

PROCEEDINGS

28th Polar Libraries Colloquy

*Sharing Polar Cultures and Knowledge:
Perspectives from Libraries and Archives*

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Editors



ISBN 978-2-925526-15-5

DOI <https://doi.org/10.60918/17866>

Cover photo: Stéfano Biondo

Includes French translations for the following sections: Word from the director, Word from the Organising Committee, Statement of Acknowledgement, Conference abstracts.

To cite this document:

Biondo, S., Bouchard, J., & Quirion, G. (Eds.). (2025). *Proceedings. 28th Polar Libraries Colloquy. Sharing Polar Cultures and Knowledge: Perspectives from Libraries and Archives*. Bibliothèque de l'Université Laval. Quebec City, June 5-10, 2022. <https://doi.org/10.60918/17866>

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Word from the director

It was a great pleasure and an honor for the Université Laval Library to host the 28th Polar Libraries Colloquy from June 5 to 11, 2022. This was the first time our library hosted this conference, whose rich history began in 1971. It was time for the Université Laval Library to host this important event, which focuses on the services, resources, and expertise that libraries and archives are developing in the field of Nordic and polar studies.

Indeed, Nordic studies have undeniably been one of our university's centers of excellence for a long time. The Centre for Nordic Studies was created at Université Laval in 1961, and other major research organizations, such as the Institut nordique du Québec, have since emerged. Today, more than 300 Université Laval professors contribute to the development of knowledge about the Northern and Arctic world.

The Université Laval Library, with its vast collections of monographs and scientific journals, geospatial data, first editions of travelogues and exploration journals, its old Arctic maps, and scientific, artistic, and heritage objects and specimens, plays a significant role in disseminating knowledge about the North and the Arctic. It offers cutting-edge expertise from librarians, documentation technicians, and geomatics specialists to support research in this field.

I would like to warmly thank the members of the organizing committee for their dedication to making this event a true success. The quality of the program, driven by the theme "Sharing Polar Culture and Knowledge: Perspectives from Libraries and Archives," was most stimulating for the participants. And this quality is first and foremost the result of the work of the conference presenters, whose articles I now invite you to read.

Enjoy your reading,

Loubna Ghaouti
Director of Université Laval Library
October 1, 2025

Mot de la directrice

Ce fut un grand plaisir et un honneur pour la Bibliothèque de l'Université Laval de recevoir, du 5 au 11 juin 2022, le 28^e Polar Libraries Colloquy. C'était la première fois que notre bibliothèque recevait ce congrès, dont la riche histoire a démarré en 1971. Il était temps que notre organisation accueille cet important événement qui s'intéresse aux services, aux ressources et aux expertises que les bibliothèques et centres d'archives développent dans le domaine des études nordiques et polaires.

En effet, les études nordiques sont indiscutablement un des centres d'excellence de notre université, et ce, depuis longtemps. Le Centre d'études nordiques a été créé à l'Université Laval en 1961, et d'autres grandes organisations de recherche comme l'Institut nordique du Québec ont vu le jour depuis. Aujourd'hui, c'est plus de 300 professeurs et professeures de l'Université Laval qui contribuent au développement des connaissances sur le monde nordique.

La Bibliothèque de l'Université Laval, par ses vastes collections de monographies et revues scientifiques, de données géospatiales, de premières éditions de récits de voyage et de journaux d'exploration, par ses cartes anciennes de l'Arctique, objets et spécimens scientifiques, artistiques et patrimoniaux, joue un rôle non négligeable dans la diffusion des connaissances sur le Nord et l'Arctique. Elle propose une expertise de pointe provenant de bibliothécaires, de techniciennes et techniciens en documentation et de spécialistes en géomatique pour appuyer la recherche dans ce domaine.

Je voudrais remercier chaleureusement les membres du comité organisateur pour leur dévouement à faire de cet événement une réussite. La qualité du programme proposé, alimentée par le thème *Sharing Polar Culture and Knowledge : Perspectives from Libraries and Archives*, était des plus stimulantes pour les personnes participantes. Et cette qualité est d'abord et avant tout le fruit du travail des présentateurs et présentatrices lors du congrès, dont je vous invite maintenant à lire les articles.

Bonne lecture,

Loubna Ghaouti

Directrice de la Bibliothèque de l'Université Laval

1^{er} octobre 2025

Word from the Organising Committee

The organizing committee is very pleased to present the proceedings of the 28th Polar Libraries Colloquy (PLC), held under the theme Sharing Polar Culture and Knowledge: Perspectives from Libraries and Archives.

Organizing this colloquy was both a source of pride and of joy. Pride, because we had the opportunity to contribute, in our own way, to the already rich history of the PLC, and also because we were able to place Indigenous cultures and issues at the heart of the event—particularly by questioning the practices used by libraries and archives to organize, classify, and describe resources related to Indigenous Peoples. Joy, finally, because it was a true pleasure to welcome colleagues from Europe and North America to exchange on our common challenges and share inspiring successes and achievements.

It is worth remembering that the colloquy was originally planned for 2020, but a certain pandemic altered those plans! We were determined to hold this gathering in person, so that PLC members could reconnect and strengthen our professional network in the best possible way: face-to-face. In hindsight, it is clear that this was the right decision, as the event generated lasting memories—not only through the presentations, workshops, and panels, but also through the banquet at the Musée National des Beaux-Arts du Québec, the guided tour of one of the most beautiful regions of la Belle Province, Charlevoix, and the lively night of dancing in the heart of Québec City.

The editorial work on these proceedings of the 28th Polar Libraries Colloquy allowed us to revisit a wide variety of engaging topics. Among these, we highlight the collaboration with Indigenous communities to preserve and transmit knowledge through digital storytelling; the representation of Canadian Inuit health research; public engagement through cultural and historical projects; bibliometric analysis of polar research; and the contribution of libraries and archives to commemorations and anniversaries related to polar studies. Finally, we must note that the outcome of this editorial work would not have been the same without the invaluable contribution of Amélie Tremblay, Communications Officer at Université Laval Library, to whom we wish to extend our warmest thanks.

The Organising Committee

Valérie Arsenault, Stéfano Biondo, Joë Bouchard, Isabelle Gagnon, Gaston Quirion

Mot du comité organisateur

Le comité organisateur est très heureux de vous présenter les actes du 28^e Polar Libraries Colloquy (PLC), organisé sous le thème *Sharing Polar Culture and Knowledge : Perspectives from Libraries and Archives*.

Organiser ce congrès a été pour nous une source de fierté et de plaisir. Fierté, parce que nous avons pu participer, à notre mesure, au développement de l'histoire déjà très riche du PLC. Fierté également parce que nous avons pu placer les cultures et les enjeux autochtones au cœur de l'événement, en particulier en proposant une remise en question des pratiques utilisées par les bibliothèques et les centres d'archives pour organiser, classer et décrire les ressources documentaires reliées aux Peuples autochtones. Plaisir, enfin, parce que ce fut une véritable joie de recevoir des collègues d'Europe et d'Amérique du Nord pour discuter de nos défis communs et partager des réussites et des réalisations inspirantes.

Il faut nous rappeler que la tenue du colloque était d'abord prévue en 2020, mais qu'une certaine pandémie a modifié nos plans! Nous tenions absolument à ce que le colloque soit un événement en présentiel, pour permettre aux membres du PLC de se retrouver et reprendre le développement de notre réseau professionnel de la meilleure des façons : en personne! Force est de constater que cette décision était la bonne et que de très beaux souvenirs sont nés de l'événement, qu'il s'agisse non seulement des présentations, ateliers et panels, mais également du Banquet au Musée National des Beaux-Arts du Québec, du tour guidé dans l'une des plus belles régions de *la Belle Province*, Charlevoix, ou de la nuit de danse au centre-ville de la *Vielle Capitale*!

Le travail d'édition de ces actes du 28^e Polar Libraries Colloquy nous a permis de nous replonger dans des sujets aussi variés qu'intéressants. Relevons notamment la collaboration avec des communautés autochtones pour préserver et transmettre les savoirs par le récit numérique, la représentation de la recherche en santé des Inuit au Canada, l'engagement du public à travers des projets culturels et historiques, l'analyse bibliométrique de la recherche polaire, ou la contribution des bibliothèques et archives aux commémorations et anniversaires liés aux études polaires. Il nous faut mentionner, en terminant, que le résultat de ce travail d'édition n'aurait pas été le même sans l'apport crucial d'Amélie Tremblay, chargée de communication à la Bibliothèque de l'Université Laval, que nous souhaitons remercier chaleureusement.

Les membres du Comité organisateur

Valérie Arsenault, Stéfano Biondo, Joë Bouchard, Isabelle Gagnon, Gaston Quirion



Group picture taken in Old Quebec City, June 8, 2022. Unknown photographer.

Indigenous Acknowledgement

In a spirit of friendship and solidarity, Université Laval honors the First Peoples of these lands. Being at the crossroads of the Onyionhwentsiio' of the Wendat people, the Ndakina of the W8banaki people, the Nitassinan of the Innu people, the Nitaskinan of the Atikamekw people and the Wolastokuk of the Wolastoqey people, we honour our relationships with each other.

Énoncé de reconnaissance

Dans un esprit d'amitié et de solidarité, l'Université Laval rend hommage aux Premiers Peuples de ces lieux. Étant à la croisée du Onyionhwentsiio' du peuple Wendat, du Ndakina du peuple W8banaki, du Nitassinan du peuple Innu, du Nitaskinan du peuple Atikamekw et du Wolastokuk du peuple Wolastoqey, nous honorons nos relations les uns avec les autres.



Collaboration and Co-Design: Digital Storytelling as Knowledge Preservation and Transmission

Sharon Farnel and Ali Shiri

University of Alberta

Ethel-Jean Gruben, Beverly Amos, and Lena Kotokak

Inuvialuit Cultural Centre

Abstract

The [Inuvialuit Voices Project](#) is a collaboration between a team of researchers from the University of Alberta and the Inuvialuit Cultural Centre and the Inuvialuit Regional Corporation in the Inuvialuit Settlement Region (ISR) in the western arctic region of Canada. The aim of the project is to enhance the [Inuvialuit Digital Library](#) of cultural resources through the co-development of a real-time digital storytelling system. Digital storytelling allows communities to tell the stories they wish to tell in the way in which they wish to tell them, and in the context of the Digital Library will make oral stories more accessible across the region, and enable the community to capture and preserve their stories within the library. In order to hear and listen to stories and to learn about the traditional processes, protocols, values, and customs around Inuvialuit storytelling, the research team gathered elders and storytellers from the ISR communities at an event held in Inuvik in November, 2019. In this paper, we provide an overview of the event and its outcomes, touch on critical aspects, such as how it was structured and why, how participants were selected to participate, and how communities and researchers can collaborate to successfully preserve and promote cultural heritage preservation.

Résumé

Le [Inuvialuit Voices Project](#) est une collaboration entre une équipe de recherche de l'Université de l'Alberta, le Inuvialuit Cultural Centre et la Inuvialuit Regional Corporation, situés dans la région désignée des Inuvialuit (ISR) dans l'ouest de l'Arctique canadien. L'objectif du projet est d'enrichir la [Inuvialuit Digital Library](#) de ressources culturelles par le co-développement d'un système de narration numérique en temps réel. La narration numérique permet aux communautés de raconter les histoires qu'elles souhaitent, de la manière qu'elles souhaitent, et, dans le contexte de la bibliothèque numérique, elle rend les récits oraux plus accessibles

dans toute la région. Elle offre également à la communauté la possibilité de capter et de préserver ses histoires au sein même de la bibliothèque. Afin d'écouter ces récits et d'en apprendre davantage sur les processus, protocoles, valeurs et coutumes traditionnels liés à la narration inuvialuite, l'équipe de recherche a réuni des personnes âgées et des personnes conteuses des communautés de l'ISR lors d'un événement tenu à Inuvik en novembre 2019. Dans cet article, nous présentons un aperçu de cet événement et de ses résultats, en abordant des aspects essentiels tels que la sélection des participants et participantes, la structure de l'événement et ses raisons d'être, ainsi que les moyens par lesquels les communautés et le milieu de la recherche peuvent collaborer pour préserver et promouvoir efficacement le patrimoine culturel.

Acknowledgements

We would like to respectfully acknowledge that our research team members are situated on traditional territories of diverse Indigenous peoples. Our team members from the Inuvialuit Cultural Centre are located in the Inuvialuit Settlement Region, and our team members from the University of Alberta are located on Treaty 6 territory and Métis region 4. We would also like to acknowledge the support of the Inuvialuit Regional Corporation, the University of Alberta School of Library & Information Studies, and the Social Sciences and Humanities Research Council of Canada.

Community Context

The Inuvialuit Settlement Region (ISR) is located in the far north of what is now known as Canada, in the northern Northwest Territories and Yukon. It was designated in 1984 in the Inuvialuit Final Agreement between the Inuvialuit and the Government of Canada. It covers approximately 90,000 square kilometers and includes the traditional lands and waterways of the Inuvialuit. There are six geographically dispersed communities within the region: Aklavik, Inuvik, Tuktoyaktuk, Paulatuk, Ulukhaktok, and Sachs Harbour. Year-round roads do not exist between all of the communities, and travel can be quite expensive.



Figure 1. Map of the Inuvialuit Settlement Region. Joint Secretariat.

The language of the Inuvialuit is collectively known as Inuvialuktun, and is comprised of three regional dialects: Sallirmiutun, which is spoken in the coastal communities of Tuktoyaktuk, Paulatuk, and Sachs Harbour; Uummarmiutun, which is spoken in Aklavik and Inuvik, and Kangiryuarmiutun, which is spoken in Ulukhaktok.

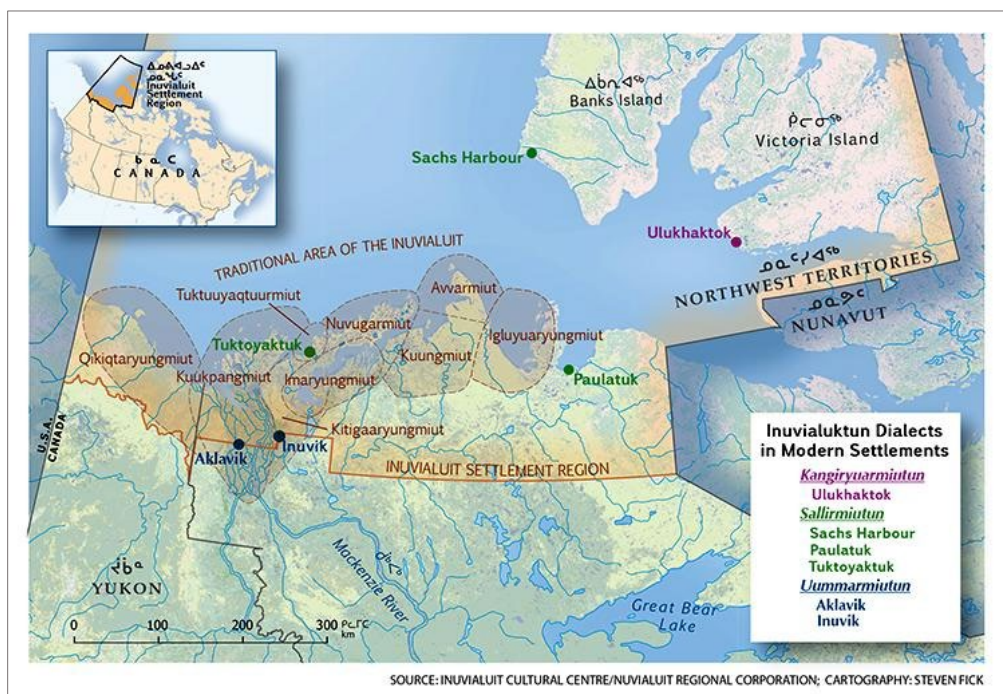


Figure 2. Language map of the ISR. Steven Fick.

Inuvialuit Digital Library

The Inuvialuit Cultural Centre was created in 1998 with the broad mandate of preserving and promoting Inuvialuit culture and the Inuvialuktun language. They do this through hosting of cultural programs at the Centre in Inuvik as well as through funding programs in each of the other five communities in the ISR. They also develop and provide access to a wide range of language learning resources and materials, host language workshops with elders, and curate collections of oral histories and historical photographs.

The [Inuvialuit Digital Library](#) was developed in partnership between the Inuvialuit Cultural Centre and the University of Alberta. The Centre wanted to make their rich and extensive collection more readily accessible to Inuvialuit living outside of Inuvik as well as to non-Inuvialuit people, and approached researchers at the University with the idea of building a digital library. The knowledge organization and resource description framework that underlies the digital library is driven by the needs and interests of the community and is designed to be flexible and adaptable over time. The digital library currently includes several thousand items including texts, language learning resources, photographs and images, and audio and video oral histories and genealogies. They are arranged into various collections by theme and format, and described with a rich set of metadata elements.

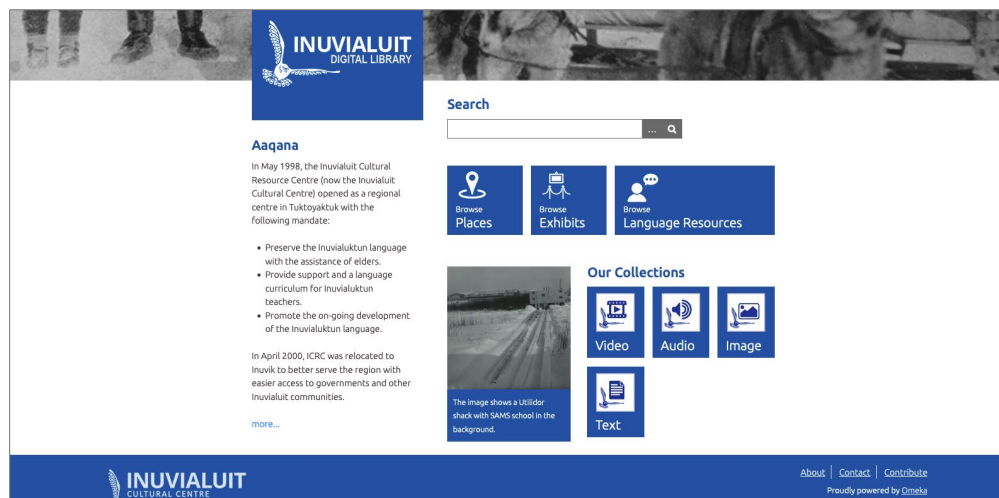


Figure 3. Inuvialuit Digital Library home page.

Inuvialuit Voices Project

From the very start of the digital library project, community members expressed a strong desire to be able to add new stories to the library, as well as to be able to use stories to enhance the descriptions of the resources that are already available in the digital library. And from this the Inuvialuit Voices Project was born.

The [Inuvialuit Voices Project](#) is a long-term project to collaboratively investigate, develop, and evaluate a real-time digital storytelling interface for the Inuvialuit Digital Library. The specific objectives of the project are to:

- establish a novel community-driven participatory design methodology for developing an audio-recording digital storytelling user interface
- design, prototype, and develop said interface with Inuvialuktun features such as storytelling and commenting functionalities that can be captured in real time
- explore the enhancement of the currently available digital materials of cultural heritage within the digital library through real-time stories and comments by Inuvialuit community members
- conduct a community-driven usability evaluation of the digital storytelling user interface and its functionalities

A critical step in developing a digital storytelling interface is gaining a better understanding of storytelling in context. And so the Inuvialuit Voices team organized an elders storytelling gathering in Inuvik in winter 2019.

Inuvialuit Elders Storytelling Gathering

The elders storytelling workshop took place at the Cultural Centre in Inuvik from November 12-15, 2019. But the planning for it started much earlier, and was driven from the start by our expert team members at the Cultural Centre, Ethel-Jean Gruben, Beverly Amos, and Lena Kotokak. As members of the community and stewards of the community's cultural record, their knowledge and connections ensured that the local community context was considered and accommodated at every turn.

Planning began in June 2019 during a research visit in Inuvik. These initial discussions, which happened in person and over the phone so that all team members, whether in Edmonton or Inuvik, could be involved, focused on the broad parameters of the event. The topics included overarching goals for the gathering and agreement on the best time to hold it, taking into account events and activities happening in the community, specific periods when elders were likely to be in town and not out on the land hunting or trapping, and when weather conditions would make travel safest and most reliable. We also discussed in general terms the ideal number of participants and broad criteria to ensure appropriate community representation. Broad categories for budgeting were identified, and a rough schedule was drafted.

Cultural Centre staff immediately started brainstorming and working with each of the community corporations to identify and invite two to three elders from each of the six communities to attend and share their stories. Having representation from each community was important not only to ensure inclusion of voices from the entire region, but also to be sure that speakers of each of the three regional dialects would be in attendance. There was also an effort to have both men's and women's experiences and stories represented, and to include elders who may not have the opportunity to participate in such events as often as others.

Budgeting appropriately to ensure the smooth running of the event and appropriate compensation for the elders who would participate was extremely important. Costs that to be accounted for include flights and accommodations as well as ground transportation. A per diem was provided for each elder, as was a daily honorarium that acknowledged the generous sharing of their knowledge and time. Funds were also required to cover daily lunch as well as morning and afternoon snacks. This included things like coffee and tea but also traditional foods such as soups and stews, bannock, berries, and country food. Ensuring that everyone was well cared for in all ways during the event was so important, and establishing rapport and trust through sharing of food and drink was a core component for participants as well as the project team.

A rough schedule was outlined just to provide a general framework for the event, and to provide some contextual information for attendees. However, most importantly, it was very flexible to be able to adjust as needed to the desires of participants, vagaries of travel in winter, and so on. Although there were some delays to weather conditions affecting flights, twelve elders and community members were eventually able to attend. They were: Nellie Arey and Renie Arey (Aklavik), Sandy Wolki, Fred Wolki, Agnes White (Tuktoyaktuk), Sammy Lennie (Inuvik), George Krengnektak, Elizabeth Kuptana, Annie Thrasher (Paulatuk), Margaret Carpenter (Sachs Harbour), Mary Kudlak, Connie Alanik (Ulukhaktok). The entirety of the workshop was professionally photographed by Elizabeth Kolb (Inuvialuit Regional Corporation) and recorded by David Stewart (Inuvialuit Communications Society) so that the stories could be preserved and added to the digital library. After the workshop concluded, the video was segmented into smaller portions to facilitate online viewing and copies were shared with all participants on USB sticks.

The workshop was moderated by Bev, Inuvialuit Voices team member and Regional Language Consultant at the Cultural Centre. On day one, Bev invited everyone to introduce themselves, to tell stories of their own choosing, and also presented topics for discussion such as genealogy, the pronunciation of names, and preservation of language. Elders told stories in whatever language they wished, and so for the most part they were told in their own dialect of Inuvialuktun. On day two we spent some time with the digital library displayed on a large smart board, and as we explored different photo collections, participants shared their recollections of different people, places, and events. It was a very powerful way to explore how technology

might be incorporated into the storytelling context and to listen to the types of stories people have to share about existing items in the library. The third and final day of the gathering was less structured as some attendees had to leave to fly home. Agnes White had brought with her several Inuvialuktun hymnals and some of the women had a singalong. Margaret Carpenter performed a drum dance for the group, which was followed by a lively discussion about drum dancing and the songs that are used, and language learning in general.

The overall goals of the gathering were to explore storytelling practices and traditions and how these might be reflected in the interface that is developed, while also having the opportunity to listen to and record stories that will be preserved and made available for the community in the future. Feedback from attendees and project team members was overwhelmingly positive. It was a very rewarding event that resulted in hours worth of stories, hundreds of photographs, and many insights into how to move forward with the Inuvialuit Voices project.



Figure 4. Inuvialuit Voices storytelling gathering, November 2019. Photo: Elizabeth Kolb.

Workshop Follow up

Following the workshop, the Inuvialuit Voices project team met in Edmonton in December, 2019 to debrief after the gathering, and to discuss the project and directions for the digital storytelling interface. The prototype as it had been developed and tweaked based on what was learned at the gathering was demonstrated to Cultural Centre staff and they had the opportunity to test it themselves and provide feedback. Much valuable information was gathered through these discussions and user testing sessions, and development work continued. Plans had been made to take the prototype to the communities in spring 2020. However, because of the COVID-19 pandemic, travel and work in the community was put on hold. During that time, we continued to work on the prototype, and the team continued to maintain our connections and relationships through regular conversations and discussions about what post-pandemic work might look like. As of the time of writing, there is hope that a research trip to Inuvik may be possible in the fall of 2022.

Communities and Researchers in Collaboration

The Inuvialuit Voices project is a continuation of a long-term collaboration between researchers and the Inuvialuit community to develop and enhance the Inuvialuit Digital Library to make it more reflective of, and responsive to, the desired functionality of the community. Story is a powerful means of information and knowledge creation and exchange within the community and across generations, and real-time storytelling functionality that allows a user at a click of a button to record their story, or tell a story about an item in the digital library, is something that the community is looking for in a digital library that they can call their own. Building on and growing existing relationships of trust, respect, and reciprocity allow this process to be driven by the community, and demonstrates the value and power of researchers and community working together as equal partners in service of community.



Local Authorship on Canadian Inuit Health Primary Research Publications

Sandy Campbell and Connie Winther

John W. Scott Health Sciences Library University of Alberta

Abstract

Background: Inclusion of local and community researchers as authors on research publications is one of the ways in which we can build equity into research projects in Canada's North. This study examines health related research about Inuit people in Canada's North, published in scholarly journals, to identify the frequency of inclusion of Inuit people as authors/co-authors.

Methods: A search of Ovid MEDLINE for articles containing the words Esk*mo, Esqu*mault, Inuit, Inuits, Inuk, Inuks or Inuvialuit in the titles retrieved 506 articles. Studies that did not involve direct interaction with community members or were not about the health of Inuit people in Canada were excluded. The affiliations of authors of the included studies were reviewed to identify local authors. If affiliation was unclear, authors' digital presence in other Internet environments was scrutinized for further information. **Results:** Of the 151 included studies, 41 had authors from the local communities and 6 had authors whose affiliation with the local community was unclear. **Conclusion:** Over the period 1999 to 2019, there was a general increase in community member authors on primary studies of Inuit health. There is also a trend towards naming entire Indigenous organizations as co-authors. Further, there have been several Indigenous research institutes developed in Canada's North.

Résumé

Contexte : L'inclusion de chercheuses et chercheurs provenant des communautés locales en tant que personnes autrices de publications scientifiques constitue un levier essentiel pour renforcer l'équité dans les projets de recherche menés dans le Nord canadien. Cette étude examine les travaux de recherche portant sur la santé des Inuit du Nord du Canada, publiés dans des revues savantes, afin d'évaluer la fréquence de participation des Inuit en tant que personnes autrices ou coautrices.

Méthodes : Une recherche a été effectuée dans la base de données Ovid MEDLINE pour recenser les articles dont les titres contenaient les termes Esk*mo, Esqu*mault, Inuit, Inuits, Inuk, Inuks ou Inuvialuit, ce qui a permis d'identifier 506 publications. Les études n'impliquant pas d'interaction directe avec des membres des communautés ou ne portant pas spécifiquement sur la santé des Inuits du Canada ont été exclues. Les affiliations institutionnelles des personnes autrices ont été examinées afin d'identifier celles issues des communautés locales. Lorsque l'affiliation demeurait incertaine, la présence numérique des auteurs et autrices sur diverses plateformes en ligne a été analysée pour obtenir des informations supplémentaires à leur propos. **Résultats :** Sur les 151 études retenues, 41 comptaient au moins une personne autrice provenant d'une communauté locale, et 6 autres comprenaient des auteurs ou autrices dont l'affiliation communautaire restait indéterminée. **Conclusion :** Entre 1999 et 2019, une augmentation notable du nombre de membres des communautés figurant comme personnes autrices dans les études primaires sur la santé des Inuit a été observée. Par ailleurs, une tendance émergente consiste à reconnaître des organisations autochtones entières comme coauteurs ou coautrices. Enfin, plusieurs instituts de recherche autochtones ont été créés dans le Nord canadien, contribuant au renforcement des capacités locales et à une représentation plus équitable dans la production de connaissances scientifiques.

Background

Much research has been done about Indigenous people in Canada, and specifically on Inuit health issues. Problems in the relationship between researchers and Indigenous Peoples have been well-documented and, over time, advice for building strong and positive research relationships has been developed (TCPS 2 2018, 2022; Inuit Circumpolar Council, 2022; United Nations Declaration on the Rights of Indigenous Peoples Act. S.C. (2021), ch. 14). In particular, the development of OCAP (Ownership, Control, Access and Possession) principles in 1998 began defining a better framework for research concerning Indigenous people in Canada (First Nations Centre, 2007).

In the area of collaboration and co-authorship, Schnarch (2004), writing about the integration of OCAP into research practices, collated a list of 30 "recurring grievances about research and researchers". While none of these directly address authorship, the following three broadly include the concept:

- "Researchers have essentially pre-empted meaningful community involvement by presenting completed research designs, often already funded, for community approval rather than collaborating from the start."
- "Researchers have treated First Nations as merely a source of data."
- "Researchers have treated First Nations researchers as informants rather than colleagues and have appropriated or failed to acknowledge some of their work."

Over time, recognition of Indigenous authorship has been included in research guidance documents. The 2018 Tri-Council Policy Statement on Ethical Conduct for Research Involving Humans (TCPS2 2018), and specifically, Chapter 9: Research Involving the First Nations, Inuit and Metis Peoples of Canada. Article 9.17 speaks to co-authorship and acknowledgement:

An Indigenous community, and those who participated in the research, should have the option to participate in deciding how collective or individual contributions to the research project will be acknowledged and credited in the dissemination of results (e.g., acknowledgement of co-authorship in research reports or at conferences and seminars) (Inuit Circumpolar Council, 2022).

Most recently, the *Circumpolar Inuit Protocols for Ethical and Equitable Engagement* provides the following protocols:

"Give credit where credit is due – Inuit organizations, communities, or individuals must be acknowledged and receive credit for the Indigenous Knowledge, expertise and information provided to others in a way that has been agreed upon and directed by the community or individuals.

Require Inuit review and agreement on all materials and products – Inuit engaged in producing those materials, information and products must have the opportunity to review results prior to public release in order to identify incorrect or sensitive information." (United Nations Declaration on the Rights of Indigenous Peoples Act. S.C. (2021), ch. 14).

While Schnarch (2004) argued eloquently for recognition of various kinds of contributions, co-authorship on research publications, particularly in health research, requires that the individual or group be intellectually involved in publications in specific ways. The International Committee of Medical Journal Editors (ICMJE) has defined four criteria that authors must meet:

- Substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work; AND
- Drafting the work or revising it critically for important intellectual content; AND
- Final approval of the version to be published; AND
- Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved (International Committee of Medical Journal Editors, 2022).

Essentially these criteria characterize the contribution of intellectual content to the written work and taking responsibility for the content. Within the ICMJE guidelines, it is possible to recognize the authorial contributions of local research team members. However, it requires that research teams have a culture and process that values authorial contributions of local people. Vaidehi, Paulami and Madhukar, writing about this issue in the global health context, state:

"For research involving patient recruitment, treatment in existing facilities, and follow-up, the notion that no locally based individuals made a "substantial contribution" (per authorship criteria) to the acquisition of data is pure fiction. Perhaps, as events played out, none of those individuals additionally fulfilled the criteria of a substantial contribution to the design of the study or writing of the report, but then perhaps they were not given the opportunity. Perhaps if they had, the design would have been more appropriate to the setting and the contextual interpretation more realistic" (Nafade et al., 2019).

Engaging local people in research, to the extent that they can meet the ICMJE criteria and can reasonably be co-authors on research papers requires that research projects be designed to include them. Schnarch (2004) said that "doing respectful research in Aboriginal communities takes more time, more money and, arguably moral fibre". Including non-academic co-authors also requires skill and planning. Flicker and Nixon have recently added clarity to this by describing a process for meaningful inclusion of "peer researchers" in the writing of scholarly papers. They cite collaborative writing as "honouring the participation and intellectual contributions of diverse team members", "increasing productivity", and "enriching the quality of scholarship" (Flicker et al., 2018).

The inclusion of local authors in research projects has benefits to both communities and the research projects. Communities that are involved in research may find that they can influence the research to focus more on their specific research needs. They may be able to ensure more culturally safe and appropriate interactions. They will be able to situate the research within their local traditional and environmental knowledge. Research engagement may create opportunities for employment for community members and skills building opportunities for youth. Working with research projects may allow community members to educate researchers and others about the local community. Finally, the last requirement of co-authorship, that authors have final approval of the manuscript that will be sent for publication, gives local co-authors the opportunity to ensure that representations of the community in the work are accurate. (TCPS 2 2018, 2022; Schnarch, 2004).

From the perspective of the research project, having a local co-author ensures a higher level of community connection with, and commitment to, the project. Having a local person as an integral team member can result in better communications and relationships with the

community. Community members are likely to be more comfortable with a local person in areas of recruitment and data collection. Local team members have knowledge of local events and conditions that might influence the progress of the project. A local author will be able to identify potential protocol and cultural errors, both in the project and the resulting publications (TCPS 2 2018, 2022; Schnarch, 2004).

Against this backdrop, this preliminary study investigates the extent to which Inuit people in Canada, who are involved in primary health research, become co-authors on scholarly papers.

Methods

In 2020, a sample of Inuit-related papers were retrieved from the Ovid MEDLINE database. MEDLINE is the U.S. National Library of Medicine's premiere database, containing references to 29 million scholarly journal articles, including Canadian health related journals (National Library of Medicine, 2020). A limited set of search terms (Esl*mo, Esqu*malut, Inuit, Inuits, Inuk, Inuks and Inuvialuit) were searched in the title field, to ensure a focus on Inuit health. The search was limited to 1999 – 2019. Articles were sorted by year of publication. Studies that were not primary research involving Canadian Inuit people were removed. Authors of the remaining articles were scrutinized for affiliation. The number of articles where a member of the population under study was included as a co-author was tallied for each year, as was the number of articles where there was sufficient interaction between the research team and local populations that a well-designed project could have included a local author. From these data, trends in co-authorship over the study period were identified.

Exclusions

Because the study focused on research publications that resulted from direct interaction between research teams and local communities, studies that did not involve direct interaction with communities were excluded. These included: secondary data analyses, literature reviews, errata, conference abstracts, non-Inuit studies, non-Canadian studies (e.g., Greenland, Alaska), and non-human studies. Many excluded articles were analyses of large surveys or Statistics Canada data, so while the original data was collected in communities, the researchers conducting secondary analysis of the data did not have direct community contact.

Identifying local authors

Our purpose was to identify instances in which someone from the population being studied was included as an author on publications resulting from the study. This definition excluded doctors, nurses and health administrators who were members of the research team because of their professional position, and had not been part of the community before holding that professional position.

To identify local community members who were authors, the following steps were followed.

1. Author affiliation information for each article was scrutinized to identify any authors who listed an Indigenous organization as their affiliation or who listed their location as an Arctic community.

Example: "(Rob Collins^{1*}, Merryl Hammond¹, Catherine L. Carry², Dianne Kinnon³, Joan Killulark⁴ and Janet Nevala⁵) ... **4Department of Health and Social Services, Nunavut...**" ¹⁰(emphasis added).

2. The text of the articles was reviewed to find instances where reference was made to any author being a member of a local community.

Example: "Five Indigenous community advisors (two Inuit representatives from TI [one male, one female], one Inuk female older adult, and two female First Nations representatives from Odawa [including one older adult]), worked with us to co-create and refine the research questions, research process, interview questions, and analysis to ensure that the research was relevant, respectful, and beneficial to their communities (Brooks-Cleator et al., 2019).

... One of the community advisors also provided interpretation for the Inuit participants. She became invaluable to the research by assisting with data collection, data analysis, and participant recruitment, and is a co-author on this paper" (Brooks-Cleator et al., 2019).

3. Those authors who were listed as being located in an Arctic community or from an Arctic community were further investigated to establish whether or not they were local community members. These investigations included reviewing any public documents and other publications, institutional and association websites, social media sites including YouTube, LinkedIn and Facebook, and searching news media for stories about the person, including announcements of employment appointments, community activities and obituaries.

Example: (Rob Collins^{1*}, Merryl Hammond¹, Catherine L. Carry², Dianne Kinnon³, **Joan Killulark⁴** and Janet Nevala⁵) ... **4Department of Health and Social Services, Nunavut...** ⁸(emphasis added)

Validated against: Nunavut. Department of Executive and Intergovernmental Affairs. Staff Directory (Nunavut. Department of Executive and Intergovernmental Affairs, 2022).

As articles reviewed for this study spanned a 21-year period, some researchers had moved, changed jobs and/or changed their names, creating barriers to identifying them. In later years, the increased use of social media proved to be a facilitator, making some individuals more visible. In all but six cases, it was possible to determine whether or not the co-author was a member of the local community.

Results

Of the 506 articles retrieved, 151 publications involved direct interaction between researchers and local community members. Of these, 41 (27.2%) included local authors and 6 (5%) had co-authors whose relationship to the local community could not be determined.

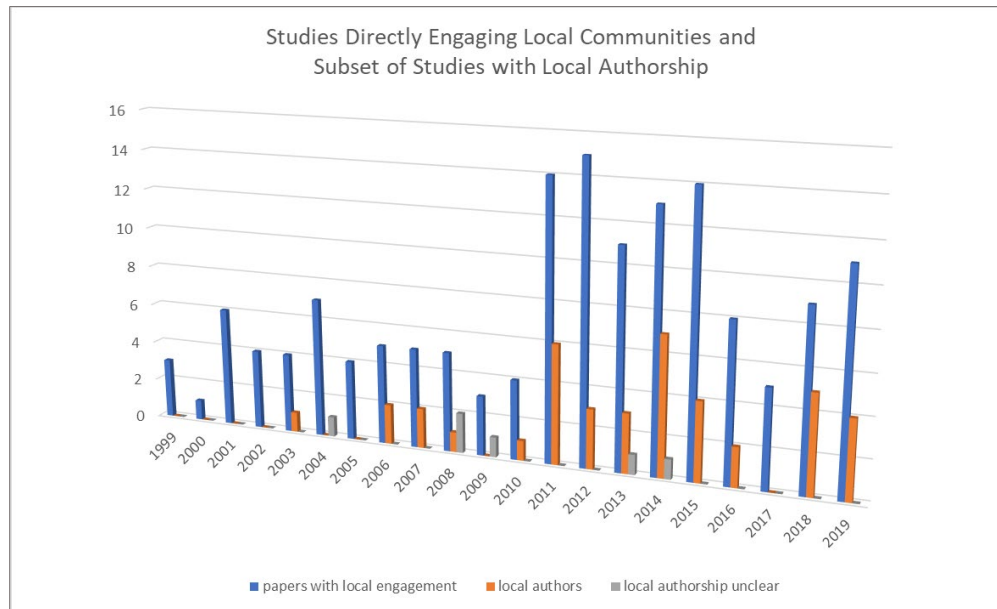


Figure 5. Included studies showing numbers of papers published per year and numbers of papers with local authorship or where local authorship was unclear.

The annual number of primary health studies ranged from 1 in 2000 to 15 in 2012. The annual number of studies with local co-authors ranged from 0 in numerous years to 7 in 2014. There was a sharp increase in the number of papers after 2010. This is likely the result of the fourth International Polar Year (March 2007 to March 2009) (NISC International, 2022), which generated considerable activity in all fields of Arctic research. Additionally, by 2008, community based participatory research and community engaged research were also becoming well-established research methods (Minkler & Wallerstein, 2008).

Because of the two distinct periods in the publication record, we have analyzed the presence of Inuit authors in the pre-2010 and post-2010 periods. Over the whole publication record the mean is 7.2 papers per year, (1999 - 2010, mean = 4.3; 2011 - 2019, mean 11.1). Over the whole publication record, the mean for papers with local authors is 1.6 papers per year (1999 - 2010, mean 0.6; 2011 - 2019 mean 3.8).

	All included papers	1999-2010	2011 - 2019
Total	151 (mean 7.2/year)	51 (mean 4.3/year)	100 (mean 11.1/year)
With local author	41 (mean 1.6/year)	7 (mean .6/year)	34 (mean 3.8/year)
Percent With local authors	27.1% local authors	13.7% local authors	34% local authors

Table 1. Total papers and pre- and post- 2010.

In addition to the simple two-fold increase in the number of studies being published about Inuit health after 2010, there is a 20.3% increase in the number of papers with local authors. After 2010, approximately one-third of the studies had local co-authors, however, this varied greatly annually from 0% in 2017 to 55.5% in 2018.

Two other observations arose from the analysis of these publications. First, in several instances, the local author listed was an organization, rather than an individual. For example, McShane, Smylie, Hastings and Martin included the Tungasuvvingat Inuit Family Resource Centre as a final author (McShane et al., 2006). The Rigolet Inuit Community Government is an author on Harper, Edge, and Cunsolo-Wilcox's 2012 study (Harper et al., 2012).

Second, there have been several initiatives to build health research programs that are rooted in Inuit communities. The publications resulting from these projects are sometimes available in the “publications” or “reports” sections of the organizations’ websites, rather than being published in scholarly journals. Two such organizations were identified through this study.

"The Qaujigiartiit Health Research Centre is an independent, non-profit community research institute that was founded in 2006 by Nunavummiut, for Nunavummiut, to answer the health questions of our communities" (Qaujigiartiit Health Research Centre, 2022). Several of their publications, which are available on the [QHRC website](#) are authored or co-authored by local people.

"The eNuk Program is, at its heart, a community-led and community-driven program. To research, develop, and implement the program, Rigolet [the southern-most Inuit community in the Nunatsiavut Land Claim Settlement Region of Labrador] partnered with a team of people working in different disciplines and sectors, including: local researches and community members, local and regional government representatives, healthcare professionals, and researchers from the University of Guelph and the Labrador Institute of Memorial University" (eNuk, 2022).

We did not find any publications posted on the eNuk website to date, but several Inuit members are co-authors on publications in scholarly journals.

Limitations

First, this study is limited by the selection of articles studied. The data set is designed to be representative and therefore is selective, rather than comprehensive, limited by the presence of important terms in the titles of articles. Some important articles may not have been included. Second, while efforts were taken to identify authors who are members of local communities, in some cases it was impossible to determine an author's affiliation. There may be some authors who have been incorrectly identified as being members of local communities and some who are members of local communities but were identified as such.

Conclusions

Over time, there has been an increase in the inclusion of local co-authors on primary studies related to the health of Inuit people. After 2010, approximately one-third of the studies had local co-authors, however, this varied greatly annually. Increased local co-author inclusion may be the result of better understanding of the value of local team members' input or may be the result of external guidance, such as the Calls to Action of the Truth and Reconciliation Commission (Truth and Reconciliation Commission of Canada, 2015), which encourages the development of respectful and equitable relations among Indigenous and non-Indigenous Canadians.

Many of the articles that did not include local people as co-authors, did list them in the acknowledgments for work done in logistics, recruitment, data collection and analysis, cultural advice, translation and linguistic support. There are several possibilities for why local people are not included as co-authors. First, researchers may not be aware of the authorial value of contributions by local participants to the research project. There may be a misperception that if someone is paid to do work that contributes to research, that being paid precludes their being a co-author. However, ICMJE places no limit on why (volunteer or paid), when or from where authors make their intellectual contributions. Second, researchers may not have structured research projects in ways that are conducive to the inclusion of local people as co-authors. Third, it is possible that local people may not find authorship sufficiently valuable to choose to be co-authors.

This study could be further refined by moving to a second phase, in which local contributors to primary Inuit health research could be contacted to determine their perception of the value of co-authorship and to clarify the instances in which the co-authors' connections to community was unclear.

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Increasing engagement: a case study of the By Endurance We Conquer – the Shackleton Project

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Abstract

The Scott Polar Research Institute recently completed By Endurance We Conquer: the Shackleton Project. This five-year project aimed to unite the Scott Polar Research Institute's Archive, Library Museum and Picture Library in a targeted purchasing strategy designed to develop its' collection of material relating to Sir Ernest Shackleton. Acquisitions made through the project are now displayed in the Scott Polar Research Institute's Polar Museum and Polar Library whilst a temporary exhibition has also toured the Falkland Islands, Chile and Ireland.

The project examined in detail the heritage aspects of the British National Antarctic Expedition 1901-04 (Discovery) of which Shackleton was a member and the three expeditions which Shackleton led to the Antarctic: the British Antarctic (Nimrod) Expedition (1907-09), The Imperial Trans-Antarctic (Endurance) Expedition (1914-17) and the Shackleton-Rowett (Quest) Expedition (1921-22), during which Shackleton died. Sir Ernest Shackleton's name is associated with exemplary leadership, courage in the face of adversity and the refusal to give up.

The Shackleton project has strengthened the Polar Library, Archive, Picture Library and Museum through knowledge-sharing and collaborative planning, and dramatically enhanced the public engagement through new acquisitions and interpretation. This presentation will focus on the wide range of education and outreach events, online films and the use of social media which were deployed to increase engagement by both researchers and the general public. The presentation will also demonstrate how the Library, Archive, Picture Library and Museum, in undertaking this project on Shackleton, have fostered the practice of interdisciplinary research.

Résumé

Le Scott Polar Research Institute (SPRI) a récemment achevé le projet By Endurance We Conquer: The Shackleton Project, un programme quinquennal visant à unifier les collections d'archives, du musée de la Bibliothèque et de la photothèque de l'institut dans le cadre d'une stratégie d'acquisition ciblée destinée à enrichir les fonds relatifs à Sir Ernest Shackleton. Les acquisitions réalisées pour le projet sont désormais présentées au Polar Museum et à la Polar Library du SPRI, tandis qu'une exposition itinérante temporaire a également circulé aux Îles Falkland, au Chili et en Irlande.

Le projet s'est consacré à l'exploration des dimensions patrimoniales de la British National Antarctic Expedition 1901-04 (Discovery), à laquelle Shackleton participa, ainsi qu'aux trois expéditions qu'il dirigea par la suite : la British Antarctic (Nimrod) Expedition (1907-09), l'Imperial Trans-Antarctic (Endurance) Expedition (1914-17) et la Shackleton-Rowett (Quest) Expedition (1921-22), au cours de laquelle Shackleton trouva la mort. Le nom de Sir Ernest Shackleton demeure indissociable d'un leadership exemplaire, du courage face à l'adversité et d'une détermination inébranlable.

Le Shackleton Project a permis de renforcer la bibliothèque polaire, les archives, la photothèque et le musée du SPRI grâce à une approche collaborative et un partage des connaissances. Il a également accru de manière significative la participation du public par le biais de nouvelles acquisitions et d'initiatives d'interprétation.

Cette communication met en lumière la vaste gamme d'activités éducatives et de sensibilisation, de films en ligne et d'usages des médias sociaux déployée afin d'accroître l'engagement tant des chercheurs et chercheuses que du grand public. Elle veut en outre démontrer comment la bibliothèque, les archives, la photothèque et le musée, à travers ce projet consacré à Shackleton, ont favorisé le développement de pratiques de recherche interdisciplinaires.

Introduction

The Scott Polar Research Institute, part of Cambridge University, was established in 1920, to encourage polar science and exploration. From its' inception the Institute has blended research with the development of an outstanding Polar Museum, a library, an archive and a picture library. Another unique feature of the Institute is the range of expertise of its researchers which bridges the human and natural sciences. The Institute is situated within the Faculty of Earth Science and Geography.

There are eight senior academic staff, about 20 graduate students and a number of post-doctoral researchers based in the Institute. The Scott Polar Research Institute offers a full-time

Masters' course in Polar Studies. It is primarily a research degree, where students are expected to undertake independent original research. The Institute also runs a three-year Ph.D. programme.

The research undertaken in the Scott Polar Research Institute is of a wide-ranging nature, due to the range of expertise of its researchers. Currently the main areas of research focus on:

- The form and flow of glaciers and ice sheets, especially the links between ice and climate change in a warming world
- Marine geological and geophysical investigations of high-latitude continental margins, including the links between past glacier and ice-sheet fluctuations and the geological record,
- Russian and Northern studies, especially transport, migration, and survival; environment and local action; reindeer herding; energy economics; identity and nationalism; memory, trauma, and family development; and shamanism, symbolism, and comparative religion.
- Remote Sensing with the aim of developing new methods for using satellite and airborne observation to study polar glacial, marine and biological environments.
- The changing socio-technical faces of the Arctic and Antarctica.

The Polar Museum

The Museum holds an important collection of artefacts, paintings, drawings, photographs and other material relating to the history, exploration and science of the Arctic and Antarctic, with particular emphasis on Britain's polar heritage. After an extensive programme of renovation, part-funded by the HLF, it reopened to the public in June 2010. As well as the permanent exhibits, the Museum regularly arranges special exhibitions and is committed to public outreach. The Museum receives over 50,000 visitors annually and hosts 200 school visits a year. It is anticipated that these figures will increase.

The Library and Archives

The Scott Polar Research Institute has possibly the world's most comprehensive polar library and archives. The Archives contain an unparalleled collection of manuscript material relating to the polar regions, research and exploration. For scientists and scholars, the Library offers a collection developed since the 1920s covering all subjects relating to the Arctic, the Antarctic, and to ice and snow wherever found. For industry, it is a prime information source on such subjects as exploration and exploitation of natural resources and on the environmental implications of such activities in the polar regions; on the design of ice-strengthened shipping and selection of sea routes; and on problems of construction and transportation in cold

environments. For government users, the Library offers an unrivalled resource for the needs of international relations and strategic defence.

The Picture Library contains a photograph collection from both the Arctic and Antarctic, mainly depicting the history of exploration in the polar regions, including much material from the expeditions of Scott and Shackleton. The Museum, the library, archives and picture library combined to contribute to the By Endurance We Conquer – the Shackleton Project.

By Endurance We Conquer – the Shackleton Project

By Endurance We Conquer: the Shackleton Project was a five year project which aimed to unite the Scott Polar Research Institute's Archive, Library, Museum and Picture Library in a targeted purchasing strategy designed to develop its' collection of material relating to Sir Ernest Shackleton. The National Lottery Heritage Fund's Collecting Cultures strand awarded the Institute up to £500,000 to be used primarily to support the acquisition of library, museum, photographic or archival items of national importance. The project began in 2015 and was completed in December 2019. Acquisitions made through the project are now displayed in the Scott Polar Research Institute's Polar Museum and Polar Library. A temporary exhibition also toured the Falkland Islands, Chile and Ireland.

The project examined in detail the heritage aspects of the British National Antarctic Expedition 1901-04 (Discovery) of which Shackleton was a member and the three expeditions which Shackleton led to the Antarctic: the British Antarctic (Nimrod) Expedition (1907-09), The Imperial Trans-Antarctic (Endurance) Expedition (1914-17) and the Shackleton-Rowett (Quest) Expedition (1921-22), during which Shackleton died. These expeditions tend to be known by the names of the ships used. Sir Ernest Shackleton's name is associated with exemplary leadership, courage in the face of adversity and the refusal to give up (Morrell & Capparell, 2001).

Museum and library outreach

The Shackleton project has strengthened the Polar Library, Archive, Picture Library and Museum through knowledge-sharing and collaborative planning, and dramatically enhanced the public engagement through new acquisitions and interpretation. This oral presentation will focus on the wide range of education and outreach events, online films and the use of social media which were deployed to increase engagement by both researchers and the general public. The presentation will also demonstrate how the Library, Archive, Picture Library and Museum, in undertaking this project on Shackleton, have fostered the practice of interdisciplinary research.

Education and outreach events

As part of this project Corinne Galloway was recruited as an Education and Outreach Assistant who developed a structured plan of Education and Outreach events intended to reach a wide range of people in the community. A stratified approach to reaching a wide variety of people was taken. Thus, some outreach events were held for small numbers of people such as those in the dialysis unit at Addenbrookes hospital, whilst other talks on Shackleton were delivered for the University of the Third Age, to Scout groups as well as all other key stages of education sector. To provide an idea of this range of events some are described in more detail here.

A workshop entitled 'Shackleton's Dilemma' was designed and delivered for Key stages 3-4. This was an activity-based workshop where students solved a variety of problems, journeying step by step through Shackleton's Endurance expedition. This involved teamwork, problem solving, time management, moral dilemmas, empathy, debate and discussion.

A loan box for schools was launched which featured a handling collection of replica items representing some of the personal and practical items the men took with them. Students were invited to handle the objects and undertake an activity exploring their own ideas of what they would take with them (and what to leave behind) once the Endurance sank. Some of its items included: selection of fiction books from the period, Bible, replica clothing (jumper, heroic era wind proof suit), personal photograph (Shackleton's wife), toothbrush, money, mock medical supplies, mini banjo. A similar event was delivered for Key stage 1-2 students based around storytelling, literacy activities and a *pack a polar suitcase trail* where students were asked to decide what to take with them on an expedition.

Cambridge Storytellers were hosted at the Institute, they recounted adventures from the extreme north and south of the world whilst Inuit legends were woven between moments from the epic tale of Ernest Shackleton's failed Trans-Antarctic expedition. As part of the Open Cambridge and Alumni weekend events, "lost and found" discussions and activities featured the little-known Japanese Antarctic Expedition of 1910-12 and a film of Shackleton's forgotten 1907-09 Nimrod expedition. These events were aimed at adults. There was an accompanying exhibition which focused on myths created or 'busted' by Shackleton and his crew, illustrating how Shackleton and his men both created and destroyed myths about Antarctica in the Heroic Age of Exploration.

Forming part of the University of Cambridge Museums night-time programming aimed at 'Experience Seekers' (generally considered to be adults in their 20s and 30s who seek new experiences to support and drive their social lives) the E&O team put on the Wunderkammer comedy night. This was a very successful and well supported evening of Improvised comedy – comedians responding to short five-minute talks on different topics from experts across SPRI – includes a segment on Shackleton.

Shackleton Online

The Shackleton project had several approved purposes defined by the National Lottery Heritage Fund. The aim of one was to improve the online Shackleton resources, principally in the development and expansion of the ‘Virtual Shackleton’ webpages. This part of the project sought to engage people with the collections of the museum, picture library and archives inviting audiences to “Explore our exceptional collection of material related to Sir Ernest Shackleton” (Scott Polar Research Institute, 2022a).

Several outputs were created, including webpages inviting online users to explore the expeditions, to delve into some of the unique items from the Institute’s historic collection of papers, objects and images and to discover the lives and stories of Shackleton’s intrepid companions. The creation of three films on the Endurance Expedition Chronometer, the Nimrod Expedition Sledging Flag and the Discovery Expedition Goggles was a sizable task. The scriptwriting, image sourcing and archival object selection were all completed at SPRI, while the post-production was outsourced to Chocolate Films who won the commission for this project. These three longer films had scope to consider Shackleton and his relationship with the objects in question, and his relationships with associated people. Further work was commissioned to create audio-described objects and learning resources.

Some shorter films are also available to the public on Facebook, Twitter and Instagram and it is worth noting the importance of social media in increasing engagement with Shackleton during this project.

Social media

Exploiting social media hinged on the creation of a coordinated communication plan. The E & O Assistant, having established a spreadsheet with key dates, was able to Tweet regularly in order to keep the level of engagement with Shackleton high, especially over the centenary year. Few opportunities to create Shackleton related news items were missed, however slight they may be. In National Chocolate Week, a photograph of an unopened tin of chocolates prepared for Shackleton’s Endurance Expedition was tweeted. This resulted in 112 engagements as recorded by Twitter.

Recognising Shackleton’s love of poetry, a series of Tweets were developed for National Poetry Day. These included:

‘We leave our pleasant homelands, for the roaring southeast winds...’

This being a draft of a poem Shackleton wrote in Antarctica (Scott Polar Research Institute, 2022). News items on Shackleton were also retweeted to strike a chord on appropriated days. Such items included tweeting a news story concerning Prince Philip’s reading of a parody of

Rudyard Kipling's famous poem *If*, as written by Antarctic explorer Sir Ernest Shackleton and his crew (BBC News, 2022). Shackleton and Kipling were known to each other, and the parody was written on a piece of cardboard in 1921, during a trip to Antarctica. This was just months before Shackleton died in 1922.

Conclusion

Beyond growing the Shackleton collections, which the funding certainly assisted, the project has been very successful in delivering a wide range of informative and engaging outreach events based around Shackleton's expeditions, and in creating fascinating online resources which have engaged worldwide online audiences, who might otherwise have been unable to visit the Polar Museum in Cambridge. An independent evaluation report (Mailhac, 2019) on the project also recognized the project's success in terms of fostering interdisciplinary team working and in developing and strengthening relationships. The report points to the role of the project in developing both external and internal relationships. By working together and learning from each other across the museum, library and archive departments, the project has helped those working on it to develop skills and expertise, including specialist subject knowledge, museum acquisitions, bidding at auction, conservation, as well as managing volunteers and not least in how to manage a large project.

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Collaborations in polar research: a bibliometric study

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Abstract

This paper reviews recent developments in bibliometric studies of polar research, building on papers presented to the 2016 and 2018 Colloquies. It extends existing work to consider the patterns of collaboration between countries, institutes, and individuals, with an emphasis on Antarctic research. It also considers the way in which material is reused and synthesised for major international collaborations, in particular the way polar literature on climate change is brought into the United Nations Intergovernmental Panel on Climate Change (IPCC) reports that are used to inform the current debate on climate change and government policy.

Résumé

Cet article propose une analyse des développements récents dans le domaine des études bibliométriques appliquées à la recherche polaire, en s'appuyant sur les communications présentées lors des colloques de 2016 et de 2018. Il examine les dynamiques de collaboration entre pays, institutions et personnes chercheuses, en mettant particulièrement l'accent sur la recherche en Antarctique. L'étude s'intéresse également aux modalités de réutilisation et de synthèse des publications dans le cadre de grandes collaborations internationales. Elle analyse en particulier la manière dont la littérature polaire portant sur les changements climatiques est intégrée aux rapports du Groupe d'experts intergouvernemental sur l'évolution du climat (GIEC) (en anglais : United Nations Intergovernmental Panel on Climate Change (IPCC), lesquels alimentent le débat actuel sur le changement climatique ainsi que l'élaboration des politiques publiques.

PART 1 - POLAR BIBLIOMETRICS, 2012-21

Defining polar bibliometrics

A key requirement for any bibliometric analysis is to identify the set of papers to be examined. This is particularly challenging for polar science, which is a broad, fuzzily-defined, and heterogenous field cutting across many formal disciplines, and only really defined by the geographic scope of its subject. Gray (2019), to which this paper is essentially an update, summarised the pros and cons of the different approaches available here as of 2018 - manual selection via topical databases; analysis of "polar journals"; analysis by affiliation to a "polar institution"; topic or subject indexing within a broader database; and finally conventional keyword analysis.

In the four years since that paper, the fourth option (topic indexing) has had some minor developments, but is still sadly not practically useful for identifying polar research. The "topics of prominence" used in Scopus - algorithmically clustered groups of papers - continue to be available within the SciVal analysis tool and are loosely referred to within Scopus, but are not searchable there. An initial analysis suggests that some of these can potentially be mapped to polar research, although not exhaustively. Web of Science does not have a direct equivalent, but has introduced "citation topics" within the InCites analysis tool, again calculated by algorithmic citation clustering; however, these are grouped at a higher level and as such no polar science topics can be distinguished.

One other development to note is that in 2019, the High North Research Documents project was relaunched as Open Polar (openpolar.no), a thematic database for all open access polar research. The restriction to just open access material means that it was not a suitable database to draw from in this analysis, but it will be looked at in further research.

As with the earlier analysis, we focused on keyword searching. This is the most commonly used method for bibliometric analysis of polar research, and probably the most effective and reliable. The search term used was the same as in Gray (2019), building on keywords presented in Gray & Hughes (2016) for Antarctic papers and in Aksnes & Hessen (2009) for Arctic papers. In Web of Science syntax, the two searches were:

TS= ((antarc* NOT (candida OR "except antarctica" OR "not antarctica" OR "other than Antarctica")) OR "transantarctic" OR "ross sea" OR "amundsen sea" OR "weddell sea" OR "southern ocean")

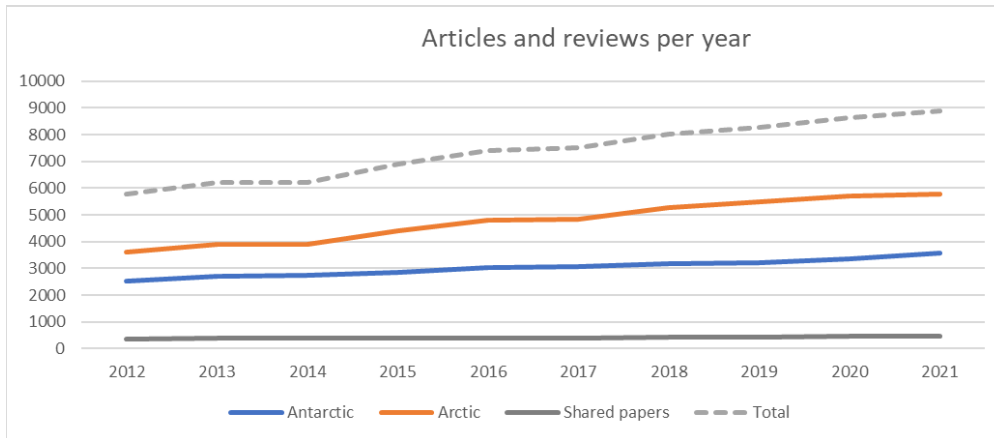
TS= (("Arctic" NOT "arctic bramble" NOT "sub-Arctic") OR "Svalbard" OR "Spitsbergen" OR "Longyearbyen" OR "Ny-Alesund" OR "Hornsund" OR "Barentsburg" OR "Kongsfjord" OR "Hopen" OR "Bjornoya" OR "Bear Island" OR "Greenland" OR "Baffin Island" OR "Queen Elizabeth Islands" OR "Ellesmere Island" OR "Devon Island" OR "Somerset Island" OR "Prince of Wales Island" OR "Banks Island" OR "Ellef Ringnes Island" OR "Amund Ringnes Island" OR "Bathurst Island" OR "Axel Heiberg Island" OR "Prince Patrick Island" OR "King William Island" OR "Prince Charles Island" OR "Bylot Island" OR "Bathurst Island" OR "Southampton Island" OR "Brooks Range" OR "St Lawrence Island" OR "St Matthew Island" OR "Seward Peninsula" OR "Nunivak Island" OR "Novaya Zemlja" OR "Severnaja Zemlja" OR "Novosibirskije Ostrova" OR "Jan Mayen" OR "Victoria Islands" OR "Nunavut" OR "Fram Strait" OR "Beaufort Sea" OR "Davis Strait" OR "Barents Sea" OR "Kara Sea" OR "Storfjorden" OR "Baffin" OR "Hudson Bay" OR "Siberian Sea" OR "Laptev Sea" OR "ChukchiSea" OR "Bering Strait" OR "Bering Sea" OR "Karskoje Sea")

As can be seen, the larger Arctic search reflects the much more fragmented nature of Arctic geography. We did not do a distinct keyword search for "polar" as it seemed unlikely that many papers could be identified which discussed the polar regions and did not also use one of the above keywords.

All data was gathered from Web of Science with one of the two search terms above, filtered to only articles or reviews, published between 2012 and 2021 inclusive. Initial assessment and data analysis was carried out through InCites; this caused a small number of papers to be omitted as the databases used for Web of Science and InCites are not completely identical. This gave us a total set of 47,910 Arctic papers and 30,347 Antarctic. 4,162 papers were identified as belonging to both sets, giving an overall deduplicated total of 74,095 papers across ten years.

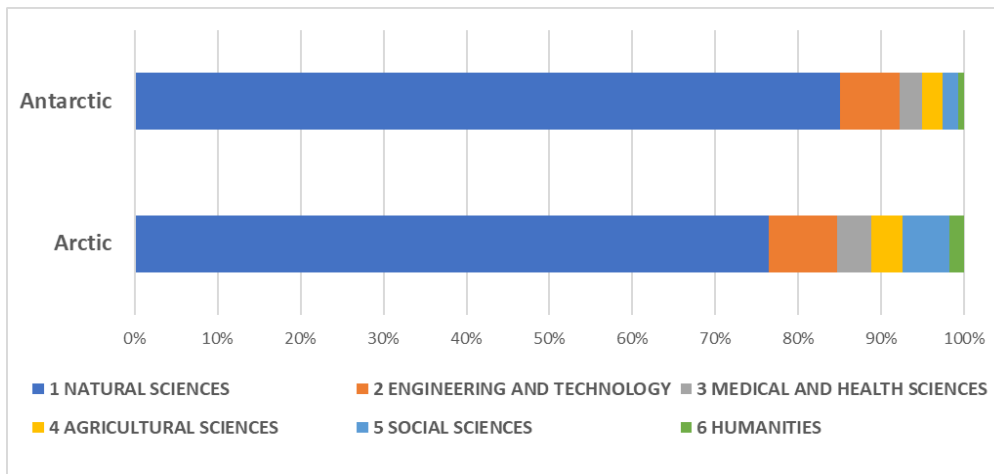
Yearly changes

The total output per year continues to rise, at a rate of around 4% per year for Antarctic research and 5.5% per year for Arctic research. However, both can be sporadic, with periods of faster growth and then retrenchment. This can be compared to the overall increase in scientific activity (estimated at 8-9% per year; Bornmann & Mutz, 2015). The volume of research which is identifiably "bipolar" is growing at a slightly slower rate, around 2.5% per year, and so is making up a progressively smaller proportion of the total over time.



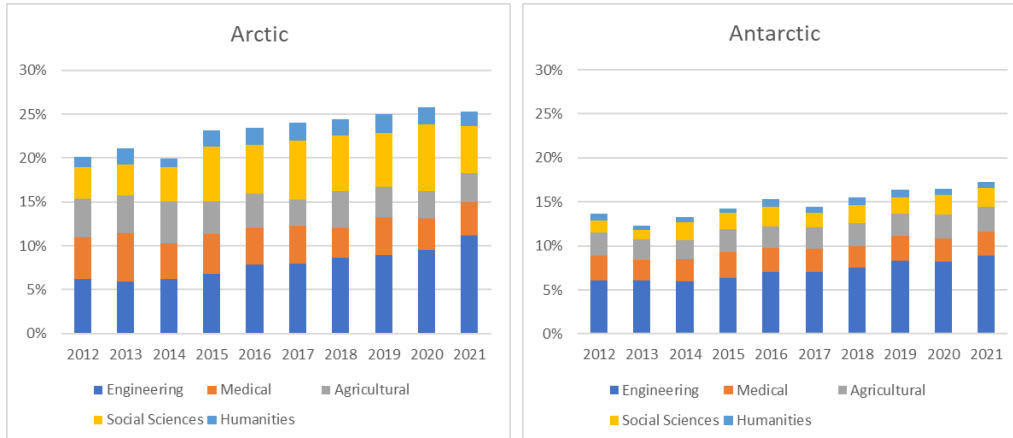
Distribution by field

Here, we have used the OECD classification schema, breaking research down into six broad categories and then subdividing those. Papers are assigned by inference from the journal in which they are published, which while potentially confusing in some cases, is reasonably reliable at this broad a scale.



Both areas are dominated by the natural sciences (biology and the physical sciences, with engineering and technology in a distant second place. The residue (around 8% for the Antarctic, 15% for the Arctic) varies - most notably, in the Arctic, a sizable proportion is given over to the social sciences, while this is less prominent in the Antarctic. The surprising volume for "agricultural sciences" is likely due to this classification including fisheries.

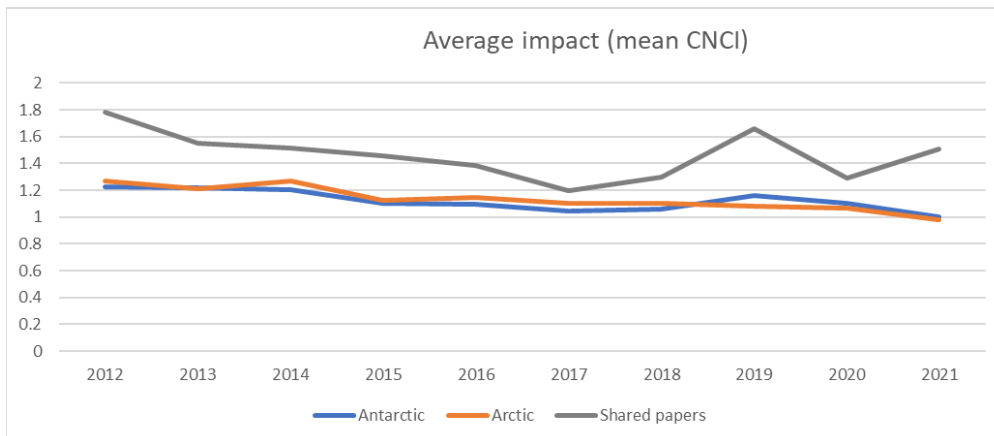
A detailed breakdown of the topics making up the six individual fields is shown in the appendix.



Looking at the development over time, we can see some differences between fields. In both regions, the share of fields other than natural sciences has steadily increased, with this change being driven primarily by engineering research in both cases. In the Arctic, the social sciences are tending to increase and agricultural research tending to decrease.

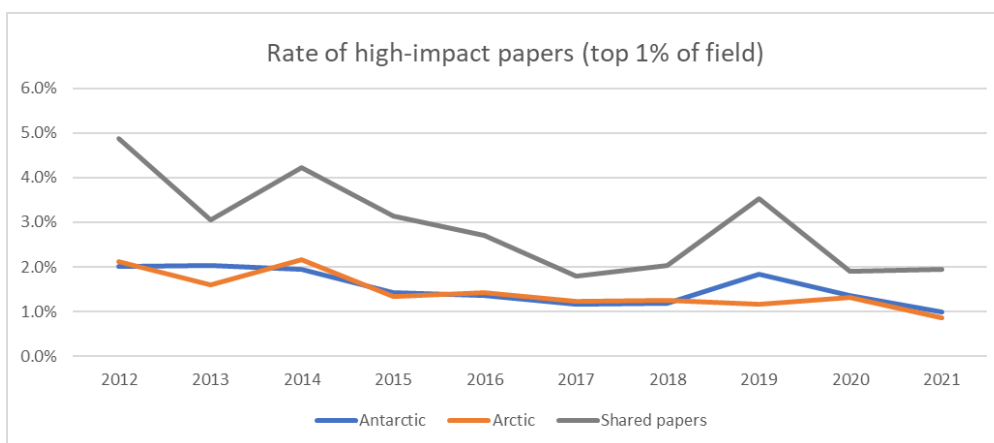
Relative impact

We can assess the relative impact of papers by looking at their normalised citation rate. This compares the average number of citations a paper has received to those of a similar age, document type (article, review, etc), and subject area. Here, we have used the Web of Science subject areas rather than the OECD groupings; these are somewhat more granular, with papers divided into approximately 250 topics such as “oceanography”, “medicinal chemistry”, or “language and linguistics”.



It is immediately evident that the shared papers are substantially higher cited than those which address just one of the regions, while the relative citation rates for Arctic and Antarctic papers are generally consistent. However, there is also a decline - Arctic and Antarctic research has decreased from around 1.2x the world average in 2012-14 down to approximately equal to the world average. Shared papers are somewhat more volatile, but there is an overall downwards trend at a similar rate.

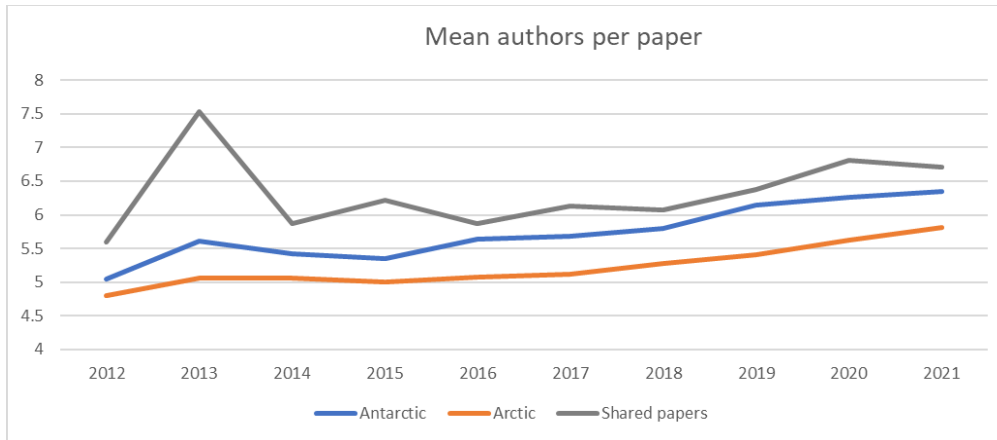
Another way of assessing impact, rather than focusing on the average - which can be distorted by outliers - is to look at the rate of papers which are very highly cited. Here, we consider the papers which have a citation rate that would place them in the top 1% of comparable papers, normalised as above.



The general patterns are quite similar. We see that Arctic and Antarctic papers start out above the world average (2% of their papers are in the global top 1%) but gently decline to around average by 2021. The shared papers have a higher citation rate than the regional ones, but again that rate drops consistently over time.

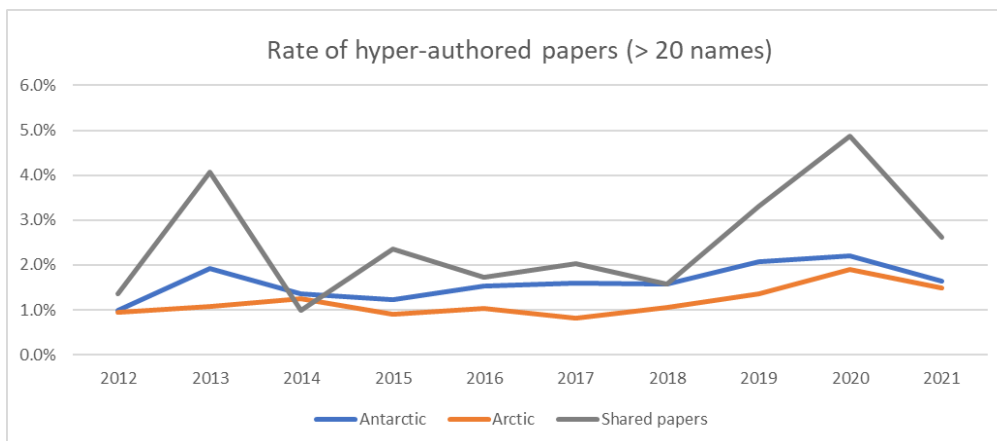
Collaborative papers

Another potentially interesting angle to consider is that of collaboration. There is a general trend to increase the level of collaboration in many fields of science, and polar research is no exception.



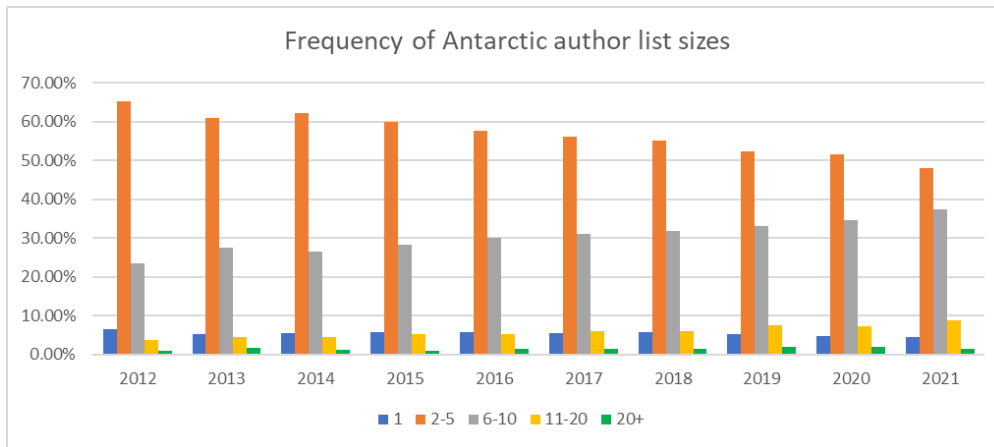
All three groups of papers showed a marked increase in collaboration rates over the ten years, with Arctic and Antarctic papers going from around five authors on average to around six - a 20% increase. Joint papers had a slightly higher level of authorship but the same trend was visible. There was also a consistent difference between Arctic and Antarctic papers, with the latter having slightly longer author lists by around 0.5 authors.

A similarly growing phenomenon is that of massively authored papers, with very long author lists. This is most common in subjects such as high-energy physics, with massive research teams of experimenters and theoreticians leading to hundreds of names on a paper, but is growing in many other fields. In some areas of medicine, it is now common to see fifty or more researchers named.

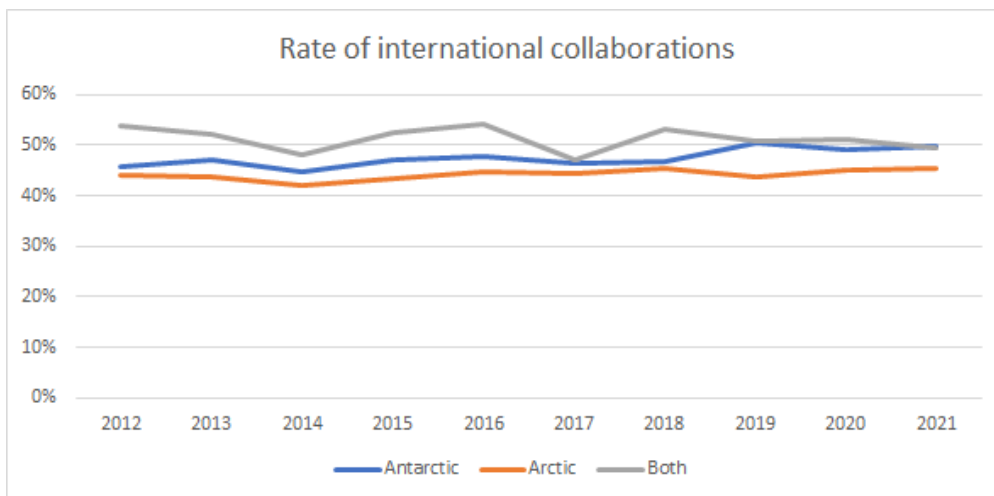


What constitutes "hyper-authorship" is very variable, but setting a lower threshold at an arbitrary but reasonable twenty papers, we find that there is indeed a slow growth over time. Both Arctic and Antarctic papers grow from around 1% to 1.5-2% having > 20 named authors. Again, the Antarctic papers show a tendency to longer author lists. Shared papers are substantially more volatile, but tend to have a higher rate of hyper-authorship than the others.

We can also look at the relative frequency of author lists in various ranges. The data suggests a slow shift to slightly larger research groups, rather than a significant change in very large groups or solo authorships.



We can see that the change is heavily driven by a rise in papers with 6-10 authors at the expense of those with 2-5 authors. Papers with 11+ authors are growing but at a relatively slower rate, and those with 20+ remain very rare. Single-authored papers are decreasing slowly, but were always relatively uncommon.



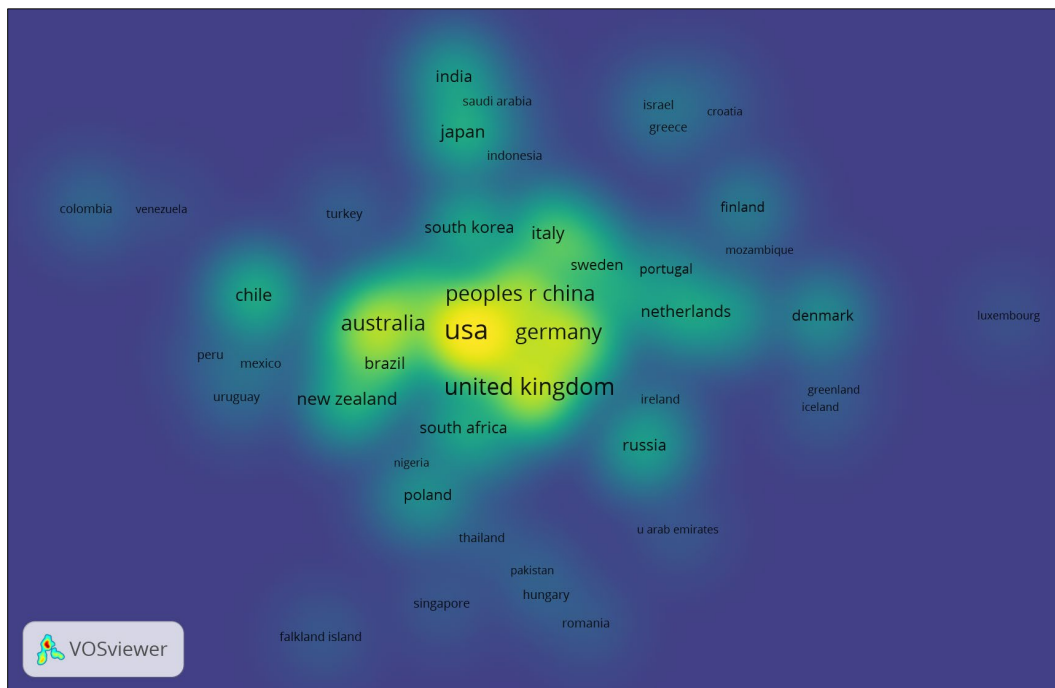
The frequency of international collaborations - papers with authors from at least two countries - is high in all three groups, around 50%, though slightly higher for Antarctic papers than Arctic ones, and as expected slightly higher still for joint papers.

PART 2 - COLLABORATIONS

International collaborations & special relationships

International collaborations, i.e. papers with at least one other country affiliation, are highly important in polar science. In order to analyse how these collaborations may develop or change over this same period, annual datasets of global Antarctic and Arctic research were generated by exporting full Web of Science records using the search strings and filters described above.

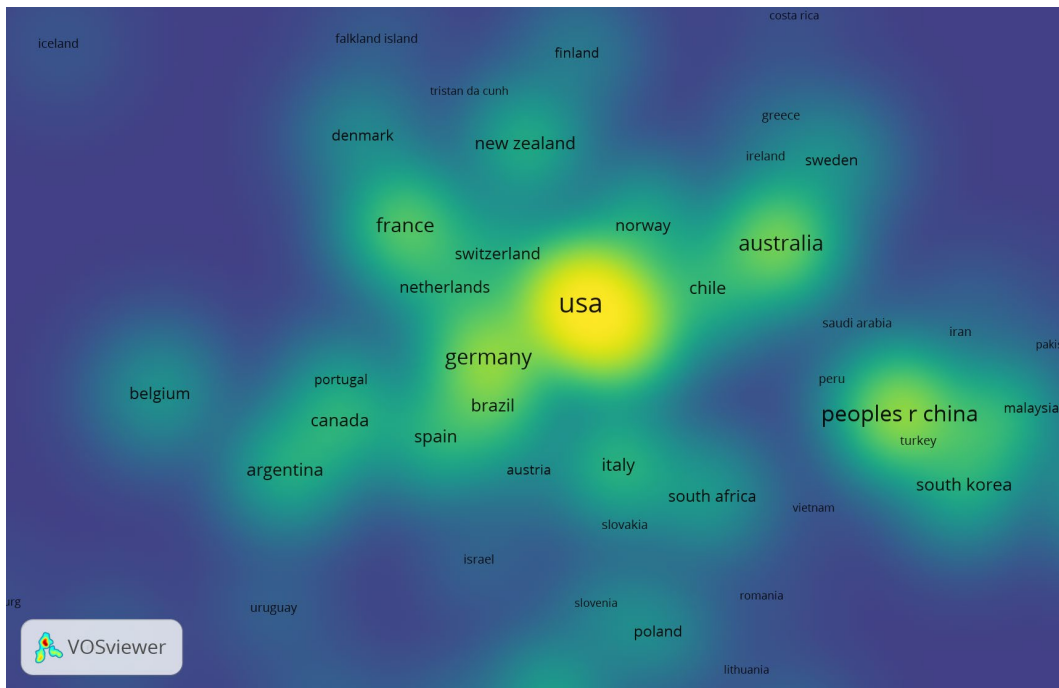
As full Web of Science records contain country data within the author affiliation field, it was relatively straightforward to then analyse international collaborations based on co-occurrences of countries on a paper. The example heat-density map for Antarctica 2018-2019 below was created using VOSViewer – a free software tool used to create visualisations of networks of bibliometric data.



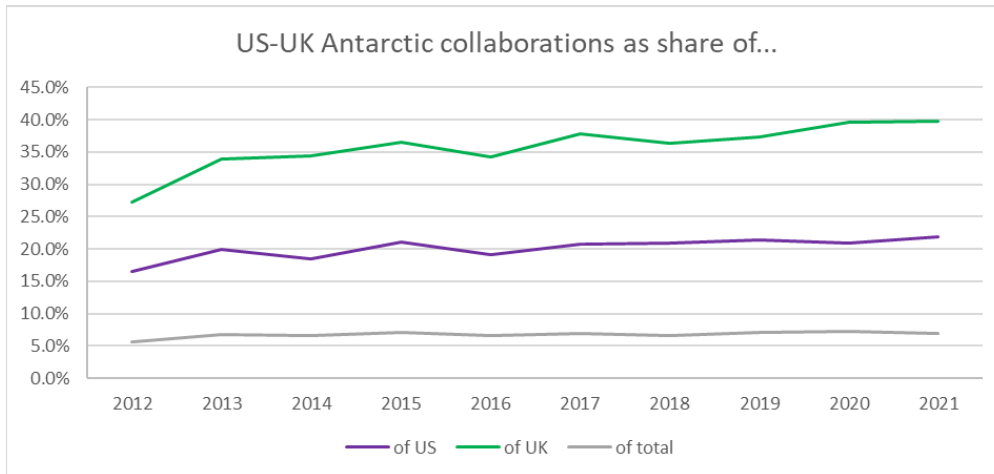
Broadly speaking, the bigger and brighter the heat-spot, the higher the volume of papers, and the more closely connected the cluster, the stronger the collaborative relationship. At the centre is a tightly knit grouping of collaborations, primarily dominated by long-standing Antarctic Treaty members - USA, Australia, UK, and Germany. Additionally, non-Treaty countries, such as China, which continues to maintain a high-level of Antarctic output (Gray, 2019). Situated around the periphery are some of the Arctic countries - Canada, Norway, and Sweden. This is likely indicative of research that is bi-polar than specifically Antarctic-focussed.

There are also clear clusters based on language, such as the grouping of Spanish-speaking Central and South American countries.

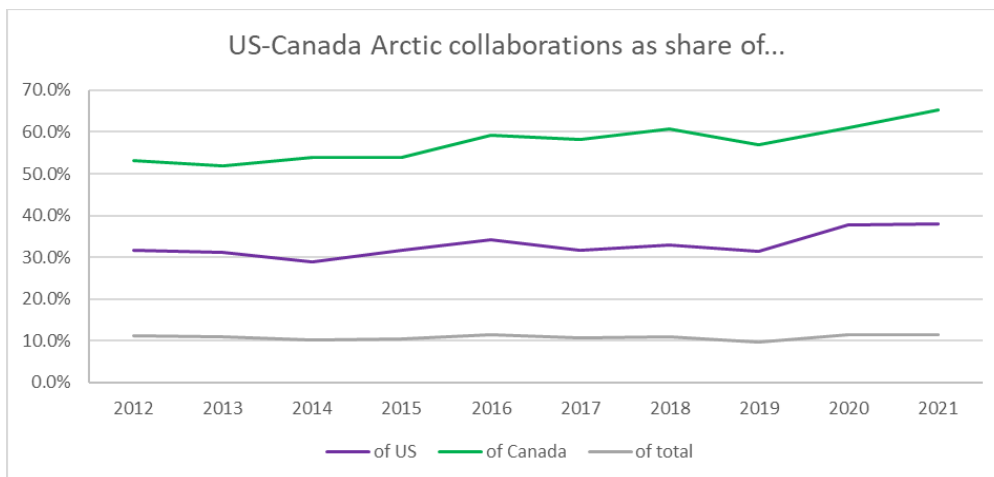
Consistently, across the years studied, the US-UK constitutes a key Antarctic collaborative partnership, to the extent that in the most recent 2020-21 heat-map, shown below, the UK is no longer visible, subsumed by its proximity to the larger partner, the US.



Clearly, not all partnerships are created equal and its relative importance to the respective party will vary. One way of viewing this would be by seeing what proportion of overall output a particular collaboration represents for each country. Again, focussing on the US-UK relationship, the graph below shows that US collaborations made up between 28 and 41% of total UK Antarctic output between 2012 and 2021. The trend shows a steady incline over years, with US collaborations making up a growing proportion of total UK Antarctic output. For the US, UK collaborations constitute a more modest 16-21% of their total Antarctic output. Overall, for this period, US-UK collaborations represent on average 6.9% of total global Antarctic output.



The same method was followed for Arctic papers and a key collaboration that stood out - unsurprisingly, given their geographical proximity and shared language - was the US and Canada. As shown in the graph below, papers that include a US collaboration represent between 50 and 65% of Canadian Arctic output. For the US, this was a more conservative 30-38% of total US Arctic output. Across the whole body of Arctic research, US-Canada papers represent around 10%.

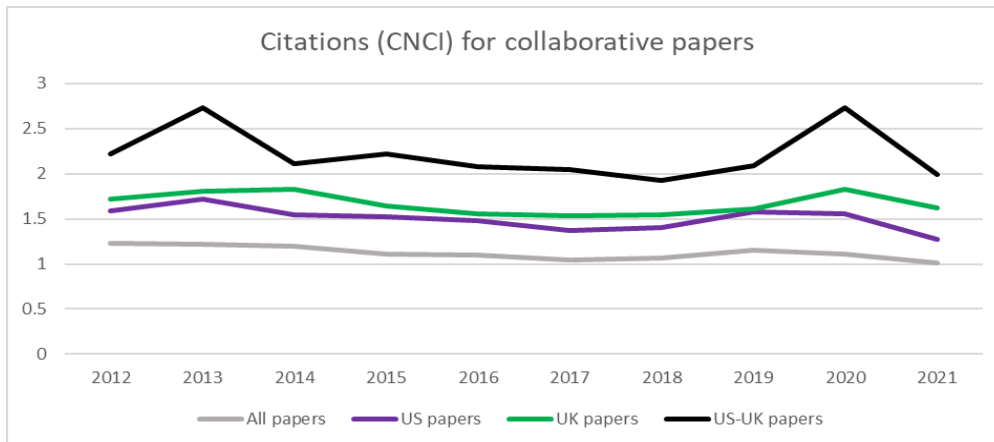


Relative impact of collaborative papers

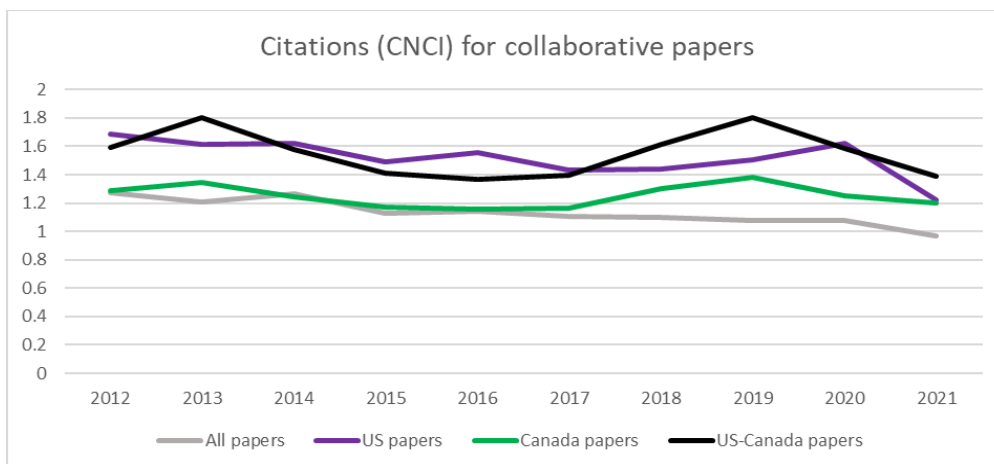
In general, papers with increased collaboration - increased numbers of authors, or increased numbers of countries represented - tend to have higher overall rates of citation. The mechanisms for this are not always clear and may vary by field (Thelwall & Maflahi, 2020).

Here, we assess the citation impact of polar papers, using the InCites category-normalised citation impact (CNCI) measure. Antarctic papers across all Web of Science research topics have an averaged CNCI of 1.13 for the period. As shown in the line-graph below, both the US and UK

papers perform similarly. However, the combined impact of US-UK papers is significantly higher with clear peaks in 2013 and 2020. Overall US papers have an average CNCI of 1.63, 1.77 for the UK. However, US-UK collaborations have an average of 2.21 - i.e. papers carrying US-UK affiliations receive more than twice as many citations as the baseline, which demonstrates the value of these collaborations.



The pattern is markedly different for Arctic US-Canada papers. As shown in the CNCI line graph below, there is a slight uplift for the US in joint collaborations with Canada - US-Canadian papers have an averaged CNCI of 1.89, as opposed to US Arctic papers, which have an averaged CNCI of 1.71. For Canada up until 2017, the CNCI roughly follows the baseline for all Arctic papers, with an averaged CNCI across the period of 1.55, so there is more of a marked increase for combined US-Canada papers.



PART 3 - POLAR RESEARCH IN THE IPCC

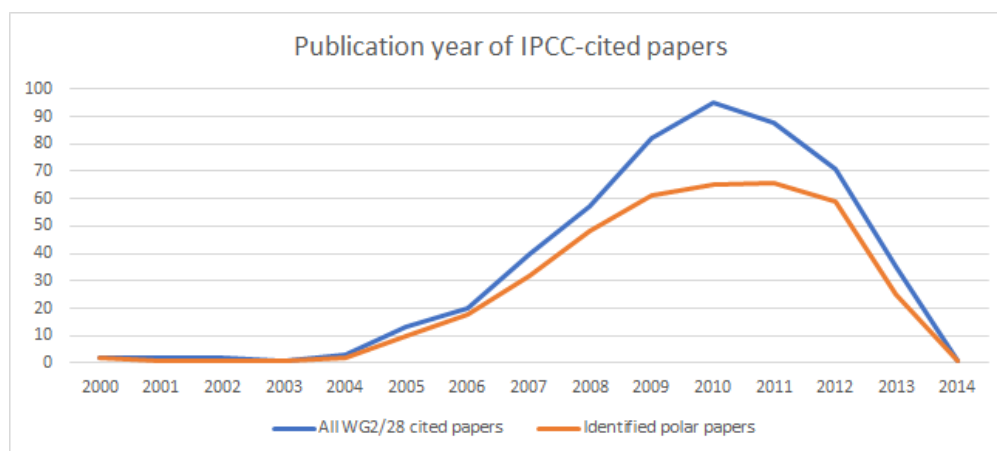
About the IPCC

The Intergovernmental Panel on Climate Change (IPCC) is the United Nations body for assessing scientific research related to climate change. The Working Group reports produced by an international panel of researchers provide Member Governments and observer organisations with the consensus on climate change and are used to underpin international and national climate policies. Inclusion within these reports could therefore be used as a measure of research quality, i.e. the international standing or perceived authority by peers.

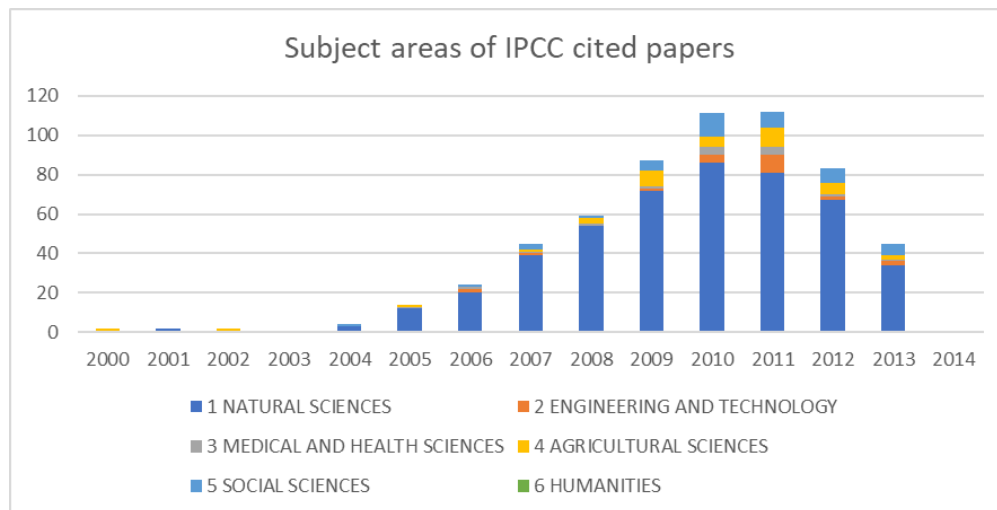
As part of the Fifth Report (2014), Working Group 2 looked at the effects of climate change, with Chapter 28 focussing specifically on the polar regions (Larsen et al., 2014). The references from this chapter were extracted for analysis, and out of 620 citations 512 (83%) were picked up by the Antarctic and Arctic search strings for analysis. The remaining references could generally be categorised as either non-polar specific - literature more broadly related to climate change - or not in publications indexed by Web of Science.

Profile of papers

A preliminary trawl of the citations by publication year also showed that those included in the Polar Regions chapter did not fit the 2012-21 period analysed. As indicated by the graph below, the majority of papers cited were from 2010, four years prior to the report's publication date. In all, roughly two-thirds of chapter citations were published before 2010. This would suggest that although climate change is a rapidly evolving topic, the IPCC reports give more weight to well-established research over the latest findings, which would be less highly cited. The majority of polar-specific citations were published prior to 2012, leaving a considerable body of polar research that could have been cited that was not.



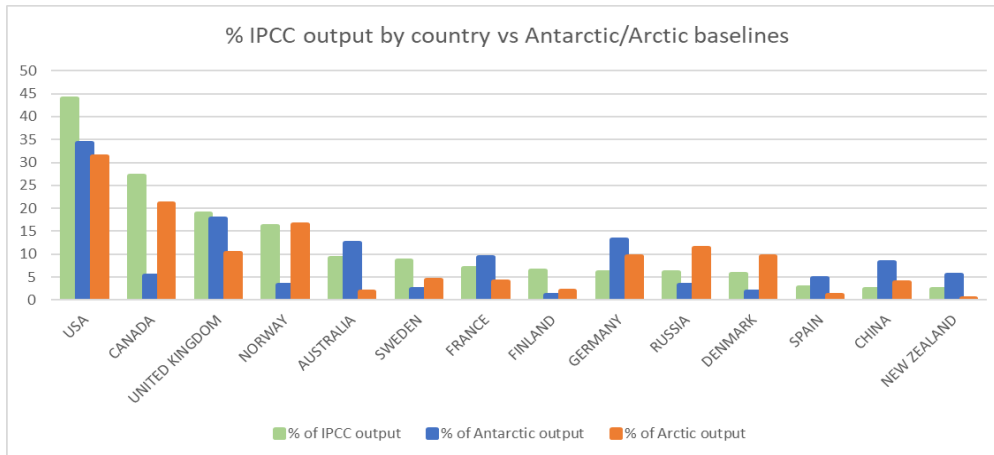
The OECD topic areas of the Polar Regions chapter again highlights that most papers fit broadly within Natural Sciences, with the breakdown mirroring the profile of Antarctic and Arctic papers, as shown in the Appendix: Earth and related environmental sciences forming the largest sub-topic, followed by Biological sciences. Agricultural sciences forms the next largest topic overall - as mentioned previously, this includes fisheries as a sub-topic. Social Sciences is primarily made up of the sub-topic Social and economic geography, which explores the impact of climate change on human populations.



In terms of article types, the Polar Regions chapter appears to favour review papers or research syntheses over original research articles. Reviews made up a significant proportion of the polar citations - ~12% - as opposed to ~4% of all polar research produced over the 2000-2014 period. Papers averaged 5.5 authors, compared to an average of 5.3 for Arctic and 5.8 for Antarctic papers 2012-21, but it should be noted that there is a long-term trend for the number of authors to increase.

It might be expected that given the international standing of the IPCC and the extra visibility of international papers, that the papers cited here would be more international than average. However, international collaboration rates were lower than might have been anticipated: 42% of papers were international collaborations, slightly below the overall average of 45-48% for Arctic & Antarctic papers 2012-21.

The papers were, however, very highly cited; a CNCI of 3.5 and 12% in the top 1% of their field, compared to the 1-1.2 and 1-2% for Arctic and Antarctic papers in the later sample. It strongly suggests that the material cited by the IPCC is among the most visible research.



Further research

This paper is primarily an update to earlier research, but the focus on collaborations offers some interesting potential for further analysis. One approach would be to compare bilateral partnerships to multilateral collaborations (Adam & Gurney, 2018). This could potentially show whether, for example, Antarctic papers that carry only UK and US affiliations perform better than those with multiple country affiliations. Another area of interest, but perhaps more difficult to achieve, would be to explore whether there is an increase over time in the number of individual countries per paper - i.e. is polar research becoming more geographically diverse?

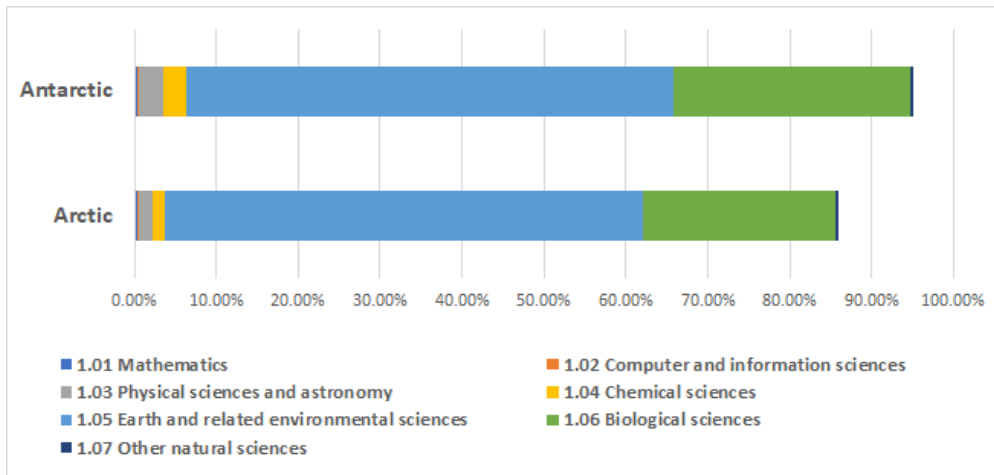
The analysis of the IPCC Polar Regions chapter literature was limited as they largely fell outside of the 2012-2021 parameters of the earlier part of this study. As the 2022 IPCC Sixth Assessment Report is now available, a follow-up would establish whether the profile of literature selected for report inclusion continues to follow the same pattern, i.e. favouring older, highly cited research etc.

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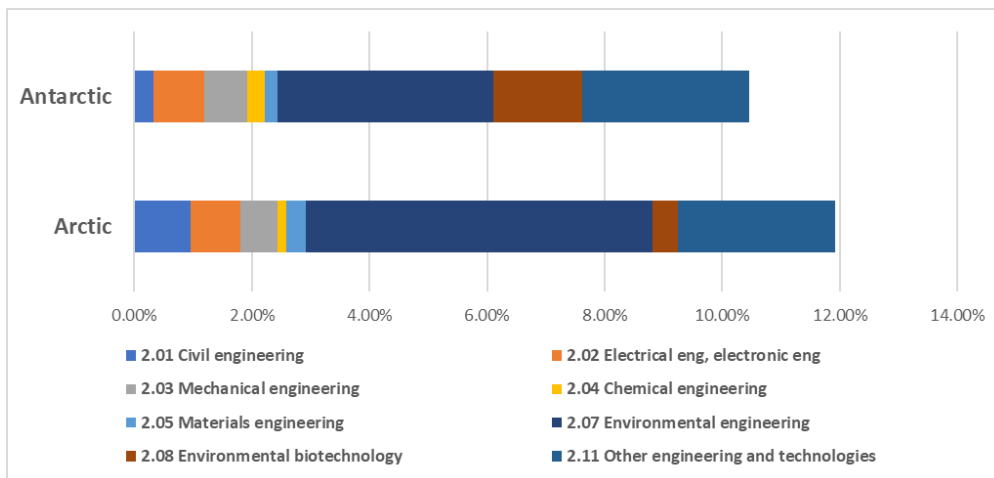
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Appendix

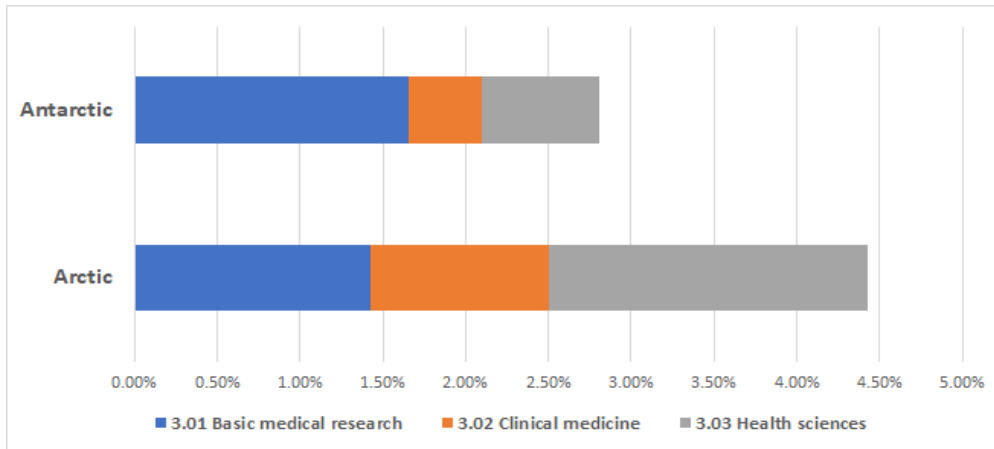
The relative breakdowns of research by field in the major subject areas are shown below. The percentages listed are the share of total research across 2012-2021.



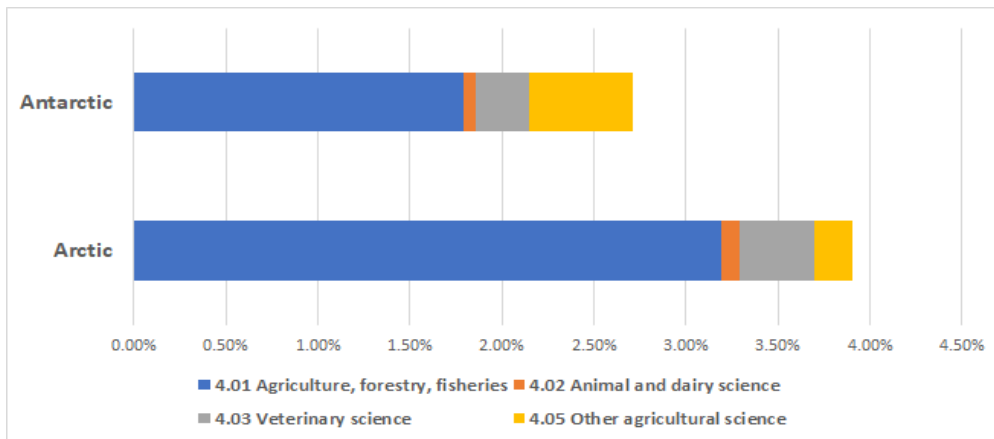
Within the natural sciences, which dominate both fields, the earth sciences make up a similarly sized slice of both, just under 60%. However, the biological sciences are more significant in the Antarctic, with 29% vs 23.5%. The Antarctic also has around twice the levels of the physical sciences and chemical sciences.



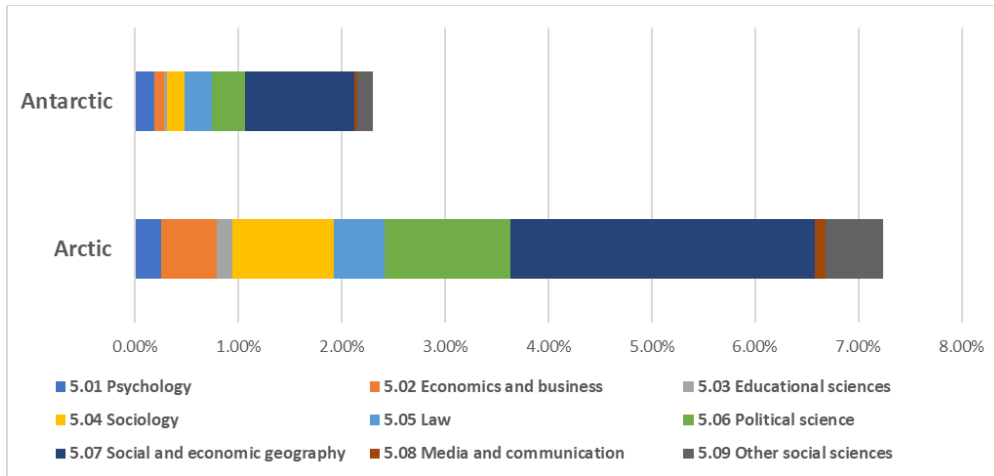
Within engineering, there are again some strong discrepancies - while the overall totals are similar, the Arctic has noticeably higher levels for civil engineering and environmental engineering, as befits an area where more emphasis is focused on human activities living in that environment, and much less for environmental biotech.



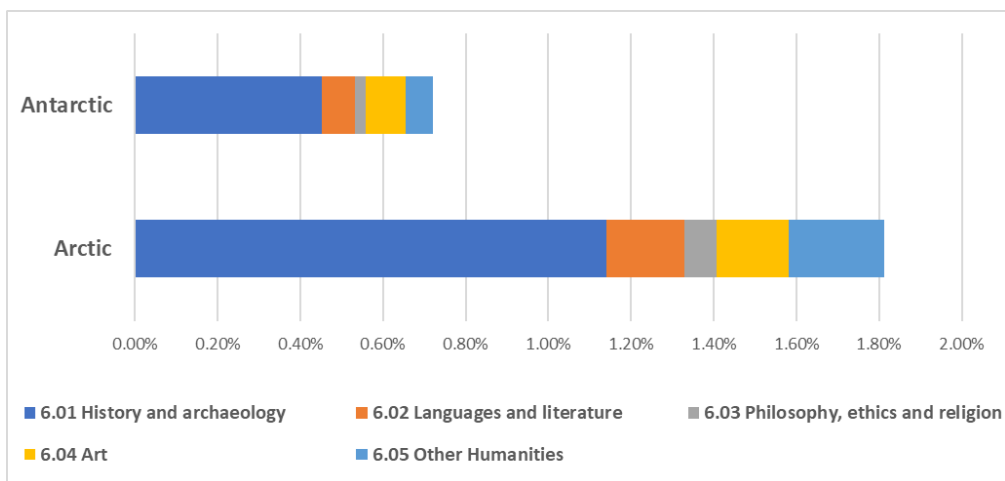
The level of basic medical research is similar in both, but the applied fields of clinical and health sciences are much more pronounced in the Arctic. Again, this is very consistent with assuming research driven by the needs of the populations living in that environment.



Within the agricultural sciences, the Arctic is more prominent in all fields except the catch-all "other". It is perhaps reasonable to assume that the share given to 'agriculture, forestry and fisheries' is more concentrated on fisheries for the Antarctic, but the data is not available at that level of granularity.



The broad social sciences category shows a very expected skew, with the Arctic heavily represented in all fields, but it is interesting to note some of the relative differences. The Antarctic has almost as much psychology research, perhaps a heritage from the long tradition of using Antarctic stations as isolated locations for human factors research, but much lower rates of economics, education, and sociology, all of which would focus on the existing populations. Meanwhile, both have strong showings in social/economic geography, reflecting research on these areas as geographic concepts.



The humanities are the smallest subset overall, less than 1% of Antarctic research and 2% of Arctic, so it is difficult to draw too many conclusions. In both, however, it is clear that history is the dominant segment.



Online Programming to Maintain (and Increase) Access to Collections During the Pandemic

Karina Peggau and Jason Cervenec

Byrd Polar and Climate Research Center, The Ohio State University

Laura Kissel

Byrd Polar and Climate Research Center Archival Program, The Ohio State University

Abstract

Polar librarians collaborate across international boundaries to curate collections, make collections accessible and searchable, and work with patrons to obtain information about Arctic and Antarctic regions, their exploration, and the people within those regions. The one-of-a-kind materials in these collections can be difficult for many potential patrons to access in meaningful ways due to location, fragility, size, and extent of finding aids. When the COVID-19 pandemic disrupted public programs, outreach organizations had the choice to either cancel events or shift to virtual programming. The Byrd Center's experience with video conferencing tools and outreach program design allowed it to seamlessly pivot to online platforms, which invited global audiences who had previously been unable to attend in-person programs or see Polar Archives collections in Central Ohio. Successful virtual Polar Archives programs can be attributed to an increased ability to host international speakers, share unique materials, and reach an international audience that would otherwise be unable to physically attend programs. This talk will cover two case studies involving the use of virtual event planning to share Polar Archive collections with a wide audience. Practical considerations for successful virtual history programs, such as pre-event planning and run-of-show documents, best practices for event structure, virtual program tools and tips, and the importance of clearly articulated roles and responsibilities will be shared.

Résumé

Les bibliothécaires œuvrant dans les domaines polaires collaborent au-delà des frontières internationales afin de constituer, organiser et rendre accessibles des collections consacrées aux régions arctiques et antarctiques, à leur exploration et aux populations qui y vivent. Ces collections renferment des documents uniques, dont l'accès demeure souvent difficile pour de nombreuses personnes usagères potentielles, en raison de facteurs tels que l'éloignement géographique, la fragilité des supports, la taille des fonds ou la complexité des instruments de recherche. Lorsque la pandémie de COVID-19 a interrompu les programmes publics, les organismes de médiation et de diffusion ont dû choisir entre annuler leurs activités ou les transférer vers des formats virtuels. Grâce à son expérience en matière de visioconférences et de conception de programmes de sensibilisation, le Byrd Center a pu effectuer cette transition sans heurts vers des plateformes en ligne, ouvrant ainsi l'accès à un public mondial jusque-là dans l'impossibilité de participer à des événements en présentiel, ou de consulter les collections des Polar Archives situées dans le centre de l'Ohio. Le succès de ces programmes virtuels tient notamment à la possibilité d'accueillir des intervenants et intervenantes internationaux, de présenter des documents inédits et d'atteindre un public élargi, incapable autrement d'assister physiquement aux activités proposées. Cette communication présente deux études de cas illustrant l'usage de la planification d'événements virtuels pour diffuser les collections des Polar Archives auprès d'un large auditoire. Elle aborde également les considérations pratiques nécessaires à la réussite de tels programmes d'histoire en ligne : la préparation en amont et la gestion du déroulement des séances, les meilleures pratiques en matière de structure d'un événement, les outils et astuces pour les présentations virtuelles, ainsi que l'importance d'une répartition claire des rôles et des responsabilités.

Background

The Byrd Polar and Climate Research Center (Byrd Center) is part of The Ohio State University (OSU) and houses approximately 14 different research groups, spanning topics from climate analytics and glacier studies to paleoclimatology and geology. The Byrd Polar and Climate Research Center Archival Program, aka the Polar Archives was established at OSU in 1990, following the university's purchase of the Richard E. Byrd Papers. The goal of the Polar Archives is to make information about the history of polar exploration and scientific investigation available for use within the context of an active polar research environment. The Polar Archives is a collaboration between the University Libraries and the Byrd Center.

Before the COVID-19 pandemic, the Education & Outreach (E&O) team at the Byrd Center hosted tours, seminars, film screenings, classroom activities, and other broader impacts programs focused on innovative research, polar education, and climate change education that reached approximately 11,000 individuals in person. Some of these events and programs were a

collaboration between the Education & Outreach team at the Byrd Center and the Polar Archives to highlight collections to the public. Programs included screenings of historical films, inviting authors and directors to speak, hosting teacher professional development on primary sources, celebrating the 50th anniversary of the first all-female research expedition to Antarctica, and displaying research findings of Polar Archives Research Award recipients. The Archives maintains a display case housing rotating exhibitions in the Byrd Center's Goldthwait Polar Library and a regularly updated "History Corner" presence on the Byrd Center's website composed of articles about the curiosities found within various Polar Archives collections. These articles are typically framed around key questions such as *How do you become the first milkman in Antarctica?* and *How did a polar center come to be located in Ohio?*



Pictured above: Snapshot from the History Corner article, entitled *How do you become the first milkman in Antarctica?* (left) and image of Terry Lee Tickhill and Eileen McSaveney as they receive a resolution honoring the 50th anniversary of the first all-female Antarctic research expedition (right).



Pictured above: A display case in the Byrd Center's Goldthwait Polar Library features artifacts and literature about the tools used to cook, eat, and store food during Antarctic expeditions.

Polar Programs & the Pandemic

The COVID-19 pandemic disrupted outreach programming worldwide, and the Byrd Center was no exception. However, due to familiarity with streaming systems, willingness to creatively deploy tools in new ways, and desire to maintain engagement with our core audiences, the Byrd Center's Education and Outreach team quickly adapted to virtual programming, using Zoom in combination with websites and video hosting platforms as our primary methods for reaching audiences. The team's willingness to pursue virtual programming in novel ways resulted in several large events in the months immediately following the initial COVID-19 lockdown. Being virtual created an unforeseen opportunity, which seems obvious in retrospect, to showcase unique aspects of Polar Archives collections to audiences who are interested but distributed throughout the world, few of whom would ever be able to visit our facilities in person. Byrd, Wilkins, and Cook's international prominence as well-known polar explorers amongst not just archivists and historians but also members of the public in places such as Germany, New Zealand, and Australia delivered audiences well beyond Central Ohio.

Two Case Studies

Byrd 1933 Film Screening & Panel Discussion

Byrd 1933 was a documentary developed in 2015 by the Byrd Center's film specialist, Pamela Theodotou, by stitching together film footage collected during Byrd's 1930's Antarctica expeditions and preserved/digitized by the National Film Preservation Foundation. The documentary was screened for the public at the Wexner Center for this Arts at OSU and infrequently made available for public screenings. In May 2020, the Education & Outreach team partnered with the Polar Archives to provide "edutainment" during the early months of the pandemic by scheduling a virtual panel discussion over Zoom in tandem with release of a link to view the documentary on-demand at home.

Flyers, photographs, and film 'teasers,' many of which have been repurposed from prior events and exhibits, were released on social media to draw interest. Although registrants were given the link to view the documentary in advance of the panel to gain some background knowledge, not everyone watched the documentary beforehand. The documentary was viewed nearly 400 times during the brief window of its availability. Approximately 100 individuals attended the virtual panel synchronously and there was a sizeable audience that elected to only watch the movie.

The panel consisted of three speakers: Polar Archives curator Laura Kissel to speak about Admiral Byrd's 1933 expedition; media specialists Pamela Theodotou to speak about creating the documentary; and climate researcher Emilie Beaudon to speak about the working in the

field in Antarctica. The three panelists each brought their unique perspectives to the discussion and the audience asked a range of questions about polar history, film creation, research, and visiting Antarctica. The success of this early pandemic program inspired a later program focused on the book *Alone*, written by Richard Byrd and ghost author Charles Murphy, that seemed a timely read for everyone social distancing.

Wilkins Collection & Panel Discussion

The Wilkins Collection event was the second of a two-part series about Sir George Hubert Wilkins, where the first part focused solely on Wilkins' *Nautilus* expedition, and this second part retraced the steps of the entire collection and how it ended up in the Ohio State University Polar Archives. This event was scheduled in celebration of the 100-year anniversary of the Shackleton-Rowett Expedition (1921-1922), on which Shackleton died. Similar to the *Byrd 1933* event, a brief video was shared to registrants in advance to provide some context about the life of Wilkins and the fate of his collection.

The four panelists each had some relationship to the Wilkins Collection; Paul Rodzianko was instrumental in contributing a large part of the Wilkins collection to the Polar Archives, Jeff Maynard has written about Sir Hubert Wilkins for over 25 years, Bob Mayer is a retire electrical engineer and has collected artifacts related to Wilkins since 2008, and Laura Kissel is the Polar Archives curator who oversees the Polar Archives' Wilkins collection today.

Although this event gathered a smaller audience than the *Byrd 1933* event, total engagement surpassed 200 people including participants to the live panel discussion synchronously, those who viewed the brief collection video, and those who viewed the recorded Zoom discussion asynchronously.

Why It Works

No travel necessary & marketed to a global audience

Zoom provided an unexpected benefit for outreach due to its ability to reach an interested international audience that could not otherwise attend in-person programs. Whereas travel costs and distance were limitations to in-person event, Zoom allowed patrons to attend events from anywhere. If events were scheduled at times that considered international audience and their different time zones, especially audiences with pre-established interest a topic or person, the planning team would see greater engagement. For instance, Wilkins has a larger audience in Australia where he was born that should factor into planning events that feature his

collections. While audiences could post questions in advance to panelists or watch the entire discussion asynchronously following the event, there was greater engagement by audiences able to ask questions of panelists live over Zoom.

Virtual materials

The novelty of virtual events garnered special appeal when museums and libraries were shut down early in the pandemic. Virtual events and film screening were welcomed ways to maintain engagements with art and cultural events, allowing audiences to still engage with experts safely. The Polar Archives was well-positioned to explore this format as much of its materials cannot be physically made accessible to large public groups because they are sensitive and one-of-a-kind as well as the facility not having the space to accommodate groups of more than 24 individuals. In a virtual space, photos can easily be shared, and artifacts are safe from physical handling, thus allowing patrons the opportunity to enjoy the unique archival materials from the comfort of their homes across the world.

Interactive experience

The *Byrd 1933* and Wilkins Collection events were designed with audience engagement in mind – the events were strictly discussion-based. Therefore, providing contextual materials in advance of the synchronous event and seating a diverse panel of experts benefitted the discussion. For example, patrons who were already familiar with the content or who engaged with the pre-event materials were given the opportunity to ask Archives-specific questions throughout the event. Those who attended out of curiosity or without background knowledge could still engage with other panelists, such as a scientist or film curator, to ask broader questions about the topic. A moderator facilitated the event to ensure that the discussion did not focus too much on one topic, context was provided for extremely specific questions, and questions were balanced between the panelists. During these events, panelists regularly received more questions than time permitted.

Audience retention

The planning team aimed to space events within a few months of each other with the intent to provide regular content without oversaturating the target audience. Because these events catered to a niche audience with an interest in polar exploration and history, the same patrons attended several Polar Archives events throughout the pandemic. These events were also recorded and posted on the Byrd Center's website for viewers to enjoy asynchronously.

Tips for Success

Marketing

Advertisements for the event should be shared on flyers, organization event pages, and social media for the event hosts as well partners and networks that have overlapping interests. In the case studies, event details were shared to the Ohio State University Alumni Association, Byrd Center social media, the University's history department, and among the panelist's host institutions. Tagging relevant organizations on social media, such as history centers, museums, or polar networks, is a strategy for reaching new patrons and might benefit from the help of someone in your institution's communications office.

Event Setup

Public events must be as user-friendly as possible. In a virtual space, this includes sharing Archival materials or background knowledge in advance via a clearly-followed link or in clearly-written email message, supplying registrants with the means to ask questions prior to the event, providing live closed captioning for the duration of the event, and adjusting the video call settings to minimize the risk of an attendee unmuting themselves. The platform our team used for virtual Archives events was Zoom Webinar due to its embedded registration process and limited audience options (the audience can only chat or ask Q&A questions). For each event, there was a point of contact who could answer audience questions pre-event or help resolve audience technical problems during the event.

Run of Show

The "run of show" is a minute-by-minute schedule of the entire event including what happens, what is said, and when things should occur. For our events, the run of show includes details such as the opening remarks, the presentation order of speakers, and the duration of each segment. In a panel discussion, a list of pre-generated "filler" questions is useful to begin the discussion, can fill awkward silences, and allows the audience time to generate their own questions. If audience questions tend to favor a specific panelist, pre-generated questions also ensure that all panelists have an opportunity to contribute to the discussion. We store the run of show on a shared drive where the host and behind the scenes staff may access it. In cases where a host is ill at the last minute or a behind the scenes team members loses internet connection during the event, a clearly-written and shared run of show make it much easier for the team to execute the planned event.

Run of Show documents can be shared with panel members as well as the hosts to ensure that everyone knows what to expect and stays on-time and on-topic. We usually run a practice session, similar to a dress theater rehearsal, to prepare all participants. This practice session should include a reminder of the event's goals and use the same technology that will be deployed during the event to help familiarize everyone (for instance, if you are using Zoom Webinar, do not use WebEx for your practice session). While the practice session does not need to be the same length as the actual event nor read every line of the moderator's comments, we recommend that it runs through the schedule step by step in sufficient detail to flush out and resolve problems. During this practice session, we identify problems and revise the run of show immediately.

Closing Thoughts

Video conferencing technology is more accessible than ever to both professionals and the public. This technology may be effectively used to reach a large audience, share one-of-a-kind archival materials, and connect panelists from all over the world with a minimal investment of time and IT support. The use of video conferencing eliminates the need to travel, encourages audience engagement, allows patrons to interact with artifacts and videos from their home, and offers the ability to record and save the experience in a collection for future use. Sufficient planning, an engaged team of partners, diverse panelists and content, and an audience-centric approach yields the greatest chance of success and audience satisfaction. Despite the return of in-person programming, virtual events have the possibility of continuing to serve a unique role in keeping people connected with our collections.

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Polar Libraries Colloquy Membership Survey: Join for the Knowledge, Stay for the Fun

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Abstract

This presentation will go through the results of a survey done in December 2020-January 2021 among the members and former members of Polar Library Colloquy (PLC). The PLC is an international association formed 1971 that functions as a collegial network for “librarians and others evidencing an abiding interest in the collection, preservation, and dissemination of polar information”.

The purpose of the survey was to collect information about the PLC membership and to find out about the role, history and future of PLC. The main purpose however was to collect information to help writing a chapter about the PLC for the upcoming book, “Library and information sciences for Arctic and Northern Studies” (Springer).

The results of this survey with totally 38 respondents show why members became members, why they stayed or didn't stay and how they see the future of PLC. Most of the members join PLC for the knowledge and they stay for the fun.

The future of PLC appears bright with many strengths according to this survey. The PLC is seen as a valuable resource. The possibilities in the future are seen in engaging indigenous librarians and other new members from smaller libraries, in developing more engagement opportunities e.g. via digital meetings and in developing social media presence.

Résumé

Cette présentation expose les résultats d'une enquête menée entre décembre 2020 et janvier 2021 auprès des personnes membres (anciennes et actuelles) du Polar Libraries Colloquy (PLC). Fondé en 1971, le PLC est une association internationale qui constitue un réseau réunissant des bibliothécaires et d'autres personnes professionnelles partageant un intérêt constant pour la collecte, la préservation et la diffusion de l'information relative aux régions polaires.

L'objectif de cette enquête était de recueillir des données sur la composition et les dynamiques du PLC, ainsi que de mieux comprendre son rôle, son histoire et ses perspectives. Le but principal était toutefois de rassembler des informations destinées à nourrir la rédaction d'un chapitre consacré au PLC dans l'ouvrage à paraître *Library and Information Sciences for Arctic and Northern Studies* (Springer).

Les résultats de l'enquête, qui a compté un total de 38 personnes répondantes, mettent en lumière les motivations qui ont conduit les membres à rejoindre le PLC, les raisons pour lesquels ces personnes lui sont restés fidèles ou non, ainsi que leurs perceptions quant à l'avenir de l'organisation. La plupart des personnes participantes indiquent avoir adhéré au regroupement pour approfondir leurs connaissances, puis avoir conservé leur adhésion pour le plaisir qu'elles trouvent dans la communauté.

Selon les conclusions de cette étude, l'avenir du PLC s'annonce prometteur et riche en potentialités. Le réseau est perçu comme une ressource précieuse. Ses forces résident notamment dans son ouverture et sa collégialité. Les perspectives d'évolution identifiées concernent l'engagement accru de bibliothécaires autochtones et de nouvelles personnes membres issues de plus petites institutions, le développement d'occasions d'interactions, notamment par le biais de rencontres virtuelles, ainsi que le renforcement de la présence du PLC sur les médias sociaux.

Background

A group of three PLC Steering Committee members had weekly meetings on Tuesdays together in Zoom during covid-19 winter 2020-2021 discussing PLC past, present and future.

These meetings were based on Sandy Campbell's idea to write an article or a book chapter about PLC. Both Cecilie Tang Møldrup and Susanna Parikka got interested. We met over the time zones: in Canada it was morning, in Denmark it was time before dinner and in Finland it was evening. The meetings were a window to the world during those isolation times.

The discussions were largely based on *Northern Libraries Bulletin* 1971-1988 and *Polar Libraries Bulletin* 1990-2020, which we read systematically during the winter.

Our intention was to find out the secret of PLC ´s longevity and success. We decided to ask PLC members why they are members, why they joined PLC and why they remained members. Their opinions about the future of PLC interested us also. The primary purpose of the survey was to gather information in aid of writing a chapter about the PLC for the upcoming book.

Many members of PLC had the opportunity to participate by completing the survey that asked questions about the role, function, history and future of the Polar Libraries Colloquy. The survey with 15 questions was sent out in December 2020 and the answering deadline was extended twice until the end of January 2021. The survey was sent to PLC mailing list addresses and also to known ex-members.

The group made some of the analysis together but the final presentation was compiled by Susanna Parikka in 2022.

Results of the survey

The survey consists of 15 questions which can be divided into three parts: questions about the membership, questions about the PLC and questions about the future. There were totally 38 respondents.

MEMBERSHIP Questions 1-6

- 1. Are you a member (including honorary members) of the Polar Libraries Colloquy?*
- 2. Is/was your membership personal or institutional?*
- 3. How long have you been a member of PLC (including honorary membership)?*
- 4. Why did you join PLC?*
- 5. If you are still a member of PLC, why have you continued the membership?*
- 6. If you are no longer a member of PLC, why did you stop your membership?*

The first part of the questions in the survey were about the membership. The majority, 63.2 % of the respondents, were members of the PLC and 34.2 % had been members before. Only 2.6 % had never been a member.

There are two alternatives of PLC membership: a personal membership and an institutional membership. Most of the respondents (47.4 %) were institutional members. Over one third of the respondents were personal members (34.2 %). Some of the respondents said they were both personal and institutional members (13.2 %). There were also a few who were not sure about the type of their membership (5.2 %).

The commitment for membership is very strong. Most of the members have been members for a long time: 68.4 % had been members over 6 years and 44.7 % had been members over 10 years. The most devoted members had been members over 25 years (15.8 %).

Questions 4 and 5 were about the reasons to join PLC and to continue the membership. The three most popular reasons to join PLC were: *Institutional reason* (33 %), *Networking with professionals* (17 %) and *Professional reason* (17 %). The fourth popular reason was *Interest in Arctic/Polar matters* (13 %). Other reasons to join PLC were: *International* (9%), *Referred/recommended by someone* (7 %), *Fun* (2%) and *Other* (2 %).

The three most popular reasons to continue PLC membership vary some from the above: *Professional reasons* (34 %), *Networking with professionals* (22 %) and *International* (13 %). The fourth popular reason was *Other* (13 %), e.g. general interest. Other reasons to continue PLC membership were: *Institutional reason* (9 %), *Fun* (6 %), *Interest in Arctic/Polar matters* (3 %).

As such, individuals join PLC because they work in an Arctic or Polar institution and also because they wish to network with other professionals. An urge to learn and develop professionally is also a strong motivator.

Individuals remain members because they wish to develop professionally and also because they wish to network with other professionals. The internationality of PLC is regarded an important reason to stay as a member.

The last question within the membership questions was about reasons for stopping membership. Eleven respondents had ended their membership. There were two reasons for that: retirement (64 %) and job change (36 %).

COLLOQUY Questions 7-11

7. *Have you attended a Colloquy meeting?*

8. *If you have attended a Colloquy, what benefits did/do you get out of attending Colloquy meetings? (Check all that apply). If you have not attended a Colloquy meeting, please skip to Question 9*

9. *What benefits did/do you derive from PLC between meetings?*

10. *Do you have a favorite memory/memories from a Colloquy meeting that you would like to share? Please describe below*

11. *The Polar Libraries Colloquy has existed as an organization for 50 years. What factors do you think contribute to the organization's longevity and future success?*

The middle part of the survey questions was about the Colloquy. PLC arranges Colloquy meetings biannually, altering between Europe and North America. The vast majority of the respondents had attended a Colloquy meeting (89,5 %).

There were given alternatives to choose from in question 8 about the benefits of attending Colloquy meetings. The results show that *Learning about new polar information sources, collections and resources* is the most popular benefit from Colloquies (92,1 %). Very near came *Building a network of colleagues who do a similar work* (89,5 %).

Alternatives Being inspired in polar colleagues and their work and Learning about new research in polar information were chosen by 86.8 % of the respondents.

The next popular alternatives were: *Socializing with friends and colleagues* (78,9 %), *Travel to different polar areas and learning about local cultures and geography* (65,8 %), *Opportunity to present scholarly work* (63,2 %) and *Opportunity to be involved in PLC committees and projects* (52,6 %).

There are normally two years between Colloquies. For Steering Group members and project members that time fills up with meetings and other activities. We were particularly interested in how ordinary members see the benefits between meetings. There were given alternatives to choose from in question 9 about the benefits between Colloquies.

Contact or availability of the PLC networks was the most popular benefit (73.7 %). Near came two other benefits, *Can post questions to and receive notifications from the listserve* and *Keeping up to date through the Bulletin* (both 71.1 %).

Half of the respondents chose *Advocacy work of PLC as an international organization on behalf of polar libraries and archives*. Quite near came also *Can return to the Proceedings to review papers I heard at the Colloquy* and *Opportunities to make professional contributions (to committees, projects and the Bulletin)*, both with 47.4 %. Only 10.5 % mentioned that they don't get much from PLC membership between Colloquies.

The PLC colloquies are very memorable for participants so it might be hard to think of the favorite memory as was asked in question 10. From single persons, David Walton and especially his performance as an auctioneer, was mentioned many times. The auction overall was mentioned several times. The friendliness of the group was often mentioned; also the colleagues, meeting them and being inspired by them. Personal funny experiences were also many, especially for people who had participated as a group. Being a host and planning a colloquy has given many good memories. Also the opposite: going to remote sights which one would not otherwise have visited.

The Polar Libraries Colloquy has existed as an organization for 50 years. Question 11 was about the factors that contribute to the organization's longevity and future success.

Of total 38 respondents 34 gave their views about the factors of PLC's longevity and future. There were nine categories of strength that could be differentiated in the free answers. The most often mentioned (13) was the fact that PLC fills a unique niche. Polar librarianship is a very specialized and important segment of the wider world of libraries. No other organization has a similar mandate than PLC.

PLC is seen as a great place to share resources or technology in ten answers. "The international and scientific aspects of PLC as well as the resource and technology sharing amongst member made the organization critical for my work and, I suspect, those of other members past and present."

Engaged and dedicated core people and leaders are seen as a strength in ten answers. Value of fun and the enjoyment of colleagues and the Colloquy was seen as a strength in eight answers. Co-operative or collaborative members were seen as a strength in seven answers.

The value of scientific or research contents at Colloquy was seen as a strength in five answers.

PLC is seen as a "home" for scattered archivists or librarians in five answers. Many arctic archivists and librarians work solo or in a small and specialized institution.

The international nature conferring benefits is seen as a strength in five answers. "I think the international composition is very important, plus the rotation of the meetings between continents." and "Internationally dispersed organization so not subject to any particular national whims."

Stable leadership and financial stability are seen as a strength in three answers.

How to go towards the future success of PLC? In the free answers to the question 11 one mentioned opinion to this was finding ways how to engage more members more often, also outside the biannual colloquies. Also it was said that the future really needs PLC (eg. climate change). It was suggested that PLC should concentrate more on how to get Arctic scientific information, research reports etc and make arctic scientific publications visible, also through open access. There was also an opinion that PLC could activate more researchers from different topics to take part and also they may distribute research information to PLC members.

One weakness was discovered by a respondent: lack of social media presence.

"Many long term research projects that are supported by polar libraries have been supported by and to some degree are successful because of this network."

FUTURE Questions 12-15

12. *What improvements or important actions will help ensure PLC's future success?*

13. *On which social media platforms would you want to be able to find information from and about the Polar Libraries Colloquy?*

14. *The founders of the then Northern Libraries Colloquy, now PLC, defined the purpose of the organization as "enabling all librarians, archivists and bibliographers from the [polar regions] and from all libraries with significant polar collections to have the opportunity to get together to promote cooperation, to learn of available resources, and to discuss mutual problems." To what extent do you think that PLC is currently successful at achieving this goal?*

15. *Is there anything else that you would like to tell us about the Polar Libraries Colloquy: past, present or future?*

The last part of the questions in the survey were about the future. For every organization the future perspectives are very important for continuity, development and regeneration. The respondents were asked for improvements or important actions that will help ensure PLC's future success. There were ready alternatives to choose from in question 12. The three most chosen alternatives were *Recruiting new members* (29), *Continue the geographic diversity in the PLC membership* (28) and *Provide occasional webinars between the colloquies* (28).

The next three alternatives were *Ensure that new members have opportunities to engage in activities between the Colloquies* (27), *Recruit more local librarians from the Arctic region* (26) and *Create a stronger social media presence* (23).

These were the least chosen alternatives: *Keep membership fees low* (17), *Maintain current stable organizational structure* (15) and *Revitalize the Bulletin* (15).

The social media platforms on which the respondents would like to find information from and about the Polar Libraries Colloquy are Facebook (17), Instagram (13) and Twitter (12). Some would use LinkedIn (7) or YouTube (7). Also, 15 respondents tell that they would not look for PLC information in social media.

The founders of the then Northern Libraries Colloquy, now PLC, defined the purpose of the organization as "enabling all librarians, archivists and bibliographers from the [polar regions] and from all libraries with significant polar collections to have the opportunity to get together to promote cooperation, to learn of available resources, and to discuss mutual problems." Nearly all of the respondents (37 of 38) thought that PLC is currently successful at achieving this goal.

The final question of the survey was an open question. There was a possibility of telling anything about Polar Libraries Colloquy's past, present or future. There were thirteen answers to the final question.

About PLC's past it was mentioned that PLC is very professional. It was also mentioned that it was a pleasure to attend meetings with such a friendly atmosphere and highly committed colleagues.

The international collaboration was seen as a strength in the present activities of PLC. Some respondents found it hard to find anything to change. PLC was seen as a "Good vehicle for informal easy communication with colleagues with similar interests: good to have a regional focus that crosses national boundaries and encourages regional and global thinking and information sharing."

PLC was seen a valuable resource in the future that provides a great venue to present one's scholarship to interested colleagues. It was also mentioned that in the future efforts should be continued to engage smaller community and Indigenous librarians in the work of PLC. Digital meetings and streamed events were proposed as also a better social media presence. There was also a suggestion for broadening the base for northern/polar information to include also researchers, data managers, and the growing categories of those who collect, use, and manage information.

Conclusions – “Keep it going!”

Most of the members join PLC for the knowledge and they stay for the fun. PLC fills a unique niche with committed colleagues with similar interests in an international network with agile nature and low administration. That is a successful and unique combination.

However, the survey shows some areas for potential improvement. In the future these themes should be developed: engaging Indigenous librarians and other new members from smaller libraries in Polar regions; providing more engagement opportunities between Colloquy meetings e.g. via webinars and digital meetings; being more visible in social media; revitalizing the Bulletin through increased content submissions from the membership and others.

“Future success may rely on wider recognition of PLC's contributions at all levels, individual, institutional, and in terms of information networks, involvement, and initiatives.”



Research Data Management: An Introduction for Polar Librarians

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Abstract

With the advent of the information age, research data is being generated in unprecedented volumes and varieties and at an increasing speed. Researchers and students have struggled to keep up with the deluge and manage their data appropriately. As information management professionals, more and more librarians are answering the call from researchers to help them manage and access this data. Organizations like Canada's Portage Network have developed data management planning tools and libraries across Canada and internationally have begun developing a variety of data services, training opportunities (for both librarians and researchers), and storage options to effectively manage the data influx.

This paper will provide an overview of research data management (RDM) fundamentals, RDM tools and training available for librarians, characteristics of polar research data and international resources for polar research data management, and suggested steps for launching research data services in polar libraries.

Résumé

Avec l'avènement de l'ère de l'information, les données de recherche sont produites à des volumes et dans des formats sans précédent, et à un rythme toujours plus soutenu. Le personnel en recherche comme les personnes étudiantes peinent à suivre ce flot continu et à gérer adéquatement leurs données. En tant que spécialistes de la gestion de l'information, les bibliothécaires répondent de plus en plus à l'appel des chercheuses et chercheurs en les aidant à organiser, gérer et accéder à ces données. Des organismes, tels que le Réseau Portage du Canada, ont développé des outils de planification de la gestion des données, tandis que des bibliothèques, au Canada comme à l'international, ont commencé à mettre en place divers services de gestion des données, des formations destinées tant aux bibliothécaires qu'au personnel en recherche, ainsi que des solutions d'entreposage adaptées à l'afflux massif de données scientifiques.

Cette communication propose un aperçu des principes fondamentaux de la gestion des données de recherche (GDR, en anglais RDM pour Research Data Management), des outils et formations disponibles pour les bibliothécaires, ainsi que des caractéristiques propres aux données issues de la recherche polaire. Elle présente également les principales ressources internationales dédiées à la gestion de ces données et formule des recommandations pour la mise en place de services de gestion des données dans les bibliothèques polaires.

What is Research Data?

Research data is diverse and there are many differing definitions of what research data encompasses. One of the best definitions that explains the multifaceted nature of research data comes from University of Leeds Library, “Research Data is any information that has been collected, observed, generated, or created to validate original research findings” (University of Leeds Library, 2022).

The following list illustrates some of the many formats of research data (University of Leeds Library, 2022):

- documents, spreadsheets
- laboratory notebooks, field notebooks, diaries
- questionnaires, transcripts, codebooks
- audiotapes, videotapes
- photographs, films
- test responses
- slides, artefacts, specimens, samples
- collections of digital outputs
- data files
- database contents (video, audio, text, images)
- models, algorithms, scripts
- contents of an application (input, output, logfiles for analysis software, simulation software, schemas)
- methodologies and workflows
- standard operating procedures and protocols

While this list is extensive and provides good examples of research data’s variety, it is not comprehensive. Wampum belts, for example, used by the Haudenosaunee, Mi’kmaq, Ojibwe, and Wendat (Huron) peoples to mark agreements, embed information in the belt’s patterns and colours (Gadacz, 2021). They include important research data for these peoples but can easily be excluded from the more limited definitions of research data. It is important that both researchers and the managers of research data understand research data’s complexities to both recognize it and properly record it.

The Research Data Lifecycle

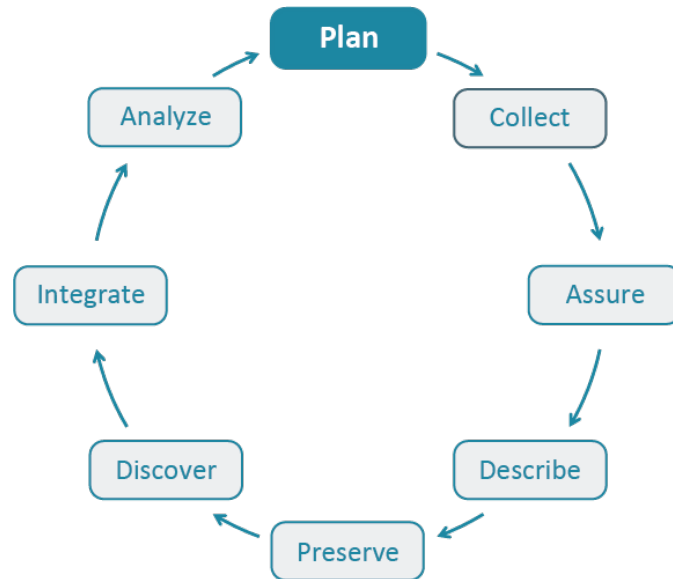


Figure 6. DataONE Data Lifecycle (2022)

The Research Data Lifecycle is a model that is often used to demonstrate how research data should be managed from its inception. While there are a few variations on this cycle, this one from DataOne is highly typical and used widely.

The Research Data Lifecycle is comprised of eight steps (DataONE, 2022):

1. Plan: this is a description of the data that will be compiled and how the data will be managed and made accessible throughout its lifetime. A DMP (Data Management Plan) Tool will often be used at this stage.
2. Collect: at this stage, observations are made either by hand or with sensors or other instruments and the data is placed into a digital format.
3. Assure: the quality of the data is verified through checks and inspections.
4. Describe: data is accurately and thoroughly explained using the appropriate metadata standards.
5. Preserve: data is submitted to an appropriate long-term archive such as a data centre or repository.
6. Discover: potentially useful data is located and obtained, along with the relevant information about the data (metadata).
7. Integrate: data from disparate sources are combined to form one homogeneous set of data that can be readily analyzed.
8. Analyse: data is investigated.

This cycle serves as the basis for research data management training and is referenced often in courses, workshops, and best practices for data centres.

Data Management Plans

The first step in the Research Data Lifecycle, a data management plan or DMP, is a plan that explains what data will be created, how the data will be created, how the produced data will be shared and preserved, and describes any restrictions that may need to be applied to access the data (if, for example, it is sensitive data such as personal health information) (DataONE, 2022). Many funding agencies now require researchers to file a DMP as part of their proposals.

It is not necessary for librarians to create data management planning tools for researchers as there are many good options available online. Some of the most popular data management planning tools, delineated by region, are:

- [USA: DMP Tool](#)
- [Canada: DMP Assistant](#)
- [United Kingdom: Digital Curation Centre](#)
- [Australia: Australian Research Data Commons](#)

For each of these regions, the tools listed above are referenced by their local government funding agencies.

FAIR & CARE



Figure 7. Be FAIR and CARE⁵

First published in 2016 in *Scientific Data*, the “FAIR Guiding Principles for data management and stewardship” were developed to improve the (F)indability, (A)ccessibility, (I)nteroperability, and (R)euse of digital resources (Go FAIR, 2022).

The first of the four steps in FAIR, Findable, states that data and metadata should be easy to find for both humans and computers. Data can be made findable by assigning it a persistent identifier such as a DOI (digital object identifier), including rich metadata that describes the data accurately and well, and by registering it in a searchable resource such as a database (Go FAIR, 2022).

The second step, Accessible, states that users must also be able to access the data and know whether it requires authentication and/or authorization to obtain it. Best practices for making data accessible include: making metadata retrievable through a persistent identifier by using a standardized communication protocol; making sure the communication protocol used is open, free, and universally implementable; making sure that the protocol allows for an authentication and/or authorization procedure if needed; and ensuring that the metadata remains accessible even if the data is no longer available (Go FAIR, 2022).

The third step, Interoperable, states that the data should be able to be integrated with other data and interoperate with other applications or workflows for analysis, storage, and processing (Go FAIR, 2022). This is one of the more difficult parts of the FAIR process to implement, especially if working with multidisciplinary data. At this stage, many data centres aspire to interoperability without fully achieving it. Interoperability requires that data and metadata use a formal, shared language for knowledge representation, that their vocabularies follow FAIR principles, and that metadata and data include qualified references to other metadata and data (Go FAIR, 2022).

The last step, Reusable, describes the goal of FAIR which is that data should be optimized for reuse by others. To achieve this goal, the data should be described accurately, clearly, and fully so that the results can be replicated or combined (Go FAIR, 2022). Best practices for reusability include: releasing metadata and data with a clear, accessible data license; associating metadata and data with a detailed attribution; and ensuring data and metadata meet community standards (Go FAIR, 2022).

The CARE Principles were developed as a response to the FAIR Principles, providing additional guidelines that allow for the interests and rights of Indigenous Peoples (GIDA, 2018). While the FAIR Principles focus on facilitating increased data sharing, they do not take into consideration power differentials and historical contexts or the critical role of data in advancing Indigenous innovation and self-determination (GIDA, 2018). The four CARE Principles are (C)ollective Benefit, (A)uthority to Control, (R)esponsibility, and (E)thics.

Each of the four CARE Principles has supporting concepts that express high-level actions for data centres to apply in tandem with the FAIR Principles (Carroll et al., 2020). The first CARE Principle asserts that Indigenous data must facilitate Collective Benefit for Indigenous Peoples. Collective benefit is achievable when data systems are designed to support: Indigenous Peoples' use and reuse of data; use of data for evidence-based decision making; and the development and use of data that reflect community values (Carroll et al., 2020).

Authority to Control, the second CARE Principle, recognizes Indigenous Peoples' rights to control and govern their own data. It further states that Indigenous Peoples' must have access to data that supports their own governance and self-determination (Carroll et al., 2020). Indigenous Peoples must also be involved in developing stewardship decisions and data management protocols for Indigenous data held by other entities (Carroll et al., 2020).

Responsibility, the third Principle, refers to the responsibility of those working with Indigenous data to nurture respectful relationships with the originators of that data (Carroll et al., 2020). Such relationships should include: advancing capacity development, increasing community data capabilities, and ensuring the data is embedded within the Indigenous language and culture (Carroll et al., 2020).

The fourth CARE Principle, Ethics, states that data practices should maximize benefit and minimize harm, promote justice, and allow for future use, with the stipulation that it is Indigenous Peoples that must be the ones who evaluate the data practices for these values (Carroll et al., 2020).

It is important to note that not all Indigenous Peoples adopt the CARE Principles. When working with Indigenous data, it is important to work with the community with whom the data originates. Communities may work with another set of guidelines, have their own procedures and policies, or an amalgamation of both formal and local directives. In addition to CARE, the following Indigenous Data Sovereignty resources are important to know:

- [UNDRIP: United Nations Declaration on the Rights of Indigenous Peoples](#)
- [CARE: Collective benefit, Authority to control, Responsibility, Ethics](#)
- [OCAP: Ownership, Control, Access, Possession](#)
- [Local Contexts: TK Labels](#)
- [First Nations Information Governance Centre – First Nations Data Governance Strategy](#)
- [Inuit Tapiriit Kanatami – National Inuit Data Management Committee and the National Inuit Strategy on Research](#)
- [Circumpolar Inuit Protocols for Equitable and Ethical Engagement](#)
- [TriCouncil Policy Statement \(2\) – Chapter 9: Research Involving the First Nations, Inuit and Métis Peoples of Canada](#)
- [SciQ: an invitation and recommendations to combine science and Inuit Qaujimajatuqangit for meaningful engagement of Inuit communities in research](#)

Research Data Librarianship

With the onset of the Information Age and the exponential growth of digital data, the management of that data has become increasingly important. Librarians, as information stewards trained in organization, cataloguing, and preservation, are uniquely qualified to work in the field of data management (Dority, 2018).

Research Data Librarians, or “databrarians,” (Maatta, 2013) fulfil a variety of jobs related to the management and preservation of data. Some of the many duties that librarians may do include: collecting raw data, providing training and education, processing data, cleaning data, creating and applying algorithms to retrieve data, analyzing datasets, communicating outcomes through plain language summaries or visualizations, preserving data, and rescuing data (Dority, 2018).

For librarians who are considering moving into data management or who find this work increasingly becoming part of their regular duties, there are a variety of training opportunities available:

- [Research Data Management Librarian Academy \(RDMLA\)](#)
- [Research Data Management and Sharing](#)
- [Digital Curation Centre](#)
- [Australian Research Data Commons](#)
- [DataOne](#)
- [Digital Research Alliance of Canada](#)
- [PARTHENOS](#)
- [MANTRA](#)
- [Jisc Research Data Management Toolkit](#)
- Data Management: A Practical Guide for Librarians by Margaret E. Henderson (2016)
- Data Management for Libraries by Carly A. Strasser (2014)

In addition to general training, librarians working with data may also find it useful to take courses in project management, GitHub and GitLab, coding – particularly in Python, user experience design, and graphic design, among others.

Polar Data

Polar data is different from most data domains because it is defined geographically rather than by discipline. This can make it tricky to link the data since it can be so disparate, ranging from historical texts to oceanographic sensor data. Internationally, polar organizations such as the

Arctic Data Committee, the Standing Committee on Antarctic Data Management (SCADM), and the Polar Data Discovery Enhancement Research (POLDER) working group have been working on ways to make polar data discoverable and accessible (Bricher et al., 2023).

Through the POLDER working group in particular, the polar data community has worked to develop best practices for data discovery. Currently, best practices include using schema.org and JSON-LD markup for linking data and using crosswalks to link controlled vocabularies (Bricher et al., 2023). Using these best practices, POLDER has developed a federated data discovery platform for the international polar community: [POLDER Federated Search](#). The federated search covers multiple polar data repositories including: DataONE, Australian Antarctic Data Centre, British Antarctic Survey, Greenland Environmental Monitoring, NASA Global Change Master Directory, and the Canadian Consortium for Arctic Data Interoperability (CCADI) (POLDER Federated Search, 2022).

Many members of the polar data community follow the International Arctic Science Committee's IASC Data Statement which provides a best practices guideline for polar data management. Notably, the statement emphasizes the importance of ethical open access:

“Data shall be preserved, accessible, and used in accordance with scientific norms of fair attribution and use...

The only exceptions to this requirement of full, free, and open access are:

- where human subjects are involved, confidentiality shall be protected as appropriate and guided by the principles of informed consent;
- where local and traditional knowledge is concerned, rights of the knowledge holders shall not be compromised;
- where data release may cause harm, specific aspects of the data may need to be kept protected (for example, locations of nests of endangered birds or locations of sacred sites)” (International Arctic Data Committee, 2013).

Further information on polar data management can be found at the following resources:

- [Arctic Data Committee](#)
- [Standing Committee on Antarctic Data Management \(SCADM\)](#)
- [Polar Data Forum](#)
- [Arctic Observing Summit Data Management Thematic Working Group](#)
- [Polar Data Discovery Enhancement Research](#)
- [Arctic Council](#)
- [Research Data Alliance](#)
- [World Data System](#)

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The Role of Archives and Libraries in Anniversary Celebrations

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Abstract

“Sharing Polar Cultures and Knowledge” can take many different forms. Recently, the Byrd Polar and Climate Research Center Archival Program (“Polar Archives”) has been an active contributor to many anniversary celebrations. Anniversaries are celebrated in recognition of time passing. We commemorate these events by displaying our most precious artifacts relevant to the anniversary, such as in displays or exhibitions. Or, we may host one talk or many that commemorates some historical achievement. Libraries and Archives tell the stories associated with the events and the artifacts, in an effort to capture the meaning. In these situations, we often shift our focus from the more scholarly uses of our collections to more “general public” applications. The events surrounding anniversaries are typically public events and allow the Library and Archives to demonstrate their value in a way that many have probably not considered.

This paper will address these specific questions posed by the 28th Colloquy planning group: “Do [Libraries and Archives] still have a real impact on the transmission of knowledge related to the polar world? How can the physical and virtual spaces of libraries and archive centres remain, in an era of information and communication technologies, essential places for sharing cultures and knowledge about the North and the Poles?”

Résumé

Le thème «Sharing Polar Cultures and Knowledge» peut se décliner sous de nombreuses formes. Récemment, le programme archivistique du Byrd Polar and Climate Research Center (Polar Archives) a activement contribué à plusieurs célébrations d’anniversaires commémoratifs. Ces événements marquent le passage du temps et sont l’occasion de mettre en valeur des artefacts emblématiques liés aux jalons historiques célébrés, notamment à travers des vitrines, des expositions ou des conférences consacrées à des réalisations scientifiques ou exploratoires majeures. Les bibliothèques et les services d’archives jouent un rôle essentiel dans ces commémorations en racontant les histoires associées aux événements et aux artefacts, afin d’en préserver la signification. Dans ces contextes, l’accent se déplace

souvent des usages strictement académiques des collections vers des approches davantage tournées vers le grand public. Les célébrations d'anniversaires, en tant qu'événements publics, offrent ainsi aux bibliothèques et services d'archives l'occasion de démontrer leur valeur sous un angle nouveau, que beaucoup n'avaient peut-être pas envisagé.

Cette communication aborde les questions soulevées par le comité d'organisation du 28e Polar Libraries Colloquy : « Les bibliothèques et les archives ont-elles encore un impact réel sur la transmission des connaissances relatives au monde polaire ? Comment les espaces physiques et virtuels des bibliothèques et des services d'archives peuvent-ils demeurer, à l'ère des technologies de l'information et de la communication, des lieux essentiels de partage des cultures et des savoirs sur le Nord et les régions polaires ? »

Introduction

Consider this call for papers from The Institute of Art Research at Vilnius Academy of Arts (reworded only slightly for language clarity):

50, 100, 200, 1000 years... As if a bookmark in a calendar, an anniversary stops briefly the ordinary flow of years distinguishing and honouring communities, institutions, places, and persons.

In what ways do anniversaries activate our memory? On what social rites do they rely? What visual means are employed to evoke the memory and to capture the meaning and continuity of an event? What are the stories behind commemorative and anniversary artworks and artefacts (from monuments to postcards, souvenirs, etc.)? What are their destinies after the anniversaries have passed? As mementos and appraisals of an event or a phenomenon, are they themselves being remembered? How can we discuss the anniversary thinking and its meaning for historical consciousness, and the culture and politics of memory (Michelkevice, 2019)?

This call for papers combined with the questions posed by the Polar Libraries Colloquy planning group will serve as the general framework for this paper.

In what ways do anniversaries activate our memory? What visual means are employed to evoke the memory and to capture the meaning and continuity of an event?

It is easy to understand how an anniversary provides an opportunity for the Archives to interact with the larger community. One reason is that anniversaries are predictable: “An accreditation review of homecoming weekend at a university, an annual meeting at a church or business, or the annual observance of Black History Month can provide the same opportunities because each is a predictable event that archivists can anticipate, plan for and use to their advantage” (Ericson, 1994). Another reason that anniversaries “work” for the Archives is because they have meaning to a wide range of people (Stothert-Maurer & Swarstad Johnson, 2021).

Additionally, an anniversary provides an opportunity for the archives or special collections unit to engage with people that might otherwise never use them. The structure of special collections and archives and how material is accessed can be intimidating. The fact that materials in collections are arranged in series, and described in finding aids is a very different system than books in a card catalog system. Patrons who are often reluctant to ask for help, often need the help of the curator or the archivist to figure out how to navigate in the special collection and archives. Our stacks are closed and not browsable, and our collections do not circulate. This makes undertaking outreach even more important for special collections and archives (Stothert-Maurer & Swarstad Johnson, 2021).

One tool that is often employed in celebration of an anniversary is the exhibition. Note these examples of exhibition titles:

- Three Mile Island, Three Decades Later
- Stonewall: Fortieth Anniversary, 1969-2009
- Mysteries in Ice: Celebrating the 25th Anniversary of the Polar Archives
- 150 – The Metropolitan Museum of Art
- A Walk in our Shoe: 100 years of Ohio Stadium

A wide array of public programs relating to exhibitions can attract a range of audiences. Examples are: exhibit previews, opening receptions, brown-bag luncheons, guided tours, lecture series, and symposia. Tying public events to an exhibit “creates synergy and adds impact” to the exhibition (Tatsumi, 2019).

Another way that we might “evoke the memory and capture the meaning [of an anniversary],” is to host one talk - or many. In 2019, the Polar Archives partnered with the Byrd Polar and Climate Research Center to commemorate the 50th Anniversary of the first all-woman research team in Antarctica. Our event, “A Celebration of Women in Antarctica” drew together an impressive slate of speakers over two days, to celebrate the team of four women from The Ohio State University, led by Dr. Lois Jones, when they made polar history in 1969.¹

For this event, we relied heavily on the historical record – the photographs, the documentation and the memories of those who were there, to tell the story. Lois Jones, the leader of the expedition, passed away in 2000. However, she left us with a rich resource, in the form of more than 2000 35 mm slides. As stated by Jane Ellison in their keynote address at DCDC, “in employing archival evidence, we help to honor our history in the truest form possible, adding

1. The website for this event can be found here: <https://byrd.osu.edu/symposia/celebrate-women/overview>. Visit the Byrd Center’s History Corner to learn more about the Lois Jones team and their historic expedition: <https://byrd.osu.edu/node/3117>.

color to past events and bringing them to life in a way simply retelling stories...would struggle to achieve” (Sentence, 2019). As a lead-up to the event, which was held in mid-October, we used social media to draw attention to the amazing image record left by Dr. Jones. We posted one image per week on the Polar Archives Facebook page, and tagged each post with the hashtag #loisjonesimageoftheweek.²

The primary purpose of this was to drive up interest in our event, with the secondary purpose to showcase the amazing photographic records of the Jones team during their record-setting expedition in Antarctica. The third goal was to increase followers to the Polar Archives Facebook page.

Our event consisted of two full days of speakers and activities that commemorated the groundbreaking events by Lois Jones and her team. Our speakers and panelists were comprised of women who had all been to the ice themselves, including two of the original four women who went in 1969! They all provided unique perspectives on what it was/is to be a woman doing work in Antarctica. And while they all differed greatly in terms of time spent on the ice, and specific roles while there, the uniting factor was the anniversary of the Lois Jones expedition and what that meant in terms of women doing science in Antarctica.

On what social rites do anniversaries rely? And a related concept: How can we discuss anniversary thinking and its meaning for historical consciousness, and the culture and politics of memory?

The motivations behind anniversaries are important because they give us a clue as to the types of information and activities that archivists will be called on to support (Ericson, 1994). Further, “anniversaries are important less for the centennial histories they produce or the nostalgia that they evoke, than for the chance they offer us to establish an identity within the community and strengthen the image of the archives as a source of useful information” (Ericson, 1994). After all, as Ericson points out, “human beings are unable to resist celebrating any anniversary divisible by twenty-five.” But actually, any anniversary at all is an opportunity for the archives and special collections. In 2020, the Byrd Center celebrated its 60th anniversary. This short, but compelling video was created to commemorate the event. Note the inclusion of historical images and footage from the Polar Archives, along with contemporary footage and imagery. <https://www.youtube.com/watch?app=desktop&v=AD7nHCRReRHs>.

2. The Lois Jones image collection can be viewed online in the OSU Libraries Digital Collections: https://library.osu.edu/dc/catalog?f%5Badmin_set_sim%5D%5B%5D=byrd+polar+and+climate+research+center+archival+program&f%5Bcollection_name_sim%5D%5B%5D=lois+m.+jones+papers&locale=en&search_field=all_fields.

Anniversaries are based on shared memories and experience, so any event based on an anniversary builds on an existing level of interest, rather than promoting an event from nothing (Ericson, 1994). However, it is important to recognize that anniversaries are not always happy events. In these cases, we commemorate rather than celebrate. For example, we commemorate the May 4, 1970 shootings at Kent State University. We commemorate the terrorist attacks on the US on September 11, 2001.

We may also commemorate/celebrate controversial events. Controversial topics may provide opportunities for special collections repositories. “Collaborations and partnerships often help to broaden perspectives and to make sure that exhibits reflect multiple perspectives, current scholarship, and cultural sensitivities” (Lacher-Feldman, 2013, p. 16). Social justice anniversaries in particular, may be frequently celebrated with narratives like “look how far we’ve come” (Sentence 2019). We need to be cognizant of the fact that we can recognize progress, while acknowledging that we have far to go. Controversies in the world of polar exploration and discovery exist on many levels and still include such concepts as global climate change and the validity of science. Showing progress over time through means of exhibitions of historical documents and photographs can be a powerful tool. For example, these images of Quelccaya, Peru, taken from the Byrd Center’s website, show the incredible change from 1977 to 2002 (<https://byrd.osu.edu/research/groups/ice-core-paleoclimatology>).



Figure 8. Quelccaya, Peru. 1977. Photo : Lonnie G. Thompson, Byrd Polar Research Center, The Ohio State University



Figure 9. Quelccaya, Peru. 2002. Photo : Lonnie G. Thompson, Byrd Polar Research Center, The Ohio State University

During the Women in Antarctica Symposium, we created a stand-alone display called Women Need Not Apply, to illustrate another type of change over time. The Papers of Admiral Richard E. Byrd contain files of applications from women who wanted to go on his polar expeditions. The letters of application of these women showed their deep desire to participate in this endeavor. Many had very marketable skills that would make them valuable on an expedition. And yet, the answer was no, based solely on their gender.

What are the stories behind commemorative and anniversary artworks and artefacts (from monuments to postcards, souvenirs, etc.)? What are their destinies after the anniversaries have passed? As mementos and appraisals of an event or a phenomenon, are they themselves being remembered?

Exhibits and events created in honor of anniversaries provide opportunities to create artifacts that can help program hosts enhance visitors' post-visit experiences. Anything attractive, memorable and useful can serve as a memento and a tool for publicity of the exhibit or the event, or at minimum a fond memory (Tatsumi, 2019). The Byrd Center produced several keepsakes for our Women in Antarctica event. Custom made silk scarves in the colors of the aurora were given to each speaker. All were different, and each was hand-sewn with a custom tag showing the Byrd Center's logo and "Celebrate Women 2019". We also had coffee cups for everyone to use during the event, and then take away at the end. These items were well-received; many of the speakers wore their custom-made scarves throughout the entirety of the event. The coffee cups not only reinforced our commitment at the Byrd Center to reduce our consumption of single-use items, but they also remind our guests of the Center and our event every time they use the mug.

Conclusion

In summary:

- In the same way that anniversaries can cause us to look back, they also cause us to look forward (Ericson, 1994).
- Anniversaries nurture a sense of community and a shared sense of accomplishment (Ericson, 1994).
- Memory institutions – like archives and special collections – are critical in terms of legitimizing history and culture (Lacher-Feldman, 2013). Archives are important to society as a whole (Skinner, 2014).
- Outreach is central to what all archivists do and has impact over other archival needs, as well as on the wider community (Chute, 2000).
- Anniversaries and promotions are a natural place for Archivists to reach the wider community. Archivists can link exhibits to many types of promotional events (Chute, 2000).

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Posters

Christoffersen, S. (2022, June). *AIDA. Arctic Information Discovery & Access*. Poster presented at the "28th Polar Libraries Colloquy. Sharing Polar Cultures and Knowledge: Perspectives from Libraries and Archives" Quebec City, Canada

AIDA
Arctic Information Discovery & Access

About AIDA

Embark on an exploration of Canada's Arctic – its history, peoples and cultures, and current scientific research!

Enter AIDA: Arctic Information Discovery & Access, an online educational experience that brings a digital archive to life with virtual exhibits, educational resources, games, webinars, and search interfaces that support information discovery at different levels.

AIDA expands upon the former ASTIS database which was already well-regarded by Arctic researchers as an online information resource and publications database for the Government of Canada's Northern Contaminants Program and the Beaufort Regional Environmental Assessment, the ArcticNet Network of Centres of Excellence Canada program, and the Canadian International Polar Year program. In addition to professional peer-reviewed publications and research project information, the database contains valuable 'grey literature' that is difficult to find elsewhere. AIDA expands on ASTIS to include archival materials, primarily from AINA's library collection – one of the largest Arctic collections in North America. This collection contains rare and unique photographs, art, artefacts, film, and audio materials.

Enhanced Features to Serve You Better

- ✓ 68,000+ publications.
- ✓ 18,000+ research projects derived from license and permit information.
- ✓ Photographs, art, artefacts, film, and audio materials.
- ✓ Virtual exhibits showcasing documents and archival materials with educational and exploratory material.
- ✓ Educational resources for K-12.
- ✓ Games.
- ✓ Webinars.
- ✓ Updated search interfaces:
 - Search available in English, French, and Inuktitut.
 - Basic keyword, advanced searching, and filtering options.
 - Mapping tool for searching by geographic area.
 - Timeline tool for searching within time periods.
 - Curated lists.
 - Gamets.
 - Login feature to permit bookmarking, creation of lists, and emailing search results.

AIDA's search results page (left) shows the multitude of actions and filters available to users. Results lists now include thumbnail photos for quick review.

“Adva
-Vision statement, Arctic Institute of North America

23,1%

History and Image courtesy of David Phillips

Cervanec, J., Peggau, K., Kissel, L., Hamilton, D., & Arens, A. (2022, June). *Technology Tools Which Individually and Collectively Allow Collections and Librarians to Reach New Audiences*. Poster presented at the "28th Polar Libraries Colloquy. Sharing Polar Cultures and Knowledge: Perspectives from Libraries and Archives", Quebec City, Canada



THE OHIO STATE UNIVERSITY
BYRD POLAR AND CLIMATE
RESEARCH CENTER

Technology Tools Which Individually and Collectively Allow Collections and Librarians to Reach New Audiences

Jason Cervanec (cervanec.1@osu.edu), Karina Peggau, Laura Kissel, Daniel Hamilton, Adelyn Arens

Virtual Tours

Virtual tours of landscapes and facilities can be created using video captured with low-cost smartphones, a web-based software package, and basic web-hosting capabilities. While the workflow is not arduous, time needs to be dedicated by a staff member who is comfortable with technology and willing to learn the process. Having a team willing to co-create a compelling narrative for the tour and design it with end use in mind is critical. For instance, is the tour for asynchronous exploration, live-guided events, or both?

Digital 3D Artifacts

Artifacts may be explored with multiple views and some of their subtleties are impossible to capture with digital approximations. However, current technology allows digital artifacts to be created using smartphone/tablet photography, a low-cost application, and a subscription-based hosting service. While only a collection subset may be digitized, this technology could dramatically increase access without the need to add physical infrastructure or arrange travel. Digital artifacts may be embedded into websites and virtual tours.

Gateways to Primary Sources

Primary sources are being identified as a competency in more educational standards and organization is an area of overlap between science, history and language arts courses. A curated set of primary sources around a key topic or question that is readily integrated into a formal or informal education setting can yield high usage. To be formatted and accessible to educators, having practitioners as co-designers in selecting sources and developing experiences is essential.









Lund, P., & Lucas-Smith, M. (2022, June). *Have you searched the Library Catalogue? Migrating catalogue records from pre-internet software to a modern library management system supporting MARC21*. Poster presented at the "28th Polar Libraries Colloquy. Sharing Polar Cultures and Knowledge: Perspectives from Libraries and Archives", Quebec City, Canada



**UNIVERSITY OF
CAMBRIDGE**



Scott
Polar
Research
Institute

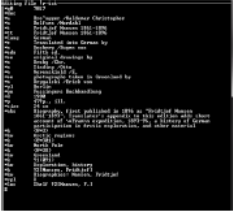
Have you searched the Library Catalogue? Migrating catalogue records from pre-internet software to a modern library management system supporting MARC21

Peter Lund and Martin Lucas-Smith
Scott Polar Research Institute, University of Cambridge
(E-mail: opl21@cam.ac.uk)

Aim

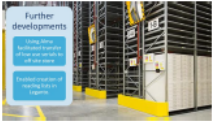
To migrate the Polar Library's catalogue from Muscat (1980s software only searchable within the library) into ExLibris' Alma, the web-based library management system used by the University of Cambridge - searchable from (almost) anywhere using iDiscover (Primo).

Muscat record



Transliteration

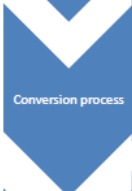
- 140,000 new Cyrillic strings
- Muscat: Roman charset
- BGN/PCGN 1947
- Non-reversible scheme!
- 30+ stages to 880s
- Language identification





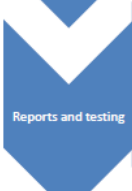
Muscat record

- 204,000 records
- c. 100 person years work
- Not MARC
- Pre-unicode
- Little validation
- No authority control



Conversion process

- 6-12 hours overnight
- Data import
- XML structure
- Text normalisation
- Russian handling
- MARC conversion
- Bibcheck
- Exports creation

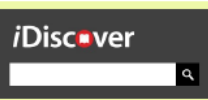


Reports and testing

- Extensive reports
- Data cleanup work
- 1,071 tests
- Test for every conversion feature
- Open source code github.com/camunigeog/muscat-conversion/

Impact

- Increase in library visits
- Increase in inter-library loan requests
- Robust process for lending books



References

Gilbert, M; Lane, H. (2008) Forty-five numbers for snow: a brief introduction to the UDC for Polar libraries. Extensions and Corrections to the UDC, 30 (2008), pp. 23-26. <http://hdl.handle.net/10150/110845>

Porter, M. and Galpin, V. (1988), "Relevance feedback in a public access catalogue for a research library: Muscat at the Scott Polar Research Institute", *Program: electronic library and information systems*, Vol. 22 No. 1, pp. 1-20. <https://doi.org/10.1108/eb046983>

Biographical Notes

Authors of presentations and posters delivered at the colloquy, included in these proceedings.

Sandy Cambell

Sandy Campbell is a health librarian at the John W. Scott Health Sciences Library at the University of Alberta in Edmonton, Canada. Sandy has been a member of PLC since 1998, has attended ten Colloquies and is the PLC representative to the University of the Arctic. Sandy has presented and published nationally on polar information topics.

Jason Cevernec

Jason Cervenec is the Education and Outreach Director for the Byrd Polar and Climate Research Center at The Ohio State University. Jason currently has three NSF-funded research projects in polar and geosciences education and led development of the Columbus Climate Adaptation Plan. The most common request for information that Jason receives from the public is on climate change. Jason taught high school science for 11 years and, during that time, took part in a Fulbright Teacher Exchange in Mumbai, India where he witnessed firsthand the challenges faced by much of the world's population. Jason volunteers with Franklin County Juvenile Court's Restorative Justice Circles and enjoys hiking and cycling. Jason and his wife have three children and have rehabilitated a 1908 house on the Near East Side of Columbus.

Shannon Christoffersen

Shannon Christoffersen is the Manager, Data and Information Services at the Arctic Institute of North America, University of Calgary and the Project Manager for the Canadian Consortium for Arctic Data Interoperability (CCADI). She is a representative on the International Arctic Science Committee/Sustaining Arctic Observing Networks Arctic Data Committee, a member of the ADC-IARPC-SCADM Vocabularies and Semantics Working Group, a member of the Polar Libraries Colloquy Steering Committee (currently serving as Past Chair and Web Developer), and she sits on the Advisory Board of the Polar Data Journal. Shannon has a Master of Library and Information Studies from the University of Alberta and a Digital Archives Specialist certification from the Society for American Archives.

Sharon Farnel

Sharon Farnel is Metadata Coordinator at the University of Alberta Library. In that role, she is leading the Library's decolonizing description initiative, and a member of the Canadian Federation of Library Associations Indigenous Matters Committee Joint Working Group on Subject Headings and Classification. She is also an interdisciplinary PhD Candidate at the University of Alberta in the School of Library and Information Studies and Department of Educational Policy Studies. In her doctoral research, she is working with the Inuvialuit Cultural Centre in Inuvik to develop a community driven knowledge organization and resource description framework for the Inuvialuit Digital Library

Andrew Grey

Andrew Gray is the Bibliometric Support Officer at University College London, where he provides training and support using bibliometric data within the library and across the university. He has published guides to using bibliometric data, as well as bibliometric research on polar science particularly in the Antarctic context. He was previously the librarian for the British Antarctic Survey 2013-2018, and has been Treasurer of the Polar Libraries Colloquy since 2014.

Laura Kissel

Laura Kissel has been the Polar Curator for the Byrd Polar and Climate Research Center Archival Program (Polar Archives) since 1996. Her work includes assisting the many researchers, scholars and students who contact the Archives to gain access to the historical collections that document the history of polar exploration. Laura works closely with the Education and Outreach team at the Byrd Center to facilitate public programs and other educational events that highlight our collections. Laura has been an active member of PLC since her first colloquy in 2000. She has been the PLC secretary since 2012.

Peter Lund

Peter Lund leads the Polar Library and Archives service at the Scott Polar Research Institute, University of Cambridge. Peter managed the By Endurance we Conquer – the Shackleton Project which was awarded project funding of up to £500,000 from the UK's National Lottery Heritage Fund. The project spanned the Scott Polar Research Institute's Museum, Library, Archives and Picture Library. Peter was responsible for overseeing acquisitions of materials relating to Sir Ernest Shackleton's Antarctic expeditions as well as an innovative outreach programme designed to promote the materials acquired. This 5-year project was completed in December 2019. In previous academic liaison and research support roles at the University of Canterbury in Christchurch, New Zealand, Peter led teams of subject librarians in the aftermath of the 2010-2011 Christchurch earthquakes.

Susanna Parikka

Susanna Parikka works as a Library Director at Lapland University Consortium Library, the only academic library in Finnish Lapland area. LUC Library is a joint library of University of Lapland and Lapland University of Applied Sciences. Susanna is a Master of Political Sciences from the Swedish-language university in Finland, Åbo Akademi University. She is now Chair-Elect of Polar Libraries Colloquy's Steering Committee.

Karina Peggau

Karina Peggau is the Program Coordinator for the Byrd Polar and Climate Research Center at The Ohio State University. Her work primarily consists of event planning, managing program and outreach requests, advancing diversity in STEM, and facilitating day-to-day operations at the Byrd Center. Karina is currently involved in one NSF-funded research project in polar literacy and has authored or co-authored several publications and presentations in polar and geosciences education. Karina earned her Bachelor of Science degree in Earth Science at the Ohio State University specializing in geology, water resource management, and climate science. She is currently earning a Master's degree in City and Regional Planning with an emphasis on sustainable development and enjoys running, gardening, and caring for her dog and two cats.

Program

Program of the 28th Polar Libraries Colloquy, June 5-June 10, 2022, Quebec City, Quebec, Canada.

Sunday, June 5th

17:30 – 20:30 EDT

ICEBREAKER PARTY

Monday, June 6th

9:00-10:00 EDT

REGISTRATION AND WELCOME

10:00- 10:10 EDT

OPENING ADDRESS

Chantal St-Louis,
Interim Director of the Library, Université Laval

10:10-11:30 EDT

OPENING CONFERENCE : « MY PORTAGE »

Hon. Michèle Audette, Senator, Senate of Canada, Parliament of Canada,
Senior Advisor on Reconciliation and Indigenous Education, Université Laval,
Commissioner, National Inquiry into Missing and Murdered Indigenous Women and Girls, Office
of Indigenous and Northern Affairs Canada,
Past President of the Native Women's Association of Canada,
Past President of the Quebec Native Women's Association,
Associate Deputy Minister for Status of Women in the Government of Quebec,
Recipient of the Queen's Diamond Jubilee Medal in 2012

13:30 - 13:35 EDT

THEMATIC NETWORK ANNOUNCEMENT

13:35 - 17:00 EDT

WORKSHOP: DECOLONIZING METADATA: ENABLING SHARING OF CULTURES THROUGH RESPECTFUL REPRESENTATION

Sharon Farnell, University of Alberta

Indigenous and non-Indigenous individuals have long criticized the Eurocentric standards and practices used for organizing, classifying, and describing resources held in cultural heritage institutions such as libraries, archives, and museums. There is an urgent need for these institutions and those who work within them to address these structural biases through decolonizing approaches. Through a combination of presentations, small group discussion, and hands-on activities, this workshop will introduce participants to the notion of decolonization of metadata, provide opportunity to critically examine a variety of resource descriptions, and enable discussion of opportunities and challenges for decolonization processes in participants' local contexts, leading to a plan for some concrete actions that can be taken after the workshop.

Tuesday, June 7th

9:00 - 10:00 EDT

KEYNOTE: A LIVED ARCHIVE: NORIENTALISM AND INDIGENOUS SELF-DETERMINATION IN A DIGITAL WORLD

Caroline Desbiens, Professor, Department of Geography, Université Laval,
Chairholder, Canada Research Chair in Indigenous Heritage and Tourism

Researchers in the humanities and social sciences have long analyzed the discursive construction of the Arctic as a space of danger and extremes, as an unknown geography always demanding exploration and conquest. From the mythic Northwest passage, to the appeal of a knowledge frontier being pushed by Western scientists and, more recently, of a unique laboratory for studying climate change, outside perspectives have overly determined global understandings of this region. Drawing from Edward Said's concept of Orientalism, it could be said that a pervasive "Norientalism" influences how the Arctic is known: to this day, the Arctic's existence in texts and images produced by outsiders often trumps the knowledge and lived experiences of local inhabitants. As custodians of these texts and images, how do polar libraries address this ambiguous heritage? Can they play an active role in decolonizing knowledge about the North? This conference will explore the agency that libraries hold in generating new understandings of place and history that support indigenous self-determination. In the Canadian context, critical approaches to how we build, curate, control, and disseminate archives can participate in the process of resurgence for Inuit, Metis and First Nations. I will conclude by discussing how information specialists can forge collaborations to enhance and support indigenous self-determination, both in academia and beyond.

10:00 - 10:30 EDT

TESTIMONY TO THE REPATRIATION PROCESS OF TANGIBLE AND INTANGIBLE HERITAGE TO THE NATION INNU

Serge Ashini Goupil,

cofounder, Corporation Mushuau-nipi,

member of the Innu Nation from Matimekush Lac John (Schefferville)

11:00 - 11:30 EDT

COLLABORATION AND CO-DESIGN: DIGITAL STORYTELLING AS KNOWLEDGE PRESERVATION AND TRANSMISSION

Sharon Farnel, Robyn Stobbs, Ali Shiri, Ethel-Jean Gruben, Beverly Amos, Lena Kotokak,

University of Alberta, Inuvialuit Cultural Centre

11:30 - 12:00 EDT

RECOGNITION OF LOCAL CONTRIBUTIONS TO INUIT HEALTH RESEARCH IN CANADA (1999- 2019)

Sandy Campbell, Connie Winther

John W. Scott Health Sciences Library, University of Alberta

13:30 - 14:00 EDT

ONLINE PROGRAMMING TO MAINTAIN (AND INCREASE) ACCESS TO COLLECTIONS DURING THE PANDEMIC

Jason Cervenec, Karina Peggau, Laura Kissel

The Ohio State University

14:00 - 14:30 EDT

INCREASING ENGAGEMENT: A CASE STUDY OF THE BY ENDURANCE WE CONQUER – THE SHACKLETON PROJECT

Peter Lund, Naomi Boneham, Corinne Galloway, Henrietta Hammant

Scott Polar Research Institute, Museum of London Archaeology

15:30 - 16:00 EDT

COLLABORATIONS IN POLAR RESEARCH: A BIBLIOMETRIC STUDY

Beverley Ager, Andrew Gray

British Antarctic Survey, University College London

16:00 - 16:30 EDT

POLAR LIBRARIES COLLOQUY MEMBERSHIP SURVEY: JOIN FOR THE KNOWLEDGE, STAY FOR THE FUN

Sandy Campbel, Cecilie Tang Moldrup, Susanna Parikka,

John W. Scott Health Sciences Library, University of Alberta, Polar Library,
University of Copenhagen, Lapland University Consortium Library

This presentation will go through the results of a survey done in December 2020 and January 2021 among the members and former members of Polar Library Colloquy (PLC). The PLC is an international association formed 1971 that functions as a collegial network for “librarians and others evidencing an abiding interest in the collection, preservation, and dissemination of polar information”.

The purpose of the survey was to collect information about the PLC membership and to find out about the role, history and future of PLC. The main purpose however was to collect information to help writing a chapter about the PLC for the upcoming book, “Library and information sciences for Arctic and Northern Studies” (Springer).

The results of this survey with totally 38 respondents show why members became members, why they stayed or didn’t stay and how they see the future of PLC. Most of the members join PLC for the knowledge and they stay for the fun.

The future of PLC appears bright with many strengths according to this survey. The PLC is seen as a valuable resource. The possibilities in the future are seen in engaging indigenous librarians and other new members from smaller libraries, in developing more engagement opportunities e.g. via digital meetings and in developing social media presence.

18:30 - 20:30 EDT

STEERING COMMITTEE MEETING

Wednesday, June 8th

9:00 - 10:30 EDT

SPECIAL COLLECTIONS VISIT: ARTIFACTS FROM THE CANADIAN FAR NORTH

Marie-Pierre Thibault

Université Laval

Laval University maintains an important collection of artifacts from the Canadian Far North. The anthropological collection includes 354 objects and sets of objects collected by Professor Bernard Saladin d'Anglure, during his many stays with the Inuit in the 1960s and 1970s. Many types of objects are represented: clothing and bedding, weapons, hunting and fishing equipment, tools and accessories for daily life and the home, sewing, body care, toys, ritual objects, sculptures and objects. miniatures, animal skeletons for educational purposes and finally, historical and archeological artifacts. Another collection kept in our reserves contains several hundred archeological artifacts. These were discovered during excavations conducted at several sites in the Canadian Arctic in the 1960s by the Center for Northern Studies. Finally, a few other works of Inuit art come from other donors, including the painter René Richard, who owned a small collection.

CONSERVATION AND TREATMENT OF THE INUIT COLLECTION

Alex Morin, Marie-Isabelle de Melo

Université Laval

2020 marked a shift in the importance Laval University places on its heritage collections. The Library, which is responsible for the management of the collections, hired a new curator, followed by a museology technician in 2021. With the arrival of this new, well-trained and experienced team, the preventive conservation of the collections was renewed and modernized. Priority was given to the reorganization of the reserves and to the storage of certain collections that are particularly sensitive because of their heritage importance or their material fragility. Equipment, tools and adapted materials were thus rapidly acquired by the Library.

The discovery of an insect infestation in the room where the Inuit collection was kept, at the end of May 2021, made the treatment of this collection an immediate priority, even if the visible damage to the objects was limited, probably because the dryness of the skins and leathers slowed down the development of the insects. Different avenues were studied to obtain a total eradication of the insects, and the process of freezing was chosen as the most effective and least damaging, in accordance with the recommendations of the Canadian Conservation Institute and the Centre de conservation du Québec. The speakers will explain the different stages of conservation and treatment that have been applied. In the idea of correcting the situation and improving the condition of the objects in exhibit, storage (reserve), consultation and in transit.

10:45 - 17:00 EDT

TOURIST VISIT IN OLD QUEBEC CITY

Thursday, June 9th

9:00 - 9:30 EDT

RESEARCH DATA MANAGEMENT: AN INTRODUCTION FOR POLAR LIBRARIANS

Shannon Christoffersen

Arctic Institute of North America, University of Calgary

With the advent of the information age, research data is being generated in unprecedented volumes and variety and at an increasing speed. Researchers and students have struggled to keep up with the deluge and manage their data appropriately. As information management professionals, more and more librarians are answering the call from researchers to help them manage and access this data. Organizations like Canada's Portage Network have developed data management planning tools and libraries across Canada and internationally have begun developing a variety of data services, training opportunities (for both librarians and researchers), and storage options to effectively manage the data influx. This paper will provide an overview of:

1. The research lifecycle and Research Data Management (RDM) fundamentals
2. RDM training opportunities for librarians
3. International resources for polar research data management
4. Steps toward launching research data services in polar libraries

9:30 - 10:00 EDT

**NORDICANA D AS A COMPONENT OF THE CANADIAN CONSORTIUM FOR ARCTIC DATA
INTEROPERABILITY: MAKING POLAR DATA DISCOVERABLE**

Etienne Godin, Warwick F. Vincent, Luc Cournoyer

Center for Northern Studies, Université Laval, Québec, QC, Canada

Nordicana D is a repository of scientific data hosted, edited and managed at the Center for Northern Studies (CEN), Université Laval. Climatic data from the SILA's station network, implying 114 stations over 37 degrees of latitude including Ward Hunt Island, north of Alert, Ellesmere Island. Observations and records as varied as the ecological monitoring of the Greater Snow Goose breeding, the monitoring of the methane emissions of tundra ponds and the monitoring of permafrost thermal regime at depth over time are assigned a DOI and stored in this repository.

Even though the data is hosted and made available online since many years, Nordicana D and Canadian Arctic data management systems (Arctic focused research centres) all over Canada are challenged by the discoverability of their information by peers, academia or the wider public.

Nordicana D, became a component of the Canadian Consortium for Arctic Data Interoperability (CCADI) and the Terrestrial Multidisciplinary distributed Observatories for the Study of Arctic Connections (T-MOSAIC) with the aim to contribute and participate in infrastructure facilitating the ethical discoverability, interoperability and visualization of Arctic data. The aim of this collaboration is to enable organizational and technical interoperability among Arctic Data providers and

repositories by developing a next generation portal to streamline the search of datasets hosted at each participant's respective infrastructure through data federation. This effort will enable the availability of hard-to-find datasets and knowledge for Northern communities, academics and decision makers.

10:00 - 10:30 EDT

OPEN POLAR: A DISCOVERY SERVICE COVERING THE GLOBAL OUTPUT OF OPENLY ACCESSIBLE POLAR RESEARCH DATA AND PUBLICATIONS

Tamer Abu-Alam, Stein Høydalsvik, Per Pippin Aspaas, Leif Longva, Karl Magnus Nilsen, Obiajulu Odu, Johanne Raade

Universitetsbiblioteket, UiT Norges arktiske universitet

Data from the Polar Regions are of critical importance to modern research. Regardless of their disciplinary and institutional affiliations, researchers rely heavily on the comparison of existing data with new data sets to assess changes that are taking effect. However, in a recent survey of 113 major polar data providers, we found that an estimated 60% of the existing polar research data is unfindable through common search engines and can only be accessed through institutional webpages. This raises an awareness sign of the need of the scientific community to harvest different metadata related to the Polar Regions and collect it in a homogenous, seamless database and making this database available to researchers, students and publics through one search platform.

This contribution describes the progress in an ongoing project, Open Polar (<https://site.uit.no/open-polar/>) started in 2019 at UiT The Arctic University of Norway based on an existing service (High North Research Documents: <https://highnorth.uit.no/>). The project aims to collect metadata about all the open-access scholarly data and documents related to the Polar Regions in a homogenous and seamless database. The suggested service includes three parts: 1) harvesting metadata; 2) enriching and filtering of the harvested metadata; and 3) making the collected records available and searchable to the end-users through an interactive user interface.

The service will help to make the polar related research data and documents more visible and searchable to the end-users and thereby reducing the findability gap.

1:00 - 12:00 EDT

PANEL SESSION : RESEARCH DATA IN POLAR STUDIES: CHALLENGES AND OPPORTUNITIES

Shannon Christoffersen, Martine Gagnon, Étienne Godin, Daniela Zavala-Mora

Arctic Institute of North America, University of Calgary, Université Laval

The purpose of this panel is to discuss the challenges and opportunities regarding data management and data sharing within the context of polar studies. This session is intended to share different perspectives about incorporating best practices for research data management, the importance of research data management systems and the challenges to implement principles or guidelines for data sharing respecting indigenous data sovereignty.

13:30 - 14:00 EDT

THE ROLE OF ARCHIVES AND LIBRARIES IN ANNIVERSARY CELEBRATIONS

Laura J. Kissel

The Ohio State University, Byrd Polar and Climate Research Center

14:00 - 14:30 EDT

TRIBUTE TO LOUIS-EDMOND HAMELIN, FATHER OF THE NORDICITY CONCEPT

Anne-Marie Hamelin

Consultant and independent researcher

Louis-Edmond Hamelin, who has been portrayed as one of the great thinkers of the Quiet revolution in Québec, describes himself as an intellectual, a geographer, a nordist and a terminologist. It was his determination and uncommon drive that led him, in the late 1950s, to put the North on the agenda of both the Université Laval and the Quebec government and to break new ground on the major issues related to it. These questions concerned a northern index, the territory, the Aboriginals, their anteriority of presence, and the relationships between Southern and Northern Quebec. A humanist, he was committed to a global approach of the North with respect to Aboriginal peoples.

His seminal work: Canadian Nordicity (1975, 1979, 1980) which conveyed the transcendental and polyvalent idea of the North, the circumpolar North, has influenced how North is now defined and conceived, how intercultural relationships between Aboriginals and non-Aboriginals develop and, to a certain extent, how northern policies are decided and implemented.

My father, a highly productive scholar and enthusiast professor, felt, after having scrutinize various classification systems, that he should develop his own. His system entitled “For geographic documentation, an autonomous, versatile and integrated classification” (1969) provided him with great satisfaction throughout his life. The daily activity of classification has contributed to the incremental enhancement of his understanding of complex questions and the development of notions such as nordicity, glaciél, circumnordique (circumpolar), territoriality, coexistence (Aboriginals /non-Aboriginals). The plural productions of my father total around 10,000 published pages. His vast organized contribution in multiple disciplines is now available in the archives of Université Laval, which, along with other institutions, is helping to ensure the conditions for the further transmission and growth of his northern vision and knowledge.

14:30 - 14:45 EDT

OVERVIEW OF THE NEXT COLLOQUY

16:30 - 22:30 EDT

BANQUET AT THE MUSÉE NATIONAL DES BEAUX-ARTS DU QUÉBEC

Friday, June 10th

8:00 - 18:00 EDT

OPTIONAL TOUR IN CHARLEVOIX

Bookmark designed by Alicia Gauthier, a graduate of the School of Design, Université Laval, and engraved in our woodworking shop at the Department of Wood and Forest Sciences.

This unique piece, made of yellow birch—the emblematic tree of Quebec—highlights the northern character of our Belle Province.

As a token of appreciation, each participant in the 28th Polar Libraries Colloquy was presented with a yellow birch bookmark during the banquet at the Musée national des beaux-arts du Québec.

