

Arctic research in the COVID-19 pandemic era: lessons learned & looking ahead in Nunavut, Canada

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On March 11, 2020, the World Health Organization (WHO) declared COVID-19 a pandemic. Within days, societies across the globe saw their schools, offices, and even borders closed. As in other regions, countless research projects in the Arctic were forced to come to a halt. For studies involving fieldwork, human subjects, and/or travel, the shift to work from home initially offered little productive potential. After a largely lost research season—which, for some, turned into two or more—studies across the circumpolar north have since returned. In certain parts of the Arctic, like the Canadian territory of Nunavut, research activities are now peaking once again. This has raised concerns about the research-associated burdens that communities may face amid this resurgence. Ethically conducted, locally partnered research can result in timely, co-produced knowledge that fills critical evidence gaps about the North. However, these benefits must be newly evaluated and weighed against their potential costs, with renewed perspective on how to best manage this influx—particularly as Arctic research conditions continue to evolve.

In 2018, the Nunavut Research Institute (NRI) issued a record 203 research licenses for studies in and about the territory in a wide array of disciplines: from the social sciences and Inuit knowledge to health sciences to physical and natural sciences (Ljubicic & Shirley, 2021). Two years later, the COVID-19 pandemic started just as NRI license applications for the 2020 summer research season were rolling in. The Government of Nunavut (GN) swiftly advised postponement of research travel to the territory (2020a). Only a half-year since its official opening in Cambridge Bay, the Canadian High Arctic Research Station (CHARS) paused on-site study plans with visiting researchers (Semeniuk, 2020). Limited NRI staff access to their Iqaluit offices during the initial COVID-19 restrictions and work-from-home transition that March led to licensing and renewal

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processing delays. Transport Canada prohibited adventure-seeking pleasure craft and cruise ships from operating in Canadian Arctic waters but permitted some research vessels (Canadian Coast Guard, 2020). Physical and natural sciences research was particularly impacted by the closure of or restricted access to key research support hubs like CHARS, the Polar Continental Shelf Program in Resolute Bay, Parks Canada's field stations, and Nunavut Arctic College's (NAC) research facilities, including laboratories and bunkhouses (Government of Nunavut, 2020c).

Beginning March 25, 2020, only residents and essential workers with authorization from the territory's Chief Public Health Officer (CPHO) could enter Nunavut—and only following a two-week quarantine at a designated hotel (called isolation hubs) in Edmonton, Winnipeg, Ottawa, or Yellowknife (Government of Nunavut, 2020b). This was essential for protecting the territory's small, remote, predominantly Inuit communities with limited medical infrastructure (with only one hospital in the territory that lacks an intensive care unit), tight social and economic resources, and prevalent overcrowded housing (increasing airborne virus transmission risk) (North American Observatory on Health Systems and Policies, 2020). By instituting firm border restrictions, Nunavut's communities were able to remain COVID-19-free until November 2020, vitally shielding residents (in particular, Elders) during that pre-vaccine period (Government of Nunavut, 2020d).

At the same time, the massive dearth in 2020 fieldwork came at bigger cost than just research teams' changes to their flight, lodging, and other reservations. For projects with longitudinal data collection—especially in the physical and natural sciences—these data droughts are unrecoverable (George, 2020). In the Arctic, which disproportionately shoulders the effects of climate change, such gaps threaten the precision and rigor of studies that rely on those data.

A 2020 ArcticNet survey of researchers revealed 96% were experiencing project delays of more than 12 months; remarkably, over 60% were making “arrangements with northerners to conduct some of their data gathering” (Semeniuk, 2020). In Nunavut, such adaptive practices were more common among research teams with longtime, established relationships in the territory. Local research participation in Cambridge Bay had some community members monitoring lichen species, with others checking on and even adjusting field-based instruments (Semeniuk, 2020). A University of Waterloo team heavily relied on their project field coordinator in Kugluktuk for fishing, sampling, and data collection (George, 2020). For research with human subjects, robust community ties more easily enabled remote training of local partners to conduct in-person interviews in accordance with public guidance on physical distancing and gatherings. Several health and social sciences researchers switched to remote engagement and outreach methods like videoconferencing interviews and online surveys.

The GN lifted its 14-day isolation hub requirement for fully vaccinated travelers to the territory in June 2021, provided these individuals obtain a CPHO vaccinated travelers exemption letter (Tranter, 2021). Although this was in the middle of what typically would be a busy summer research period, not all hurried back North; in 2021, 117 research licenses were issued by NRI (Nunavut Research Institute, 2022). However, by the following year, researchers were raring to come back; NRI licensed 155 projects in 2022. This post-COVID surge offers exciting opportunities but also presents some complex challenges and considerations. The potentially high value of research must be weighed against research-associated burdens—new and old—faced by communities.

In May 2023, the WHO declared the end of the global emergency state of COVID-19 while retaining its pandemic status. The virus appears here to stay, and so systems must be adapted accordingly. This time of constant change means stakeholders—researchers, their community-based partners, and entities like NRI—should regularly appraise territorial research activities to ensure maximal community safety and protection in addition to scientific and local importance. In their research applications, scholars should address any novel, pandemic-related risks associated with their plans, including COVID-19 transmission risks posed to communities and themselves as

well as alternate study approaches if faced with a lockdown or border closure. More than ever, relationships with communities should be cultivated as closely as is appropriate to the topic and as early as possible. Hiring community members is strongly encouraged for project tasks beyond the usual translation or interpretation services, as this helps build and sustain local capacity in research and logistical support services. However, these connections should not overly burden the territory's residents (called Nunavummiut). While each study requires a different engagement scheme, all researchers should continue to align their endeavors with local preferences and priorities and Inuit Tapiriit Kanatami's National Inuit Strategy on Research (2018).

It must be underscored that Nunavut's infrastructure already faced pre-pandemic impediments like limited, expensive lodging and hit-or-miss telecommunications services; COVID-19 merely brought these underlying vulnerabilities into starker relief. Regarding dedicated resources for researchers, bunkhouses are not equipped to handle individual isolation needs like a washroom, as common areas and even bedrooms are shared. Human resources, too, have suffered, with local research staff capacity not yet fully recovered from the pandemic.

Communities have also received extraordinary interest in their COVID-19-related experiences from researchers, with at least one instance of competing research proposals on the same topic in a single community. As a result, some proposals may not receive local support to safeguard the time, safety, and wellbeing of Nunavummiut. Researchers—particularly early career researchers—should be aware of the currently heightened community research fatigue and local perceptions that many proposed projects feel redundant. Those seeking access to communities for new studies should compile and consider the breadth of relevant projects already undertaken or underway, such as via NRI's annual research compendium. Any idea must be well justified, be locally backed, and meaningfully complement and enhance the existing knowledge base. Nonresident researchers should become familiar with community needs, perceptions, priorities, and capacities, including the present research burden. They must also be mindful of initiatives led by local and regional groups already seeking to address the issues or questions of interest. Research fatigue may be further mitigated by the adoption of well-established ethical research approaches: being open to collaborating (rather than competing) with investigators from other institutions to minimize duplicative efforts; prioritizing and bolstering the wellbeing of community members engaged in research support; ensuring compensation to collaborators and participants is fair, in line with local expectations, and paid on time; and committing resources and time to sharing preliminary and final research findings with communities well ahead of submission for publication and/or conference presentations.

COVID-19's legacy on Arctic research is not yet set in stone. This allows those of us involved in research in Nunavut—based both in and out of the territory—to envisage this new era of circumpolar scholarship together. Community interests, values, and knowledge (including Inuit Qaujimagatuqangit) should remain firmly centered in all aspects of proposed research. Per community-based researcher and Pond Inlet resident James Simonee: “there can't be any science done in the North if you don't have any [I]ndigenous knowledge” (2017). In fostering local relationships, two-way trust will organically bud; this is a wise investment for study rigor and in the event of another system shock necessitating remote collaboration. In our vision, local partners' boots will already be on the ground, equipped with skills and knowledge, and ready to continue study activities without as much as a hiccup—much less a gap year or more for Arctic research.

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