

Project Summary: NNA Planning: Co-Designing Civic Education for the Circumpolar North Overview:

This planning grant will launch collaborative research into the development and implementation of effective Arctic civic education programs that support sustainable development and community resilience in the region. The Arctic is facing unprecedented changes, including expanding globalization and rapid environmental transformation. Civic education has long been a cornerstone of American democracy, and is designed to cultivate the exact deliberative and civic leadership skills needed to collectively respond to difficult challenges like those arising in the Arctic. This is particularly true given the emergence of new forms of global and environmental civic education, which have the potential to support international collaboration and decision making within the complex socio-ecological systems that define the Arctic.

Unfortunately, there has been little systematic development of civic education curricula tailored to Arctic contexts. Within the Arctic, the recent focus has been on building basic local community capacity to overcome gaps in educational opportunity and to decolonize teaching. Outside of the Arctic, there is even less discussion of how education might be used to make non-Arctic students effective partners for Arctic communities. Addressing these gaps is imperative given the large and increasing role that non-Arctic actors play in shaping the circumpolar North. Bringing these concerns together, there is almost no discussion of how educational programs might be designed to bring Arctic and non-Arctic students together. If the future of the Arctic is likely to be determined by international decision-making processes that bring northerners and southerners together, then it only makes sense to leverage educational spaces to build the capacity of these international actors to work collaboratively together with one another. This project responds to this need by building an international and interdisciplinary team to develop an actionable, convergence research agenda on Arctic civic education. Given the experience of the research team, initial discussions will center on the development of educational resources for undergraduate students, both inside and outside the Arctic. The following key research questions will guide the project:

1. What key elements should define Arctic civic education, such that they prepare Arctic and non-Arctic students to collectively address the complex social and environmental challenges that define the region?
2. How can Arctic education programs be designed and implemented in anti-colonial ways?
3. What opportunities and challenges exist for leveraging travel – both physical and virtual – in advancing Arctic civic education that brings Arctic and non-Arctic students together?

Funding will be used to carry out virtual and in-person workshops that engage a core team of collaborators able to speak to the varied disciplinary, geographic, and Indigenous contexts of the Arctic with respect to education. This team has the potential to transform ongoing educational practice in and about the Arctic and to produce an agenda for an exciting new area of convergence research.

Intellectual Merit:

This project expands fundamental research across a range of educational domains. It places research on civic education into conversation with emerging models of environmental science education and Indigenous teaching practices, to theorize new learning models that tie notions of citizenship to understandings of the science of environmental change. We will also set the groundwork for fundamental research into best practices and evaluation approaches for distance learning programs that bring students together across international borders.

Broader Impacts:

This research has the potential to broadly transform how Arctic Studies is taught globally. As an educational discipline, Arctic Studies is a small but growing field. These programs are likely to expand dramatically in coming years, yet future programs have few effective models for program design and delivery of civic education. This project creates these resources, and ensures they have impact through UW's ongoing teaching and dissemination through the University of the Arctic network. Bringing together students, faculty, and researchers in this cross-cultural collaborative work will build relationships and the capacity of this team to carry out future Arctic research.

Keywords: Arctic education, civic education, anti-colonial teaching, environmental science education, distance learning

Project Description: NNA Planning: Co-Designing Civic Education for the Circumpolar North

1. Project Rationale

This planning grant will launch collaborative and interdisciplinary research into the *development and implementation of effective Arctic civic education programs*. These programs, focused primarily at an undergraduate level, would offer Arctic and non-Arctic students interdisciplinary knowledge and skills to collaboratively address the most pressing issues facing the region. The Arctic is facing unprecedented changes, including expanding globalization and a rapid environmental transformation. In response, those living in the north and the south must change too. Civic education has long been a cornerstone of American democracy, and it is designed to cultivate the exact deliberation and civic leadership skills needed to collectively respond to challenges like those arising in the Arctic. This is particularly true given the emergence of new forms of global and environmental civic education, which have the potential *to support international collaboration within the complex socio-ecological systems that define the Arctic*.

Unfortunately, there has been little systematic development of civic education curricula or teaching resources tailored to Arctic contexts. Within the Arctic itself, much of the recent focus has been on building local community capacity to overcome existing gaps in the opportunity for education and to decolonize teaching. Arctic education has long faced daunting challenges, ranging from lack of local teachers and lack of resources to a legacy of colonial curriculum design and delivery. There is increasing recognition, though, that education is a critical factor in advancing Arctic-led development, regional security, and community resilience. Initiatives across a range of scales have built local capacity for achieving educational excellence – examples include international projects like the Arctic Council’s *Teacher Education for Diversity and Equality in the Arctic* and the University of the Arctic’s *Indigenous Pedagogy in Teacher Education* programs; the Inuit Tapiriit Kanatami’s (ITK) *National Strategy on Inuit Education*; and the local production of the first social studies textbook grounded in Inuit history in Nunatsiavut, Canada (see, e.g., Arctic Council 2019; Beaton et al. 2019; ITK 2011; Kyriakou et al. 2018; Moore and Galway 2018; Snow et al. 2018; Spratt et al. 2018). Advances in telecommunications technologies also present opportunities for Arctic students to take advantage of new distance education opportunities. These represent important steps forward for advancing local opportunities for Arctic students. However, challenges remain. Given the local focus of many existing programs, much less progress has been made in understanding how education might be leveraged to support broader thinking about the Arctic as a distinct international region. Less is known about how educational programs might be designed, for example, to support circumpolar-wide engagement between different Arctic communities and Indigenous groups, to bolster their abilities to collectively determine the future of their own lands.

Outside of the Arctic, there is even less discussion about how education can be used to make southern students more effective partners for Arctic communities. Addressing this gap is imperative given the increasing role that non-Arctic actors play in shaping the circumpolar North. The unprecedented environmental and economic shifts being experienced in the region are often driven by decisions made outside of the Arctic, and new opportunities increasingly attract non-Arctic businesses and countries to the region. To make effective and ethical decisions, these actors need interdisciplinary understanding of how their actions ripple across the complex and interlocking social, ecological, and infrastructural systems that define the circumpolar North. Unfortunately, this education is often unavailable or limited. To date, there are less than a handful of Arctic or Northern studies majors/minors in the United States, and only about a dozen internationally. Given geopolitical interest in the region, the demand for such programs is likely to expand exponentially in the coming years. And, yet, there are *no current models for effectively designing and delivering civic education programs that train non-Arctic students holistically about Arctic issues*. Such models will be vital for putting in place new Arctic programs for southern students, especially as these students increasingly engage the region in roles ranging from physical scientists performing Arctic research to private citizens that can vote in ways that impact Arctic policy.

Bringing these concerns together, there has been little scholarly discussion of how educational programs might be designed to bring Arctic and non-Arctic students together. Information and communication technologies (ICTs) and international organizations increasingly support collaborations

between Arctic communities and various stakeholders from the south, from researchers to business and policymakers. If the future of the Arctic is to be determined by international decision-making processes that bring northerners and southerners together, then educational programs are needed to build the capacity of these international actors to work collaboratively. How might Arctic education programs be designed to bring Arctic and non-Arctic students together, to discuss what citizenship and partnership look like in Arctic contexts? Used in this way, civic education can play a strong role in supporting these students to effectively and ethically collaborate as they define the future of the new Arctic.

This project will respond to these gaps by ***building an international and interdisciplinary team to develop an actionable, convergence research agenda on Arctic civic education***. By civic education, we refer to learning experiences that provide students with the knowledge to participate effectively and ethically in the political decision-making processes that shape the social and environmental conditions of the Arctic. What broad sets of knowledge do all actors visiting or making decisions about the Arctic – from scientists to businesses, NGOs, and politicians – need to not only carry out the technical aspects of their jobs, but to also be strong partners with local communities? What knowledge do local community stakeholders need to provide leadership within those partnerships? Given the backgrounds and experiences of the research team, initial discussions of these topics will center on undergraduate education, both inside and outside of the Arctic. However, the team will also remain open to developing related research planks associated with K-12 education, lifelong education, professional training, and more, as opportunities arise. The following key research questions will guide these discussions:

1. What key elements should define Arctic civic education, such that they prepare Arctic and non-Arctic students to collectively address the complex social and environmental challenges that define the region?
2. How can Arctic education programs be designed and implemented in anti-colonial ways?
3. What opportunities and challenges exist for leveraging travel – both physical and virtual – in advancing Arctic civic education that brings Arctic and non-Arctic students together?

Funding will be used to carry out ***virtual and in-person workshops that engage a broad range of Arctic researchers and practitioners***. The purpose of these workshops will be to consolidate existing research partnerships, network with new partners, refine research questions, and finalize research design decisions for future work. A central belief of this work is that the Arctic is defined by complex and interconnected social, environmental, and built systems, and that effective civic education models must build the capacity of students to navigate and also impact these systems. This requires integration of knowledge from across the social and natural sciences, and also full engagement with the diversity of Indigenous knowledge systems that span the circumpolar North. The workshops will therefore be supported by a core team of collaborators able to speak to the varied disciplinary, geographic, and Indigenous contexts of the Arctic. This includes collaborators with expertise focused on the US, Canada, Greenland, Russia, and the Nordic region. Indigenous collaborators include scholars and practitioners that are Unangax/Aleut, Canadian Inuit, and Alaskan Iñupiaq. These collaborators also offer strong connections to international Arctic education resources including the University of the Arctic's Laera Institute for Circumpolar Education, Fulbright Canada, and the Arctic Education Alliance. This team, and their long-term work, has the potential to ***transform ongoing educational practice*** in and about the Arctic, and to create and define an ***exciting new area of convergence research***. At the end of the planning process the team will have finalized a major research agenda, with specific projects planned that can be easily transformed into grant proposals. We will plan for the development and submission of proposals to organizations such as the National Science Foundation (e.g., NNA, IGE, or IRES), Carnegie Corporation of New York, and University of Washington Global Innovation Fund immediately following the planning period.

1.1 Civic Education and the Arctic | A significant goal of this project is to build knowledge around ***how civic education can be developed to address pressing social and environmental challenges in the Arctic***. Civic, or citizenship, education can be defined as deliberative instructional programs designed to affect students' beliefs and actions as members of a political community (Sherrod et al. 2002). While connections between learning and citizenship have a very long history, civic education largely emerged as a field of

formal education within the US in the early 20th century (Galston 2007; Malone 2009). Research into the impacts of civic education expanded rapidly in the 1980s (e.g., Cook 1985), and scholars have since found that civic education has substantial effects on students across primary, secondary, and post-secondary settings (Buckland et al. 2018). Not only can civic education expand student capacity and interest in engaging in civic leadership and democratic behavior, but it also provides students with perspectives and portable skills that support scholastic excellence, competitiveness on the job market, and collaboration across diversity (Colby et al. 2003; Gurin et al. 2011; Jacoby et al. 2009; National Task Force on Civic Learning and Democratic Engagement 2012). These findings alone strongly support the potential of civic education programs for having broad impact in the Arctic, as communities and international stakeholders work to address emerging challenges and engage in sustainable development.

Recent global trends, though, have challenged the effectiveness of traditional models of civic education, and led to new educational models of even more relevance to the Arctic. First, educational researchers and practitioners are increasingly interested in *exploring convergences between civic education and environmental science education* (Buckland et al. 2018). This interest is a reflection of the belief that civic education cannot remain exclusively focused on political or social science topics if it hopes to train the next generation to address climate change and other environmental issues. The related body of work asks how civic education curriculum might be updated to give students the knowledge and skills to engage with the social and policy dimensions of science-intensive environmental issues, to produce new notions of environmental citizenship (e.g., Buckland et al. 2018; Kahn 2010; Rumore 2010; Tasquier et al. 2013). This research is relevant to the Arctic because of its unique socio-ecological context. The Arctic region is warming at a rate that is nearly twice that of the global average warming, and we are losing ice at an alarming rate (e.g., IPCC, 2013; 2019; AMAP 2017; 2019). Air and ocean warming is transforming the Arctic, including that sea ice is thinning and is less extensive, the Greenland Ice Sheet is losing mass, outlet glaciers are retreating, and permafrost is thawing. In the coming decades, there may be no summertime sea ice across the Arctic Ocean. Terrestrial and marine ecological systems are impacted by these changes as all life must adapt to the new state of the Arctic. Since Arctic ecological and social systems are coupled, these environmental changes are rapidly translating into social impacts. Melting ice is opening new shipping routes, creating new opportunities for natural resource extraction, and accelerating other processes of globalization. Local communities are experiencing effects including declines in subsistence harvesting, impacts on Indigenous culture and knowledge, disruptions to infrastructure and transportation networks, declines in health, and more (e.g., Cameron 2015; Ford et al. 2012; Gerin-Lajoie et al. 2016; Haalboom and Natcher 2012; Stern and Stevenson 2006; Stevenson 2014; Tester 2009; Watt-Cloutier 2005). The interdisciplinary nature of environmental civic education models could help students to better understand and respond to these complex and changing socio-ecological changes. Moreover, such a holistic view of civics, as relating to both the social and environmental obligations of Arctic citizens, may be more consistent with Arctic Indigenous knowledge systems that emphasize the seamless interconnections between society and the environment (Arnakak 2002, 2004; Johnson 2014; Leduc 2010, 2011; Tester and Irniq 2008). This is a rich convergence research area.

Second, in addition to a focus on the environment, accelerating processes of globalization have called into question the traditional local and national focuses of civic education. Banks (2017) argues that civic education has historically conceptualized citizenship along nationalist and assimilationist lines. Now, expanding migration patterns, reactions to populist nationalism, and broader movements toward social justice are calling into question this approach to civics. These concerns have given rise to new forms of global civic education that attempt to transcend national boundaries in order to engage in international discussions of human rights, global diversity, globalization, and environmentalism (Banks 2017; Kymlicka 2011; Saputra 2020; Yemeni et al. 2019). This work in global civic education has similarly explored how digital technologies facilitate new forms of international dialogue, activism, and politics, and how civic education might be redesigned to support student engagement with these new technologies and practices (Kahne et al. 2016). These educational tools are particularly relevant to the Arctic as it emerges as a distinct and cohesive geopolitical region on the world stage. The Arctic is defined by high levels of international complexity, in that its politics are strongly shaped by a range of internal and external actors acting across

many different scales. A global civic education perspective allows us to better imagine the Arctic as a distinct geographical, political, and environmental region, to ask what responsibilities and rights varied actors have within the emerging circumpolar community that defines that region, and to explore what educational resources those actors need to engage with those responsibilities and rights. Global civic education programs could, for example, support Arctic Indigenous peoples to take advantage of political and technological tools to network and share knowledge with one another across different Arctic regions, or to transmit their political desires to geopolitical centers of power in the south (Young 2017). At the same time, these programs could expand the capacity of non-Arctic actors who travel to the region for business or research to, in the words of Inuit scholar Pitseolak Pfeifer (2018), “become better Northerners.” (34) In this way, emerging ideas from global civic education can help us explore the role of Arctic civic education within institutions outside of the North.

Taken together, these bodies of work represent a wealth of educational resources that could be applied to support the education of the students that will go on to tackle the most challenging Arctic issues. And, in fact, several scholars have called for additional exploration of how Arctic education might be shaped to have more transformative impacts on local socio-ecological systems (e.g., Cost 2015; Kudryavtseva et al. 2020; Maatta et al. 2020; Neustroeva et al. 2014). Existing research in this area, though, remains limited at best, and empirical investigations tend to have a very localized focus (e.g., Johanson 2018; Jokela and Coutts 2018). Large gaps remain in understanding how this work might be expanded to develop educational resources that encourage and support successful circumpolar-wide collaboration between Arctic communities, and that might be used in non-Arctic institutions to create better partners for Arctic communities. In response to these gaps this project asks the question: ***What key elements should define Arctic civic education, such that they prepare students to collectively address the complex social and environmental challenges that define the region?*** The planning grant will bring together a team to review current educational efforts about the North, and then discuss how those existing efforts might be synthesized and extended to create a circumpolar-wide research agenda that promotes civic education.

1.2 Decolonizing Civic Education | Attempts to tailor civic education to Arctic contexts also requires engagements with the colonial histories of education across the region. A second core research question is therefore: ***How can Arctic education programs be designed and implemented in anti-colonial ways?*** Education has long been used as a tool of assimilation across the Arctic states. In the Canadian Arctic, for example, the residential schooling system is a tragic example of how education was intentionally designed to split up Inuit families, undermine Inuit knowledge, and assimilate Inuit into Canadian settler culture (Cost 2015). Across the Nordic Arctic boarding schools were deployed to support broader assimilationist and segregationist policies, depending on the local tactics being deployed to support colonial control of Sámi populations (Lakkala et al. 2013; Minde 2005). While current educational approaches in the Arctic may be less overtly colonial, they nevertheless continue this colonial legacy. Arctic Indigenous communities often lack the necessary resources and staffing to provide effective education, resulting in deep achievement gaps (Williamson and Vizina 2017). Curriculum, pedagogical approaches, and even teachers are often exported to the Arctic from non-Arctic and non-Indigenous contexts, meaning that teaching itself tends to be normalized to colonial educational standards (Sabzalian 2019). Educational programs, for example, often downplay or entirely exclude Indigenous knowledge and language, the role of elders in transmitting knowledge, and the importance of place-based, experiential knowledge. These dynamics are consistent with broader Indigenous critiques of Western education (e.g., Daniels 2011; Grand 2000; Martin et al. 2017; Rains and Swisher 1999; Sabzalian and Shear 2018). This work reminds us that colonial education *about* the Arctic does not only occur *within* the Arctic - southern institutions also teach about the region in ways that marginalize Indigenous peoples and knowledge.

It is imperative that this project not reproduce these colonial dynamics. This goal, however, is challenging given the specific attributes of existing environmental and civic education programs that we might draw upon. In a recent review of environmental education literature, Maina-Okori et al. (2018) found that the field largely excludes Indigenous perspectives. This reflects a broader knowledge economy, in which Indigenous knowledge is either excluded altogether or assimilated within broader Western scientific

frameworks (Murphy 2011; Young 2017). Civic education has an equally problematic history, in that it has been positioned to extend colonial tactics of Indigenous denationalization and assimilation into the classroom (Sabzalian 2019). Not only has civic education often conceptualized citizenship along nationalistic and (assimilatory) multiculturalist lines, but it has systematically omitted discussions of decolonization, Indigenous sovereignty, and treaty systems. In response, *Indigenous scholars have called for the fundamental rethinking of core concepts of civic education through Indigenous lenses* (e.g., Haynes Writer 2002, 2010). This project is positioned to contribute to that ongoing work.

Fortunately, alternative educational theories and pedagogical approaches are emerging from Arctic Indigenous communities, which this project will be able to draw upon and learn from. Some of these initiatives, such as the University of the Arctic's *Inclusion and Equity Teaching Program* or the *Yukon Native Teacher Education Program*, seek to expand the number of qualified Indigenous teachers and build the capacity of all teachers to engage in decolonizing praxis (e.g., Beaton et al. 2019; Lewthwaite and Connell 2018; Moore and Galway 2018; Tulloch and Moore 2018). Other efforts seek to develop context-specific curriculum, class resources and tools, and pedagogical approaches (e.g., Burke et al. 2019; Jokela and Coutts 2018; Keskitalo et al. 2020; Lynch et al. 2017; Maatta and Uusiautti 2015, 2019; Salusky et al. 2021; Snow and Ochalski 2018; Tuck and Yang 2011). This work has drawn upon and produced a broad range of educational theories and philosophies, including critical and anti-racist pedagogies, culture-based education, place conscious teaching, two-eyed seeing and two-worlds teaching approaches, Indigenous pedagogies, and much more. At their core these approaches focus on problematizing existing power hierarchies within educational institutions, and on producing space for Indigenous epistemologies in the classroom. Notably, though, little of this work has engaged with notions of civic education. A key aspect of this project will therefore be to survey this ongoing work on Indigenous pedagogies and place it into conversation with approaches to civic education. Our circumpolar-wide approach allows us to synthesize Indigenous approaches across the Arctic, to create a diverse yet common set of curricular resources and tools that even the most marginalized communities can draw upon to expand their educational capacity (Cost 2015; Gray and Colucci-Gray 2013; Theunissen 2018). Pfeifer (2018) also reminds us that it is not sufficient to focus only on expanding the capacity of Northern communities to engage in research and policy-making. He argues that non-Arctic institutions currently lack the capacity to teach southern students about Arctic Indigenous peoples, which makes them challenging partners for Indigenous communities and, ultimately, produces barriers to self-determination. It is therefore important that our long-term research agenda supports not only the decolonization of teaching in the Arctic, but also the decolonization of Arctic education in southern institutions.

1.3 Overcoming Distance in Arctic Education | Thus far the proposal has focused on social processes that shape teaching in and about the Arctic. It is also important to consider how the unique physical and built environment of the Arctic converge to shape educational possibilities. Much of the Arctic is characterized by low population density, with small communities spread across vast distances. This produces cost and market disincentives to providing these communities with services, including education. It is difficult and costly to staff and support schools across many, small, rural communities (Billmeyer et al. 2020). Furthermore, the harsh environment makes it hard to establish transportation and telecommunications infrastructure that might help students to take advantage of more extensive regional education resources (Molnar 2014; Zerehi 2016). These conditions not only make it difficult for Arctic communities to provide their students with sufficient education, but also make it difficult for students from the south to learn directly from northerners. To overcome these challenging conditions, educators have begun exploring two options for encouraging greater educational opportunities in the Arctic – study abroad and exchange programs that facilitate physical travel and the development of online programs to encourage remote learning. Both options present important opportunities for increasing educational interactions both between different regions of the Arctic and also between Arctic and non-Arctic students. Facilitating these interactions is a core component of developing circumpolar-wide civic education, and therefore a key goal of this project. The final research question is therefore: *What opportunities and challenges exist for leveraging travel - both physical and virtual - in advancing Arctic civic education?*

Technology advances have slowly improved the digital connectivity of the Arctic, making remote learning more of a possibility. Despite the potential of remote learning for ensuring equal access to education, though, Billmayer et al. (2020) note that research on the subject remains quite sparse across the Arctic. Advances in remote learning necessarily require convergence research, since they rely both on improvements to the digital, built environment of the Arctic and also better understanding of the social and teaching practices that shape online learning. From a built environment perspective, the Arctic Internet connectivity continues to suffer shortcomings including poor reliability, sparse coverage, low performance, and high costs (Arctic Council 2016; Molnar 2014; Reichert 2020; Spinu 2016; Young 2017; Zerehi 2016). New telecommunications infrastructure projects, ranging from the installation of new fiber lines to the deployment of low earth orbit satellites, are slowly changing this technology landscape. However, without increased capacity, it is unlikely that local communities will be able to fully take advantage of these new opportunities. PI Young's current NSF-funded research *explores socio-technical solutions to digital divides in the Arctic, including the development of community-powered telecommunication systems*. Findings from that research can help to shape this project's discussions of how to better leverage new telecommunication options in support of Arctic education.

Improved infrastructure is a necessary condition for effective remote education, but it is not a sufficient condition. *Educators also need to redesign curriculum and teaching approaches so that they are customized to virtual learning spaces*. Distance teaching has been thrust into the spotlight over the past year, as school systems across the globe have grappled with the effects of COVID-19. Educators have grappled with questions about how online teaching produces opportunities and inequalities, how to build the digital literacy and capacity of teachers and students, how to sustain student interest in online settings, and much more. This has produced new knowledge and tools that this project can leverage in thinking about Arctic civic education. And, in fact, this year the UW leveraged its shift to online teaching to expand its Arctic minor course offerings to students in the North, through its relationship with the UArctic. At the same time, though, it is important to adapt distance learning approaches to the context of the Arctic. PI Young's prior research demonstrates that there are unique challenges associated with leveraging Internet technologies to support Arctic Indigenous knowledge systems (e.g., Young 2017, 2019, 2020). While Internet platforms can support the preservation, revitalization, and exchange of Indigenous knowledge and culture, connectivity can also expose Indigenous communities to foreign language, media, and knowledge to produce subtle forms of epistemic and cultural colonialism. Careful consideration is therefore needed when choosing to invite new technologies into Indigenous communities, to ensure that the benefits outweigh the risks. A key task of this planning grant will therefore be to review existing work on effective distance teaching practices in the Arctic (e.g., Billmayer et al. 2020; Hilli and Akerfeldt 2020; Keskitalo et al. 2020; Siljebo 2020), to identify key opportunities and challenges in the field, and to formulate future research projects around those areas. This will allow us to launch future research to produce best standards for deploying and leveraging telecommunications infrastructure to support Arctic civic education that brings Arctic and non-Arctic students together in effective dialogue.

Of course, distance learning is not the only way to create opportunities for bringing Arctic and non-Arctic students together. The project will also explore the potential of study abroad and exchange programs for supporting Arctic civic education. Possible models include the University of the Arctic's *north2north* program and the University of Washington's Arctic Task Force or Exploration Seminar models. The Arctic Task Force, for example, is a capstone, policy-writing course co-taught by co-PIs Fabbi and Koutnik for UW International Studies students. The Task Force includes a one-week research trip to Ottawa where students meet with Inuit organizations, federal departments, and scholars. The Task Force has included Inuit students who join UW students in Ottawa and travel to UW to participate in an Expert Evaluation process. In this way the course effectively challenges students to integrate competing epistemologies to solve major issues facing the region. Other models bring together distance and study abroad formats. The Trent University-Yukon University Model Arctic Council, directed by Collaborator Specca, is a simulation of the real-world Arctic Council. It is one of the only Model Arctic Councils in the world designed primarily for undergraduate students. It uses both in-person and online spaces to bring students together from around the circumpolar world, to represent both nation states and Indigenous Permanent Participants. It thereby

offers a hybrid teaching model that also brings together Western and Indigenous thinking within educational contexts. This project will examine these, and other, models of study abroad to determine what opportunities they provide for expanding access to Arctic civic education.

2. Project Agenda

We request funding to hold a series of workshops that will explore the themes and questions described above, with the goal of producing and refining an actionable research agenda on Arctic civic education. The workshops will be attended by researchers and practitioners with expertise in education, and who are able to represent the varied disciplinary, geographic, and Indigenous contexts of the Arctic. We have identified a core team of ten collaborators who will participate in these workshops. However, we also expect to identify additional participants throughout the course of the project, and have allocated budget to enable our group of participants to expand over time. The participation of students is also central to this project. In-depth involvement of students provides them an invaluable educational opportunity about Arctic education and operationalizing international research. Their perspective will also be invaluable in helping us to understand their current learning experiences, so that this project can improve those experiences. Student participants will be selected from the UW Arctic minor or from graduate students already working on aspects of Arctic research.

		Year 1				Year 2			
		AUT	WIN	SPR	SUM	AUT	WIN	SPR	SUM
Workshop 1	Planning and Logistics								
	Hold Workshop								
Workshop 2	Planning and Logistics								
	Hold Workshop								
Workshop 3	Planning and Logistics								
	Hold Workshop								
Workshop 4	Planning and Logistics								
	Hold Workshop								
Workshop 5	Planning and Logistics								
	Hold Workshop								
Developing Next Steps	Workshop Analysis								
	Publication								

Figure 1: Timeline of project activities

The project will hold five workshops over the course of two years (Figure 1). In Year 1, we will hold three virtual workshops. We have chosen a virtual format to ensure that the project is not disrupted by any long-term consequences of the COVID-19 pandemic. These meetings will be scheduled to account for the varying time zones of participants. Each will be scheduled for two half-days, which we believe will give us sufficient time for substantive discussion while accounting for constraints associated with the lower capacity of some of our community-based and Indigenous collaborators; difficulties associated with scheduling across time zones; and fatigue involved in teleconference sessions. Pre- and post-workshop communication (see the Management and Integration Plan) will be utilized to ensure that we maximize workshop time. Each Year 1 workshop will have a separate theme, based around project research questions: 1) *Designing Arctic Education*; 2) *Decolonizing Civic Education*; and 3) *Overcoming Distance*. Workshops will be moderated by PI Young, who has experience moderating large, international workshops and has received training and support for technology-based moderation from the UW iSchool Learning Technologies Team. After each workshop, PIs will analyze workshop data (i.e., transcripts of workshop discussion) using content analysis, and they will create a short workshop report summarizing key themes to be presented at the following workshop. In Year 2, we will hold two in-person workshops, although we will also be prepared to shift to a virtual format if the effects of the pandemic last longer than expected. We believe that the face-to-face interactions will better strengthen relationships amongst the research team, which is particularly important given that this project involves research across cultural and national boundaries. We have planned one workshop in an Arctic location and one workshop in a non-Arctic

location, to build our team's capacity to work in and across these different geographies. The first workshop of Year 2 will be hosted by the University of Lapland-Rovaniemi, and will focus on synthesizing themes across the prior workshops. We expect this to be the most intellectually rich workshop, resulting in specific research questions and methods that the group would like to collaboratively pursue beyond the planning grant. The final workshop (second in-person workshop of Year 2) will then focus on operationalizing that research agenda, by refining specific project ideas that can be easily transformed into grant applications at the end of the planning period. The final workshop will also be used to plan other deliverables from the project, including a final project report, a special issue of the *Arctic and International Relations* series published by UW, and manuscripts for submission to scholarly journals. This final meeting will take place at the UW's Friday Harbor Laboratory on San Juan Island, Washington. The proceedings of these in-person workshops will once again be recorded, and our team will perform content analysis on transcripts to identify key themes. Findings will be written up in short workshop reports that will be shared back with the full project team at the following workshop and posted to a project website. This process will ensure strong continuity of group ideas and progress across the five workshops.

2.1 Workshop 1: Designing Arctic Civic Education | The first workshop will take place in a virtual format over the course of two half-day sessions in February 2022. Its purpose will be to introduce collaborators to one another and to begin initial conversations around key elements and design of Arctic civic education. The PIs will begin the meeting by sharing their overall vision for the planning process, and will then facilitate icebreaker activities to begin bringing collaborators together as a team. Small and large group discussions will then focus on: 1) reviewing existing work in the area of Arctic education, to identify potential synergies and resources; 2) exploring what might be meant by the concept of 'Arctic citizenship', including what rights and responsibilities might be associated with the term; 3) defining what general topics and elements should be covered within Arctic civic education curricula, and what methods might be used to teach about these topics; 4) examining how existing civic education and environmental science education resources might be combined to support this teaching; and 5) identifying what additional participants might provide needed expertise for further exploring these topics in future workshops. Given the initial make-up of the research team, we expect these discussions to focus primarily on opportunities for higher education institutions to support Arctic civic education, but discussions may also explore K-12 education, lifelong learning, or professional training. We can imagine, for example, that collective interest in K-12 education may develop over the course of the workshops, given its importance for Arctic students and the expertise of Collaborator Lane. Participants will also discuss how to shape their long-term research agenda in relation to Arctic and non-Arctic students. A key goal of the team is to produce resources relevant for both Arctic and non-Arctic students, to facilitate thinking about the Arctic as a unique region that often encourages international forms of collaboration. The group will discuss whether this goal would best be accomplished through the formation of a single educational model that serves both student populations, or whether this planning process should actually result in multiple research agendas tailored to these different populations. The outcome of this workshop will be the identification of refined themes and questions for exploring key elements of Arctic civic education.

2.2 Workshop 2: Decolonizing Civic Education / The second workshop will take place in a virtual format over the course of two half-day sessions in May 2022. Its purpose will be to begin initial conversations around the inclusion of Arctic Indigenous perspectives and knowledge within Arctic civic education. The PIs will begin the meeting by sharing a summary of the themes discussed at the last meeting, and solicit feedback to determine whether participants have had further thinking on any of these themes since Workshop 1. They will once again also facilitate icebreaker sessions, to continue working on team-building. From there, discussions will focus on: 1) identifying and reviewing existing classes and educational programs that offer good models of anti-colonial Arctic education; 2) exploring the colonial assumptions built into existing civic education models; 3) identifying critical and Indigenous educational frameworks for theorizing future work; 4) debating the appropriate long-term focus of the research agenda, in terms of balancing the needs of building the educational capacity of Arctic communities versus building the capacity

of southern Arctic researchers to be better partners; and 5) identifying what additional participants might provide needed expertise for further exploring these topics in future workshops. The outcome of this workshop will be the identification of refined themes and questions for ensuring that Arctic civic education can be designed and implemented in anti-colonial ways.

2.3 Workshop 3: Overcoming Distance | The third workshop will take place in a virtual format over the course of two half-day sessions in July 2022. The purpose of this workshop will be to begin initial conversations around the use of study abroad programs, exchange programs, and remote learning to support Arctic civic education programs. Once again, the workshop will begin with reflection on the themes that came out of the prior workshop and team-building activities. Small and large group discussions will then focus on: 1) reviewing existing distance education, exchange, and study abroad programs to identify potential synergies, best practices, and models; 2) identifying key opportunities and challenges associated with these educational formats; and 3) identifying what additional participants might provide needed expertise for further exploring these topics in future workshops. The outcome of this workshop will be the identification of refined themes and questions for supporting Arctic civic education through virtual learning and study abroad formats.

2.4 Workshop 4: Synthesis | The fourth workshop will take place over three days in October 2022. It will be held at a conference center of the University of Lapland-Rovaniemi in northern Finland. This location was selected because the University of Lapland also houses the International Secretariat for the University of the Arctic, which will allow us to more strongly connect the project with their circumpolar-wide educational infrastructure. Each day at the workshop will include a combination of small and group discussions of project matter, as well as team-building events that allow collaborators to connect with one another, UArctic colleagues, and the local land and community. Day 1 of the workshop will focus on reviewing themes that emerged from Year 1 workshops, advancing conversations about those themes, and exploring synergies across these different conversations. Day 2 of the workshop will then focus on transforming those conversations into a more concrete research agenda. This will include the refinement of core research questions and hypotheses, the selection of educational theories and philosophies for framing those questions, the design of research methodologies for answering these questions, and the initial identification of specific case studies and partners for carrying out future research. Day 3 will then ask participants to brainstorm and discuss potential future funding opportunities and sketch out initial next steps to explore these opportunities. Participants will leave this meeting with action items to prepare for the final workshop, including thinking through specific project ideas, venues for future grant proposals, and possible manuscript topics for journal articles emerging from the planning grant.

2.5 Workshop 5: Building out the Research Agenda | The fifth workshop will take place over three days in April 2023. It will be held at the University of Washington's Friday Harbor Laboratories, a scholarly workshop location on San Juan Island, Washington. This location was selected to signal the commitment of the UW to long-term partnership with all of the collaborators involved in this planning process. By holding the event locally, the project can include additional faculty, researchers, and senior administrators from the UW, to build our institutional capacity to support this research agenda over the long term. The PIs will once again kick this meeting off by sharing a summary of the work from the prior workshop, and they will then ask participants to share any updates they have on identifying partners, research sites, case studies, and funding sources for future work. The participants will then break into smaller groups based on mutual interests, and will spend the majority of the workshop engaging in collaborative research design and refinement for specific projects. The PIs will also offer basic training around the logistics of grant writing, targeted at Indigenous practitioners and early career scholars involved in the project, and providing resources that collaborators can share through their networks. The goal of these activities is to build the capacity of these collaborators to lead future efforts within the long-term research agenda. We will also discuss potential grant opportunities that the group wants to pursue after the end of the planning grant. Per NNA requirements, though, grant funding will not be used for actual proposal development or preparation.

The final day of the workshop will be spent discussing other opportunities related to the project, including the production of a special issue of the *Arctic and International Relations* series published by University of Washington, the collective writing of journal manuscripts, and possibilities for adjusting existing classes (e.g., UW Arctic minor or UArctic classes) based on the workshops.

2.6 Analysis of Workshop Discussions | Workshop discussions will be audio recorded and transcribed using UW's paid Zoom platform. The PIs have had success using Zoom's automated transcription service in the past, combined with spot checking by a graduate student. After each workshop, our team will perform an inductive analysis of transcripts and researcher notes, using a grounded theory approach (Clarke 2003; Glaser 1978; Kitchin and Tate 2013). Young will lead this process, with support from a graduate research assistant. They will perform a first stage of analysis, looking for common trends across the conversations. They will analyze transcripts concurrently, with regular check-ins to triangulate coding schema (Baxter and Eyles 1997). In a second stage they will perform axial coding to relate codes into a reduced set of themes (Strauss and Corbin 1990). Results will be discussed with the wider UW team, and then written into a short report. We expect this analysis to reveal common research questions, project ideas, case studies, and more.

2.7 Project Outputs | The end of the planning period will be used to perform additional analysis and writing associated with project outputs. PIs, collaborators and other contributors will provide short (3-5 page) policy papers on Arctic civic education for Issue #8 of *Arctic and International Relations (AIRS)*. This will provide preliminary thinking, literature reviews and policy considerations. *AIRS* is the outcome of a partnership between the Canadian Studies Center and the International Policy Institute in the Jackson School of International Studies. The series is dedicated to translating scholarship into policy options to enhance understanding of the Arctic as a unique region in international affairs including the important role of Arctic Indigenous Peoples. Findings will also be developed into papers for peer reviewed journals. Our goal is to have each PI lead the development of one manuscript for publication, with support from the graduate research assistant and any interested collaborators from the workshops. Possible venues include *Education in the North, Ecology and Society, New Area Studies, and World Development*. Finally, throughout the project workshop findings will be captured in short reports which will be regularly shared through a project website developed and maintained by the UW Jackson School. At least two interviews of experts in the field will be conducted and published for the World Policy Institute's *Arctic in Context* blog, to provide enhanced visibility for the issue of Arctic civic education to a wide audience.

3. Team Members, Partners, and Project Management

3.1 Team Members | This project will be managed as a collaboration between Young, Fabbi, and Koutnik, who will be responsible for designing and implementing all grant activities. The PIs have collaborated extensively as part of the UW's Arctic Initiative Leadership Team, and collectively have Arctic research and teaching expertise that span the social sciences, natural sciences, and humanities. They will be joined by two graduate students, who will provide logistics and research support in planning and implementing the workshops. The grant will also support UW student participation in project workshops.

Jason Young is a Senior Research Scientist with the Technology & Social Change (TASCHA) Group and the inaugural Research Fellow at the Center for an Informed Public (CIP) within the UW Information School. He has over a decade of experience on the use of digital technologies by Indigenous peoples to engage in environmental politics and cultural regeneration. Working in Nunavut, Canada, his prior NSF-funded research explored how Inuit use technology to increase inclusion of *Inuit Qaujimaningit*, or Inuit knowledge, in environmental decision-making processes. While carrying out that project, Young was also a five-time recipient of the Department of Education's Foreign Language and Area Studies (FLAS) Fellowship to study Inuit language and culture. More recently, he has been funded by the NSF NNA Program to conduct research into the potential of community-owned telecommunications systems to support the goals of Inuvialuit communities. This past and ongoing work is directly applicable to this

project, in speaking both to the knowledge politics intrinsic to education in the Arctic and to the digital divides that shape educational solutions. Young designed and teaches the UW's introductory course to the Arctic minor, *Indigenous Diplomacies and International Relations in the Arctic*, which is also open to UArctic students. He leads the UW Arctic scholarship-to-policy initiative, which encourages students to translate knowledge from coursework into actionable policy proposals. Finally, for the past seven years Young has been the head coach of a policy debate team at Garfield High School, an urban public school in Seattle. He collaborates with high school educators to teach students how to debate about current events and public policy. This provides him with additional experience in working with youth on civic education.

Nadine Fabbi is the Managing Director of the Canadian Studies Center/Arctic and International Relations in the Henry M. Jackson School of International Studies at the UW and co-lead, with Koutnik, of the Arctic Initiative, part of the International Policy Institute in the Jackson School. Her doctorate is in Educational Leadership and Policy in the Faculty of Educational Studies from the University of British Columbia. Fabbi has played a lead role in building an Arctic initiative at the UW. She designed and teaches *Transnational Task Force on the Arctic*, a capstone for majors in International Studies that takes students to Ottawa for an intensive one-week research trip; introduced the teaching of the Inuit language to the U.S. Department of Education's FLAS fellowships program; spearheaded the development of the Arctic Studies minor at the UW, the first such minor in the contiguous states, as well as the UW's Fulbright Canada Visiting Chair in Arctic Studies; developed and oversaw the Arctic Fellows Program supported by a Carnegie Corporation of New York grant (2016-20); and, founded *Arctic and International Relations*, a journal dedicated to policy options and enhancing the voices of Arctic peoples. Fabbi is now bringing the World Policy Institute's *Arctic in Context* blog to the UW. Fabbi's interests include how we understand the Arctic as a unique region in the field of area and international studies and what this means in higher education; how Arctic Indigenous internationalism is influencing international relations and regimes such as the Arctic Council; and how policy and activism in Arctic policies are reshaping how we think about international relations and social justice. Fabbi serves on the editorial board of the *American Review of Canadian Studies* and on the Academic Leadership Team for UArctic.

Michelle Koutnik is a Research Associate Professor in the Department of Earth and Space Sciences in the College of the Environment at the UW. She is a glaciologist with research programs that span studying the dynamics of glacier change, Greenland and Antarctic ice-sheet history, the relationship between climate and ice-sheet evolution, as well as the history of ice on Mars. Her research includes numerical modeling and field work in Greenland, Antarctica, Iceland, and on mountain glaciers to collect geophysical data and ice cores; she has conducted polar field work since 2004 and has worked as part of multiple international teams. Engaging across disciplines is central to her research, and to her teaching. She is the co-lead, with Fabbi, of the International Policy Institute Arctic Initiative at UW. Most relevant to this proposal is her drive to teach interdisciplinary courses that bring together the science and the societal impact of environmental change (Koutnik et al., 2020), and bring together students from across the UW campus. She developed and taught an introductory course on sea-level change, she co-taught a UW 'Task Force' course (with Fabbi) on Arctic sea ice and policy, and she taught a Calderwood seminar in public writing on ice and climate change (2021 and planned for 2022). In addition, Koutnik created and leads an Exploration Seminar course on ice and climate change for 15 undergraduate students that includes 2.5 weeks of travel in Greenland and 1.5 weeks in Denmark (2008, 2018, and planned for 2022-2024), engaging with individuals and institutions in community, education, research, and government sectors.

3.2 Collaborators | While the core researchers will be responsible for organizing all grant activities, the greatest strength of this project is its inclusion of diverse collaborators selected from the based on their professional standings and existing connection to the PIs. This includes natural and social scientists ready to support convergence aspects of the project; experts from the North American, Nordic, and Russian Arctic to ensure representation from the major regions of the circumpolar North; and Indigenous leaders, practitioners, and scholars representing the Unangax (Aleut), Inuit, and Iñupiaq.

Victoria Qutuuq Buschman (Iñupiaq) is a conservation biologist originally from northern Alaska now residing permanently in Nuuk, Greenland. Her role in research is to challenge the colonial

legacy of conservation and instead promote partnerships with Indigenous communities, knowledge, and governance to develop ethically conscious, culturally-relevant, and fully knowledge-based conservation efforts in the Arctic. In part, she serves as the Indigenous Knowledge and Conservation Advisor for the Arctic Education Alliance, an educational partnership between the U.S. and Greenland that focuses on developing curriculum and programming in natural resource management, tourism, and hospitality. She also serves as a consultant and by-request representative for the Inuit Circumpolar Council, where she works on the project "Ethical and Equitable Engagement Synthesis Report: A collection of Inuit rules, guidelines, protocols, and values for the engagement of Inuit Communities and Indigenous Knowledge from Across Inuit Nunaat."

Irina Dranaeva is the head of the Department of International and Interregional Cooperation at the Arctic State Agrotechnological University, Yakutsk, Russia. She has worked for over a decade at the Department of Northern Studies, North-East Federal University. She graduated from the Yakut State University in the department of English Language, and finished Bachelor of Circumpolar Studies courses and advanced emphasis courses on Northern Politics (University of Arctic, 2004-2008). In 2007, Dranaeva was awarded a scholarship for the mobile exchange program *north2north* (University of the Arctic) and studied at Finnmark University College (Alta, Norway). Dranaeva has an education in Economy and Finance, 2009 Yakutsk State University. Since 2014 she has coordinated the Bachelor of Northern Studies UiT program. In 2020 she organized the international seminar "Arctic Food Security" at ASAU. Since 2010 she has organized the summer and winter schools for international students.

Dr. Michael Hawes is a political science professor and academic administrator whose research focuses on Canadian foreign policy, public diplomacy, and international education. He is President and Chief Executive Officer at the Foundation for Educational Exchange between Canada and the US (Fulbright Canada). His most recent books include *Canada's Public Diplomacy* (2020) and *Canadian Foreign Policy in a Unipolar World* (2018). Hawes is co-founder of the Fulbright Arctic Initiative, which supports research and scholarship on health and human wellness, energy and security, and climate change in the Arctic. He is also founder of Honouring Nations Canada, a pan-Canadian research initiative designed to support scholarship on Indigenous issues and support traditional ways of knowing. Hawes sits on a number of editorial boards of academic journals. He also works with the Government of Canada and the Canadian Foreign Service Institute to train diplomats.

Jodie Lane (Inuit) is the Director of Education with the Nunatsiavut Government Department of Education & Economic Development. She has spent her career in the field of education and has worked with students to prepare for post-secondary studies and pursue academic goals. She sits on national committees on education including the National Inuit Committee on Education and helped develop the National Strategy on Inuit Education (2011). Her current interests involve infusing more Inuit language and culture into the K-12 curriculum and increasing the number of Inuit teachers in Nunatsiavut (the Inuit region in Newfoundland and Labrador). She was the Nunatsiavut Government lead on the development of the Labrador Inuit Society and Culture course and the creation of the *InukKutivut IlukKusivut Our People, Our Culture* textbook and teacher resource, with plans to expand course and curriculum development into other subject areas. Lane has a master's in Education from Mount Saint Vincent University.

Dr. Liza Mack (Unangax/Aleut) serves as the Executive Director of the Aleut International Association, one of the six Permanent Participants to the Arctic Council. She is Unangax, born and raised in the Aleutians and has over 20 years experience working in and around Native organizations and communities. Mack received her Ph.D. in Indigenous Studies from the University of Alaska Fairbanks (UAF) where her research focused on political ecology, natural resource management, knowledge transfer and engagement of Native communities in the regulatory process and how that may or may not affect the Native Cultures of Alaska. She has an AA in Liberal Arts from UAS Sitka, a BA and MS in Anthropology from Idaho State University and has been an adjunct professor at UAF, teaching Native Cultures of Alaska and Intro to Unangam Tunuu. She focuses on cultural revitalization and community involvement in the regulatory process. She possesses knowledge of Alaska Native Cultures and is familiar with the local,

regional, state, federal and international board processes that take place in Alaska and the Circumpolar North. She values the importance of engaging Native people in these settings.

Dr. Andrew Nestingen is professor of Scandinavian Studies and Department Chair in Scandinavian Studies at the UW. He is the author or editor of many articles and five books, including most recently *Nordic Noir, Adaptation, Appropriation* (Palgrave-MacMillan, 2020), co-edited with Linda Badley and Jaakko Seppälä. His research and teaching include Sámi studies. He has written and taught about Sámi cinema and literature. The Department of Scandinavian studies under his leadership is seeking to develop Sámi studies as a part of its research and teaching, and connected to Arctic studies at the UW.

Dr. Heather Nicol is the Director of the School for the Study of Canada at Trent University. Her research focuses on dynamics that structure the political geography of the circumpolar North, including cross-border relations and geopolitical narratives. She leads the UArctic circumpolar studies collaboration in North America and is a co-director of the Laera Institute for Circumpolar Studies. She is also co-ordinator of the Trent Online Circumpolar Studies Diploma; and is actively involved with UArctic educational and research initiatives. Nicol has completed multi-year studies on the Arctic and UN Sustainable Development Goals (in partnership with the University of Saskatchewan and Polar Research and Policy Initiative); led the Arctic component of the Borders in Globalization research program (with University of Victoria); has been a Fulbright Fellow in the University of Washington Arctic Studies program working specifically on the Arctic Council and the author of numerous books and articles.

Dr. Timothy J. Pasch is Associate Professor of Communication at The University of North Dakota and principal investigator for NSF Arctic Social Sciences initiative (Grant 1758781) focused on digitally enhanced cultural entrepreneurship and small business development in remote Arctic communities. Pasch is a dual US/Canadian citizen fluent in French and Japanese with some Inuktitut language ability. Pasch has received research support from the US NSF, US Department of Education Title VI (FLAS), and from the Government of Canada's Embassy and Program Support Grants. He lived with an Inuit family in Inukjuak, Nunavik (Arctic Québec) during his doctoral dissertation research and has worked in Arviat, in the Kivalliq Region of Nunavut, and in the Tanana Region of Central Alaska on multiple community-based digital research initiatives. Pasch is active in the Arctic Social Science community through collaborations with the NSF Arctic Data Center and IARPC. His currently funded research addresses cyberinfrastructural and curricular barriers for enhancing sustainable, culturally aligned economic development education in remote regions of Nunavut and Alaska.

Dr. Anthony Speca, Managing Principal of Polar Aspect, is an educator who designs and runs the world's only Model Arctic Council (MAC) programmes for secondary-school pupils. He also designs and runs in-person and online MACs for university students, particularly undergraduates. Speca combines this innovative educational work with appointments to Trent University in Canada, where he is Adjunct Professor of Canadian Studies, and to Norwich School in the UK, where he teaches Philosophy, Politics, Economics and Geography. He also serves as Managing Director of the Læra Institute for Circumpolar Education, a part of the international University of the Arctic. Prior to becoming an educator, Anthony was a senior policy official with the Government of Nunavut in the Canadian Arctic.

Dr. Gary N. Wilson is a Professor in the Department of Political Science and the Coordinator of the Northern Studies Program at the University of Northern British Columbia (UNBC) in Canada. He is also the Co-Director of the University of the Arctic's Laera Institute for Circumpolar Education and the President of the Association of Canadian Universities for Northern Studies (ACUNS). He has been involved in Arctic education since the early 2000s, as an instructor, curriculum developer and administrator. He also co-developed the Master's of International Northern Development (MIND) program, a joint program of study between UNBC and Nord University in Bodø, Norway. His research and teaching focus on politics and governance in the circumpolar north.

The proposal will provide participant support to these collaborators so that they can attend the in-person meetings in Year 2 of the project. This includes budgetary support for international collaborators. We believe that this international funding is vital to the success of the project. First, the project frames Arctic civic education as a set of curriculum that provides insights into the Arctic as a global, circumpolar region. This requires knowledge about all parts of the Arctic which, in turn, requires engagement from experts from

all parts of the Arctic. Second, to have the broadest impact possible, we must ensure that project results are communicated globally. Collaborators include key members of the UArctic Laera Institute for Circumpolar Education, which is one of the strongest educational bodies associated with the Arctic. Their inclusion not only allows us to benefit from their immense knowledge, but also gives us access to the UArctic's global network of educators for disseminating project results.

Finally, we hope that workshops will spur additional networking and present opportunities for new collaborations. We have built funding into the project to bring additional collaborators into the workshops as we proceed. We are particularly interested in including additional Indigenous collaborators. In that vein we have continued sharing this proposal through our networks, including through its recent presentation to Arctic Council Permanent Participants via the Indigenous Peoples's Secretariat.

3.3 Project Management | The project's management plan will coordinate efforts between the PIs, students, and collaborators. The PIs will be in constant ad hoc communication with one another. Young will be the direct supervisor of the iSchool graduate student working on the grant, while Fabbi will be the supervisor of the Jackson School of International Studies graduate student. Koutnik and Fabbi will jointly oversee the undergraduate student in charge of creating and maintaining the project website. In these capacities they will hold a regularly scheduled, weekly meeting with the students during which they will discuss research progress, review ongoing work, and set future goals. Fabbi will be the primary contact between the core research team and collaborators, although all three PIs will support this work. They will make themselves available through phone and email, and will establish a listserv and WhatsApp group for sharing research updates. The PIs will also host a quarterly teleconference for the participants, where they will discuss progress, share learnings, and set future project goals. Given a core goal is the development of educational models that will be widely adopted, another critical component is ongoing communication of results. Project amplification by way of digital, print, and traditional marketing has the potential to reach target audiences with specific messaging - to learn about the project, explore outputs, collaborate, and more. The team will regularly create project content to share through existing marketing and distribution channels. A central component of this communications strategy will be development of a project website. This site will be nested within the existing UW Arctic Studies website, in order to make it highly accessible and visible.

4. Significance

4.1 Intellectual Merit | This project is poised to expand fundamental research across a range of educational domains. Our research will connect work on civic education with environmental science education, to theorize new learning models that tie notions of citizenship to understandings of the science of environmental change. The planning period will be used to conceptualize projects that advance the design and evaluation of these educational approaches. This work will also contribute to explorations of how education intersects with processes of colonialism, and present opportunities to develop anti-colonial teaching approaches. Finally, we plan fundamental research into best practices and evaluation approaches for creating distance learning programs that bring students together across international borders.

4.2 Broader Impacts | This research has the potential to broadly transform how Arctic Studies is taught within North America and beyond. As an educational discipline, Arctic Studies is a small but growing field. Presently there are just two Arctic or Northern Studies majors/minors in the United States (University of Alaska-Fairbanks and UW), and fewer than a dozen across the rest of the world. However, the field is exploding as evidenced by the growing geopolitical attention given the region, the launch of the Fulbright Arctic Initiative by the State Department in 2015, and the growing salience of the University of the Arctic. Within the Arctic Council, Finland's 2017-19 chairmanship was the first to launch an educational priority. New Arctic Studies majors, minors, and graduate programs will only increase in coming years. Yet, future programs will have little to draw upon when it comes to effective models for program design and delivery. The closest to a mode is offered through the University of the Arctic (UArctic). While the UArctic has

provided a Bachelor's Degree in Circumpolar Studies since its inception, its primary role has been to provide access to existing education to northerners via its network of institutions (Poelzer 2007; Hessein et al. 2013). This sharing of resources, while tremendously valuable, only allows for a modest shaping of the curriculum by the UArctic. In addition, the mandate of the UArctic is education “in the North, for the North, and by the North,” whereas this project looks to broaden that vision to bring together north-south epistemologies and students to explore civic education *about* the North. Our collaboration with the UArctic's Laera Institute for Circumpolar Education (Nicol, Specca, and Wilson) will not only grant us access to their broad resources and contacts in Arctic education, but will also ensure that we can share project outcomes across their institutional networks to have broad educational impact. Our communications efforts, including development of a project website and publications, will also ensure broad visibility. This project therefore has the potential to fundamentally define how Arctic civic education is taught globally, thereby shaping the relationship that countless students have to the region. More immediately, grant funding will be used to bring together students, faculty and researchers, and practitioners to develop new understandings of Arctic education. All team members, and especially the students, will benefit from cross-cultural exposure to international, collaborative research. This work will build relationships and the capacity of this team to carry out future Arctic research. The UW team plans to directly incorporate findings into their Arctic minor curriculum to immediately benefit the UW students that they reach most directly.

5. Results from Previous NSF Support

5.1 Jason Young was supported as a Co-PI on the NSF grant *DDRI: Use of Digital Technologies by Indigenous Peoples for Communication Within and Beyond Communities* (GSS: 1535142 | Aug 2015 - July 2017). This funded systematic examination of how Inuit leverage the Internet to expand their environmental resilience. **Intellectual Merit:** It offered theorizations of the role of ICTs in supporting Indigenous resilience. It revealed that connectivity has the potential both to increase Indigenous visibility and erode cultural resources. **Broader Impact:** The project resulted in the design of two courses, award of Young's doctoral degree, and conference presentations and publications (Young 2016, 2017, 2019a, 2019b). Young is also a co-PI on *Exploring The Benefits and Challenges of Community-Powered Connectivity In The New Arctic* (NNA: 2022246 | Sept 2020 - Aug 2022). This ongoing grant explores how Arctic telecommunications infrastructure can be designed to support communities in responding to rapidly changing environmental and social conditions. **Intellectual Merit:** This project will develop new theorizations of the role of community-owned networks in supporting Arctic Indigenous communities, thereby contributing to ongoing discussions on digital divides, ICTD, and digital colonialism. **Broader Impacts:** This project will address inequalities in technology access by producing a socio-technical model that rural Arctic communities can use to deploy their own infrastructure.

5.2 Nadine Fabbi has no prior NSF funding.

5.3 Michelle Koutnik was previously supported as PI on the NSF Arctic Natural Sciences: *Unraveling the history of the Greenland Ice Sheet from its internal radiostratigraphy* (1503907; 8/31/2015-8/30/2019). **Intellectual Merit:** Internal reflections imaged by radars across large portions of the Greenland Ice Sheet are an excellent spatially resolved record of annual to multi-millennial change in Greenland. In this project we used the radiostratigraphy archive for Greenland to constrain ice-flow models of ice-sheet evolution. Improved reconstructions of the last deglaciation and Holocene behavior in Greenland are important toward understanding the modern ice-sheet state and for making projections. **Broader Impacts:** This grant supported two graduate students and a postdoc (now in a faculty position), and produced 3 papers and 12 conference abstracts. Broadening from ice and climate science to education, Koutnik led a 4-week Exploration Seminar for 15 undergraduate students to Greenland. In this course students met with scientists, politicians, educators, community activists, artists, and citizens of Greenland and Denmark to learn from and share perspectives on environmental change and life in the Arctic.

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