

# Use of Traditional Knowledge for University Research: Conflicts Between Research Ethics and Intellectual Property Ownership Policies

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**Abstract:** The cultural knowledge of Aboriginal communities has been a long-time interest of social scientists. More recently, researchers from natural sciences and biotechnology have also taken an interest in “traditional knowledge”, for example, knowledge about medicinal plants. Research that involves the cultural knowledge of Aboriginal communities — especially that with perceived commercial value — is demanding an understanding on the part of all university researchers and university administrations of both ethical and legal issues, as well as how research ethics and intellectual property ownership policies are interrelated. While research ethics and intellectual property ownership policies in Canada are both evolving to meet the demands of new and complex situations, a key question is whether they are evolving in isolation of one another — and if so, where continued divergent evolution leads. This paper examines the current state of ethical research guidelines and intellectual property ownership policies at universities in British Columbia, and identifies how these policies may foster, impede, or channel the protection and promotion of traditional knowledge.

## Introduction

The cultural knowledge of Aboriginal communities has long been of interest to university researchers in social sciences, such as ethnographers and anthropologists. More recently, there has been increased interest in traditional knowledge<sup>1</sup> by researchers from natural sciences and biotechnology (e.g., phytochemists, microbiologists, pharmacologists). Generally, social science is more qualitative and contextual (e.g., understanding the cultural systems of which traditional knowledge is a part), and social scientists tend to have a greater awareness of ethical issues in research that involves humans because working with people is often the nature of their research. By comparison, researchers from the natural sciences and biotechnology tend to be interested in quantitative approaches and the more technical or applied aspects of cultural knowledge, and usually have less to do with the people who are the knowledge holders. Given the numerous opportunities for industrial research partnerships these days, natural scientists are usually more aware of issues related to intellectual property ownership of their research products.

However, research involving traditional knowledge — especially that with perceived commercial value — is demanding

a clear understanding of *both* the ethical and legal issues, as well as how research ethics and intellectual property ownership policies interrelate. Given the increasingly political dimensions of research involving traditional knowledge, an understanding here is important for not only university administrations, but for all university researchers — no matter what their discipline.

In Canada, academic research ethics and intellectual property ownership policies are both evolving to meet the demands of new and complex issues. A key question, though, is whether they are evolving in isolation of one another — and if so, where continued divergent evolution leads. The purpose of this paper is to examine the current state of ethical research guidelines and intellectual property ownership policies, using as an example the four main universities in British Columbia to identify how these policies affect the protection and promotion of traditional knowledge. The paper begins with a summary of research ethics policies and intellectual property ownership policies at universities in British Columbia, then discusses issues relating to use of traditional knowledge by university researchers and potential consequences when ethics and intellectual property ownership policies are in conflict.

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<sup>1</sup>There is no single agreed definition of “traditional knowledge”. In this paper, the term refers to the knowledge, beliefs, innovations, and practices derived from customary uses and associated cultural practices and traditions of Aboriginal peoples transmitted through oral tradition and first-hand observation (CBD 1992; Laird 2002).

## Academic Ethical Standards

Research ethics standards for Canadian universities are set by the *Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans* (TCPS 1998). This policy statement governs all research at institutions financially supported by the three national funding councils: the Natural Sciences and Engineering Research Council (NSERC), the Social Sciences and Humanities Research Council (SSHRC), and the Canadian Institutes of Health Research (CIHR)<sup>2</sup>. The mandate of the three councils is “to promote, assist and undertake research” in their respective domains. The *Tri-Council Policy Statement* was adopted in 1998 to “promote research that is conducted according to the highest ethical standards” (TCPS 1998). As a condition of funding, the councils require that researchers and their institutions apply the principles in the *Tri-Council Policy Statement* as a minimum standard. Further, the councils require institutions to have a research ethics board that evaluates all research involving human “subjects” through an ethical review process<sup>3</sup>. Specifically, ethical review is required for activities involving “research”, defined as “a systematic investigation to establish facts, principles or generalizable knowledge”. The research must also involve “research subjects”, which are broadly defined in article 1.1 but essentially exclude research involving public policy issues, the writing of modern history, literary or artistic criticism, critical biographies of the deceased, or research about living people if based exclusively on published works (TCPS 1998). A key element of the ethical review process is the development of a Letter of Consent intended for individual research subjects or participants to sign as evidence of their prior informed consent to be involved in the research. Most institutions will accept justification for verbal consent instead, if written consent is not possible or appropriate.

In theory, implementation of the *Tri-Council Policy Statement* has involved an elaborate scheme of cooperation between various national and institutional entities, including the three councils, their presidents, and respective committees or secretariats, a national advisory council (National Council on Ethics in Human Research, NCEHR<sup>4</sup>), and individual research institutions<sup>5</sup>. In practice, implementation of the *Tri-Council Policy Statement* has been largely left to individual institutions, which in turn, rely heavily on the integrity of individual researchers for voluntary compliance, facilitated through their institutional research ethics board.

Ethical norms for university research have arisen largely from a biomedical model, wherein recognition of the autonomy of the individual and protection from harms are key elements. As such, the *Tri-Council Policy Statement* requires commitment of researchers to respect some fundamental ethical principles of research and human rights. These princi-

ples include: respect for human dignity, respect for free and informed consent, respect for vulnerable persons, respect for privacy and confidentiality, respect for justice and inclusiveness, and balancing of harms and benefits (i.e., minimizing harm and maximizing benefit). While recognized as important, an over-emphasis on *individual* rights of research subjects has been cited as a major criticism of the policy from the perspective of working with Aboriginal communities or other self-defined collective groups (Weijer et al. 1999; NCEHR 2001).

Section 6 of the *Tri-Council Policy Statement* specifically addresses research involving Aboriginal peoples. As this section was based on the extensive literature available rather than on discussions with affected peoples or groups, it has been “in abeyance” since its inception in 1998, pending discussions with Aboriginal representatives and affected communities (TCPS 1998; McDonald 2000). Section 6 acknowledges that research with Aboriginal communities involves extra complexities, and suggests incorporation of “additional requirements [rather than separate standards] to ensure that the rights and interests of the community as a whole are respected”. Among others, these requirements include such elements as:

- consideration of past harms to individuals and communities incurred by expropriation of cultural properties and human remains;
- respect for the culture, traditions, and knowledge of the Aboriginal group;
- consideration of the interests of the Aboriginal group when property or private information belonging to the group is studied or used;
- conceptualization and conduct of the research as a partnership with the Aboriginal group;
- adjustment of the research to address the needs and concerns of the Aboriginal peoples involved;
- willingness to deposit data and other research outcomes in an agreed-upon repository; and
- the opportunity for the community to react and respond to research findings and publications.

Section 6 has been subject to criticism by Aboriginal and non-Aboriginal researchers alike, largely for what it lacks and its ambiguities, and for the length of time it is taking to address the shortcomings. Recently, several national initiatives have been instigated to respond to general problems with the *Tri-Council Policy Statement*, although it is unclear which specific issues will be addressed by each initiative or if the initiatives are even coordinated. For example, in November 2001, the Interagency Advisory Panel on Research Ethics (PRE) was created by the three councils to further the evolution and implementation of the *Tri-Council Policy*

<sup>2</sup>CIHR was formerly the Medical Research Council of Canada (MRC).

<sup>3</sup>“Subjects” is the arguably antiquated language retained by the *Tri-Council Policy Statement* and some institutions. Despite extensive discussion on alternative terms (e.g., participants), the councils chose to retain “subjects” because “it is they who bear the risks of the research” (TCPS 1998).

<sup>4</sup>NCEHR includes representatives from key organizations in clinical research as well as the public. It serves an advisory role to research ethics boards in interpreting ethical guidelines. See <http://www.ncehr-cnerh.org>.

<sup>5</sup>A schematic of implementation was formerly available at [http://nserc.ca/programs/ethics/english/tric\\_chart\\_e.htm](http://nserc.ca/programs/ethics/english/tric_chart_e.htm) [cited 23 May 2003].

*Statement*, as well as to engage a wider public and expert audience on research ethics in Canada (PRE 2002). In addition, PRE is establishing a special working committee on social sciences and humanities to respond to gaps, ambiguities of language, and inadequate treatment of priority issues for these disciplines<sup>6</sup>; undoubtedly research involving Aboriginal communities and their cultural knowledge will be identified as a priority issue. Furthermore, both SSHRC and CIHR have their own, more specific initiatives related to ethics of research involving Aboriginal communities. SSHRC initiated a national dialogue in 2002 on “research and Aboriginal peoples” to identify key funding priorities and outstanding issues<sup>7</sup>. The CIHR Institute of Aboriginal Peoples’ Health, which funds initiatives to improve the health of Aboriginal peoples in Canada, has developed its own guiding principles for working with Aboriginal communities and their knowledge based on the principle of respectful collaboration (IAPH 2001–2002). Both these initiatives have had relatively strong participation and support so far by Aboriginal peoples from within and outside of academe. In 2004, a national Working Group on Aboriginal Ethics was established by the CIHR Institute of Aboriginal Peoples’ Health in collaboration with the CIHR Ethics Office to facilitate the development of ethical guidelines for health research funded by CIHR. The Aboriginal Ethics Working Group will share information and reports with PRE for use in revisions to Section 6 of the *Tri-Council Policy Statement*.

At the institutional level, some universities in British Columbia, such as the University of Victoria (UVic) and the University of Northern British Columbia (UNBC), are developing a special sub-committee on human research ethics to review research that involves Aboriginal communities or cultural knowledge. Both institutions are developing more specific ethics policies to guide research in an Aboriginal context and/or provide general protocols for involvement of Aboriginal Elders or other community members in university courses and events (Brunt 2003; MacGregor 2003). For example, a draft document called “Protocols and Principles for Research in an Indigenous Context”, originally developed by the Indigenous Governance Program at UVic, is under revision for adoption by the Faculty of Human and Social Development.

The current state of academic research ethics guidelines is thus both dynamic and fractionated at the national level. New academic funding initiatives, which provide increased opportunities for research involving Aboriginal communities, are adding incentive for revision of relevant ethical guidelines<sup>8</sup>. However, while effort is being directed toward more appropriate content, uniform interpretation, and consis-

tent implementation of the *Tri-Council Policy Statement*, these achievements may still be years away. In the meantime, interpretation and implementation are left to individual institutions, their research ethics boards and special sub-committees in some cases, which are often comprised of faculty members serving in a volunteer capacity<sup>9</sup>, with little or no means of adequate oversight or enforcement (typically, research ethics boards are mandated to approve research projects before the project begins and to review annual progress reports submitted by the researcher). Concrete and consistent guidance across academic institutions for research involving Aboriginal communities or their cultural knowledge is still lacking in Canada. More specific guidelines or protocols that are emerging from individual institutions and/or collaborating communities may provide useful examples to inform the national discussion<sup>10</sup>. In the interim, significant responsibility resides with individual researchers to interpret the *Tri-Council Policy Statement* and their institutional ethics guidelines in ways that are consistent with the Aboriginal contexts of their work.

## Academic Research and Intellectual Property Ownership Policies

Unlike research ethics policies in Canada, there is no national body that oversees academic research and intellectual property ownership policies. Each university determines its own policies, in compliance with Canadian and international law and according to its institutional mandate. In general terms, university ownership can be categorized as either “inventor as owner” or “institution as owner”. Simon Fraser University (SFU), UVic, and UNBC can be placed in the former category. Excluding copyright, the University of British Columbia (UBC) falls into the latter category (MacGregor 2003; Tolson 2003; Volker 2003; UBC 1993, Policy #88). More specific comparisons of patent and copyright policies are provided below as these are typically seen as most relevant to academic research involving traditional knowledge.

## Copyright

At UBC, ownership of and copyright to most “literary works” produced in connection with the university are vested in the originator, with the exceptions of audiovisual and computer materials (i.e., audio and video tapes, slides, photographs, films, computer programs, and computer-stored information). These excluded works are considered “inventions” and are assigned to the university if there is a

<sup>6</sup>See [http://www.nserc.ca/programs/ethics/english/nomination\\_e.htm](http://www.nserc.ca/programs/ethics/english/nomination_e.htm) [cited 23 May 2003].

<sup>7</sup>See [http://www.sshrc.ca/web/whatsnew/initiatives/aboriginal\\_e.asp](http://www.sshrc.ca/web/whatsnew/initiatives/aboriginal_e.asp) [cited 23 May 2003].

<sup>8</sup>For example, through the Community–University Research Alliance funding initiative of SSHRC, the Institute for Aboriginal Peoples’ Health funding streams of CIHR, and the new Aboriginal Research pilot program of SSHRC.

<sup>9</sup>In addition to faculty members, the research ethics board composition of SFU includes a student and two members from the community outside the university (SFU 2001, policy r20.01), and that of UNBC includes at least one community member with no affiliation with the university (UNBC 1995, section 4.2).

<sup>10</sup>For example, the Standard of Conduct for Research in Clayoquot and Northern Barkley Sound Communities developed by the Clayoquot Alliance for Research, Education and Training (available at <http://www.clayoquotalliance.uvic.ca/>), the Mi’kmaq Research Principles and Protocols (available at <http://mrc.uccb.ns.ca/prinpro.html>) and the ‘Namgis First Nation Guidelines for Visiting Researchers/Access to Information (available at <http://www.law.uaberta.ca/research/aboriginalculturalheritage/casestudies.htm>).

proposal to protect or license them (UBC 1993, Policy #88). By comparison, copyright policy at SFU specifies that only ownership of university-requested and university-sponsored products rests with the university; products arising out of research or other activities involving a university contribution are subject to joint ownership of copyright by the originator and the university, generally with a equal sharing of royalties or other income, should they arise (SFU 1992, Policy R.30.01). While less explicitly stated in their policies, the expectations at UVic and UNBC are similar to that of SFU (MacGregor 2003; Tolson 2003). At all the institutions, an exclusive proprietary right is recognized for all graduate students to their own thesis products.

## Patent

Patent policies of the three “inventor as owner” universities are generally focused on sharing revenue from commercialization rather than ownership. SFU explicitly waives all rights to patents relating to a discovery or invention by a faculty, staff, or student in the course of his/her research at the university, but requires the university be informed of the discovery and any intention to pursue a patent. If the patent services of the university technology transfer office are requested, however, all rights to the discovery will be assigned to the university. The university will receive 50% of all income until expenses are recovered, and 20% thereafter (SFU 1995, Policy R 30.02). At UNBC, currently, the Senate Committee on Research and Graduate Studies determines whether ownership of a potentially patentable property is retained by the university, the employee, jointly by the university and employee, or by an outside sponsor (UNBC 1995, section 3.4.1.3). However, apparently all research policies at UNBC are currently under revision (MacGregor 2003). UVic is “committed to balancing any ownership rights” and leaves to the inventor both ownership and the decision as to whether or not to pursue commercialization through UVic or elsewhere. The university expects to share in revenues for its role in “infrastructure investment” in cases where its technology transfer services are used to commercialize a product, if the product is related to development of course materials, or if it the university has an interest in an invention that was developed using UVic funds or facilities but is commercialized elsewhere (UVic 2000, Policy 1180, section 3).

In contrast, UBC faculty, staff, or students who propose to protect or license a discovery, invention, or audiovisual or computer material that used university funds or facilities must first complete an invention disclosure form providing a full description, and rights must be assigned to the university. The university then decides whether to protect or license the product in return for a share of any proceeds, or to reassign rights to the inventor. Generally, the university retains 50% of the net income of a patentable invention and the remaining 50% is divided among the inventors (UBC 1993, Policy #88). When other institutions are involved, the proceeds are typically divided equally among the university, inventor, and other institutions, using an inter-institutional agreement (Campbell 2003).

## Application of Intellectual Property Ownership Policies to Research Involving Traditional Knowledge

To date, no universities in British Columbia have been involved with a patent application or other means of intellectual property ownership or benefit-sharing arrangement with an Aboriginal group in Canada or an Indigenous group elsewhere (MacGregor 2003; Tolson 2003; Volker 2003; Campbell 2003). The closest situation that was described involved a reciprocal arrangement between an individual Aboriginal Elder and UNBC, as follows. Two UNBC professors worked with a local Elder to produce a book on traditional medicinal knowledge. The authors, who were granted copyright by their institution, chose to retain their moral rights but transferred their copyright to the Elder. The royalties received from the publication were put into a UNBC bursary that supported further research on traditional knowledge by students at UNBC (MacGregor 2003).

Representatives from the technology transfer offices of all four universities indicated that if a researcher from their institution made a discovery or developed an invention in collaboration with an Aboriginal group, joint intellectual property ownership would be considered (MacGregor 2003; Tolson 2003; Volker 2003; Campbell 2003). According to a technology transfer office representative at UBC, the template would involve equal sharing between the universities and the inventor(s), using UBC’s existing model of inter-institutional agreements. That is, the Aboriginal group would be viewed as “just another party” for assignment of the patent and sharing of commercial revenues. Whether or not any individual(s) from the Aboriginal group would be named as inventors on the patent would depend on their contribution to the inventive step. It was noted that a careful assessment would be needed as to who was named as inventor. While very specialized traditional knowledge was seen to potentially qualify as know-how, there was concern raised about the possibility of an “obviousness objection” for a patent based on traditional knowledge (Campbell 2003). The closest precedent to date described at UBC is a set of patents on natural compounds with antimitotic properties isolated from a marine sponge found in the coral reefs off Papua, New Guinea, by Dr. Ray Anderson (UBC Zoology). The UBC University Industry Liaison Office licensed the product to American Home Products and it is now in clinical phases of testing. An inter-institutional agreement was used to share revenues equally between UBC, the University of Papua New Guinea, and the Papua New Guinean Government. The discovery was based on marine biodiversity prospecting without links to traditional knowledge or any Indigenous group (Patscan News 2000; UBC 2002).

By comparison, the representative from the technology transfer office at UVic proposed a more customized approach to exploring the opportunity of joint intellectual property ownership with an Aboriginal group, consistent with UVic’s “case-by-case” approach to assessing any potential intellectual property arrangement. Rather than have an inventor fill out an invention disclosure form to initiate discussions, UVic generally prefers to talk with interested parties first, to discuss available options and appropriate

protection strategies. There is no fee for consultations, nor is there a commitment to pursue commercialization through the UVic technology transfer office. Self-described as a “young and growing” office, UVic appears to recognize the initial and ongoing investment in relationship-building and education required to develop community-level understanding and support as a basis for effective commercial partnerships in future. Again, it was noted that careful consideration would be required as to who was named as inventor, but in this case, the tendency would be to err on the side of inclusiveness so as to prevent a patent from being nullified by omission of a legitimate contributor. Anyone who provided a “creative contribution” to the invention would be seen as a potential inventor, leaving open the possibility of key individuals from an Aboriginal community to be named (Tolson 2003).

Technology transfer office representatives at all four institutions indicated that education is now a key component of their mandate, although the target audiences for such education varies, and to date it appears aimed at researchers and potential corporate partners. It is questionable whether or not invitations to university-based seminars will be sufficient for very many members of Aboriginal and other communities to develop a working understanding of intellectual property rights and related issues in research. Consideration of a more customized approach seems merited.

### Potential Points of Conflict between Intellectual Property Ownership Policies and Ethical Guidelines

There is a general disconnection between university intellectual property ownership and ethics policies at the institutional level, despite the fact that both types of policies typically are administered through the Office of Vice-President, Research. This disconnection is becoming increasingly obvious amid a relatively recent surge of academic and corporate interest in developing the commercial potential of certain aspects of traditional knowledge and related natural resources. Arguably, the most cogent example is the use of traditional plant knowledge as the basis for developing new commercial health or medicinal products. While most efforts to find patentable compounds from plants based on traditional knowledge have not resulted in commercial products, two recent examples have emerged: (1) the appetite suppressant “P57” made from a patented bioactive compound derived from the South African succulent plant *Hoodia gordonii*<sup>11</sup> and (2) the anti-HIV compound

“prostratin” isolated from the bark of the Samoan medicinal plant, *Homalanthus nutans*<sup>12</sup>.

These two examples demonstrate the potential and illustrate the kinds of connections this kind of applied research has to universities. The initial time-intensive research phases (e.g., field interviews, plant collections, and extractions, bioactivity screening) are commonly conducted in university labs, often as part of graduate student theses. Therefore, it is relevant to consider the ethical and legal policy issues that may arise in the use of traditional knowledge by academic researchers. Such considerations may be particularly important given the highly political dimensions of this kind of research at the international level, where claims of “biopiracy” have been routinely leveled at university-sponsored biodiversity research and bioprospecting projects<sup>13</sup>, in some cases resulting in the termination of the project funding (ETC Group 2001; Rosenthal 2003)<sup>14</sup>.

In the context of research and commercial development of traditional knowledge and related biological resources, the disconnection between ethics and IP ownership policies potentially poses a problem. For example, if a new plant compound was discovered based on traditional knowledge and the Indigenous source of that knowledge claimed the rights to any intellectual property derived from it (based on the argument that proprietary rights to intellectual properties and natural resources are integral parts of cultural heritage) this could pose a conflict between intellectual property ownership policies and ethical guidelines, especially in cases where institutions (such as UBC) claim the rights to an invention.

Within the university system, “who owns the results of the research” and “who owns the intellectual property arising from the research” depends on institutional policies. But some, perhaps many, Aboriginal peoples would disagree. Underlying the question of who *ought* to have ownership rights to a discovery or invention based on traditional knowledge is whether the intellectual value or creative contribution of the cultural knowledge being disclosed *exceeds* that of the research or transcription process. This question is at the heart of Aboriginal claims to intellectual property, as well as editorial control and restrictions on publishing. How can this conflict be addressed? To the greatest extent possible, rights to research outcomes should be sorted out *before* the research begins. One opportunity is at the stage of developing consent.

As indicated previously, developing a Letter of Consent is an ethical requirement of research involving humans (e.g., conducting interviews about medicinal plants). While some-

<sup>11</sup>P57 was found based on ethnobotanical information published in the 1930s that documented traditional use of the *Hoodia* plant by the San peoples, who are indigenous to South Africa. South Africa’s Council for Scientific and Industrial Research (CSIR) holds the patent to P57 and licensed commercialization rights to the UK-based pharmaceutical company Phytopharm, who in turn sublicensed to the USA-based company Pfizer (CSIR 2002; Phytopharm 2002; Carroll 2003; Stephenson 2003; Chennells 2003).

<sup>12</sup>Prostratin was found during a collaboration between researchers at Brigham Young University and the National Cancer Institute, based on the traditional knowledge of Samoan healers who used the bark of *Homalanthus nutans* to treat yellow fever. The use of prostratin in AIDS treatment was patented and licensed by the National Cancer Institute to a USA-based non-profit research institute. It has been undergoing safety and clinical trials with the expectation that it will be eventually licensed to a drug company (Cox 1994; AIDS Research Alliance 2001).

<sup>13</sup>Bioprospecting is the exploration of biological diversity for commercially valuable biological and genetic resources (Laird 2002).

<sup>14</sup>For allegations of biopiracy, see [www.etcgroup.org](http://www.etcgroup.org). For an insightful analysis on biopiracy/bioprospecting discourses, see Svarstad 2000.

times viewed as an inconvenient and time-consuming exercise that delays research for several weeks, developing a Letter of Consent with the input of the Aboriginal participants can be a vital *opportunity* to collaboratively assess positive and negative impacts of research. For example, this exercise can be used to identify and address some general concerns about medicinal plant research and bioprospecting endeavors, and to discuss specific concerns about how the data generated from the research will be used and by whom. It is also the appropriate time to address ownership of data and intellectual property rights, if these matters are relevant to the participants' decision to take part in the research — which is the case for many Aboriginal groups in BC.

Should intellectual property rights be outlined on consent forms? Isn't stating intellectual property ownership by an Aboriginal group inconsistent with the policies of some universities, such as UBC? Probably, but it is not inconsistent with the requirements and recommendations of Section 6 of the *Tri-Council Policy Statement*, which forms the basis of the principles and guidelines underlying the ethical review process required by university research policy. Protecting Aboriginal interests in intellectual property is not explicitly mentioned, but the language used in the *Tri-Council Policy Statement* certainly leaves this possibility open, particularly if the intellectual property is linked to cultural heritage. More specifically, a statement of Aboriginal ownership attempts to:

1. consider past expropriation of cultural properties *and forestall this situation for the specific research*;
2. respect the culture, traditions and knowledge of the Aboriginal group *by adhering to customary norms*;
3. consider the interests of the group *when their knowledge is being studied or used*;
4. conceptualize the research as a partnership with the Aboriginal group *by supporting joint decision-making for the research process and outcomes*;
5. adjust the research to *address the needs and concerns of the Aboriginal peoples involved*; and
6. provide an opportunity *prior to research* for the community to react and respond to potential research findings and publications.

If a patentable, commercializable product happened to result from the research, then a question that may arise is the legal weight of a Letter of Consent. Would the rights claimed by the University supersede those claimed by the Aboriginal group? Rephrased, this question is really asking which policy has priority — university intellectual property ownership or research ethics policy? It also raises the question of whether or not a consent form can be considered a contract. A contract requires "consideration", an exchange of value (often money) between the contracting parties. Does traditional knowledge with potential commercial value qualify as consideration? Is an honorarium consideration when given by a university researcher to an Aboriginal Elder who shares cultural knowledge? These questions require wider discus-

sion among Canadian research ethics scholars and policy-makers.

Apparently clarification of these ethical and legal policy issues will require initiation of a specific case that challenges the policies in question. Without such clarification *in advance* of initiating a case, however, especially at universities that require the submission of an invention disclosure form and assignment of rights to the university to initiate a patent application, it is questionable what incentive exists for an Aboriginal group that is concerned about such issues to enter the process.

## Conclusions and Recommendations

The impact of academic research on the promotion and protection of traditional knowledge is directly related to the policies that govern research and research conduct. To help identify how policies may foster, impede, or channel the protection and promotion of traditional knowledge in Canada, a detailed critical analysis is required of university research ethics guidelines and intellectual property ownership policies as they apply to research that involves the cultural knowledge of Aboriginal communities.

It is important to note that access and use of traditional knowledge by academic researchers takes place both directly (i.e., through interactions with Aboriginal participants in research), and indirectly (i.e., through published primary and secondary literature and databases)<sup>15</sup>. While direct interactions with research participants are governed by national and institutional ethical guidelines for research involving humans, indirect access to traditional knowledge via the published literature is not. However, in terms of perceived rights to traditional knowledge, many Aboriginal people don't differentiate between what is published and now considered "public domain" and what is not. Given that research involving traditional knowledge can be a means of establishing proprietary rights in the knowledge, it is unsettling that key issues regarding ownership and control of knowledge are not explicitly addressed in existing research ethics policies. It is important that this oversight be carefully assessed and addressed at both national and institutional levels.

Conversely, ownership and rights of researchers, their research institutions, and their research sponsors are clearly articulated at the institutional level through university research policies, specifically intellectual property ownership policies. These rights vary from institution to institution but fall into the two general categories of "inventor as owner" or "institution as owner". In British Columbia, institutions adhering to the former policy tend to be less established, less experienced, and less active in commercialization of research products. While no precedent was found in British Columbia for a joint intellectual property ownership arrangement between a university and an Aboriginal group, all institutions expressed a willingness to explore this possibility if

<sup>15</sup>For example, published compilations of plants and traditional uses such as Moerman 2000 and electronic databases such as the Traditional Ecological Knowledge Prior Art Database (T.E.K.\*P.A.D) at <http://ip.aaas.org/tekindex.nsf> and the Natural Products Alert (NAPRALERT) database available at <http://www.uic.edu/pharmacy/depts/PCRPS/NAPRALERT.htm> [cited 18 Jan 2004].

it arose through research that was conducted at their university.

Based on a review of current institutional policies and discussions with technology transfer representatives, the less established technology transfer offices (i.e., UNBC and UVic) were more open to discussing potential scenarios and interested in the idea of exploring innovative partnerships with Aboriginal groups, as well as adapting or creating policies to support such collaborations. The most established facility (i.e., UBC) displayed the least flexibility or sense of need to alter current ways of doing things to facilitate potential partnerships with Aboriginal groups. In some cases, the upfront requirement to submit an invention disclosure and assignment form may pose an insurmountable barrier in principle for some Aboriginal groups to even consider a collaboration.

The educational mandate, shared by all of the technology transfer offices to some degree, seems essential to building a foundation of awareness and understanding in Aboriginal communities about intellectual property rights, ownership issues, challenges, and opportunities. Other keys to facilitating partnership with Aboriginal groups, perhaps more challenging for some of the institutions, will be the ability to take time upfront to engage in reciprocal cross-cultural learning and the flexibility to adapt policies and practices accordingly. Presumably, incentives for universities to reassess their policies will continue to grow as additional concrete examples emerge of how traditional knowledge can make valued contributions toward inventions, and as further precedents are established for ownership and profit-sharing by Indigenous groups. New national and international laws and policies on "Access and Benefit Sharing" are emerging from commitments to the 1992 Convention on Biological Diversity, which Canada has signed and ratified. For example, the *Bonn Guidelines on Access to Genetic Resources and Fair and Equitable Sharing of the Benefits Arising out of their Utilization* provides added guidance and incentives for academic, industrial and government researchers to urgently address these issues.<sup>16</sup>

There is a need to educate academic researchers as well as communities on institutional policies. Since it is the researcher who will initially negotiate the ground rules for research, a clear understanding of research and ethics policies and existing institutional obligations is needed to determine what elements may be non-negotiable within the research relationship. Knowing the "bottom line" is helpful for all parties to make informed choices. Education is an investment and ought to be seen as a proactive measure to foresee and forestall problems that, in some cases, could otherwise lead to litigation. Addressing potential ethical and legal conflicts in advance of research is especially important for graduate students who have less flexibility in their programs than faculty to adjust to such circumstances.

Consistency across legal and ethical policies in definitions of terms such as "ownership" and "control" when referring to

data, knowledge, products, and other aspects of research will help to address real world complexities of working in an intercultural and political environment. Likewise, ambiguities in language and terminology in section 6 of the *Tri-Council Policy Statement* must be addressed with potentially commercializable research in mind. It will likely take collective expertise from ethics, law, natural and social sciences, business and Aboriginal communities to come up with acceptable university policies for partnerships that can work beyond just corporate contexts. UVic and UNBC may be examples of institutions in Canada where ethics and intellectual property ownership policies can *co-evolve* in future, which will be important for resolving ownership and other issues involved in research on traditional knowledge.

A timely opportunity exists for Canada to address issues related to access and use of traditional knowledge that are raised by academic research conduct — not just for universities but for governments, industry, non-governmental organizations, and other institutions that may engage in research involving traditional knowledge. More specific guidelines or protocols that are emerging from individual institutions may provide useful examples to inform the national discussion, as will emerging international instruments, such as the *Bonn Guidelines*. Analysis of more contextual, on-the-ground experiences of practitioners are needed to derive lessons, inform policy changes, and facilitate *convergent* rather than divergent policy evolution. Researchers and practitioners in Canada have an opportunity — and responsibility — to help identify research issues that can be addressed by policy changes.

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<sup>16</sup>The *Bonn Guidelines* were adopted in 2002 at the Sixth Conference of Parties (COP 6) to the Convention on Biological Diversity. Decision VI/24: Access and benefit-sharing as related to genetic resources. Available at <http://www.biodiv.org/decisions/default.aspx?m=cop-06&d=24> [cited 18 Jan 2004].

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