb for Duke Press, Indigenous scholar Candis Callison states, “There are exceedingly few texts like this that ask from an Indigenous perspective: how might we consider relations between science and land and water and still practice ‘good’ science? ***Pollution Is Colonialism*** **is at the leading edge of a significant turn in science and technology studies toward thinking with settler colonialism** as a structure and terrain, and by bringing Indigenous studies into conversations with pollution, plastics, and lab sciences, this book makes a major contribution.”

It is hard to gauge the direct impact of a book on scholarly thought, particularly when it has been in circulation for just over a year. While the book has been **cited 207 times** already (via Google Scholar), I think some of the comments from the informal survey of scholars who teach my work are a better indication:

"Pollution is Colonialism has fostered some of the ***most generative discussions in an undergraduate course in almost a decade of teaching*** *Japanese literary and media studies in the department of East Asian Studies at Princeton University. The relational orientation of Max’s writing truly invites and inspires students to examine the settler colonial epistemologies that we typically bring to questions of environmental harm."*

"I teach Max's work (specifically, Pollution is Colonialism) in two environmental studies courses in the School of the Environment at University of Toronto. Max's work is, for many students, ***nothing short of a paradigm shifter*** *in the best possible way."*

*"I taught *Pollution is Colonialism* in an advanced level graduate seminar on "Narratives of Development and Globalization." In this class we mostly read recent monographs and literary works that take up the afterlives and current iterations of regimes of colonization and development -- Prof.*

Liboiron's text was ***one of the most original, groundbreaking, and grounding texts we read all semester*** *and became a touchstone for the works we read after."*

"This year we set Pollution is Colonialism (and the two Media Indigena podcast episodes discussing it) as one of the ***primary textbooks*** *for University of Vermont's Environmental Studies 001 course (~250 students),* ***replacing an older textbook that has been used since the course's inception a decade or so ago****. We felt like the combination of subject matter (including examples and stories) and the way the text was written would be a great way for students to be engaged with learning about these complicated issues. We also hope that the openness with which the text is written, including explanations of why the book is the way it is, editorial choices, and footnotes, offers an introduction to broader ethical themes outside the 'hard curriculum' of the course, and encourage students to consider what it means to relate ethically within science and academia."*

"I am an Associate Professor at Colby College in Waterville, Maine, and I assign Pollution is Colonialism as one of the foundational texts for an upper level anthropology and STS seminar. Students have found the book to be ***transformational*** *in the way they think about pollution, land, research and environmentalism."*

Book awards

Pollution is Colonialism was published in May 2021 and has already **won two international book awards**:

1. The **Labriola Center American Indian National Book Award** for book that "focus on topics and issues that are pertinent to Indigenous peoples and nations." Authors can be academics, independent researchers, or work for tribal offices and government agencies.
2. The **Clay Morgan Award for Best Book in Environmental Political Theory** from the Western Political Science Association (WPSA), whose purpose is "to recognize outstanding scholarship, published in a book-length monograph, which utilizes the resources, literatures, and approaches of the field of political theory to address intersections between contemporary or historical environmental challenges on the one hand and the philosophical and ideological concepts, principles, and debates animating political life on the other."

Comparative success of the book (Duke University Press)

Duke University Press is in the **top tier of North American University Presses**, as designated by the AUPresses, specializing in **theory** in the humanities and social sciences. Duke Press is best known for cutting edge theory in queer and Black studies that change the state of academic fields (see the write up of Duke Press's Senior Editor in *The New Yorker* on the topic (2022)). *Pollution is Colonialism* has **sold out twice** from

Duke Press. It is the second **top seller for any book published in the Spring at Duke Press in memory**, behind Sarah Ahmed's *Living a Feminist Life* (Appendix 2). This is nearly unheard of for a first book. It has **sold over 7,500 copies** in print (more than most academic books sell in their lifetimes), and many more in electronic formats (not tracked), with nearly 400 in library holdings around the world. Ken Wissoker is the Senior Executive Editor of Duke University Press and has written a letter detailing the specific successes of *Pollution is Colonialism* both in raw numbers and in comparison to other books at Duke University Press (Appendix 2).

New projects: Indigenous quantitative & collective methodologies

Since April 2022, I have begun a series of new projects with funding from SSHRC and NSERC to collaboratively investigate Indigenous methodologies in quantitative research and in creating research collectives. Both projects deepen my research on the theory and practice of compromise--the condition of working to be in good relations within dominant cultures and infrastructures characterized by colonial relations.

Indigenous quantitative methods (NSERC funded)

I am working with **ten Indigenous quantitative researchers based mainly in the United States** to create, describe, test, document, and share Indigenous approaches to quantitative research. To date, most (though certainly not all) work on Indigenous and decolonial methodologies have focused on qualitative methods in the social sciences and humanities, to the point where it can seem as though quantitative methods are antithetical to Indigenization or decolonization. Despite this, there are increasing calls from scientists, Indigenous peoples, and members of the public to recognize the colonial legacies in Western science approaches to research, and to do science differently. This requires not just numerical literacy, but the ability to **(re)bring quantitative methods deeply into Indigenous cosmologies, communities, and accountabilities**. We have started this work with a literature review and series of interviews with practitioners, and the project as a whole will include lab exchanges, methods briefs for teaching and research, a strong professional network, and academic publications.

Ethnography of Indigenous-led labs (SSHRC funded)

Some of the researchers in the Indigenous quantitative methods project are also part of a new SSHRC Insight grant using collective ethnographies of work in Indigenous-led academic laboratories, to describe and theorize the tensions of doing Indigenous sciences in non-Indigenous spaces (including Drs. Carrol Russo, David-Chavez, and Gomez, whose letters of support are Appendices 13-15 respectively). The project team of myself **and five US-based Indigenous researchers** will analyze two intersecting spheres of Indigenous methodologies: everyday practices of doing science, since it is in action where decoloniality happens; and collectives, as collectivity is central to most Indigenous cosmologies, ethics, and theories of change as well

as Western science. **Duke University Press has solicited a multi-authored monograph on the project** (see Wissoker's letter in Appendix 2).

IndigeLab Network (SSHRC Partnership Grant)

The participants in these two projects, plus others, are also the basis for an in-progress SSHRC Partnership Grant entitled *IndigeLab Network*. We have **won the LOI stage and are now applying for Phase 2 funding**. This **seven-year, $2.5 million grant would enable 20 international co-applicants and eight partners** (First Nations Information Governance Centre, Native BioData Consortium, ORCID Inc., The Carpentries, *Engaging Science, Technology, and Society* Journal, ArcticNet, University of Arizona, and University of Toronto) to focus on theories of change methods for changing research cultures at multiple scales (from the lab to the university to the discipline) based in Indigenous feminist thought. The full phase two application is due in October 2022.

Integrity

Methodologies for integrity

The MUNFA Collective Agreement highlights **integrity as a core component of the intellectual maturity required for promotion** (applicants shall "demonstrate intellectual maturity, characterized by depth and breadth of teaching and scholarship, and **academic integrity**" 12.17.a.). Integrity can refer to a range of moral principles, but **in my work, integrity can be understood as accountability**, a

> "short-hand for 'accountability to relationships.' It names the actions that enact our beholdenness to our partners, collaborators, and other CLEAR members, both as individuals and as a collective, as well as relationships we don't choose, don't like, don't desire, and that are not successful. In the words of Cree researcher Shawn Wilson, 'right or wrong; validity; statistically significant; worthy or unworthy; value judgements lose their meaning. What is more important and meaningful is fulfilling a role and obligations in the research relationship — that is, being accountable to your relations' (2008: 77). Accountability means that we do not focus on the intent of actions, but in the actions and their effects, acknowledging responsibility when there is a gap between intent and effect" (CLEAR lab book, 2022: 11)

Many of the research methods I've created and/or used with CLEAR can be understood as methods in accountability, particularly equity in author order, community peer review, participatory statistics, participatory budgeting, Indigenous data sovereignty, and only working with Indigenous groups or on Indigenous land with permission. The way CLEAR is run using anti-oppressive facilitation and consensus-based decision making is likewise about accountability. The lab book even has a protocol for making apologies based on principles of restorative justice and a section on how to write proper thank you notes to show gratitude--both actions central to accountability in team research.

Testimonies of research integrity

Tooting my own horn about accountability is a bit odd, since legitimate accountability can only be recognized by those to whom you are accountable, so I request that the committee consult the letters of support from research partners in the appendices:

- [redacted], a partner on the ArcticNet North by North project that requires research be led by and for Inuit of Nunavut (Appendix 10)
- [redacted], Natural History Museum, London, England. [redacted] a collaborator on the CINUK grant monitoring plastics in Nunatsiavut (Appendix 11)
- [redacted] Team. I worked with [redacted] on plastic monitoring in the Atlantic provinces (Appendix 12)
- [redacted]. I work with [redacted] on the new IndigeLab and Indigenous quantitative research methods projects (Appendix 12)
- [redacted] Colorado State University. [redacted] is a co-applicant on the IndigeLab Network SSHRC partnership grant and a collaborator on in-progress writing about Indigenous research (Appendix 13)
- [redacted]. I work with Dr. [redacted] on the new IndigeLab and Indigenous quantitative research methods projects (Appendix 14)

Below are some of the comments from the informal survey:

> *"Liboiron's work is* ***some of the most important work currently being carried out with regard to the vital topics of accountability to and review by the community****, putting into question the academic processes and to whom we are accountable."*
>
> *"I am a physics education researcher, meaning that I study the teaching and learning of physics along with physics disciplinary culture and practices, from a physics perspective (I am in a physics department at the University of Washington). I work with university faculty and high school teachers on integrating physics teaching with social justice and ethical decision-making.* ***Dr. Liboiron's work is the best example I have ever seen of how to conduct laboratory science with full awareness of the sociopolitical decisions that this entails at every turn.*** *Dr. Liboiron provides straightforward guidance*

and clear distinctions (e.g., of Indigenous vs. anticolonial science). Their work is brilliantly challenging while also being joyful and actively inspiring to me. Now when I put on my lab coat, I think: How can I be in good relationship to land and people in the science I do today? How can I guide others to be in good relationship? I only read Pollution is Colonialism a few weeks ago and I am profoundly influenced. I have already shared it with many colleagues."

*"Max's work has proven transformative for so many of my students -- and for so many reasons. Not only is Max a globally renowned and valued *subject* expert on waste, plastics, and related topics; but their *way of being* a researcher, colleague, and mentor* ***helps my students appreciate that the ways we produce knowledge in relation with one another are just as important as the knowledge we produce****. Max is a model of what, and how, so many of my students want to be."*

Summaries of key metrics

Publications

	Books	Refereed Articles	Invited Articles	Book Chapters	Writing for Public Audiences	White Papers	Special Issue Co-Editor	Films	Total
All time	2	34	18	13	~120	12	4	4	83
	2%	39%	21%	15%	not included	14%	5%	5%	100%
Since Assoc Prof	2	9	5	4	~15	7	0	4	31
	6%	29%	16%	13%	not included	14%	0%	13%	100%

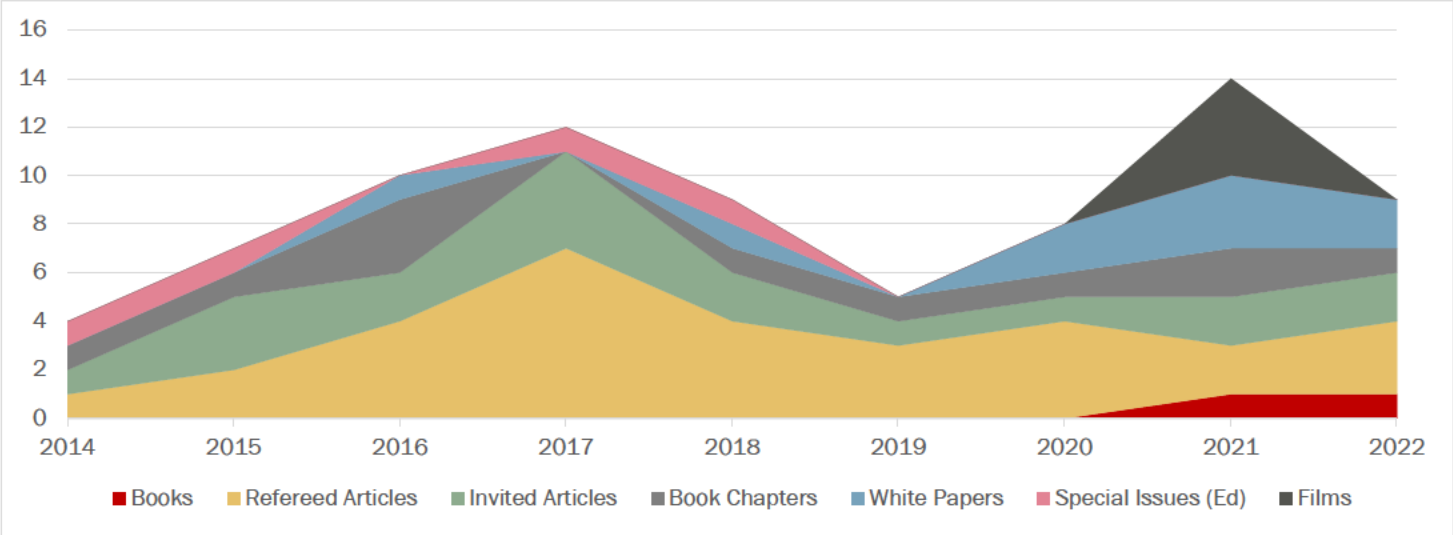


Figure 3: Number and types of publications over time. The dip in outputs from 2018 to 2020 was during my time as a full-time administrator (AVPIR).

I have **87 publications**, of which 34 are peer reviewed articles and two are peer-reviewed books. **More than a third of those (n=31) have occurred since becoming Associate professor, including two manuscripts**. The MUNFA Collective Agreement stipulates that "Greater weight shall be placed on refereed products of scholarship than on those that have not been refereed" (12.13.b.). Since becoming Associate Professor in 2020, I have published **31 items, with most (29%, n=9) being peer reviewed articles**. Most of my white papers are also refereed, particularly the one for the World Health Organization, which underwent three rounds of peer review. MIT Press did one round of peer review with four reviewers, and Duke Press does two rounds of review.

Co-authors

I have **230 co-authors** (counted per paper, not as individuals across papers), including some massive collaborations with **as many as 22 co-authors on a single paper**. I have worked with **more than half of them (n=122) since becoming Associate Professor.** These two metrics together show that I am publishing more large-authored, collaborative pieces since my promotion.

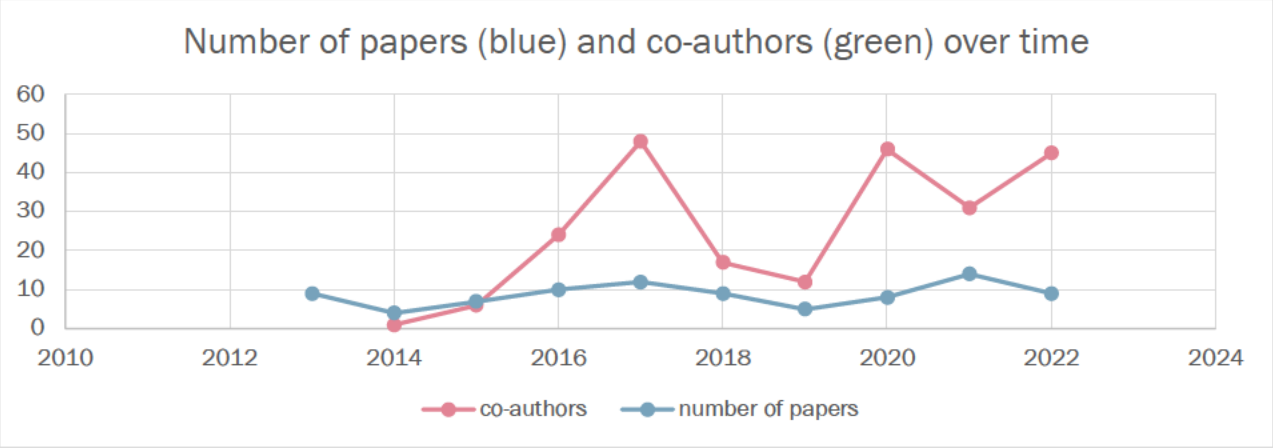


Figure 4: comparison of the number of outputs published (in blue) versus the number of co-authors (in green). In 2013, I published only solo-authored texts. From 2018-2020 I was a full time administrator.

Overall, across my co-authors, over **65% are women or gender minorities. 32% are students, and when I am first author the student portion rises to 57%. 12% of the papers I'm co-author on have a student as first author.** Nearly **half of my co-authors are international** (or non-Canadian), attesting to the international scope of my collaborations and networks.

Notable publications

In late 2020, I was **invited by *Nature* editors** to write an article about decolonization for ***Nature Geoscience***. The resulting publication, "Decolonizing geoscience requires more than equity and inclusion" (2021) is rated in the **top 5% of all research outputs scored by Altmetrics and the 99th percentile for impact. It is ranked in**

the top three articles (out of 46) from *Nature Geoscience* of the same age (Appendix 5). Likewise, a unique publication in *Science of the Total Environment* that argues for considerations of Inuit sovereignty in Arctic research *within* a classic scientific baseline study ("Abundance and types of plastic pollution in surface waters and the case for reconciliation science in the Eastern Arctic (Inuit Nunangat)" (2021)) is also **ranked in the top 5% of all scored papers and in the 94th percentile for attention** by Altmetrics (appendix 7).

White papers for decision making bodies are another important type of publication.

1. Most recently, the *WHO Health Evidence Network synthesis report: Cultural contexts of health: how do the cultural contexts of waste practices affect health and well-being?* was published (2022) through the **Health Evidence Network, the European organization that advises the World Health Organization (WHO). Authorship for this publication was by invitation from HEN, and the paper was heavily peer reviewed.**
2. I was also part of a large team of authors who published a suite of **three white papers on monitoring and assessment of microplastics in the Arctic for the Arctic Monitoring and Assessment Programme (AMAP)** led by the international Arctic Council (this has also resulted in several peer reviewed papers with the same team in the last two years).
3. I have another paper under community peer review *Comparative Food Pricing in Newfoundland and Labrador using Citizen Science* with **32 community co-authors at the request of the Nunatsiavut Government**. All white papers **specifically address governance needs and priorities** by the bodies who requested them.

Impact of publications

International distribution of citations

Web of Science metrics based on 30 of my peer reviewed publications provides an overview of citations to my articles. The vast majority of articles that cite my work come from outside of Canada, which accounts for only 17.2% of my citations. The largest share is from the United States, which accounts for 30.4%, followed by the UK at 17.8%. Australia, China, Germany, Norway, France, and Italy account for between 5-10% each. This map below is produced by Web of Science and includes a count of countries for peer reviewed articles that cite my work.

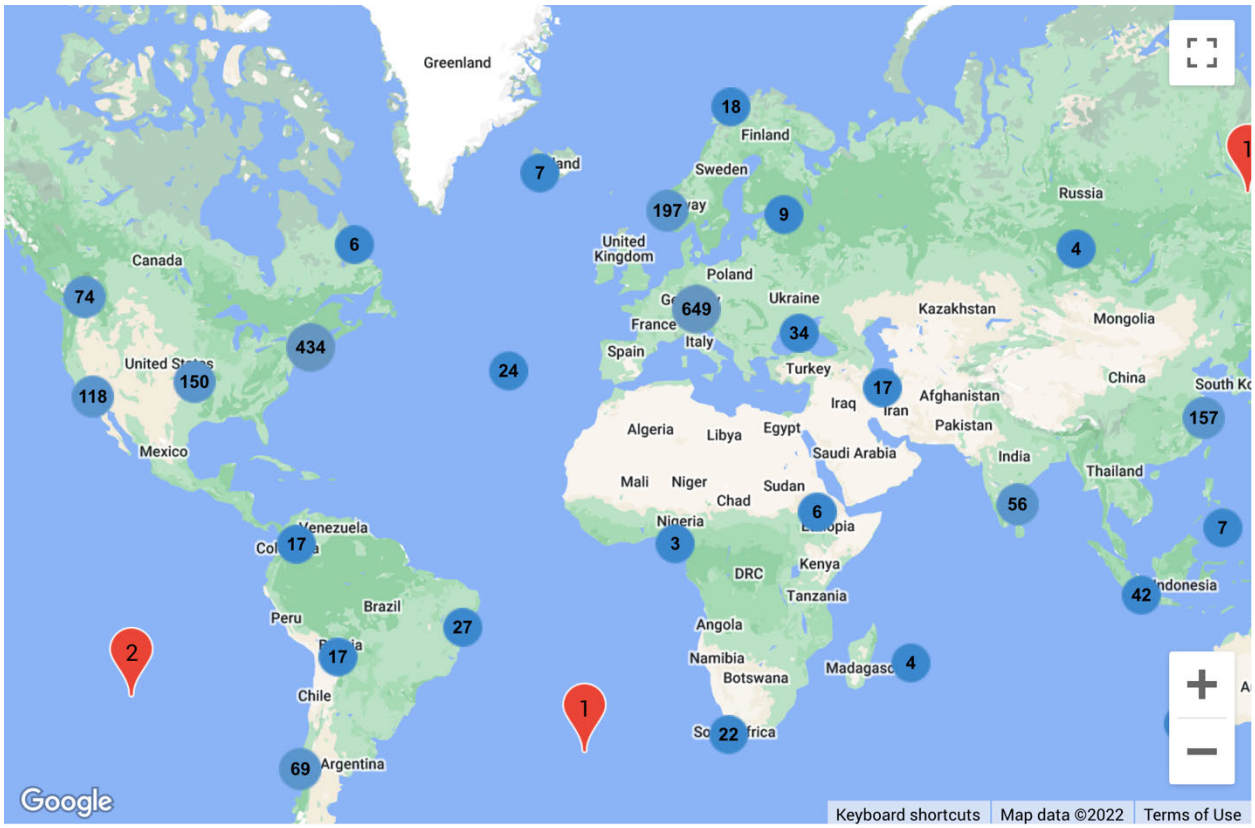


Figure 5: Geographical distribution of where citations to my work originate, based on lead author's affiliations.

Tripling H-index

While I do not bank on standardized metrics such as H-Indexes as a reflection of impact, I do wish to **use my H-index for comparison against myself. When I went up for promotion and tenure as an assistant professor, I had an H-index of 8 and an average citation rate of 8.5 citations** per article, which also happens to be the average citation rate for all Memorial University authors (not weighted by discipline) based on SciVal metrics. Today, **my H-index is 25 and I have an average citation rate of 34.6**. Publishing more is different than publishing well—that is, publishing to meet pressing research needs or address knowledge priorities—and this acute acceleration of the degree to which my research *circulates* rather than merely grows is important for understanding its impact.

International and disciplinary distribution of instructors teaching my work

Survey respondents included the countries in which they taught my work as well as the discipline their course(s) were registered with. The results show **a wide breadth of distribution, both geographically and disciplinarily.**

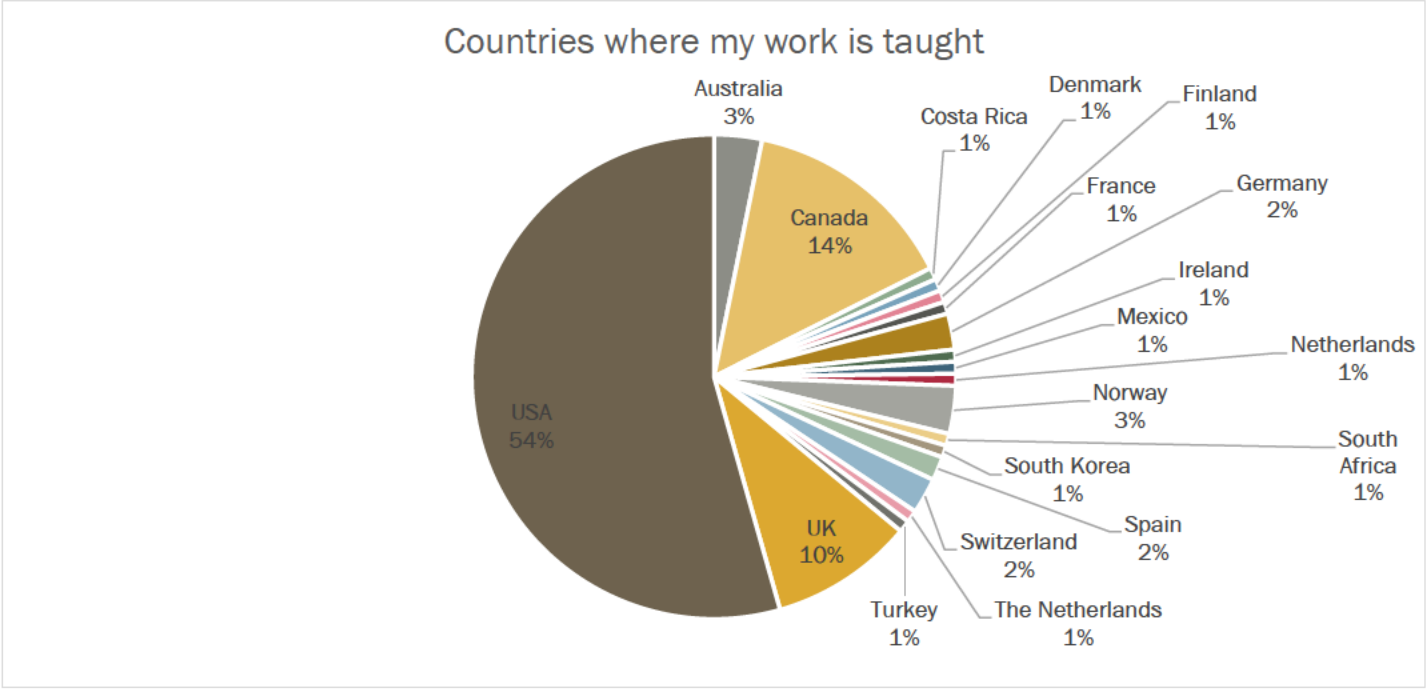


Figure 6: The comparative share of countries where my work is taught, based on informal survey respondents. Canadian classrooms make up only 14% (n=18) of the total.

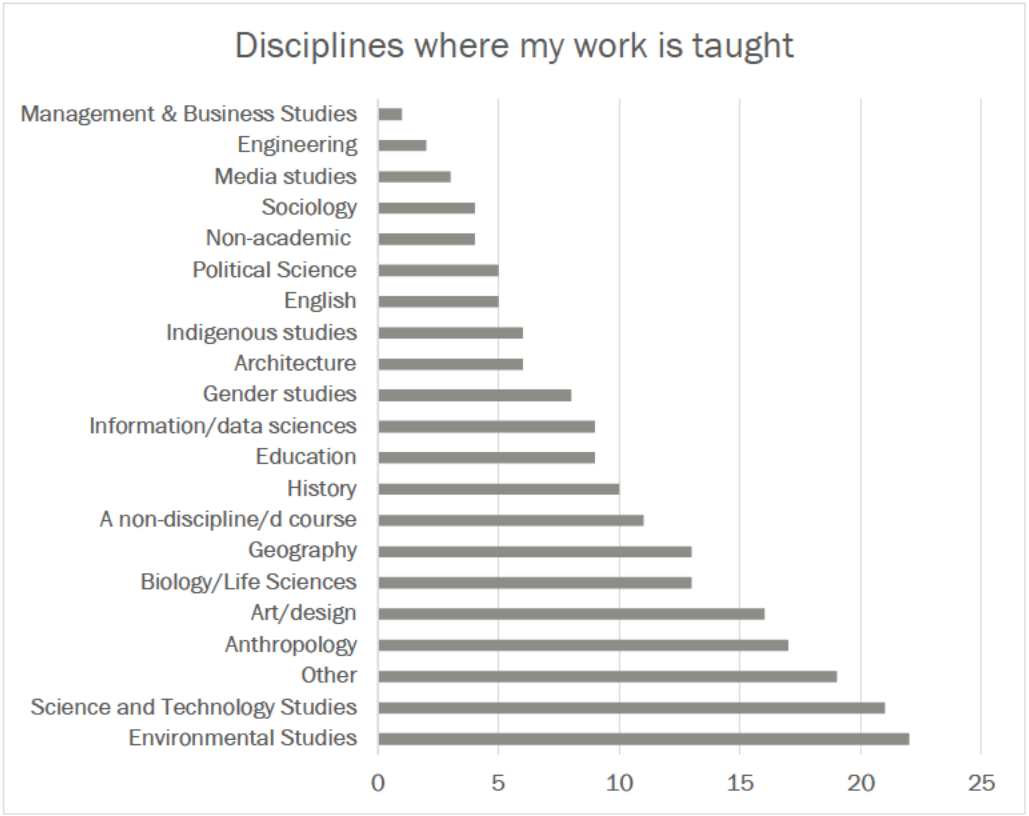


Figure 7. Survey respondents who teach my work identified which disciplines the course was based in (cross-listed courses are represented twice).

Genres of publications being taught vs cited

The different types of publications have different audiences and different uses—it is why I have turned to film and magazine articles in the last few years and have always written blog posts. Informal respondents selected which types of my publications they used in the classroom:

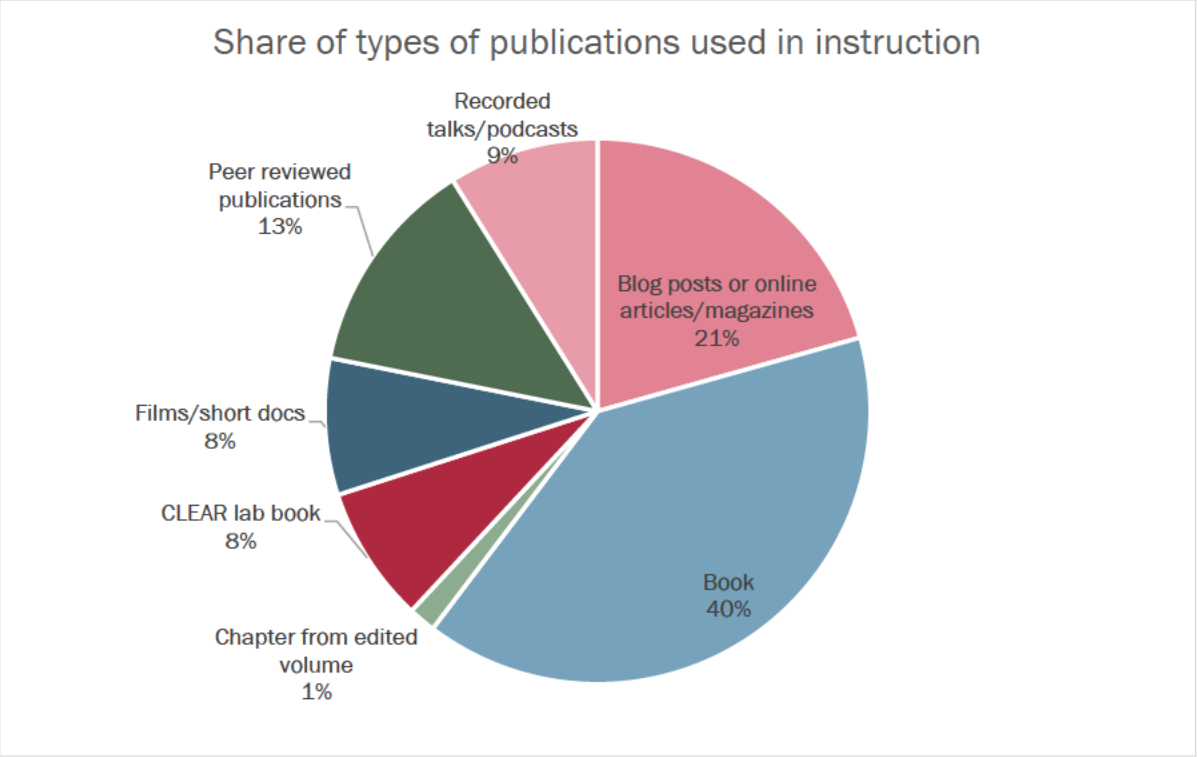


Figure 8: Of 247 submitted instances of teaching a type of publication, the largest share of respondents (40%) taught one of my two books, with the second largest share being online blog posts and magazine articles. Peer reviewed articles accounted for just 13% (n = 32) of publications in the classroom.

This differs from which types of publications are being cited. 59% of my citations are from peer reviewed articles, which is not surprising, while only 12% of the work in classrooms are those same articles. While my films, presentations, and the CLEAR lab book are never or rarely cited, they are often taught. While the MUNFA Collective Agreement stresses peer reviewed publications, this underemphasizes impacts of research on young researchers and learners.

	Book	Peer reviewed	invited articles	book chapters	blog posts & magazine articles	films	presentations	CLEAR lab book	Total
Count of citations	205	1256	360	156	137			1	2115
% of citations	10%	59%	17%	7%	6%	0%	0%	0%	
Count of what is being taught	108	32		4	51	20	22	20	257
% of what is being taught	42%	12%	0%	2%	20%	8%	9%	8%	

*Note some differences between figures in the chart and graph are due to leaving the formal survey open and having more responses come in. The count of citations is from Google Scholar, which includes more grey literature than other aggregators.

Writing for public audiences, instructors, and students

A significant amount of my writing is dedicated to public audiences. This work circulates far more than other genres-- for example, a blog post on "Firsting in Research" from 2021 has over 5.9k views, and that's on only one of the three blogs where it has been posted. A blog post on decolonizing syllabi from 2019 has 35.7k views. All of my blog posts combined, which number over 60, have had nearly 200k unique views, and those are only the posts I have metrics for (and do not include articles in *Teen Vogue*, *Science for the People*, or *Orion*, for example).

In 2020, I began working with *Orion Magazine*, "America's finest Environmental Magazine." I wrote "Plastics in the Gut" for them in 2020 and have been commissioned for several more texts in the next few years. My dedication to mobilizing knowledge in more publicly accessible forms lead me to work with Couple3 Films under a MEOPAR grant to create three short film episodes in a series on anticolonial and feminist methodologies called "Laboratory Life" (2021), each with between 600-3000 views, and a short film called *SuliaKaKatigelluta* on my plastic pollution work. One instructor noted that, "Their shorter blog posts are also a really valuable add to my undergraduate classes on the cultural politics of climate change: accessible, direct, and thought provoking to students in both the sciences and humanities."

While the collective agreement is clear that "Greater weight shall be placed on refereed products of scholarship than on those that have not been refereed" (12.13.b.), it also notes the importance of "diverse…forms of communicating knowledge." To that end, I provide two metrics for understanding how my work circulates. While peer reviewed articles are certainly cited the most (59% of all citations), they account for only 12% of my work that is taught in classrooms. 42% of survey respondents who taught my work taught from one of my two books, and mainly *Pollution is Colonialism*, which accounts for only 10% of all citations (though both books are less than two years old, so this will likely shift). 20% of teachers taught my blog posts or magazine articles, which constitute 6% of all citations. Finally, I note the different countries where my publications are taught: more than half of respondents taught in the USA (54%), followed by Canada (14%) and the UK (10%), a trend that mirrors the geographical locations of viewers on the CLEAR website as well as the top three locations for articles that cite my work.

Funding

Since arriving at Memorial, I have obtained **$4.6 million in funding** as a Principle Investigator (**95% of which is external**) and an additional **half a million as a Co-Investigator or Collaborator.** Note that the figure for Collaborative funding only reflects projects for which I am an active member with regular contact with the main research team. I have removed over ten million dollars of collaborative grants from my CV where I am a named as a co-investigator or collaborator at the application stage only.

Of my PI funding, **$3.7million has been obtained since I became an Associate Professor—about 80% of my total funding**. Roughly half of my PI grants are for **research in the social sciences (48%)** and the other half from the **natural sciences or multidisciplinary funding from NSERC (49%),** with a minute fraction for public engagement. This includes grants from SSHRC Insight ($499k), NSERC Horizon Discovery ($497k), CINUK from the National Research Council, a new international Arctic collaboration fund based in the natural sciences and Inuit knowledges) ($450kCAD & £543), the Ocean Frontier Institute ($480k), POLAR ($295k), and ArcticNet's North by North program ($1.2 million), among smaller amounts from the Northern Contaminants Program, the Nunatsiavut Government, the NunatuKavut Community Council, the Smallwood Foundation, and others. This range-- from some of the major funding agencies in Canada to international competitions to contracts with small community councils, as well as social and natural sciences--**reflects very different adjudication values, including what counts as merit**. This indicates that my work is strong in terms of methods (Tri-Agency grants), collaboration (CINUK and Nunatsiavut funding), impact (public engagement grants), and integrity (local contracts).

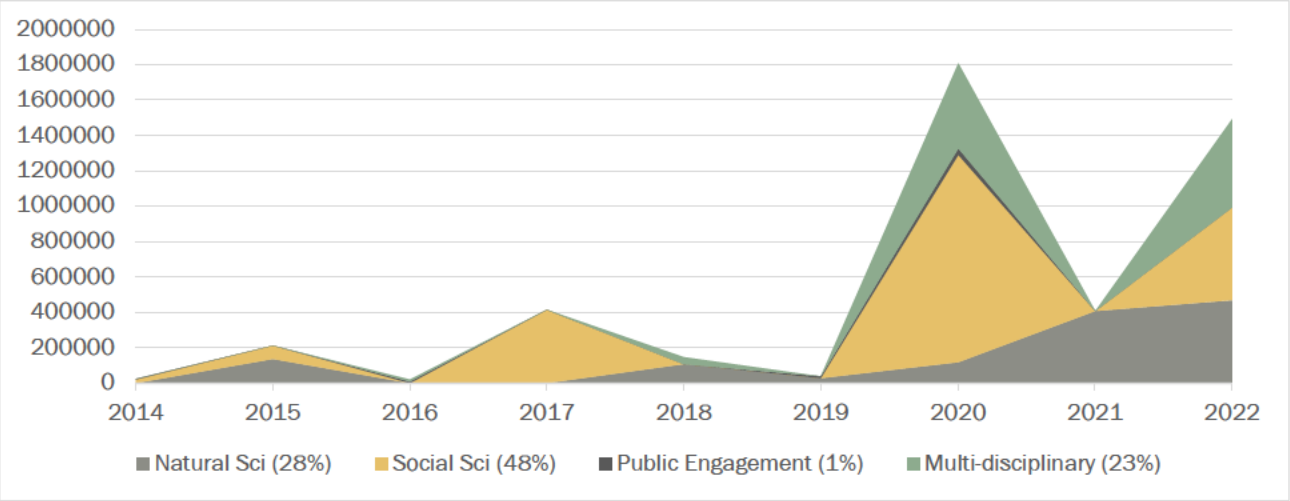


Figure 9: Count of total funding dollars per year of award as PI, by disciplinary focus, over time.

In the graph above, you can see the rise and fall of my funding success over time, with a low point while I was AVPIR doing full time administration (2018-2020), and an acute rise in finding after becoming Associate Professor in 2020 . Notice also how explicitly multidisciplinary funding becomes a major stream at this stage, due in part to an NSERC Discovery Horizons grant (2022) and an OFI grant (2020).

Awards

Competitive awards are a key form of external recognition, particularly for superior research. MUNFA's Collective Agreement specifically lists "**national or international awards [as] indicative of a high level of academic recognition" and a basis for "promotion at any time**" (12.17.a.).

University Awards

While the information is still embargoed (please do not share beyond the confines of this document), I am a recipient of **Memorial's President's Awards for Outstanding Research** (2022), which "recognizes early career faculty who have made exceptional contributions to their disciplines and have demonstrated a potential to become international research leaders." Happily, this year I share the award with Dr. Carissa Brown, also in Geography. The award is the **highest research award for "early career" faculty at Memorial** (defined in the PAOR as holding our first academic appointment within 10 years of the application date) and is "adjudicated based upon the quality, innovation, and impact of their research. The applicant's national and international stature, as assessed by their peers, will play a major role in the adjudication committee's recommendation" (award Terms of Reference)

In 2022, I also received **Memorial's sole award recognizing research ethics: the Marilyn Harvey Award to Recognize the Importance of Research Ethics**, which is awarded "to a student, staff or faculty member,

retiree or alumni who has distinguished themselves by their actions and contributions to scholarly research and embodies the institution's commitment to excellence in research ethics…based on evidence of continued distinction, in excess of the required level of performance" in their normal employment (Terms of Reference). The selection committee includes:

- Vice-President (Research)
- Associate Vice-President (Research)
- Provost or delegate
- Representative from the Deans and Directors group
- Representative from the Office of Research Ethics

National Awards

In 2021, I was inducted into **Royal Society of Canada's (RSC)** College of New Scholars, Artists, and Scientists. This is **one of the most prestigious awards in in Canada**, recognizing "leaders in research and innovation and mobilizing them in open discussion and debate about complex and timely issues in the headlines or on the horizon. Their integrated interdisciplinary knowledge and understanding is a valuable national resource. This is a lifetime recognition…. Fellows are those with exceptional and original publications, intellectual achievements, and creative activities" (RSC nomination form, 2022).

During my sabbatical (2020-2021), I was a **Distinguished Visiting Indigenous Faculty Research Fellow at the Jackman Humanities Institute, University of Toronto**. This is an **invitation-only** award, and included an office, stipend, research funding, and weekly obligation to work with other Fellows on research themes.

International Awards

In 2022, I became one of the inaugural members of **Data & Society's Scholars Council** (two-year term). The council of eleven international experts study technology and data's role in society help the organization chart a path forward in their research, including rethinking research practice, developing new research areas, and working with Data & Society staff on existing projects. .

In 2019, I received a **Circle Holder award from Science for the People**, a US-based organization "dedicated to building a social movement around progressive and radical perspectives on science and society" (SftP website). The "Circle Holder is an honor granted to individuals and groups whose work at the intersection of power, ideology, and equity in science is paving the way for diverse and just scientific futures. Circle Holder awards reward those whose actions and practices are impacting how science is done and used. Carefulness, ethics, accountability, and good relations are prioritized in selection alongside exceptional content and action. Circle Holders are appointed for life, and are responsible for recruiting, mentoring, and

apprenticing future SftP Circle Holders with the end goal of creating a robust network of radical scientists across generations, disciplines, and nations" (SftP magazine, volume 2, no. 2).

As an author, I received **two international book awards for *Pollution is Colonialism:*** The Labriola Center American Indian National Book Award in 2022 and Clay Morgan Award for Best Book in Environmental Political Theory in 2021. These are mentioned above.

Finally, in 2021 I was a **finalist for Victoria Davion Award for Intersectionality in Environmental Ethics from International Society for Environmental Ethics**. "The award honors scholars engaged in intersectional work that describes, considers, or responds to overlapping forms of exclusion, discrimination, or injustice" (ISEE website, 2021).

Other awards from before I became Associate Professor, including from the Canadian Museum of Nature, the Society for the Social Studies of Science (4S), and the Computer-Human Interaction, among others, are outlined in my CV.

Panels and presentations

Expert Witness	Keynotes	Juried Presentations	Invited Presentations	Public Presentations	Workshops	Total
1	13	38	27	25	28	128
1%	10%	30%	21%	20%	22%	100%

Since arriving at Memorial, I have given **over 150 presentations**. Of my **14 keynotes, roughly half have been since my appointment to Associate Professor** in fields as diverse as discard studies (NYU), the arts (Leeds Art University), STS (RPI), science communication (Inclusive SciComm Symposium), and environmental science (Yale). As **Associate Professor, nearly all my juried presentations are with Liz Pijogge, my research partner in Nunatsiavut**, and my focus has shifted from conference presentations to invited presentations (18 of my 45 invited talks since 2014 have been in the last two years). I have begun to refer all paid invitations to speak about CLEAR to students and staff in CLEAR, so while those requests have increased in number over the last few years, I personally have been given fewer of them--a mark of success in a training setting at a university where the goal is not to just reproduce yourself and your work, but to support the work and networks of emerging and junior scholars. This is a place where mentoring and research outcomes are one and the same.

Presentations of note

A few speaking invitations since I became Associate Professor are of particular note: **The Global Partnership on Marine Litter (2022) is a program of the United Nations Environmental Programme**, and I was speaking to hundreds of UN delegates for that presentation. The talk on "Waste Colonialism" for the **European Zero Waste Alliance (2021)** was similarly for an audience of European Union environmental ministers and the talk for the **Tribal Science Council of the Environmental Protection Agency** was the same for the United States (2020). Finally, the 2021 panel on the Futures of Feminist STS for ***Catalyst*'s 10th anniversary was a panel organized by Donna Haraway and Banu Subermanian**, who spoke on the "foundations" of feminist STS, and I was one of four speakers on the "future" of feminist STS; there were **over 400 people in attendance**.

Editorial and refereeing duties

Peer review duties

I do not track which bodies I review for by year to maintain blind review. Thus, I have only my total metrics for review. The graph below includes counts of reviewer engagements (n=58), not total individual applications reviewed, since grant and conference reviews can encompass 20-50 applications at a time.

Figure 10: Distribution of refereeing duties across disciplines and type of review

	Social Sciences		Natural Sciences	
	Count	%	Count	%
Grants	2	5%	6	35%
Articles	30	73%	9	53%
Manuscripts	7	17%	0	0%
Conference subs	2	5%	2	12%
Total	**41**	**100%**	**17**	**100%**

As you can see from the list of journals and funding organizations I review for in my CV, **my refereeing duties include a wide range of disciplines,** from STS to ocean science to visual culture to Indigenous studies to engineering. This diversity attests to the breadth of my expertise. Some of my grant reviewing, particularly for international organizations such as the Natural Environment Research Council (NERC) in the UK and the National Science Foundation (NSF) in the United States are for specific niches of expertise, such as interdisciplinary sciences or Indigenous sciences. While I review more articles in the social sciences, I review more grants in the natural sciences. More than half of my review activities are for articles in the social sciences by count (though by number of individual applications, it would be grant applications in the sciences).

Since becoming an Associate Professor, **I have been contracted (invited) to review for more Non-governmental Organizations (NGO) and Community-based Organizations (CBO),** focused on documents such as vision statements, ethics guidelines, research reports, and policy reports. Nationally, this has included the Assembly of First Nations (AFN). **Internationally, I have reviewed for the Inuit Circumpolar Council (ICC), the Health Evidence Network (HEN) at World Health Organization (WHO)** (which is how I later came to co-author a white paper for them), and the **Protection of the Arctic Marine Environment (PAME) committee of The Arctic Council.** See my CV for the full list.

Editorial duties

For a decade **between 2011 and 2021, I was the Managing Editor of *Discard Studies*.** The blog has been credited with the articulation of the field of Discard Studies (now formalized as a keyword in journals, a conference, and our new book). I am also on the editorial boards of *Engaging Science, Technology, and Society* and on the International Advisory Board of the *Journal of Open Hardware*, Ubiquity Press. All three are open-source publication venues (these last two are detailed in the service dossier).

Research collaboration and partnerships

My work is characterised by collaboration and partnerships, which are summarized in the chart below. The chart includes only those that have/are occurring since being promoted to Associate Professor and do not include collaborations with students and members of CLEAR.

Memorial University	• Josh Lepawsky (Faculty, MUN): mainly on topics related to discard studies, including our co-authored book. Not funded. • Alex Zahara (PhD Candidate, MUN): co-editor of Discard Studies blog in 2020. Funded by SSHRC.
Newfoundland and Labrador	• Nunatsiavut Government and Liz Pijogge: together we run plastic monitoring projects in Nunatsiavut, including holding grants together. Funded by NCP, ArcticNet, CINUK, and POLAR. • NunatuKavut Community Council: Contract for processing samples from NCC homelands for plastics. Funded by NCC.
Atlantic region	• Bluenose Coastal Action Network: partnership on monitoring plastics in Atlatnic Canada. Funded by ECC (held by Bluenose) and GradSWEP. • AAROM Group (14 Indigenous nations/councils): collaboration on Indigenous environmental infrastructure and data sovereignty. Funded by OFI.
Canada	• Nunavut Arctic College/Nunavut Research Institute: partnership on research capacity building and Inuit Traditional knowledge. Funded by ArcticNet. • Assembly of First Nations (AFN): contract to review Indigenous-led research on climate change and pollution. Funded by AFN. • CLEAR AIR program: Hosted four artists in CLEAR. Funded by SSHRC.
International	• Alex Bond (Curator of Birds, UK Museum of Natural History): Collaborator on Nunatsiavut plastic work. Funded by CINUK. • Jan Wouter Streinsman (Netherlands): Collaborator on Nunatsiavut plastic work. Funded by CINUK. • Imari Walker (Duke University): Collaborator on plastics and justice paper. Unfunded.

	• Win Cowger and his team (US eNGOs): Collaboration on harmonization of plastic methods. Unfunded. • AMAP/Arctic Council: Collaborative team work on monitoring knowledge, guidelines, and methods for plastics in the Arctic. Unfunded. • Global Partnership on Marine Litter (GPML) (UNEP): a consultant on how to approach Indigenous user groups and rights-holders around plastic pollution data. Unfunded. • IndigeLab Network: I convene an increasingly formal network of 20-30 Indigenous gender minority researchers from mainly the US and Canada to support one another in our professional work and research. Funded by NSERC and SSHRC.

Media/public intellectualism

The Collective Agreement notes that "**contributions as a public intellectual" are part of the evaluation of scholarship** (12.13.b). I have already described my writing for public audiences in the publication section above, so here I will highlight engagements with the media about my research.

Number of media interviews and feature coverage since 2012				
Feature film/ television	International	National	Local	Total
2 (~1%)	57 (~32%)	41 (~23%)	79 (~44%)	179 (100%)

A full list of my media appearances is included in my CV. Here I highlight a few notable cases:

Third party documentaries

My research has been the subject of **two external documentaries**.

1. This August (2022), ***CBC Gem* premiered *niKet (Food)*, a full-length episode** on my and Liz Pijogge's plastic work on Nunatsiavut foodways as part of their *Mi'kma'ki* collection (Nunatsiavut is not in Mi'kma'ki, but these are their titles). Directed by Wendell Collier or Wanderer Entertainment, the all-Indigenous film crew came to St. John's and Nain to film our work.
2. In 2019, **Couple3 Films, based out of New York City, did a mini-documentary** on my plastic work and anticolonial methods entitled *GUTS*, which was featured on *The Atlantic* and in *Labocine.* Noah Hutton, one of the filmmakers, wrote an article about his experience working with us: "Our time with CLEAR showed us how a group of people, aligned by a shared set of values, could actively deconstruct the entrenched power dynamics and models of hierarchy all around them – in this case, in academia. So hoping to avoid replicating the exploitative labor practices many of us had experienced before on non-union, low-budget filmmaking, we decided to try to adapt CLEAR's *Lab Book* – which articulates their shared values, rules, and protocols – for use in the making of *Lapsis* [his feature length film]" (*TalkHouse,* 2021).

   I later worked with Couple3 on the four films we produced together (detailed in publications section).

Collaboration with national reporter

In 2020, I began working regularly but informally with reporter **Marc Fawcett-Atkinson, who covers the environmental beat for *The National Observer* and *Mother Jones***. I both taught him about the state of knowledge about plastic pollution generally and the history of the plastic industry to better inform his journalism, as well as provided expert quotes and reviews for particular legislation, new research findings, and events. I am quoted directly in **14 of his articles** in 2021 while Canada announced a ban on some single use plastics and the Global Treaty on Plastics was being planned. I also provided background information on several similar stories without being quoted.

Key provincial interviews and coverage

I worked with several reporters on a series of interviews related to **Newfoundland and Labrador's plastic bag ban in 2020**, including *CBC Newfoundland and Labrador* (television), *CBC News (radio and print), NTV News (television), CBC Newfoundland and Labrador Morning Show (radio)*, with earlier coverage in 2016 and 2017 from *CBC Cross Talk (radio), VOCM (radio), CBC St. John's Morning Show (radio), CBC News* (TV and radio), and *The Independent* (print).

Key national interviews and coverage

I was a guest on **CBC's Quirks and Quarks** in 2022 to discuss the UN Plastic Treaty (along with **nine interviews with *The National Observer* and two with *Mother Jones***).

Rick Harp's *Media Indigena*, an Indigenous current affairs podcast, **did two hour-long episodes** on my book *Pollution is Colonialism* in 2021 (ep 258 & 259)

Within a month of becoming Associate Professor in 2020, Memorials' Research Impacting Indigenous Groups (RIIG) policy came into effect and I did a series of interviews on the policy syndicated by *CBC News (Newfoundland and* Labrador), *Academic TopTen*, *CBC Indigenous*, *Indigenous Land and Resources Today, Nation Talk*, *Yahoo!News,* and *The Canadian News*.

Key international interviews

My international interviews tend to be more about CLEAR and our methods in general, or plastics in general, rather than clustering around issues like in local and national media highlights. These are selected because of the publication venues or public responses:

- In 2020, I was interviewed for a piece in *The New York Times* on the impact of COVID lockdowns on lab-based research.
- A piece on "Why Trying to Clean Up All the Ocean Plastic is Pointless" in *Gizmodo* (a US-based tech and science magazine/news outlet) on why reducing plastic production rather than clean ups is a

more impactful strategy resulted in a high number of personal emails, online comments, and editors reaching out to comment that "it was one of the most fascinating discussions we've run in my 4+ years at the site."

- Public broadcasting from *Australia Broadcasting Corporation (ABC)* and New Hampshire Public Radio (NHPR) did a total of three segments on CLEAR's research protocols (two of these were on the overrepresentation of sandy beaches in shoreline plastic research)
- A piece in *American Scientist* ("How Climate Science Could Lead to Action") used CLEAR as an example of what action-oriented scientific research could and should look like

Conclusion

As this dossier demonstrates, I am involved in a wide range of intellectual activities, fields, and outputs. Most of my research activities are guided by direct requests from partners, collaborators, NGOs, audiences, and reporters. Writing accessibility leads to more requests for accessible writing, for example, and the more researchers use anticolonial, lab-based, and open-source methods and tools, the more we are asked to expand on those methods. I believe (and have been told by audience members, press editors, and reporters) that one of the core reasons my work is so successful in terms of circulation and particularly international circulation, is that I am addressing these very real needs. In other words, I am not looking for an audience for my work; diverse audiences are waiting for me to respond to their inquiries. In the next phase of my work, I am looking to radically expand the teams working towards those inquires through the IndigeLab Network, and my funded projects on Indigenous quantitative methodologies while continuing my environmental assessment work with Nunatsiavut Government and new partners.

Appendix

1. Introduction to *Pollution is Colonialism*, Duke Press (2021)
2. Letter from Duke Senior Executive Editor Ken Wissoker on *Pollution is Colonialism*
3. Review of *Pollution is Colonialism* in *Antipode* by Anna Stanley (2021)
4. Article in *Nature Geoscience*, "Decolonizing geoscience will take more than equity and inclusion" (2021)
5. Altmetric report for "Decolonizing geoscience will take more than equity and inclusion"
6. Article in *Science of the Total Environment*, "Abundance and types of plastic pollution in surface waters and the case for reconciliation science in the Eastern Arctic (Inuit Nunangat)" (2021)
7. Altmetric report for Abundance and types of plastic pollution in surface waters and the case for reconciliation science in the Eastern Arctic (Inuit Nunangat)"
8. Altmertric report for Cowger et al. (2020) "Reporting guidelines to increase the reproducibility and comparability of research on microplastics" in *Applied Spectrosocopy*
9. Altmertric report for Liboiron, Tironi and Calvillo (2018), "Toxic Politics" for *Social Studies of Science*
10. Partner letter of support: [redacted]
11. Partner letter of support: [redacted])
12. Partner letter of support: [redacted])
13. Collaborator letter of support: [redacted])

14. Collaborator letter of support: [redacted] (USA)
15. Collaborator letter of support: [redacted] (USA)
16. Letter from Senior Acquisitions Editor Beth Clevenger, MIT Press on *Discard Studies*
17. Full informal survey responses