

Research Processes and Indigenous Communities in Western Alaska: Workshop Report

Kawerak, Inc. Social Science Program

*Report to the National Science Foundation
for Award 1624041*

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2017



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Acknowledgments

The authors would like to acknowledge the workshop participants, guests, and observers as well as the funders and institutional support for this workshop. The workshop participants, guests, and observers gave generously of their time and their minds, and their contributions are greatly appreciated. Participants included Toby Anungazuk Jr. (Chinik Eskimo Community), Charles Degnan (Native Village of Unalakleet), John Goodwin (Kotzebue), Qaiyaan Harcharek (North Slope Borough), Cyrus Harris (Manilaaq Association), Jerry Ivanoff (Native Village of Unalakleet), Robert Keith (Native Village of Elim), Elmer Seetot Jr. (Brevig Mission Traditional Council), and Cassandra Ahkvaluk (Native Village of Diomede). (Two individuals from the Yukon-Kuskokwim Delta region were also invited, but were unable to attend due to work and subsistence commitments.) Holly Smith from the National Science Foundation Division of Ocean Sciences was a special guest at the workshop, and Austin Ahmasuk (Kawerak, Inc. Marine Advocate), Carolina Behe (Inuit Circumpolar Council Alaska Indigenous Knowledge/Science Advisor), Mary David (Kawerak, Inc. Executive Vice President), Lisa Ellanna (Katirvik Cultural Center Director), Rose Fosdick (Kawerak, Inc. Natural Resource Division Vice President), and Jeanette Koelsch (National Park Service, Bering Land Bridge National Preserve Superintendent) were invited observers. Additionally, the authors would like to acknowledge Frances Degnan from Unalakleet, who provided extensive written feedback prior to the workshop regarding the workshop topics.

All participants were provided with a draft of this report for review. We would like to thank in particular Austin Ahmasuk, Toby Anungazuk Jr., Charles Degnan, Frances Degnan, and Mary David for providing detailed feedback.

The National Science Foundation Arctic Social Science and Ocean Sciences Divisions provided the invaluable funding necessary to conduct this workshop. This material is based upon work supported by the National Science Foundation under Grant Number 1624041. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the authors and do not necessarily reflect the views of the National Science Foundation. The Kawerak Marine Program and the National Park Service Bering Land Bridge National Preserve also provided support for the workshop. Kawerak, Inc. provided the venue for the workshop. The authors are grateful for this support.

Additionally, the authors would like to acknowledge Kawerak Social Science Program Research Assistant Cindy Wieler for logistical assistance before, during, and after the workshop, all of which helped to make the workshop run smoothly. The authors would also like to thank Barb Nichols for catering the event, and Clarissa Eide of the Kawerak Travel Department for making travel arrangements for workshop invitees.

Citation

This report may be cited as follows:

Raymond-Yakoubian, B. and J. Raymond-Yakoubian (2017) Research Processes and Indigenous Communities in Western Alaska: Workshop Report. Prepared by Sandhill.Culture.Craft and Kawerak Social Science Program. Kawerak, Inc.: Nome, AK.



Participants, Special Guest, Observers, & Facilitators for the August 2016 Nome Workshop
Missing from photo: Lisa Ellanna, Jerry Ivanoff
(Photo: Kawerak, Inc. Social Science Program)

Introduction

In August of 2016, Kawerak Incorporated and Sandhill.Culture.Craft partnered to hold a workshop in Nome, Alaska. The workshop was part of a larger project for this partnership which is looking at research processes and their relationships with Alaska indigenous communities. This project, an anthropology of northern research, treats this research itself as an object of study. The workshop brought together key indigenous voices from western and northern Alaska who have been highly involved in research. The goal of the workshop was to create a dialogue on the nature, concerns, and possible futures related to the relationships between research processes and indigenous communities. In turn, the workshop would (and did) provide valuable grounding to help guide future project activities, especially as they pertain to indigenous perspectives.

Context

Research activities have become a regular occurrence in northern indigenous community life, a major factor influencing policy and management affecting these communities, and a source of various community impacts (positive, negative, and otherwise). Research processes span across the disciplines, including work in the natural sciences (e.g. physical oceanographic work, climatological research, fisheries and marine mammal research) as well as the social sciences (e.g. ethnographic studies, socioeconomic impact studies, and harvest survey research). This research may have commercial, academic, management, policy, advocacy, and other impetuses.

The topic of research as an object of discussion, inquiry, and consideration has become a commonplace in western Alaska communities. For example, Raymond-Yakoubian and Raymond-Yakoubian (2015b) demonstrated broad concern regarding research activities and priorities relating to salmon and environmental change amongst Bering Strait communities. Additionally, research in western Alaska with community effects has increased dramatically in recent years (e.g. through increased research on climate change, vessel traffic, fisheries, infrastructure needs, and resource development). Research appears to have become a significant and regular part of the 'seasonal round' in the region's indigenous communities. This will likely increase in the future. For example, the Arctic Funders Collaborative and the Moore Foundation committed approximately \$30 million over the next three years for research in northern Alaska and Canada in association with the December 2016 establishment of a Northern Bering Sea Climate Resilience Area (Federal Register 2016)¹.

In addition to the above, a variety of other developments and activities have recently occurred which indicate a growing need for a systematic and holistic study of the relationships between research and indigenous communities. For example, communities have increasingly expressed interest in participating in all aspects of the research process, from helping to set research priorities to providing Traditional Knowledge (TK) to contribute independently of and in concert with scientific inquiries (see e.g. Raymond-Yakoubian and Raymond-Yakoubian 2015b and Raymond-Yakoubian et al. 2017). There is increased interest in involvement of rural youth in scientific fields related to marine studies (see e.g. the Caleb Lumen Pungowiyi Memorial Scholarship Fund). Aspects of the phenomena of 'research fatigue' in communities is also being more broadly recognized as something requiring consideration (see e.g. Raymond-Yakoubian and Raymond-Yakoubian 2015b, and Sheehan and Jensen 2015). The growing need

¹ In April 2017, President Trump revoked the Executive Order establishing this Area.

for the consideration of the impacts on communities from research not traditionally considered 'human subjects research' has also become an area of consideration (see e.g. Raymond-Yakoubian 2012 and AFSC 2012 regarding ship-based science). Critical perspectives on the conduct of research as relates to northern indigenous communities have increased in recent years as well, including in public spheres (see e.g. Eegeesiak 2016, Voice of the Arctic Inupiat 2016). The important connections between decision-making and Inuit food security and community sustainability, including as pertains to research, have become clearer recently as well (ICC-Alaska 2015). Several indigenous bodies have recently developed their own specific research protocols or guidelines (e.g. BBNA n.d., NVK 2013, Calista Education and Culture pers. comm.). There has also been a recent increase in certain forms of meta-research activities. One major type of these activities have been large-scale data aggregation efforts (e.g. PACMARS, the Polar Data Forum, ELOKA). Another major type of meta-research are projects aimed at increasing local participation in research activities, projects focused on the incorporation of local and traditional knowledge (LTK) into scientific research, and work calling for development of new protocols and processes regarding research and indigenous communities (e.g. ANSC 2003, NSF and BASC 2004, Caldwell et al. 2005, Gearheard and Shirley 2007, Pearce et al. 2009, Aerts et al. 2011, NWAB 2013, CTKW 2014, J. Johnson et al. 2014, M. Johnson et al. 2014, ELOKA 2015). Developments such as those above also constitute an object of study for the larger project of which this workshop is a part, and accordingly an object of discussion for the workshop itself.

Part of the context in which this project is situated are the now almost-innumerable studies examining the interfacing of forms of indigenous knowledge (IK) and western science. Critical examinations of these studies have provided valuable cautions about the importance of examining the power relationships involved in cross-cultural knowledge-management relationships (see e.g. Nadasdy 1999, Schreiber and Newell 2006). As Lederman has noted, anthropologists can play an important role in the critical investigation of regulatory structures (2007). It is a hope that the meta-analytic nature of this project can provide valuable insights at these junctures of culture, knowledge, scientific practice, and management/regulation. Additionally, this project looks to build on the literature which has taken a critical eye towards research ethics and gatekeeping (e.g. Annas 2006, Bradburd 2006, Fassin 2006, Lederman 2006, Bell 2014), particularly that which engages the concerns of indigenous people related to these processes (Trimble 2008). This project acknowledges the importance of the suggestions advanced by others of the value of applying new frameworks to research to create more equitable science (Smith 1999, Wilson 2008, Carey et. al. 2016), such as in, for example, Smith's arguments about the importance of changing power relationships and methodologies related to research practice, and Wilson's observation of different ontologies of research based on differing relationships to research between indigenous and non-indigenous people.

Workshop Overview

The August 2016 Nome workshop was designed to set the stage for understanding indigenous concerns regarding research processes themselves. The goal of this dialogue was to help lay key groundwork for future work on this topic and the broader examination of the entire field of research in and near Alaska indigenous communities as an object of anthropological study. Additionally, it was hoped that these initial dialogues would assist in the development of future funding plans, research tools (e.g. interview guides), sampling strategies, community engagements, and study priorities. Further, this workshop was designed to help create a valuable interactive network amongst participants towards the end of creating a more explicit dialogue on examining research processes in western Alaska and increasing positive and

beneficial interactions between indigenous communities and research communities. A final goal of this workshop was the production of the present report, which summarizes and analyzes the results of the workshop in terms of the key topics, issues and questions elaborated on further below, with an eye towards suggestions for future work which should be conducted in this arena to expand the positive results of the workshop.

Based on their previous fieldwork on these topics, and extensive previous anthropological research throughout western Alaska, the workshop organizers identified key indigenous voices throughout western and northern Alaska with extensive and important experiences related to research affecting Alaskan indigenous communities. In total, nine participants from indigenous communities and organizations throughout western and northern Alaska participated in the workshop. Seven other guests and observers were also invited to the workshop whose participation was felt would greatly assist the dialogue. This included representatives from the Inuit Circumpolar Council Alaska, the National Science Foundation, the National Park Service, and Kawerak, Inc.

Kawerak's Board of Directors, which consists of representatives from all of the Bering Strait region's tribes, approved the research project which this workshop is a part of. The workshop was conducted with the informed consent of the workshop participants. Additionally, this workshop was conducted under an IRB-approved protocol.

The workshop was conducted in a semi-structured format. Workshop participants, guests and observers had been provided in advance documents outlining the discussion topics for the workshop and the agenda. The workshop organizers/facilitators (Brenden Raymond-Yakoubian of Sandhill.Culture.Craft and Julie Raymond-Yakoubian of Kawerak, Inc.) began the workshop with an overview of the rationale for the event, a brief discussion of research-related issues in western and northern Alaska, and a layout of how the 2-day workshop would proceed. Following this, the participants, guests, and observers introduced themselves to the group and discussed some aspects of their experiences and concerns related to research processes.

Following this, over the course of two days the workshop invitees focused discussions on four topical areas and questions. Time was allotted to discuss each thematic area, as well as to discuss all the themes in general.

- 1) What is the overall 'landscape' of research processes which are in, near to, or otherwise affect indigenous communities?
- 2) What are indigenous concerns, perspectives, and needs regarding research?
- 3) What are some ways forward which can change for the better the relationships between research processes and indigenous communities?
- 4) As a special case study, the group also set aside time to discuss ship-based research in particular as regards the three areas/questions above. (This was in addition to the general discussion of the above themes.)

For each theme, the facilitators introduced the topic. Facilitators also oriented the group and discussions with sub-themes and questions to consider, both at the beginning of the topical sessions as well as throughout. Additionally, at several junctures, a number of special presentations were made by invitees which provided specific case studies and discussion topics. All invitees were encouraged to participate,

and a robust interactive dialogue ensued over the successful 2-day workshop.

The draft final version of this report was submitted to workshop invitees for their review; comments were incorporated into the final version of the report.

A summary and analysis of results of the workshop discussion is presented below, organized into several key thematic areas. These thematic areas formed the organizational structure of the workshop. However, comments were made which crossed the themes throughout the workshop; therefore, the breakdown below is largely for convenience of presentation, as many issues were found to cross-cut the themes.

Conceptualizing the Research/Indigenous Community Landscape

Facilitators framed this topic as a discussion about the 'lay of the land', so to speak, regarding research which affects communities. This included consideration of the following topics and questions: what types of research are being conducted in, near to, or which otherwise affect communities; how is this research conducted?; what are the impacts of this research?; how are communities and individuals involved or not involved in research?; general discussion of indigenous community-research interactions; what is the relevance of research to policy, management, everyday life, etc.?; what assumptions and consequences are associated with research?

Discussions on this overall topic began with two presentations about research involving indigenous participation in northwest Alaska from Manilaaq Association and the Native Village of Kotzebue. The presentations included discussion of a number of projects which entailed the involvement of indigenous people and their expertise, traditional and indigenous knowledge, and/or locally-developed research protocols in research projects. This included, for example, research on seal oil, seal tracking, beluga whales, sheefish, and whitefish ecology. Among other things, these presentations created discussion about the value of local oversight and protocols related to research, and the importance of the involvement of and collaboration with local people and their knowledge and expertise in research.

One striking analytical result from the workshop should be noted here. As evidenced in discussions regarding the research landscape, three themes appeared which strongly cross-cut into other areas for discussion (e.g. concerns, ways forward, etc.). The first pertains to the importance of subsistence and natural resources to indigenous communities. The second pertains to the striking frequency of discussions about concerns related to research (e.g. how is the data used, lack of involvement of locals in research, lack of local concerns driving research, etc.). The third were the frequent discussions about ways forward for improving relationships between indigenous communities and research processes (e.g. establishing protocols, getting greater recognition for TK, etc.). What this clearly shows is that in the very conception of the research landscape itself for indigenous people, the fundamental cultural touchstone of subsistence reigns paramount here as in other domains of life, and the research landscape itself in its current and historical forms is characterized fundamentally as something that evinces great concern and a sense of *lacking* – that is, as something which needs substantial improvement in order to work better and more equitably.

For the sake of organization, those comments just noted which related to concerns about research, and ways forward, will be discussed further below in the similarly-named sections. In terms of other discussion about the research landscape, the following points were gleaned from workshop participants.

The research landscape is marked to a degree by secrecy and a lack of a voice for indigenous people. People often see 'artifacts' of research (e.g. hearing about it afterwards, or seeing it being conducted but not being sure about the details) but similarly are often left in the dark about its entirety. People do not feel as though they know about all of the research that is being conducted near their communities and which impact their resources. This also bleeds into another observation by participants, which was that research is in many ways an extension of existing colonial and other power-based processes. Research has been used to further commercial interests and extract resources important to indigenous people. (This is true for a variety of resources, including those which may be important to indigenous people but not as important as subsistence resources; for example, it was noted that the non-renewable resources in the region are fairly well-mapped, and in many cases that information is kept as proprietary by whatever interests mapped them.) There was a sense that everything – including research – is geared towards the cash economy, thus connecting up with concerns about the relationship of research to subsistence. It was noted by one participant, for example, that in some cases research has become even more disruptive to subsistence than industry activities.

Research is often predicated on, an extension of, and co-implicated with long-standing and ongoing power relationships and inequities (e.g. colonial processes, governmental control over subsistence, the taking of traditional lands, etc.). The questions of who conducts research and for whose benefit are both concerning and sometimes interlinked. It was clearly felt that research often does not benefit indigenous people, and that indigenous people's benefit is not a research concern. Indigenous people are often a key point of impact from research itself and/or that which is being studied. Additionally, as in government, representation and involvement in research for indigenous people is lacking. There was also a concern that western discourses, traditions and institutions are used as the arbiters of truth and reality – for example, publishing papers is seen as a crucial standard by which truth is determined and verified. Other and related connections between knowledge, deeper historical power relationships, and research were also noted. For example, it was noted that the dominant society's institutions – e.g. permits, licenses and educational requirements – have an interconnected effect whereby Alaska Native people are deprived of economic activities while simultaneously having their subsistence economies degraded. Additionally, the unique, valuable, powerful, and effective knowledge of Alaska Native peoples, as evidenced, for example through millennia of peoples' living with the environment, has been marginalized and even ignored in pedagogy, research, and governance. The research landscape is thus clearly connected to various forms of power, to the great disadvantage of indigenous communities. Unsurprisingly, pessimism was expressed at the workshop that things were likely to get worse in the future as relates to research.

Some indigenous communities and organizations are regularly approached regarding research requests and interests, and for others this is less common. Additionally, some organizations and communities are conducting their own research and research-related activities. This was discussed, for example, in the above-noted discussions regarding Manilaaq Association and the Native Village of Kotzebue. Kawerak, Inc. is also heavily involved in research (for example, in its Social Science Program). It was noted that there are good examples and models which may be used for the future for indigenous organizations and communities, such as those just mentioned. Additionally, the North Slope Borough's efforts to integrate TK and science was discussed, as were particular venues where scientific information could be shared (e.g. Arctic-Yukon-Kuskowkim Sustainable Salmon Initiative meetings, the Western Alaska Interdisciplinary Science Conference, the Alaska Marine Science Symposium, etc.); it was hoped more of these venues would occur in the future, and on a statewide level.

A variety of drivers of research were discussed by participants. These included development activities (including commercial activities, infrastructure development, etc.), climate change, subsistence research, and community desires (e.g. to document language, history, and knowledge). It was noted that communities' desires are not listened to enough. Further, there was a pessimistic concern that without money, people (any people, indigenous or otherwise) simply will not have a voice in these processes.

Even if oft-ignored, indigenous people are a part of this research landscape – just as they are part of ecosystems, as was discussed several times during the workshop. As was noted by participants, local people may not have PhDs, but they do know their subsistence resources. A number of values associated with TK and IK were discussed, including similar and parallel qualities to scientific knowledge, their ability to integrate with science (as well as their interrelationships with science), their ability to fill in gaps, their intergenerational qualities, their focus on the powers of observation (which is also important to science), and the value of oral traditions.

Indigenous people and communities are and want to be involved in research gatekeeping activities, and this is felt to be just, ethical, and reasonable. When approached with research requests, Tribes must consider the pros and cons of research, and take into account the potential benefits of research activities. Tribal sovereignty is a concern, for example over sacred, village, and cultural sites and lands, and as such the oversight, regulation, and permission over research activities which may pertain to these areas should rest with Tribes. Gatekeeping concerns also extend, of course, to subsistence resources as well. It was noted that natural renewable resources are of great foundational importance to the essence of who indigenous people of this region are, and there must be a consideration about the real possibility that research projects can lead to gateways for activities (such as development, commercialization, and regulation) which can erode the strength of highly valued traditions and ways of life.

Research was, as already intimated above, noted as something which is and can be used in indigenous peoples' lives. For some people, using research is a regular part of their lives (e.g. using it, conducting it, participating in it, etc.). Research can also be used for a variety of things beneficial to communities, such as recording history and forms of indigenous knowledge, bringing TK and science together, advocating for rights, and monitoring the environment (e.g. climate change, pollution, etc.) - among many other things. It was seen as something which could be used to protect resources, to provide power (as a form of knowledge generation), to drive policy, and to understand ecosystems more fully (including the human component, which is often ignored).

Indigenous Concerns, Perspectives, and Needs Regarding Research

Facilitators framed discussion around this topic using the following general questions and topics: what general concerns and thoughts do people have regarding research in, near, or otherwise affecting indigenous communities?; what are community research needs (e.g. topics, research gaps, how to be involved, etc.)?; what research capacity is needed in indigenous communities?; what are elements of the relationship between research and indigenous communities which are good, and which are not good, need to be changed, or need to be otherwise improved?

Again, as noted earlier, discussions relating to concerns, perspectives and needs occurred in a cross-cutting manner. These issues were brought up frequently in other thematic discussions, and during discussions of this theme, other themes were frequently brought up. Perhaps the most common theme

that was also raised during these discussions were ideas about “Ways Forward” - that is, ways in which the relationships between research and indigenous communities can be improved. This has a positive and negative side to it – on the positive side, it shows that people do want to improve this relationship, but on the negative side it shows that research as a whole as it is conducted now and in the past is viewed in many ways in a negative light and as something in need of change. In another sense, this is a function of the structure of the discussion – the consideration of indigenous “needs” regarding research does lend itself to bleeding over into a discussion of “ways forward;” however, there was a sense that these needs were largely not being met, and thus the ways forward include having these needs met, thus returning to the recurring theme that research processes require changes if they are to be appropriately attuned to indigenous concerns.

For the sake of organization, discussions about needs and desires related to research will be mainly covered in the “Ways Forward” section below even if they arose during discussions during this or other portions of the workshop. The analytical point should be remembered, however, that these needs and desires were raised in this and other sections of the workshop discussion, and the fact that these needs and desires are largely (though not entirely) unmet in the current northern research regime indicates that this is an important indigenous perspective on research, and that it is a concerning problem in need of remedy. The discussion below in the remainder of this section will therefore focus mainly on other concerns and perspectives raised by participants.

Concerns about historically negative aspects of research loomed in the discussion. For example, the Iodine 131 experiment was noted, as was harmful research such as that which supported intercept fisheries whose actions harmed subsistence resources. It was noted that research with questionable utility is done in the face of communities lacking the funding to provide basic needs such as water and sewer. Research activities causing substantial disruptions to subsistence activities were noted in some areas. Research activities are also not unrelated to existing power relationships which have long disadvantaged indigenous communities. Systems of colonial representation and resource management are still ongoing. Management and research are interconnected, and research can be used to support actions harmful to subsistence and communities. Additionally, indigenous people lack power in these venues. There was a concern with a history of bad research, research and management whose activities differ greatly in private from how they appear in public, and with manipulated research and data in favor of commercial interests. Additionally, research exists amidst a backdrop of a variety of perverse ways in which indigenous people are treated in relationship to the environment, none of which are just or accurate – instead of as, for example, rightful stewards who have a right to subsist on their resources and who are a part of but not reducible to those resources nor as people who can simply be taken from with impunity. For example, it was noted that people can be treated as aliens on their own land, that they can be disenfranchised from their resources, and how their lands can be reduced to being treated as equivalent with public land, as well.

People also appear to be put into vexing binds as a result of the state of research, especially against this backdrop of a troubling research history. While people want to have their knowledge considered, others are concerned about the ways it will be used (including potentially against indigenous interests). For example, there is a desire for researchers and management to involve indigenous people in research processes and decisions, but at the same time there is a cognizance that this research can be used for decisions which can be positive or negative in effect. These issues also play out on even deeper cultural levels. For example, research makes a large impact on the world, but is based on written traditions, and to

participate in that indigenous people have to have their knowledge documented in writing, as opposed to the oral traditions through which that knowledge has sustained their cultures for millennia. People also have to find ways to address issues of intellectual property rights, which are also based on a cultural and economic system foreign to traditional lifeways. Yet, against these conundrums, as one participant pointed out, if you aren't part of the decision, you are subject to it – and thus there is a reluctant desire to engage in these processes.

As noted elsewhere, there are concerns about how research data is used. People are concerned about researchers 'taking' data out of communities, much like resource extraction industries. There are concerns about the consequences of sharing data, about how data is used, and the complexities of data access. For example, information from communities has been used against them, as in the case of restrictions on subsistence practices. There were strong concerns about how research is done to benefit those with money and power, and there was also concern about data misrepresentation on the part of those with money and power. Additionally, it was wondered whether or not research studies often accomplish what they set out to, which speaks to a sense of disconnectedness on the part of communities from research processes.

A variety of processual concerns were raised. Indigenous communities are generally not involved, or not appropriately involved, throughout the entire research process in most cases. It was also felt that there is a lack of institutional requirements dictating that the opposite be the case (for example, on the part of research funders). There is a lack of consideration on the part of the research community of indigenous community desires and community benefits. Issues and problems of consent were also discussed at the workshop. Consent issues are considered to be a problematic aspect of the relationship between research and indigenous communities. People noted, for example, instances of people not receiving information on how data was going to be used, what the impacts of giving or sharing local information might be, communities perhaps being in a bind to want to support projects while at the same time not fully understanding them, and so on. Other processual concerns included the sense that oftentimes interaction with indigenous communities and their knowledge are considered as little more than 'checking off a box'. The importance of subsistence also arose during these discussions, as it was noted that research should be conducted at times that do not conflict with subsistence activities.

Problems of over- and under-research were discussed. These issues demonstrate that problems with research can be highly geographically specific in their manifestation. For example, in some communities and regions, there is a problem of an inundation of research (e.g. researchers, research requests, etc.), while in other communities and regions, people feel as though they are practically ignored. The commonality between both cases, however, is a wrongly-attuned relationship to communities. People noted that there is a problem of redundant and repetitive research; harvest surveys and climate change research stood out as particularly problematic in this regard. Research fatigue exists across regions and communities (independently of the issue of under- vs over-research). Some individuals are highly sought-after to participate in research-related activities, and they do it not necessarily always because they want to but because they feel it is important or necessary. Research fatigue can also affect those in institutions as well, who want to review research and research proposals, and assist communities in that regard, but have limited time to do so. Research fatigue is also closely tied in with burnout from having to attend meetings. People are often forced to wear multiple hats; this is often exacerbated by the fact that those who are drawn into these processes repeatedly are also people who are highly involved in subsistence and other vital activities.

Various aspects of community involvement in research were noted as concerning. It was felt that there is a general lack of consultation with Tribes and communities regarding research, and a lack of sufficient institutional stipulations requiring consultation. The problem of researcher follow-up with communities – or rather, lack of it – was extensively discussed. Many times researchers do not follow-up with communities to present the results of their research. It was questioned whether there was adequate oversight to ensure that researchers honor their commitments, including as regards funder oversight. Researchers who are told to follow-up with communities often do not, which creates a negative response to research in communities, and makes communities disinclined to have research there in the future. It was also felt that the differences between outreach and the presentation of research results were not sufficiently understood by researchers. The value of having funders who require researchers to be accountable to communities, including in terms of follow-up (e.g. results presentations), was noted. People wanted funders to require researchers to work with communities, including presenting results and following up with communities. It was noted that some researchers are good at making follow-up with communities. It was felt that researchers need to present their results to communities in clear lay language, and it was also felt that adults as well as children should be involved in research. In general people were tired of not being listened to, and also about the lack of knowledge about what research is happening, who is doing it, and why (e.g. for whose benefit, for what purpose, etc.). The extensive conduct of research with no community benefit was seen as problematic, and the fact that it is unclear what benefit research often has is equally problematic, as it indicates lack of community engagement. It was felt that researchers should be engaging with communities about what types of research will benefit communities. It was noted that research is often out of touch with and disconnected from local concerns.

Several other deep-seated cultural issues were also brought up by participants. The distinction between oral and written traditions was noted, the strength of oral traditions was discussed, and the importance of protecting and preserving culture and its values and traditions was noted. It was also noted that sustainability needed to be defined in relationship to subsistence. One participant noted the importance of there being a recognition that knowledge is inherently imperfect. It was also discussed that there is often a glaring problem of the identity politics of research, whereby Inuit people and their resources are studied by non-Inuit people, but generally not the other way around.

Some positive perspectives related to research were noted, including examples of institutions who are conducting work which helps communities. For example, it was noted that the Alaska Eskimo Whaling Commission has been successful in addressing research-related issues as pertains to whales and whaling, and the local successes of Ukpeaġvik Iñupiat Corporation (UIC) Science were also mentioned.

Ship-Based Research

As noted earlier, the workshop's topics were discussed not only in general, but also in regard to the specific “case study” of ship-based research. This was a particular area of concern for NSF's Division of Ocean Sciences (OCE), who provided partial funding for this workshop, and is a longstanding topic of concern in western and northern Alaska communities. Discussion on this topic revolved around participant feedback to an NSF OCE presentation made at the workshop, and also in regard to more general questions and topics posed to the group by facilitators, including: How can we apply general insights from ideas on the topics discussed in other parts of this workshop specifically to ship-based research? What do participants think about these topics as they pertain specifically to ship-based

research? What experiences have participants had with ship-based research?

The workshop was fortunate to have a presentation from the NSF's OCE. The presentation covered how OCE fits into NSF's organizational structure, what its programs are, the proposal and award process, environmental compliance considerations, and OCE-supported research and facilities. The latter included discussion of the R/V Sikuliaq and research issues, including considerations of conflicts with subsistence activities. Workshop participants engaged in a robust dialogue related to the presentation, providing feedback on issues related to funder responsibilities, award processes, and, most centrally, community involvement in research. For example, a concern was noted regarding researchers who come to work in and near northern communities but who have little knowledge of the area and its cultures, and who don't involve local people in research. It was pointed out that local people often have information about research questions, and as such, researchers and funders could save money by hiring locals to be involved in the research. Concerns were expressed about the need to include collaboration with communities in proposals, about the need for LTK to be required to be taken into account in research by researchers and agencies, and regarding the importance of tribal consultation for all research activities. With regard to questions about who researchers and agencies should contact for soliciting comments, it was noted that the appropriate point of contact for this should be Tribes. Additional suggestions by participants included establishing a research-related office in a rural community, for TK holders to be included as part of the review process for research proposals, and for researchers to be required to communicate about their projects to communities in plain English.

During broader discussions of ship-based research, discussion amongst workshop invitees often delved into broader areas, as in other portions of the workshop. Some of these were slightly broader – such as general discussions and concerns about vessel traffic in general that aren't necessarily research-related – and some of these were considerably broader – such as the topic of tribal consultation. This is likely at least partially a reflection that people do not consider research issues to occur within a vacuum.

One area of considerable discussion revolved around issues related to regulations and protocols. There was concern that ships of all kinds may not have knowledge of ice conditions, and concerns about safety and the capacity to deal with any problematic issues that may arise if a ship has a problem. One recommendation was that efforts be made for all ships, perhaps following along the models used by oil companies, to have information about where not to go in terms of protecting subsistence and subsistence resources (e.g. areas to be avoided). One concern about ships in general related to enforcement (or lack thereof) related to discharge. Another regulatory desire was that the “doughnut holes” need to be closed. Finally, there was widespread lament among participants regarding the demise of the coastal zone management program in Alaska.

Discussion revolving around subsistence, the environment, and other community impacts, were also prominent topics. As was noted on several occasions, subsistence is the highest priority for Tribes. There is concern about vessel traffic, including ship-based research, disrupting subsistence activities and resources, and examples of this having occurred were discussed. One related concern was about ships breaking up ice and creating artificial leads which could signal to animals it is time to migrate out of an area. Another concern about community impacts from vessels pertained to on-shore activities of ship travelers. People from ships coming ashore can (and have) displaced local resources through consumption and placed a stress on those resources (e.g. food, internet bandwidth, etc.). Invitees discussed concerns about various forms of pollution from ships as well. There was concern about ships

using ports of refuge (such as Golovin Bay and Port Clarence) in terms of bringing in pollution, invasive species, and other unknown and potentially hazardous cargo. It was felt that it is important for there to be protocols to ensure ships do not pollute waterways, and that there be enforcement of these rules. People were also concerned about noise pollution from ships. It was noted that a ship needn't even be visible for it to have a substantial impact on animals. Concerns were also voiced about the impacts of vessel traffic on the Russian Federation side of the Bering Sea and Strait; greater information about and regulation pertaining to that activity was perceived as being beneficial.

A substantial amount of discussion related to ship-based research revolved around issues of research and community engagement. It was noted that it is important for indigenous communities to be involved in research planning and priority development activities, in order for research to benefit communities, and for researchers to report back to communities and not just commercial or other interests. The activities of the Arctic Waterways Safety Committee (AWSC) were discussed, including concerns related to the under-representation of Tribal voices on this Committee and the desires on the part of researchers and agencies to streamline their engagement with communities and to view the AWSC as a one-stop place to do this. Engagement with communities, tribal consultation, and government-to-government consultation activities were discussed in great detail, and these activities were felt to be crucial for ship-based research activities. While it was noted that there may be variable interest from community to community regarding interest in ship-based research activities, it was felt that whenever a community or the environment or resources it depends upon are potentially impacted, the Tribes should be consulted in advance by researchers and agencies about those proposed activities. It was noted that while some 'stronger' regions and organizations might have more success than others, for many there is little success in these regards, and tribal consultation and co-management are mostly platitudes that are rarely meaningfully practiced. The frequently-noted lament about indigenous concerns losing out to power and money was raised again here.

While there are various interests in communities, including Tribes, cities, corporations, and so on, when it comes to potential impacts to subsistence, the environment, and subsistence resources, the Tribe is considered the appropriate point of contact, and they should always be consulted. It was noted that attempts to contact other entities may be seen as attempts to get around the tough conversations, tribal consultation, and government-to-government relationships that need to occur. One participant eloquently noted that it is painful when indigenous people are overrun, and considered to be unintelligent and lacking in broad-based knowledge (which is exactly the opposite of the truth). (The proper understanding of the extent of indigenous knowledge – which is often absent in western scientific and management discourse – is discussed in Raymond-Yakoubian 2017). The recent problems with NOAA/NMFS relating to tribal consultation were discussed (see e.g. Raymond-Yakoubian 2012), including how NOAA/NMFS ignored requests for tribal consultation related to a recent bottom trawl research survey, and conducted the survey despite these requests and in the face of serious indigenous opposition. The complexities about what is and isn't covered by IRB oversight was noted, including brief discussion of the problematic associated with research having impacts on communities but yet is not considered from a regulatory perspective to be human subjects research.

Ways Forward for Research and Indigenous Communities

Facilitators framed discussion on this topic along the lines of the following questions and themes: What are some ways the relationships between research processes and indigenous communities can be improved? What specific suggestions can be made? What do participants think about certain ideas such

as increased local control over research, developing local and regional institutions to deal with research-related issues, increasing research capacity in communities, co-science and co-management, new protocols, policies, standards, and legislation related to research, and so on?

Workshop participants identified many ideas for ways forward to improve the relationship between research and indigenous communities. Some of these have already been raised either explicitly or implicitly in earlier sections of this report (e.g. addressing the research-related concerns which were raised), and will not be repeated in total.

One substantial category identified could be characterized as entailing increased and realigned engagement of the research community with indigenous communities. A sub-theme within this includes changes regarding oversight, control mechanisms, and process as pertains to research. Expressed was a need for greater oversight of research activities at multiple levels – from funders, regarding research not traditionally considered human subjects research, and in terms of indigenous oversight of research (e.g. through tribal councils being involved throughout research processes, including permitting, where the research impacts indigenous people or the resources they depend on). One avenue suggested for the latter was to use existing locally-based control mechanisms such as tribal land regulations. Indigenous conduct and control over research (which has successful precedents in the region) were highlighted as one mechanism for the future. Finding ways for indigenous people to 'have a seat at the table' – or to even change or 'redesign' the table – were stressed, such that local active participation in the entirety of research processes could occur. The development and enforcement of research rules, regulations, and protocols for all kinds of research which affect indigenous communities (including, of course, the resources they depend on) was also stressed as an important future development. This would include requirements that research results be presented to communities in clear language, having TK holders as proposal reviewers and peer-reviewers of research, adequate informed consent processes (e.g. regarding the consequences of sharing data), ensuring researchers understand the distinctions between outreach and consent, giving adequate time for Tribes to engage with research processes, and engagement of indigenous communities throughout all aspects of the research process, including, for example, in research planning and priority-setting, in research conduct, and so on (including requirements for tribal consultation for research and government-to-government relationships where relevant).

Multiple parties were identified as needing to be involved in setting and enforcing these rules. These included researchers themselves, funders, and universities; additionally, there were discussions about how local and regional mechanisms could be created to help facilitate these goals as well. This included discussions about the need to increase capacity to deal with and engage in research for local (e.g. tribal council) and regional indigenous entities, and a need for local and regional indigenous entities to develop guidelines, protocols, and enforcement from the indigenous point of view which relate to research affecting people, resources, and the environment (including rules for how such research should proceed, and which also address how communities should engage with researchers. The need for researchers to know who to contact with regard to indigenous communities was emphasized. Also, the need for meaningful, equal and successful co-management was stressed.

Numerous other indigenous community desires, specific and general, were identified as pertains to ways the relationship between communities and research could be more positive and fruitful. These include, for example, the following:

- To know about the research that is going on which affects their communities, environment, and

resources

- For there to be more home-grown indigenous educators and researchers, for Alaska Native history and knowledge to be taught, practiced and interwoven into governance, and for there to be an increased recognition of the value of Alaska Native knowledge
- Adequate funding for Tribes to do their work, including research-related work
- A clearinghouse with the results of scientific studies (including data from private industry)
- For research that impacts communities only to be done if communities consent to it
- For research grants and permits to have stipulations requiring community involvement
- For indigenous children to be exposed to research, subsistence, and TK in their educational curriculum
- Issues related to research should be incorporated into curricula related to Alaska Native studies
- For meaningful community follow-up to become mandatory for research affecting communities, and for there to be enforcement of this after research permissions have been received
- Increased transparency about the motives for, drivers behind, and management implications of research, and increased education for indigenous communities to be able to navigate systems related to this and to be able to interpret research motives, drivers, rhetoric, and practices
- For research to have local benefit; that is, for researchers and research entities to endeavor to find out what research is of interest and use to communities, for the research which is done to be of value to communities, and for communities to have input into research priorities and plans. (This is not to say that community research interests and needs are always unmet; they are sometimes, intentionally and unintentionally. For example, there is community-driven research.) Some community research interests that were noted included research into:
 - Climate change, such that advance warning of changes could be clearer. Additionally, it was expressed that local people need to be involved in the conduct of this research, e.g. documenting and measuring observed changes.
 - For traditional use areas to be mapped and protected
 - For the impacts of large-scale industrial fishing on subsistence resources to be made clear
 - For research into pollution, its effects, and the ways to mitigate it
 - Information about environmental health, including testing and monitoring
 - The effects of antibiotics when they get into waterways
 - Contaminated sites and their cleanup (e.g. abandoned military sites)
 - Increased vessel traffic and issues related to that such as pollution (including noise pollution)
 - Traditional end-time stories
 - Development of IK and TK focused curricula which also includes Native language education, and the integration of these into schools
 - More baseline information, e.g. about climate change as pertains to the various resources each community depends upon
 - Health problems seen in subsistence resources
 - The effects of wildlife guiding activities
 - Problems such as toxins coming over to Alaska from the other side of the International Dateline

Profound concern was noted with regard to government-sponsored harvest surveys on a number of levels. The methodological and accuracy problems with these surveys, their use against subsistence practices, problems of confidentiality, their dubious overall value, the lack of involvement of indigenous people in analysis, and the presence of better alternatives were all noted. There was a desire for a better approach to be taken on a wide-scale with respect to this issue.

Invitees expressed a desire for there to be a greater recognition and understanding of IK and TK in the research community (as well as in other spheres, e.g. by the State of Alaska). TK should not be seen as simply something which can verify science, nor should it be seen as something which requires verification either. It was stressed that TK should be seen as equal in value with science. It was also stressed that indigenous people have extensive – and the best – knowledge about the resources and environments which they depend on. Additionally, the proper extent of IK and TK needs to be understood, and that is as something which is broad in scope and applicability. The importance of local people as tradition-bearers and educators of their children about traditional practices, values and knowledge was also emphasized. Recognition of Alaska Native history and knowledge, and a revitalization with regard to this (e.g. through the teaching of Alaska Native history from an Alaska Native perspective and by Alaska Native people; recognizing the long history of valuable and applied Alaska Native environmental knowledge; teaching and utilizing Alaska Native knowledge in homes, schools, governance, and elsewhere, etc.) is seen as very important for the future. People want to perform gatekeeping tasks related to research, and they want their knowledge to be incorporated into research, to be used in the consideration of ensuring that research which is conducted is of benefit to communities, and to be protected and used for the benefit of tribes. It was also emphasized that when community knowledge is used, it should be acknowledged where it came from.

A number of proposals were made regarding future collaborations and discussions to make improvements with regard to research processes. These included discussions about improving the state of harvest survey activities, addressing what becomes of data (including the topics of ownership rights, and the purposes of data), finding ways to get indigenous people involved in various aspects of the research process such as the proposal review process, coming up with things that key research-related bodies such as the AWSC can address, talking about what people are willing to share publicly in terms of data, discussion about the details of how increased involvement in research can be logistically handled (e.g. at the regional vs local level, by whom, in what way, etc.), fighting for rights related to resources and subsistence activities (including getting rid of language in ANCSA which extinguished aboriginal hunting and fishing rights), pushing for the coastal zone management program in Alaska to be revived, and a general joining forces between indigenous regions, organizations, and entities to work towards a more positive research-related future.

Overall, there was an expressed need for a far more robust conceptualization of the involvement of indigenous communities in research than is currently the case, at all levels of research processes. It was seen as vitally important that the perspectives of indigenous people be centrally incorporated into research. Additionally, it was clear that the priority of protecting subsistence, subsistence resources, and the environment is key to indigenous communities, and that this consideration is highly relevant to indigenous perspectives about research processes as well.

Discussion

A number of considerations cross-cut through the thematic discussions of the workshop. This included, for example:

- Indications that there are substantial needs – and desires – for changes to occur in research processes in order to improve the relationship between research and indigenous communities
- The primacy of considerations regarding subsistence, and subsistence and other natural resources, extends to the world of research
- The numerous and complex binds which indigenous people are put in as regards to engagement with research
- The interconnections between research and deeper concerns related to power imbalances, cross-cultural differences, and a history of colonialism
- The desire for greater involvement of indigenous people and their knowledge in many ways and at many levels throughout the entire research process. This includes, among many other things, tribal consultation and government-to-government relationships, co-management and co-production of knowledge, researchers and research bodies engaging with communities, more active indigenous participation in research (including indigenous conduct of research), more and better oversight of research, greater research capacity for communities, and a greater attention to community needs and concerns in the prioritization, planning, design, conduct, and dissemination of research
- A desire for greater oversight of research, including at the local and regional levels. Additionally, there is a desire for funders to increase their level of oversight of research, their level of expectations and responsibilities for funded researchers as relates to indigenous communities, and their involvement of indigenous people in the research process itself
- The fact that the different themes of this workshop are themselves highly interconnected as relates to indigenous perspectives on research (e.g. the conceptualization of the landscape, concerns about the landscape, and suggestions for change).

The workshop itself was highly successful. It brought together a number of key indigenous voices in western and northern Alaska as relates to research, along with other important invitees, to create a dialogue on the topic of indigenous perspectives on research affecting indigenous communities in this region. Surveys distributed at the end of the gathering indicated satisfaction with the workshop amongst invitees. Attendees expressed a sense that this laid a good groundwork for moving forward on a number of these issues, including collectively where possible. Facilitators found the information from the workshop to be highly valuable, including in the previously established goal of laying ground for future work on this topic. In addition to this report, data from the workshop have directly contributed to a public presentation on the study (Raymond-Yakoubian and Raymond-Yakoubian 2016) and a number of grant applications to expand the research.

The workshop succeeded in giving voice to a highly under-examined part of the northern research-related landscape – that is, indigenous perspectives. The workshop helped to explicate the structural, political, cultural, and epistemic bases for research which has human impacts in western and northern Alaska. The workshop will play a central role in the facilitators' larger project, as was hoped. This larger project examines research which affects Alaskan indigenous communities from a holistic anthropological perspective, and treats that research itself as an object of social scientific study. The study will look at the perspectives, institutions, processes, actors, and practices across the social field relating to research

affecting indigenous communities. The study is not only seen as timely, but also has the potential, through the understandings it evinces, to radically alter goals, priorities, orientations, institutions, texts, guidelines, standards, practices, and capacities related to research practices. The results of this workshop speak to this breadth of potential. On the one hand, the workshop took a significant step forward in forwarding indigenous perspectives on these processes, thus providing key perspectives towards transforming and improving the relationships between research and communities. On the other hand, one way in which this workshop (and the broader associated study) can make novel contributions is that it does not seek to simply insert indigenous views and concerns into existing research processes, but rather to examine those entire processes themselves and their participants holistically, with a focus on indigenous community members, who are a – if not the – critical component to, and point of impact from, these processes, yet whose voice in these processes is highly understated.

In addition to the avenues already discussed above in the rest of this workshop report, a number of other avenues will be pursued for the larger study, some of which can be briefly touched upon here.

As noted, it is felt that this workshop – and the larger study it is a part of – will help to explicate the structural, political, cultural, and epistemic bases for research which has human impacts in the Arctic, and has the value of understanding research itself from perspectives which have not been emphasized and thus expanding our meta-epistemic capacity in all fields of research which impact or involve people. For example, this may involve revising and expanding scientific assumptions about both the nature of human-environment relationships as well as the understanding of human impacts from research through the interfacing of different cultural knowledge systems relating to this with different cultural perspectives on research relating to the environment. For example Fienup-Riordan (1999) noted key difference in conceptualizations of the impacts of research between Yup'ik and western biological scientists studying geese, and the importance of how research is conducted (in addition to research's results). Bielawski's ethnography of Arctic science relating to the Polar Continental Shelf Project also noted key differences between western scientific and Inuit perceptions of research impacts (Bielawski 1992, 1996), including similar observations about how any research on the land could have significance to Inuit people. Such observations provide a crucial groundwork for this project in its attention to the comparative rationalities involved in different conceptualizations of research. The facilitators' previous work (see e.g. Raymond-Yakoubian and Raymond-Yakoubian 2015a, 2015b, and Raymond-Yakoubian et al. 2015) has also indicated that these considerations are highly germane to this project's topic of study. As one workshop participant noted, in manner which clearly highlighted alternative relevant worldviews to the topic at hand, it is important to consider the traditional view that arguing about resources can lead to their disappearance. On a number of levels (e.g. from the perspective of comparative rationalities, from the reality of human impacts from many kinds of research, etc.), one important area this project examines is the apparent need to expand the conceptualization of the ethical boundaries of, and standards relating to, research responsibility currently largely only constrained to research traditionally considered to be 'human subjects research' (e.g. to include expanding human subjects research considerations, review, and oversight to research which impacts the environment upon which Alaska Native people depend).

This project would also expand Geertz's view of social science as a “variety of moral experiences” to science and research in general (Geertz 2000). Additionally, the facilitators would like to suggest a further repurposing of Sahlins' call for an “indigenization of modernity” to call for an 'indigenization of research', whereby views of research as simply involving or effecting indigenous people is abandoned in favor of understanding that how research itself is defined – as well as concepts of research impacts – is

based inherently on a relationship of perspectives between all stakeholders involved, including both research and indigenous communities (Sahlins 1993, Raymond-Yakoubian and Raymond-Yakoubian 2015b). That is to say, indigenous perspectives on research are part of what research is, in and of itself.

References

Aerts, L., B. Streever, and J. Payne (2011) Science, Natural Resources, and Subsistence in Alaska's Arctic Lands and Waters: A continuing dialogue on working together to understand our changing arctic. North Slope Science Initiative Workshop Report. Barrow, AK March 29-31, 2011.

AFSC (Alaska Fisheries Science Center) (2012) Considerations for Research Planning in the Northern Bering Sea Research Area. Prepared by NOAA NMFS Alaska Fisheries Science Center for the North Pacific Fisheries Management Council: Seattle, WA.

Annas, G. (2006) "Anthropology, IRBs, and Human Rights." *American Ethnologist*. 33(4): 541-544.

ANSC (Alaska Native Science Commission) (2003) Northwest Alaska Regional Meeting Report. Alaska Native Science Commission: Anchorage, AK.

Bell, K. (2014) "Resisting Commensurability: Against Informed Consent as an Anthropological Virtue." *American Anthropologist*. 116(3): 511-522.

BBNA (Bristol Bay Native Association) (n.d.) Bristol Bay Native Association Policy Guidelines for Research in Bristol Bay. Dillingham, AK.

Bielawski, E. (1992) "Inuit Indigenous Knowledge and Science in the Arctic." In *Northern Perspectives* v20, no. 1, summer 1992. Canadian Arctic Resources Committee.

Bielawski, E. (1996) "Inuit Indigenous Knowledge and Science in the Arctic." In L. Nader (ed.), *Naked Science: Anthropological Inquiry into Boundaries, Power, and Knowledge*. New York: Routledge. Pp. 216-227.

Bradburd, D. (2006) "Fuzzy Boundaries and Hard Rules: Unfunded Research and the IRB." *American Ethnologist*. 33(4): 492-498.

Caldwell, J., J. Davis, B. Du Bois, H. Echo-Hawk, J. Shepard Erickson, R.T. Goins, C. Hill, et al. (2005) Culturally competent research with American Indians and Alaska Natives: Findings and Recommendations of the First Symposium of the Work Group on American Indian Research and Program Evaluation Methodology. In *American Indian and Alaska Native Mental Health Research*, 12(1):1-21.

Calista Education and Culture (pers. comm.) Personal communication with Calista Education and Culture anthropologist regarding Calista IRB.

Carey, M., M. Jackson, A. Antonello, and J. Rushing (2016) "Glaciers, Gender, and Science: A Feminist Glaciology Framework for Global Environmental Change Research." *Progress in Human Geography*. 1-24. DOI: 10.1177/0309132515623368

CTKW (Climate and Traditional Knowledges Workgroup) (2014) Guidelines for Considering Traditional Knowledges in Climate Change Initiatives. Version 1.0. Accessed at: <http://climatetkw.wordpress.com>

Eegeesiak, J. O. (2016) "Chair's Message: Achieving Equity in Arctic Science and Research. In *The Drum*. 9(3): 5. ICC-Alaska: Anchorage, AK.

ELOKA (Exchange for Local Observations and Knowledge of the Arctic) (2015) Indigenous Knowledge: Key Considerations for Polar Data Planning. Statement from the Sharing Knowledge: Traditions, Technologies, and Taking Control of Our Future Workshop. September 22-24, 2015. Boulder, CO. Accessed at: http://www.uaf.edu/anpn/eloka_statement.pdf

Fassin, D. (2006) "The End of Ethnography as Collateral Damage of Ethical Regulation?" *American Ethnologist*. 33(4): 522-524.

Federal Register. 2016. Executive Order 13754 of December 9, 2016. Northern Bering Sea Climate Resilience. Volume 81, Number 240: 90669-90674.

Fienup-Riordan, A. (1999) *Yaquiget Qaillun Pilartat (What the Birds Do): Yup'ik Eskimo Understanding of Geese and Those Who Study Them*. In *Arctic* 52(1): 1-22.

Gearheard, S. and J. Shirley (2007) "Challenges in Community-Research Relationships: Learning from Natural Sciences in Nunavut." *Arctic*. 60(1): 62-74.

Geertz, C. (2000) *Available Light: Anthropological Reflections on Philosophical Topics*. Princeton: Princeton University Press.

ICC-Alaska (Inuit Circumpolar Council-Alaska) (2015) *Alaskan Inuit Food Security Conceptual Framework: How To Assess The Arctic From An Inuit Perspective*. ICC-Alaska: Anchorage, AK.

Johnson, J., R. P. Louis, A. Kliskey (2014) *Weaving Indigenous and Sustainability Sciences: Diversifying Our Methods*. (WIS²DOM) Workshop report. February 13-16, 2013.

Johnson, M., H. Eicken, M. Druckenmiller and R. Glenn (editors) (2014) *Experts Workshops to Comparatively Evaluate Coastal Currents and Ice Movement in the Northeastern Chukchi Sea; Barrow and Wainwright, Alaska, March 11-15, 2013*. University of Alaska Fairbanks, Fairbanks, Alaska.

Lederman, R. (2006) "The Perils of Working at Home: IRB "Mission-Creep" as Context and Content for an Ethnography of Disciplinary Knowledges." *American Ethnologist*. 33(4): 482-491.

Lederman, R. (2007) "Comparative "Research": A Modest Proposal Concerning the Object of Ethics Regulation." *PoLAR: Political and Legal Anthropology Review* 32: 305-327.

Nadasdy, P. (1999) *The Politics of TEK: Power and the "Integration" of Knowledge*. *Arctic Anthropology*, 36 (1/2): 1-18.

NSF and BASC (National Science Foundation Office of Polar Programs and Barrow Arctic Science

Consortium) (2004) Draft Guidelines for Improved Cooperation between Arctic Researchers and Northern Communities. August 23, 2004 draft. Accessed November 16, 2015:
http://archive.arcus.org/guidelines/Cooperation_draft_23August04.pdf

NVK (Native Village of Kotzebue) (2013) Native Village of Kotzebue Research Protocol. Kotzebue, AK.

NWAB (Northwest Arctic Borough) (2013) Improving local participation in research in northwest Alaska: Final Workshop Summary and Workgroup Recommendations.
<http://www.nwabor.org/wp-content/uploads/NorthwestAlaskaResearchWorkshopSummaryFinal.pdf>

Pearce, T., J. Ford, G. Laidler, B. Smit, F. Durden, M. Allarut, M. Andrachuk, S. Baryluk, A. Dialla, P. Elee, A. Goose, T. Ikummaq, E. Joamie, F. Kataoyak, E. Loring, S. Meakin, S. Nickels, K. Shappa, J. Shirley, and J. Wandel (2009) “Community collaboration in climate change research in the Canadian Arctic.” In *Polar Research* 28: 10-27.

Raymond-Yakoubian, B. (2017) Sounds and Discourses of Knowing: The Extents of Indigenous Knowledge and the Cross-Cultural Epistemic Assumptions of Alaskan Natural Resource Management. Paper presented at the University of Tartu Arctic Workshop, Tartu, Estonia. May 2017.

Raymond-Yakoubian, B. and J. Raymond-Yakoubian (2015a) “Always taught not to waste”: Local Traditional Knowledge and Norton Sound/Bering Strait Salmon Populations. Arctic-Yukon- Kuskokwim Sustainable Salmon Initiative Project #1333 Final Report. Kawerak Social Science Program: Nome, AK.

Raymond-Yakoubian, B. and J. Raymond-Yakoubian (2015b) At the Intersection of Bering Strait Inuit Subsistence Lifeways, Western Science and Management, and Environmental Change: Scientific and Regulatory Ideology, Human-Environmental Justice, and the Indigenization of Climate Change. Paper presented at the Climate Change in Culture Conference. Charlottetown, Prince Edward Island. May 28-31, 2015.

Raymond-Yakoubian, B. and J. Raymond-Yakoubian (2016) Perspectives on the impacts of research on Alaskan indigenous communities: Notes from an anthropological inquiry into research processes. Paper presented at the National Park Service Centennial Science and Stewardship Symposium. October 19, 2016.

Raymond-Yakoubian, B., L. Kaplan, M. Topkok, and J. Raymond-Yakoubian (2015) 'The World has Changed': Injalit Traditional Knowledge of Walrus in the Bering Strait. Kawerak Inc. North Pacific Research Board Project 1013 Final Report. Kawerak Social Science Program: Nome, AK.

Raymond-Yakoubian, J. (2012) Participation and Resistance: Tribal Involvement in Bering Sea Fisheries and Management and Policy. In C. Carothers, K.R. Criddle, C.P. Chambers, P.J. Cullenberg, J.A. Fall, A.H. Himes-Cornell, J.P. Johnsen, N.S. Kimball, C.R. Menzies, and E.S. Springer, editors. *Fishing People of the North: Cultures, Economies, and Management Responding to Change*. Alaska Sea Grant, University of Alaska Fairbanks. Pp. 117-130.

Raymond-Yakoubian, J., B. Raymond-Yakoubian, and C. Moncrieff (2017) “The Incorporation of Traditional Knowledge into Alaska Federal Fisheries Management.” In *Marine Policy* 78: 132-142.

Sahlins, M. (1993) "Goodbye to *Tristes Tropes*: Ethnography in the Context of Modern World History." *The Journal of Modern History*. 65(1): 1-25.

Schreiber, D. and D. Newell (2006) Commentary: Negotiating TEK in BC Salmon Farming: Learning from Each Other or Managing Tradition and Eliminating Contention? In *BC Studies* 150: 79-102.

Sheehan, G. and A. Jensen. 2015. Emergent Cooperation, or Checkmate by Overwhelming Collaboration: Linear Feet of Reports, Endless Meetings. In R. Pincus and S. Ali, editors. *Diplomacy on Ice: Energy and the Environment in the Arctic and Antarctic*. New Haven: Yale University Press. Pp. 213-223.

Smith, L. T. (1999) *Decolonizing Methodologies: Research and Indigenous Peoples*. London: Zedbooks.

Trimble, J. (2008) "Commentary: No Itinerant Researchers Tolerated: Principled and Ethical Perspectives and Research with North American Indian Communities." *Ethos*. 36(3): 380-383.

Voice of the Arctic Inupiat (2016) "Letter to Alaska Governor Bill Walker." June 24, 2016. Accessed at: <https://voiceofthearcticinupiat.org>

Wilson, S. (2008) *Research Is Ceremony: Indigenous Research Methods*. Halifax: Fernwood Publishing.