

## University Research on Traditional Medicines: Implications for Aboriginal Communities <sup>1</sup>

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The objectives of this session are to examine the relationship between traditional medicines and universities, the codes of conduct that universities need to comply, and the implications for Aboriginal peoples working with researchers. First, it will be helpful to understand the types of university research occurring on traditional medicines and the kinds of researchers involved.

A key point I wish to make is that university researchers who study traditional plant medicines are not all alike. There is a diverse spectrum of medicinal plant scientists who have different objectives for their research and adhere to different theories, philosophies and methodologies (see Figure 1). They come from a variety of academic backgrounds in the social sciences (e.g., anthropologists, ethnographers), natural sciences (e.g., natural products chemists, pharmacologists) and health sciences.

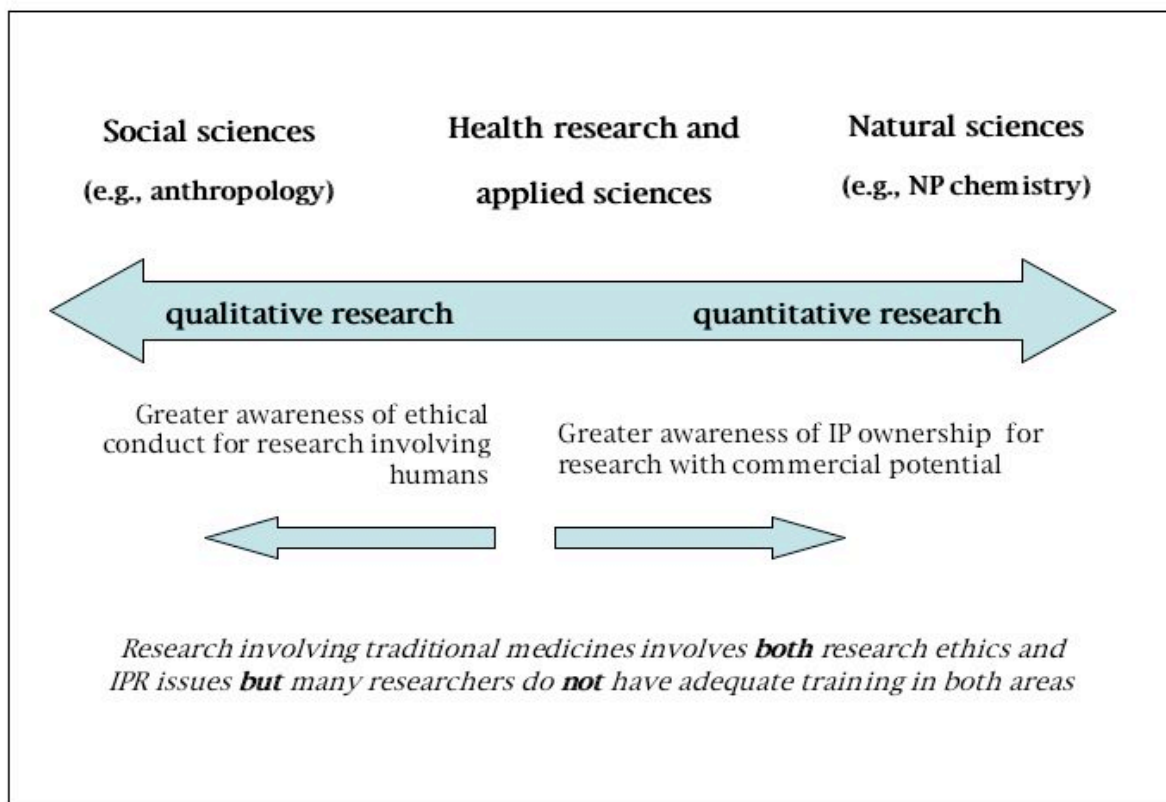
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This diversity of researchers enriches the opportunity for gaining new knowledge about plant medicines, but complicates discussions of the ethical and legal issues related to access and benefit-sharing (ABS). Social science researchers generally understand the ethical issues in research related to interacting with people (i.e., human research ethics) such as prior informed consent, but they often have a more limited awareness of intellectual property (IP) ownership issues. In contrast, natural scientists, especially those involved in applied research with commercial potential, increasingly have to address IP ownership rights to their work (e.g., patents) but tend to have limited exposure to human research ethics since it is uncommon to have people directly involved as ‘subjects’ in this kind of research.

**Figure 1. Spectrum of medicinal plant researchers**



However, *all* of these issues are inter-related in medicinal plant research, so they require careful consideration by *all* researchers, regardless of their specific background and whether or not there is an intention to commercialise resulting products. Unfortunately, few university researchers have adequate exposure to the complex of ethical and legal issues involved, let alone training in how to address them, which greatly complicates ABS discussions related to medicinal plant research.

Ethnobotanists are one group of researchers that *ought* to span the spectrum of awareness about medicinal plant research. It could be argued that by definition of their discipline, ethnobotanists have an implicit moral obligation to be aware of and address these issues in their work. In fact, many ethnobotanists and researchers from related fields

such as ethnopharmacology have been confronted with ABS issues since well before the term “access and benefit-sharing” was ever coined. This doesn’t mean that ethnobotanists have resolved the issues, rather that collectively they have some useful experiences and insights to share in Canadian and international discussions on ABS.

Ethnobotany is a field of study that seeks to understand a wide variety of interrelations between humans and plants from many different disciplinary perspectives (Ford 1994: 44, 46) while ethnopharmacology focuses specifically on health related practices and biologically active substances used by humans with the aim to develop a comprehensive understanding of traditional medical systems (Elisabetsky and Etkin 2005). Plants that have a role as traditional foods and/or medicines and the cultural knowledge related to these plants have been an important focus for many ethnobotanists and ethnopharmacologists over the last century. Within the last couple of decades, however, medicinal plant research in both fields has increased in profile, prestige and notoriety.

Indeed, in recent years, ethnobotanists and ethnopharmacologists have been caught in the centre of numerous controversies about “bioprospecting” or “biopiracy”, sometimes as proponents of the research and sometimes as relatively innocent or unsuspecting bystanders. The resulting turmoil has caused tremendous stress and uncertainty for individuals, communities, institutions and funders. As ethnobiologist Darrell Posey (Posey 1999: 225) observed some years ago, university scientists have largely seen themselves as the innocent victims of the academic system that they must operate within. While it is true that obstacles to equitable research involving Aboriginal peoples, cultural knowledge, and traditional resources are created by some academic policies and structures, this cannot be an excuse for researchers to ignore or avoid difficult and complex issues.

*Scientists are not accustomed to playing the role of the villain, and they find the lack of trust in their activities to be of profound puzzlement. They see themselves as seekers of the truth, and if anything, victims of a system that exploits their efforts by low pay, reduced research funds, and precarious infrastructural support.*

Darrell Posey (1999:225) *Safeguarding Traditional Resource Rights of Indigenous Peoples.*

When the issues are teased apart, however, layers of problems related to the diversity of researchers become apparent. For example, there are several different ways to study the medicinal properties of plants. Some researchers work directly with knowledgeable Elders to learn about the plants and collect samples from traditional use sites on Aboriginal territories. In these cases, the direct interaction with the knowledge holders sets a high level of obligation and accountability in research. Other researchers use plant information that is already published in the academic literature or otherwise considered in the “public domain” (i.e., books, journal articles, databases, registries, herbarium specimens, botanical garden collections).<sup>3</sup> When cultural knowledge from these secondary sources is

<sup>3</sup> For example, published compilations of plants and traditional uses are found in books such as *Native American Ethnobotany* by D. Moerman (2000), electronic databases such as the *Traditional Ecological Knowledge Prior Art Database* (T.E.K.\*P.A.D) available at <http://ip.aaas.org/tekindex.nsf> and

used as an information base for medicinal plant research, it is more difficult and complicated to work out current expectations and obligations regarding ABS and the original source communities.

*Indigenous peoples have asserted that with respect to Indigenous knowledge that is already documented or in registers or databases, this knowledge is NOT in the public domain, and Indigenous peoples retain all rights over the ownership and use of this knowledge. Similarly, any Indigenous knowledge acquired without prior and informed consent is not in the public domain, and all rights remain with the affected Indigenous peoples. Mechanisms are necessary for the repatriation of Indigenous knowledge and genetic resources that have been illegally appropriated. Indigenous knowledge and genetic resources should be classified as inalienable cultural heritage which is not subject to the laws relevant to public domain.*

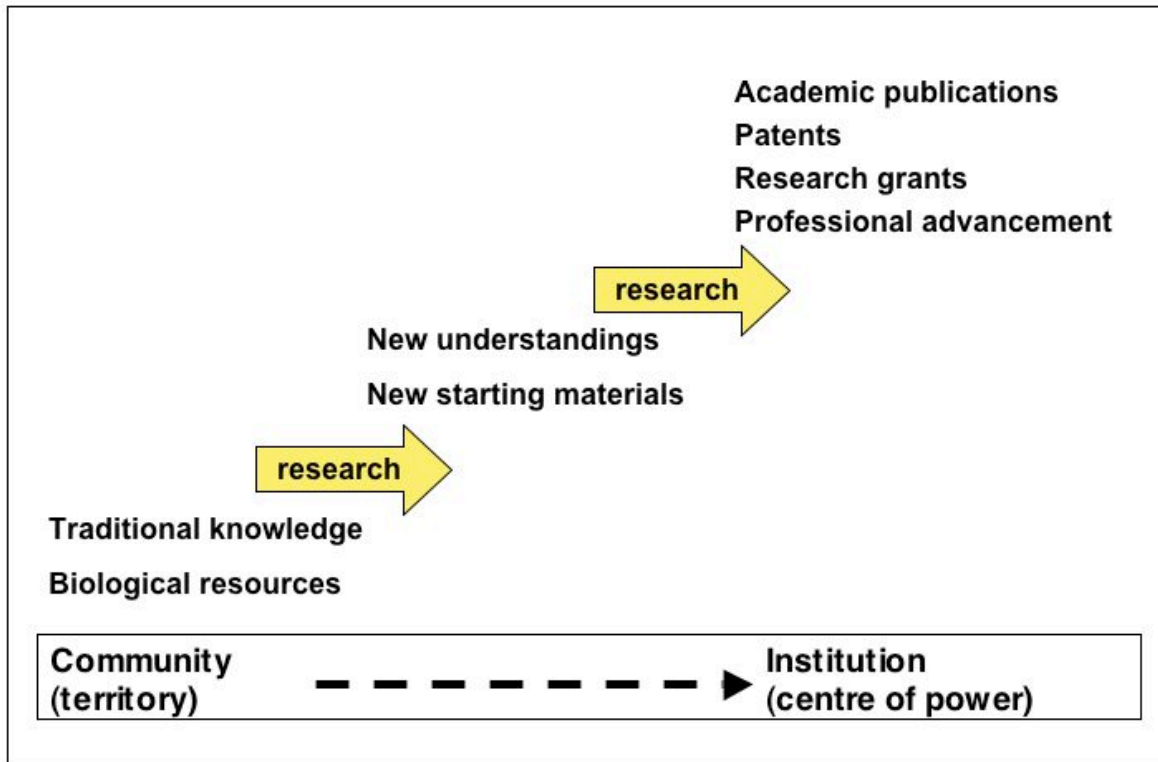
*Collective Statement of Indigenous Peoples on the Protection of Indigenous Knowledge* presented at the third session of the United Nations Permanent Forum on Indigenous Issues, 10-21 May 2004, New York.

Furthermore, while it might not seem ethical or equitable from an Aboriginal community's perspective, it has been common practice for academic researchers who use published sources of medicinal plant knowledge to cite only the academic author of the published book or article rather than give due credit to the person or community who was the original source of the information. This "distancing" of knowledge and resources from their Aboriginal origins has weakened legal rights of Aboriginal peoples and dulled the sense of moral obligation by downstream users such as other academics, government scientists, and the private sector (e.g., biotechnology, herbal and pharmaceutical companies).

This situation is recognised as unjust when measured by current ethical standards in ethnobotany, but it is not easy to solve. How does one begin to tackle a problem that has accumulated over decades or even centuries? Redress requires a two-fold strategy – one aimed at the cumulative problem of *past* research and publication practices (i.e., information already in the public domain) and one aimed at changing *future* practices so as to prevent perpetuation of the problem.

How we arrived at this situation can be partly understood as a result of conventional academic research practices that tend to be linear and extractive in nature. That is, conventional research methodologies are largely premised on a one-way flow of starting materials (e.g., cultural knowledge and plant resources) from dispersed "territories" such as rural areas and Aboriginal communities to "centres" of power such as academic institutions (see Figure 2).

**Figure 2. Linear (extractive) research practices**



As ethnopharmacologist Elaine Elisabetsky has noted, university researchers and their institutions have been the main beneficiaries of this style of research – which has laid the foundation for criticisms of “scientific imperialism” and “biopiracy” in medicinal plant research.

*Usually, indigenous knowledge was crucial to the development of such products; nevertheless, indigenous groups tend not to benefit from the achievements of research. ... As a result, such research efforts are perceived as scientific imperialism: scientists are accused of stealing plant materials and appropriating traditional plant knowledge for financial profit and/or professional advancement.*

Elaine Elisabetsky (1991) *Sociopolitical, economical and ethical issues in medicinal plant research.*

Simple logic tells us that most linear, extractive processes are ultimately unsustainable. Pragmatically speaking in the context of medicinal plant research, if the ecological and cultural integrity of *in situ* sources of biological resources and Aboriginal knowledge are not maintained, they will eventually be depleted and researchers will run out of “starting materials” for their research. On ethical grounds, of course, contributing to the demise of ecosystems and cultures to feed the research process is completely unacceptable. How

then, can the research process be changed so that it is a self-sustaining endeavour of mutual benefit to all parties involved and supportive of long-term ecological and cultural needs? In other words, how can the research process be “circularised”?<sup>4</sup>

As more researchers in the ethnosciences have taken this question to heart, a shift in research paradigms is beginning to emerge. Collaborative and participatory approaches and philosophies have come to the forefront of debates on how medicinal plant research ought to be conducted. For example, in the edited volume “Biodiversity and Traditional Knowledge: Equitable Partnerships in Practice” (Laird 2002), the concept of “equity” or “fairness in dealing” is injected into the research process, leading to a new foundation for research built upon community-centered and ecosystem-based values. In this context, moving from linear to circular research practices includes elements such as:

- Developing consent and communication processes that respect local values, protocols and timeframes;
- Embracing consent as a ongoing process throughout the research project;
- Involving local people in meaningful ways in the research design and process;
- Sharing decision-making and control over research processes and outcomes;
- Co-defining and sharing benefits of research (direct and indirect; tangible and intangible; monetary and non-monetary; immediate and longer term);
- Using research as an opportunity for *reciprocal* (two-way rather than one-way) exchange of knowledge, ideas and resources;
- Embedding local training and education opportunities directly into the research process;
- Giving due credit for contributions to research and dividing ownership of any products fairly;
- Sharing data and results in locally-useful forms;
- Identifying future opportunities for collaboration and continuation of research on topics of mutual interest.

Circular research practices are premised on recognising the contributions (tangible or intangible) of participants to the research process and outcomes. These contributions may lead to new ideas and discoveries, deeper understandings, and alternative approaches – all of which may serve as new starting materials and inspiration for further cycles of research (see Figure 3).

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<sup>4</sup> For a more detailed discussion on this topic, see Bannister et al. (forthcoming).

**Figure 3. Moving from linear to circular research practices**



There is a growing array of local, national and international instruments (e.g., codes, guidelines, statements) relevant to medicinal plant research that incorporate the above collaborative principles and practices in the spirit of empowering communities in the research process, supporting biological and cultural diversity, and protecting Aboriginal rights to traditional knowledge and plant medicines as part of their tangible and intangible cultural heritage. These instruments are having an impact on the way medicinal plant research is viewed by the research community, the media and wider society by broadening awareness and stimulating discussion of the issues, potential benefits and possible harms.

Some examples from international law include statements, declarations and conventions such as:

- 1988 Declaration of Belém by the International Society of Ethnobiology;
- 1992 Kari-Oca Declaration and the Indigenous Peoples Earth Charter;
- 1992 Charter of the Indigenous-Tribal Peoples of the Tropical Forests;
- 1992 Convention on Biological Diversity;
- 1993 United Nations Draft Declaration on the Rights of Indigenous Peoples;
- 1993 Bellagio Declaration on Cultural Agency/Cultural Policy;

- 1993 Mataatua Declaration on Cultural and Intellectual Property Rights of Indigenous Peoples;
- 1993 Recommendations of the Voices of the Earth Congress;
- 1993 Julayinbul Statement on Indigenous Intellectual Property Rights;
- 1995 Sabah Statement from the United Nations Development Programme Asian; Consultation Workshop on the Protection and Conservation of Indigenous Knowledge;
- 1995 Suva Statement from the United Nations Development Programme on Indigenous Peoples' Knowledge and Intellectual Property Rights;
- 2000 Statement of the Union of British Columbia Indian Chiefs from the Protecting Knowledge: Traditional Resource Rights in the New Millennium Conference;
- 2004 Collective Statement of Indigenous Peoples on the Protection of Indigenous Knowledge.

These concepts are also entrenched in the codes of ethics of many academic and professional societies whose members engage in aspects of medicinal plant research, including:

- American Anthropological Association (<http://www.aaanet.org/committees/ethics/ethics.htm>);
- International Society for Ethnobiology (<http://guallart.anthro.uga.edu/ISE/soceth.html>)
- Society for Economic Botany (<http://www.econbot.org/ethics/>);
- Society for Conservation Biology ([www.conbio.org/2004/MembersMeeting/Ethics\\_Statement\\_2004\\_07.pdf](http://www.conbio.org/2004/MembersMeeting/Ethics_Statement_2004_07.pdf));
- Society for Environmental Toxicology and Chemistry ([http://www.setac.org/htdocs/who\\_code.html](http://www.setac.org/htdocs/who_code.html));
- American Institute of Chemists (<http://www.theaic.org/DesktopDefault.aspx?tabid=46>);
- American Chemical Society (<http://www.chemistry.org/portal/a/c/s/1/acsdisplay.html?DOC=membership\conduct.html>).

*The ISE recognises that culture and language are inextricably connected to land and territory, and cultural and linguistic diversity are inextricably linked to biological diversity. Therefore, the right of Indigenous peoples to the preservation and continued development of their cultures and languages and to the control of their lands, territories and traditional resources are key to the perpetuation of all forms of diversity on Earth.*

From the Preamble of the *Code of Ethics* of the International Society of Ethnobiology (1998)

Still other academic and professional societies and organisations that are involved in medicinal plant research have articulated ethical standards in the form of guidelines, reports, position statements, resolutions and discussion papers. Some examples are:

- American Society for Pharmacognosy *Guidelines for Interactions with Source*



- *Countries* (see Journal of Natural Products 1997, 60, 654-655);
- Technical Report of the International Union of Pure and Applied Chemistry (<http://www.iupac.org/reports/1996/6812andrews/index.html>);
- Position statements of the American Folklore Society on ethics and human subjects (<http://www.afsnet.org/aboutAFS/ethics.cfm>);
- The International Chemical Society *Göteborg Resolution* (<http://www.chemecol.org/society/about.htm>);
- *Suggested Ethical Guidelines for Accessing and Exploring Biodiversity* prepared as a Pew Conservation Scholars Initiative by Anil K. Gupta (<http://users.ox.ac.uk/~wgtrr/gupta.htm>);
- *Ethics, Biodiversity, and New Natural Products Development* prepared as a discussion paper for the WWF-World Wide Fund For Nature by Anthony B Cunningham (<http://peopleandplants.org/dp/dp2/index.html#intro>);
- *Indigenous Peoples and Participatory Health Research* guidelines commissioned by the World Health Organization ([http://www.who.int/ethics/indigenous\\_peoples/en/index.html](http://www.who.int/ethics/indigenous_peoples/en/index.html)).

The above types of instruments set the current standard of expectation and provide significant guidance for research involving traditional plant medicines. However their impact on academic research practices varies considerably. Outside of northern Canadian regions where formal research licensing mechanisms are in place, in most cases there is a low degree of enforceability, thus the instruments are largely educative in nature.

An important development is the increasing number of Aboriginal organisations and communities that are developing their own guidelines, codes of ethics and protocols for research conducted with, in and about their members. There are many examples, such as:

- *Principles and Guidelines for Researchers Conducting Research With and/or Among Mi'kmaq People* developed by the Mi'kmaq Ethics Watch;
- *Traditional Knowledge Research Guidelines* prepared by the Council of Yukon First Nations;
- *'Namgis First Nation Guidelines for Visiting Researchers/Access to Information* prepared by the 'Namgis First Nation;
- *Code of Ethics for Researchers Conducting Research concerning the Ktunaxa Nation* prepared by the Ktunaxa Nation;
- *Tl'azt'en Nation Guidelines for Research in Tl'azt'en Territory* prepared by the Tl'azten First Nation.

*The starting point for any ethical research of Indigenous knowledge and heritage must be the law of the Indigenous people being studied, which defines what constitutes property, identifies who has the right to share knowledge and property, and determines who is to benefit from and who is to be responsible for such sharing. ... Unless researchers are aware of and act consistently with the laws of Indigenous peoples, any attempts to learn or to use Indigenous knowledge and heritage are unlawful, illegitimate, and unethical.'*

Marie Battiste and James Youngblood Henderson (2000:144) *Protecting Indigenous Knowledge and Heritage: A Global Challenge*.

In these cases, the instruments should lead to a direct link between Aboriginal community partners and university researchers, helping to create communication and accountability tools that will foster appropriate research conduct within the community. However, there is still a relatively low awareness by university researchers that such community protocols exist, and public access to them is often limited. This is important to note because, before researchers can “*act consistently with the laws of Indigenous peoples*” (Battiste and Henderson 2000), they need to learn what these laws are.

The most prominent (and perhaps most enforceable) instrument for university researchers in Canada is the national ethical standard called the *Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans* (<http://www.pre.ethics.gc.ca/english/policystatement/policystatement.cfm>). The *Tri-Council Policy Statement* was adopted in 1998 by the three academic granting 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). It sets out the minimum ethical standards for all research involving humans that is conducted at Canadian universities, and compliance is a requirement of funding from the councils

The general principles of the *Tri-Council Policy Statement* include elements such as:

- respect for human dignity;
- respect for free and informed consent;
- respect for vulnerable persons;
- respect for privacy and confidentiality;
- respect for justice and inclusiveness;
- balancing of harms and benefits (*i.e.*, minimising harm and maximising benefit).

A major criticism of *Tri-Council Policy Statement* from researchers in the social sciences, especially those who work with Aboriginal and other communities, has been an over-emphasis on *individual* rights. The policy is currently under review for future revision to address this and other shortcomings.

Section 6 of the *Tri-Council Policy Statement* is specifically about research involving Aboriginal peoples. It sets out additional requirements for researcher, such 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 Aboriginal groups
- consideration of interests of the Aboriginal group when property or private information belonging to the group is studied or used;
- conceptualisation and conduct of research as a partnership with the Aboriginal group;
- adjustment of research to address the needs and concerns of the Aboriginal peoples involved;
- willingness to deposit data and other research outcomes in an agreed repository;
- opportunity for community to react and respond to research findings and

publications.

Section 6 was based on information from the literature *about* research involving Aboriginal peoples rather than from a process of dialogue *with* Aboriginal peoples in Canada. It falls short of the current need for more explicit guidelines in this area and has been in abeyance since its inception, pending consultation with appropriate Aboriginal representatives. The length of time it is taking to address these inadequacies is also the subject of much criticism.

Recently, CIHR-Institute for Aboriginal Peoples Health stepped forward to show some leadership on developing new guidelines for research involving Aboriginal peoples. In 2004, CHIR established a national working group (Aboriginal Ethics Working Group) comprised of Aboriginal elders, Aboriginal community members, and both Aboriginal and non-Aboriginal scholars to develop a new code of ethics that will guide all research on Aboriginal health that is funded by CIHR. The first draft of this code of ethics is presently in the final stages of completion and a vetting process led by several Aboriginal health research centres (ACADRE centres) will enable feedback from Aboriginal communities across the country. A revised draft is expected to be released for public input in fall 2005 and adopted by CIHR by early 2006. It is also expected that this code of ethics for Aboriginal health research will be used as the basis for revisions to Section 6 of the *Tri-Council Policy Statement*.

The various instruments discussed above are key in shaping the climate for medicinal plant research and setting the ethical standard of the day. However, in medicinal plant research, many of the ethical issues overlap with legal ones. Therefore, careful consideration in light of this is needed on ABS policy development. Medicinal plant research at universities, for example, is influenced by both the ethics policies and IP ownership policies of the institution. Therefore, questions of “who owns the results of the research?” or “who owns the intellectual property arising from the research?” do not simply involve the researcher and the community partner who were involved in conducting the research – they also involve the sponsoring institution(s). Some universities in Canada have flexible research and IP policies that could likely accommodate an Aboriginal community’s requirement for data and IP ownership while other universities may not (see Bannister 2005).

As ABS policy considerations are discussed within Canada, we will need to consider what is fair to Indigenous communities as well as what is fair to researchers, their institutions and funders? In other words, whose rules lead to equity in research? According to Michael Seadle (2002) *“The question of whose rules to use...cannot always be answered in the field. ... In an ideal world, everyone’s rules are respected. In the real world, practical solutions must be worked out by the individual researchers and the participants and communities with which they interact”*.

My belief is that collaborative frameworks for research involving cultural knowledge and biological resources are essential. They must be based on principles of equity, reciprocity, mutual respect, and joint responsibility but also must involve practices that are supportive of long-term ecological and cultural integrity. Fostering a “circular” rather than “linear” research framework in the university setting still requires changes in the mindsets of individual researchers, as well as in the research, IP and ethics policies of Canadian

universities and other research institutions. There is an important role for a new national “code of conduct on ABS”, perhaps parallel to the *Tri-Council Policy Statement*, that draws upon elements of existing local, national and international instruments and sets clear ethical and legal standards for university and other research on traditional knowledge and genetic resources. Conceivably, work on ABS policy development would both benefit from and contribute to university research policy development, catalyzing more consistent and integrated policy evolution with Canada.

*Promoting concepts of joint responsibility and ownership tends to encourage cross-cultural collaboration. ... Its basis is a shared commitment to search for balanced solutions that ensure the protection of intellectual and cultural property rights.*

Erich Kasten (2004) *Ways of Owning and Sharing Cultural Property*.

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