



DNA and Indigeneity

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DNA in the News

Rapid developments in genetic technologies are allowing for innovative applications in archaeology and anthropology. Intriguing scientific studies hinting at population origins, movements and admixtures are reported almost daily in the news. In addition to obtaining DNA from living individuals (via blood samples, saliva and other biological material) technological advancements are now allowing for the extraction of “ancient” DNA (aDNA) from teeth and bones, providing previously unimagined insights into past populations’ origins and interactions, and, in rare cases, identifying close genetic links between ancient peoples and their living biological relatives. Ancient DNA is also making headlines for identifying historical figures, including the murdered imperial Romanov family, and, more recently, the remains of King Richard III from beneath a car park in Leicester, England. Ancient DNA is also now pointing to a genetic contribution of Neanderthals to contemporary individuals, reigniting a long debate over the relationship between Neanderthals and contemporary humans, and even suggesting that some of our illnesses might be linked to Neanderthal genes.

Yet for Indigenous peoples, these technological advances raise many questions around their very identity as founding populations and their histories, their ancestries, and connections between past and present groups. These scientific pronouncements about identity and related concepts may have profound social, cultural, political and economic consequences for Indigenous peoples. In particular, DNA is increasingly perceived as being able to provide objective evidence to support or refute land claims and other identity-based rights, to provide genetic criteria for tribal enrollment and to adjudicate the repatriation of ancestral remains to descendant communities. Moreover, there is concern that the lure and mystique of genetic information has the potential to reduce the complexities of identity to biological categories.

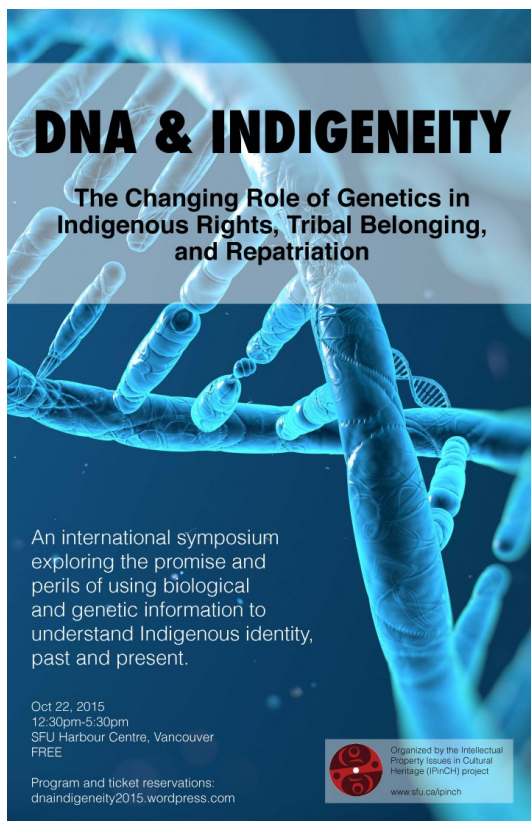
DNA and Indigeneity Symposium

These topics were the focus of a public symposium and two-day workshop on “DNA and Indigeneity: The Changing Role of Genetics in Indigenous Rights, Tribal Belonging, and Repatriation,” held in Vancouver, British Columbia, October 22–24. Sponsored by the [Intellectual Property Issues in Cultural Heritage \(IPinCH\) project](#), these linked events brought together an international group of academics, practitioners and community representatives from Canada, the United States, Australia and Latin America.

The public symposium focused on current and prospective applications of genomics in archaeology and anthropology. After a traditional welcome by Musqueam Nation member Victor Guerin, and an introduction by IPinCH Director George Nicholas (SFU), the symposium was structured into three sequential sessions.

The first focused on the promise and perils of using genetics to provide insight into identity and featured presentations from Armand Minthorn, (Confederated Tribes of the Umatilla), Deborah Bolnick (U Texas-Austin) and Alan Goodman (Hampshire C). Minthorn spoke to the controversy surrounding Kennewick Man (The Ancient One). While scientists had claimed that Kennewick Man was unrelated to contemporary Native Americans based mainly on cranial morphology and in contradiction to oral tradition, recent DNA tests support long-standing claims made by the Umatilla, Colville, and others of their relatedness to the Kennewick Man. In some senses, the degree to which Kennewick Man seems to genetically relate to the confederated tribes of the Colville Reservation might be unusual. Bolnick and Goodman both noted that straightforward genetic links between ancient and modern populations should not be expected. For example, the recent genetic analysis of the Anzick-1 male infant from Montana (dated to ~12,500 YBP) suggests that he is Native American but more closely related to contemporary Central and South Americans. Given the great expanse of time that has elapsed and the ways that social groups merge and migrate, both phenotypes and genotypes will change. Strong genetic matches over time may not be found even when there is cultural continuity.

The second session explored issues of justice, ethics and social identity relating to the repatriation of human remains. The speakers were Daryl Pullman (Memorial U), Dorothy Lippert (Smithsonian) and Cressida Fforde (Australian National U), all of whom spoke to how DNA may potentially provide greater accuracy in the identification of biologically related groups on a *general* level. However, they cautioned that DNA should be viewed only as one tool and that genetic data are best evaluated in the context of a suite of information, including archival materials, oral history and archaeology. One point of clear agreement among symposium and workshop participants is that identities are complex and that “genetic identity”, while offering sometimes critical insights, should not be conflated with social identities.



DNA & INDIGENEITY

The Changing Role of Genetics in Indigenous Rights, Tribal Belonging, and Repatriation

An international symposium exploring the promise and perils of using biological and genetic information to understand Indigenous identity, past and present.

Oct 22, 2015
12:30pm-5:30pm
SFU Harbour Centre, Vancouver
FREE

Program and ticket reservations:
dnaandindigeneity2015.wordpress.com

Organized by the Intellectual Property Issues in Cultural Heritage (IPiCH) project
www.sfu.ca/ipich

The final session examined current challenges and future directions for genetic research involving modern Indigenous communities. Presentations by Kim TallBear (U Alberta), Rosalina James (U Washington) and Ripan Malhi (U Illinois, Urbana-Champaign) addressed the problematic history of genetic research with Indigenous peoples before turning to the present to identify opportunities to work together in a good way. A key example is Malhi and colleague's Summer Internship for Native Americans in Genomics (SING; <http://conferences.igb.illinois.edu/sing/>) at the U of Illinois, Champagne-Urbana.

DNA Workshop Discussions

The subsequent two-day invited workshop provided a fruitful opportunity for 19 scholars, practitioners and community representatives to delve further into the complex issues introduced in the symposium. Additional workshop participants included Jessica Bardill (East Carolina U), Brian Egan (SFU), Sara Juengst (Appalachian State U), Teresa Nichols (Indiana U), Susan Rowley (UBC), Dave Schaepe (Sto:lo Nation), Ernesto Schwartz-Marin (Durham U) and Alexa Walker (SFU).

The four workshop sessions were designed to tease apart and dig deeply into the following topics: a) DNA and the repatriation of human remains; b) Land and identity-based rights; c) Biogenetic identities and tribal belonging; and d) Resources for researchers and communities working at the crossroads of genetics, biology and identity.

One key takeaway message from the workshop is the need to support Indigenous peoples around the world in their efforts to secure genetic autonomy. Workshop participants described "genetic autonomy" as the ability of individuals or groups to control when, where, how and by whom their

genetic information is used. To this end, it is critical that additional resources and support are provided for Indigenous peoples seeking training in genomic sciences.

Workshop discussions also highlighted some of the complexities of identity (or identities), as well as the meaning and importance of "indigenous identity" in different geographic and sociopolitical contexts, including the United States, Canada, Mexico, Brazil and Australia. For example, Jessica Bardill and Eduardo Swartz-Marin led a discussion that highlighted how countries vary widely in how genetic information is gathered, interpreted, controlled and disseminated, as well as the use and stakes of genetic information.

Another key point of discussion at the workshop focused on clarifying misconceptions about DNA and genetic testing. A growing number of Native American tribes, especially in the United States, are turning to genetic parentage tests to inform tribal enrollment decisions, but there is much uncertainty among many tribal members about the exact purpose of these tests and how they differ from genetic ancestry tests. Participants probed the contrast between the lived



Participants in the 2-day DNA and Indigeneity workshop. Photo courtesy IPiCH

experience of being a tribal member and genetic gate-keeping to tribal membership.

Finally, there was a strong consensus among workshop participants of the need to contextualize the results of genetic research, particularly when working with Indigenous communities. By presenting genetic information alongside other ways of interpreting the past, such as oral histories and archaeology, a more holistic, complete and dynamic interpretation of identities—past and present—may be realized. Contextualization was a key takeaway from the workshop and symposium.

Ultimately, genetics and ancient DNA analysis should be considered alongside other ways of understanding the identities of ancient and modern-day peoples. “Genetic identity,” it was agreed, should be considered as a supplementary source or a last resort when all other information has been considered. For example, if there is no information on the geographic provenance or cultural affiliation of human remains, then DNA analysis may provide insight into genetic relatedness *at a general level*. Even then, results need to be considered cautiously as genetic similarities do not necessarily equate with cultural relatedness, and vice versa.

Proposed workshop outputs include a symposium proceedings volume and other publications, a travelling exhibit on “DNA and Indigeneity,” appropriate in size for tribal colleges and a website housing a diverse assortment of resources. Videos of the symposium presentations are available on the [IPinCH website](#).

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Alan Goodman (Hampshire C) is professor of biological anthropology and a past President of the American Anthropological Association. He co-directs the AAA’s public education project on race, human variation and racism (understandingrace.org). His research focuses on the biological consequences of inequality, poverty and racism.

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