

Abstracts / les résumés

Public Lecture / Conférence publique

Dr. H.V. Nelles

Light Switch: Towards a History of the Second Enlightenment

But for the aesthetic pleasures we draw from waterfalls, geysers and fireworks, we value energy not as a good in itself, but rather for the work it can be made to do. In recent time we have produced a good deal of energy and put it put to work making light. This talk will venture some thoughts on why the earth has begun to glow in the dark.

Session 1 Energy in Quebec / L'énergie au Québec

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L'énergie nucléaire au Québec : débats politiques et conflits de représentations, 1964 à 1996

Les études en sciences humaines portant sur l'énergie nucléaire se sont surtout concentrées sur le développement de l'industrie et de la technologie (Mehdi, Gingras, Bothwell), ou encore sur les luttes menées par les groupes environnementalistes dans les années 1970 (Vaillancourt; Babin). Nous proposons plutôt d'étudier, dans une vision d'ensemble, les discours des responsables politiques québécois, des dirigeants d'Hydro-Québec, ainsi que des groupes de pression en matière d'énergie nucléaire entre le milieu des années 1960 et le milieu des années 1990. Ce faisant, notre perspective diachronique mettra l'accent sur les conflits de valeurs, intérêts et représentations que ces différents acteurs associent à l'énergie électrique en général et à l'énergie nucléaire en particulier. En d'autres mots, nous brosserons le portrait d'une histoire politique des choix et des représentations qui sont rattachées à l'énergie nucléaire au Québec, une histoire sensible aux luttes que se font les différents acteurs dans l'espoir d'influencer à leur manière les orientations de l'État québécois.

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“To live neath the line is a shocking affair”: New York Citizens' Opposition to Québec Hydroelectricity, c. 1975-80

Québec's hydroelectric development, its consequent detrimental ecological effects, and questions of environmental justice have been explored by several scholars. What is less known is the similar public outrage spawned during the 1970s at the expansion of the Hydro-Québec power grid and delivery of electrical current to the United States. Taking New York's "North Country" as a study area, this paper examines the strident protests (c. 1975-80) among citizens whose land was appropriated by the Power Authority of the State of New York in order to build gigantic 765 kV lines (used for transmitting power from Québec to New York City). Though unsuccessful, an array of rural folk (long-time farmers, recent "back-to-the-landers", working families, and Akwesasne Mohawk) marshaled significant human resources and attracted the international media. These same protestors also questioned whether their state should be involved in a project which alienated the James Bay Cree from their own land.

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La stratégie nucléaire québécoise de 1963 à 1983 **(Quebec's Nuclear Strategy from 1963 to 1983)**

Cette communication retrace, sur une période s'étalant entre 1963 et 1983, l'évolution de la stratégie nucléaire du gouvernement du Québec. La première période, entre 1963 et 1971, marque les débuts du programme nucléaire québécois, sous l'égide d'Hydro-Québec. Les efforts de la société d'État aboutissent à la construction de la centrale de Gentilly-1 en 1971. La deuxième période, s'étendant de 1972 à 1977, couvre un moment d'opposition politique sur l'avenir du développement de la filière nucléaire. Le Parti Libéral, au pouvoir, est en faveur du développement du projet hydroélectrique de la Baie James. Le Parti Québécois défend quant à lui un investissement plus massif dans le nucléaire. La troisième période s'étale de 1977 à 1983. Le Parti Québécois arrivé au gouvernement modifie sa précédente position lors de la publication du Livre Blanc sur l'énergie en 1977 et impose un moratoire sur l'énergie nucléaire la même année jusqu'en 1980. Le moratoire sera renouvelé en 1981 pour 5 nouvelles années. À partir de l'analyse de ces trois périodes, nous soulignerons les raisons qui ont poussé le gouvernement du Québec à investir dans l'industrie nucléaire, à travers la construction de deux centrales et d'une usine d'eau lourde. Nous évoquerons également les différents enjeux, techniques, économiques et politiques, qu'impliquait un tel développement. Nous dégagerons ensuite les facteurs déterminants dans le changement de cap opéré à la fin des années 70, dans la stratégie nucléaire de la province. Finalement, nous verrons, comment ces nouvelles mesures se sont traduites sur le terrain et leurs impacts sur le développement des projets nucléaires alors en cours.

Session 2 Medicine / Médecine

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Guérir avec l'électricité : parcours divergents de l'électrologie et des rayons X dans les milieux médicaux francophone et anglophone

Dans la province de Québec, entre les années 1880 et 1930, les médecins francophones perçoivent l'électrologie comme une grande discipline englobant les diverses utilisations diagnostiques et thérapeutiques de l'électricité, dont entre autres les rayons X qui apparaissent dans les hôpitaux au tournant du siècle. Les médecins anglophones montréalais séparent plutôt dès le début des années 1900 l'utilisation des rayons X des autres applications médicales de l'électricité, la radiologie prenant rapidement de l'expansion au détriment de la spécialité électrologique. Cette communication vise à cerner la portée et la teneur de ces divergences en s'attardant plus particulièrement à la littérature médicale, aux cursus d'enseignement universitaire et à la division des départements hospitaliers. Il sera également question des fondements de ces divergences qui se situent à notre avis dans le type de formation reçue, dans les filiations distinctes d'« école médicale » à l'étranger, dans l'idéal inculqué de la pratique de la médecine, et dans l'appareillage et les ressources disponibles, déterminants culturels et institutionnels qui influencent les modes de pratique et d'organisation de la spécialité électrologique.

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From Curiosity to Menace:

the Medical Community and Malignant Melanoma in Canada before 1990

Malignant melanoma (MM) is a relatively rare but often deadly skin cancer. While it was recognized as a significant problem in Australia in the 1950s, it was essentially below the radar in Canada. Australian workers identified long-term sun exposure as the prime aetiologic factor but the hypothesis had problems. Canadian and American epidemiological data in the 1960s seemed to provide weak support for the idea but it was the Western Canada Melanoma Study in the 1980s that provided evidence for the alternative

intermittent exposure hypothesis that remains one of the accepted causative factors. This paper surveys the Canadian medical community's views on MM to the end of the 1980s and offers some suggestions of why MM was of little interest until recent years.

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L'histoire du don d'organes au Québec, de 1958 à 2011

Nous avons étudié l'origine du phénomène du don d'organes ainsi que son évolution de 1958 à 2011, dans la société québécoise. La thérapeutique de la greffe dépasse le cadre médical hospitalier en sollicitant l'ensemble des membres de la société ainsi que ses institutions politiques et juridiques. Afin de convaincre la population des bienfaits inhérents au don d'organes, différents acteurs - médecins, groupes communautaires et instances gouvernementales- ont dû en faire la promotion. C'est en consultant les archives de Transplant-Québec et des études et publications des ministères de la Santé du Québec et du Canada que nous sommes à même de cerner le phénomène du don d'organes. À ces sources s'ajoutent les témoignages que nous avons recueillis de médecins transplantateurs qui ont participé au développement du don d'organes. Tout en dépassant le cadre hospitalier, en sollicitant l'État et la population, la demande pour le don d'organes reste largement tributaire du degré d'implication du corps médicale.

Session 3 — Energy & the Environment / L'énergie et l'environnement

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CANADIAN ENERGY STRATEGY AND CONSERVATION IN THE 1970's

About 1973, the abrupt decrease in crude oil shipments due to political action by Middle Eastern suppliers, caused a shortage and a steep price rise. In response, western countries had to develop a strategy of diminishing consumption and increasing production in both traditional and environmentally friendly resources. Energy strategies, both nationally and in Quebec, succeeded in curbing consumption and in expanding production while fostering research in renewable sources. Considerable success in all the aspects provided long lasting benefits, but after the embargo was lifted, many research initiatives were gradually abandoned for political reasons. From metallurgical expertise in hot rolling and forging of steels and Al or Mg alloys and in history of central Canadian manufacturing development since the 19th century, a retrospective is provided of graduate courses, engineering committees and publications on Energy Strategy and on Conservation. With the Order of Engineers of Quebec, he reviewed resource situation and effective actions that were sent to the National Assembly. Industry sector committees provided free exchange of conservation techniques under the federal energy ministry. Progress reports were issued annually by Energy Mines and Resources, Ottawa, with criticisms and suggestions by the Science Council of Canada. Pipeline history in North America was reviewed along with the 1978 manufacture and construction in Canada. Concordia engineering students' design and production of a solar water-heating system won several international awards.

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The problematization of renewable energy in New Brunswick Keywords: Actor network theory, New Brunswick, Renewable energy

This paper explores the development of renewable energy in New Brunswick through social interactions using the Actor Network Theory (ANT). ANT is not only an extremely effective tool for describing the processes by which inventions and technological systems come into being, or fail to materialize, it also re-characterizes social interactions to include both human and nonhuman while focusing on their relationship (networks) between them. While the increasing environmental degradation and the potential for renewable energy has been a topic of great interest in recent years, little is known about the social

consequences of implementation; more specifically, how the process of forming a new network for such new technology might impact existing networks. Through the case study of New Brunswick (NB), this paper identifies a number of actors that impact the development of renewable energy. Overall, the development of renewable energy in NB appears to be problematic to other networks given the little effort made to secure the cooperation of potential users, as well as those it works with, and the various components of the device.

Session 4 — Technologies and methods / Les technologies et les méthodes

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"Well, the payroll is working, now what?": Considering the early Canadian Computer User

In my talk, I will analyze the construction of the computer user through the lens of the Computing and Data Processing Society of Canada (CDPSC) from the late 1950s forward. With just a handful of digital computers in the country in 1955 by the end of the decade there were over sixty, as uses were expanding from purely scientific research to include accounting and data processing. In 1958 the CDPSC was formed and held a national conference with hundreds of attendees in Toronto. Further biennial conferences followed as well as smaller regional meetings, a quarterly publication and an annual national computer survey. Within these resources I will explore how early Canadian computing professionals understood the role of computer users and how this perspective evolved. This project falls within my recent research exploring the relationship between computer hardware, professionals and users from the 1950s to the 1970s. In particular, I am emphasizing an approach that encompasses "how users matter" and how they shape technology to move past the established hardware-driven narrative in the history of computing.

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Unexpected Discoveries: The Search for George Klein's "Snow Kit"

Why would a pioneer of the Alouette satellite program conduct a "survey" of "physical characteristics of snow-covers"? Working for the National Research Council in the late 1940's, George Klein, one of Canada's most prolific inventors developed a system to classify snow, for which he designed instruments to advance his research. This paper explores the search for, and recent acquisition, of Klein's illusive snow science kit and the impact his work had on developing a snow classification system. It follows three narratives that the objects reveal: the NRC studies conducted by avalanche pioneer Peter Schaerer which were instrumental to the construction of the Trans-Canada highway through the Selkirk mountains at Rogers Pass; the Parks Canada use of the instruments in snow research and avalanche control until they were recovered; and finally, broadly speaking, some current centers of research and areas of activity in Canada.

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Richard Upham Marsters, Canada's First Chronometer Maker

It took John Harrison more than 25 years to resolve the technical issues to create a marine chronometer that met the requirements of the UK's Board of Longitude Prize. Within a few years, a handful of others in Britain and France were also making chronometers and adding further improvements. But in North America it was well into the 19th century before anyone was able to acquire the technical skill to build a chronometer. Evidence gives the Canadian first to Richard Upham Marsters, a Nova Scotia native. Marsters received a UK patent for a ship's propeller in 1819 and by 1826 he was petitioning the Nova Scotia government for funds to build an observatory to "rate" chronometers. But before long he was advertising sale of chronometers in New York papers. By 1830/1831 he was back in NS publishing ads including testimonials. One surviving example is known but our knowledge of his training and movements

is still sketchy. This presentation will summarize what we know about Marsters and why and what he achieved.

Session 5 Energy: Early 20th Century / Energie: le début du 20e siècle

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Les motivations qui ont guidé les manufacturiers montréalais dans leurs choix énergétiques entre 1890 et 1920

Cette communication vise à présenter, à l'aide d'exemples, les motivations qui ont guidé les manufacturiers montréalais dans leurs choix énergétiques entre 1890 et 1920. Dans un marché énergétique concurrentiel comme celui de la métropole industrielle du pays, les industriels doivent tenir de compte de nombreuses variables. Qu'on pense aux impératifs économiques tels que le prix du combustible ou de la ressource ou encore le coût de conversion énergétique, la disponibilité des formes d'énergie, mais aussi de leurs besoins d'autonomie face aux services d'utilité publique. À ce chapitre, le couloir industriel du canal de Lachine constitue une cible de choix quant on veut analyser sur le long terme les modalités du recours de l'énergie comme force motrice dans l'industrie manufacturière. Il l'est d'autant plus qu'il est l'un des seuls endroits au Canada, où l'on assiste à une telle échelle à l'émergence, à l'essor et au déclin de l'énergie hydraulique, de la vapeur, de la thermoélectricité et dans le cas de l'hydroélectricité à son émergence.

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Lines Across Lines; early electrical transmission interconnections between Quebec, Ontario, and New York

This study will explain how cross-border electrical interconnections between Quebec, Ontario and neighboring American states developed and evolved from the late 19th century through the 1950s. When entrepreneurs and industrialists first sought to exploit the hydroelectric potential of Niagara Falls in the late 1800's, the boundary between Canada and the United States meant very little and government regulation of electricity production and distribution was minimal. The destination of the electricity generated was not of any concern to governments on either side of the boundary. In Quebec, power generation and transmission were entirely in private hands up to the mid-1940s and utilities supplied Ontario and the US with electricity under contract or on an as-needed basis. Early transmission lines also existed across the St. Lawrence River, which delivered power to Eastern Ontario from New York State. Selected, important examples of interconnection over this time period will be discussed in the paper and the regulatory and operational regimes under which these interconnections existed will be analyzed. These early exchanges of electricity existed long before cross-border trade regimes, regulation or nationalization, and the technological ability to transmit large amounts of electricity over long distances were significant parts of the milieu of power generation and transmission. Analyzing the first decades of interconnection thus provides a necessary historical background to make sense of the more extensive interconnections and complex regulatory and trade structures that shaped electricity networks in Quebec, Ontario and neighboring US states since the 1960s. Although a detailed account of these later changes lies beyond the scope of the present paper, some important comparisons between the two eras will be made. On a historiographical level, the paper is intended as a contribution to the study of transnational history. In particular, it will consider the larger technical, political, and cultural consequences that have ensued from the structuring of cross-border electrical connections and how these have shaped Canada-US relations.

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The Ontario Hydro Commission and the Giant Power Survey of Pennsylvania, 1923-1925

Since its foundation in 1906, the Hydro-Electric Power Commission of Ontario exerted a major influence on the politics of electricity in the United States. American supporters of publicly-owned utilities saw the Hydro as a model worth emulating south of the border. Reformers who sought lower electric prices for consumers also looked to the Hydro for evidence of the technically-feasible lowest cost of producing and transmitting this source of energy. This paper will examine a specific instance when American Progressives sought to use the Hydro as both a source of information and inspiration for electric policy reforms: the Giant Power Survey of 1923-1925, an attempt by Pennsylvania Governor Gifford Pinchot to bring about lower electricity costs for consumers and to extend access to rural areas, through a mix of greater regulation and government action. The individuals involved in Giant Power came into close contact with Hydro officials for the vital administrative and technical information with which to argue for their cause; the Ontarians, however, had their own reasons to be wary of getting involved in a controversial proposal.

Session 6 Public History of Science and Technology at the University (Organized Session) **L'histoire publique de la science et de la technologie à l'université (séance organisée)**

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Public History of Science and Technology at the University

At the University of Toronto, academics within the sciences and humanities have, for decades, agreed on the need to safeguard the material record of local scientific research. Various schemes have typically involved some combination of several elements: the creation of a catalogue, a university-wide accessions and handling policy, and one or more exhibit spaces. However, the reasons for such an effort have never been articulated with sufficient clarity to produce serious action. Though rarely articulated, problems of interpretation, values, and cultural differences between the sciences and humanities, as well as between various departments, have posed a real problem for a project that is ultimately founded on representing local practices. This panel presents some instances of successful collaboration between scholars in the humanities and the sciences through the University of Toronto Scientific Instruments Collection (UTSIC.) Presenters (graduate and undergraduate students with a range of academic interests) reflect on their experiences through the framework of 'public history' which seeks diverse perspectives in telling institutional stories while encouraging broad participation in the interpretive process. We argue that a clearly articulated collaborative vision may provide the way forward for plans to create a collection of historical scientific artifacts at the university.

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A Historical Perspective on the Acquisition of the Electron Linear Accelerator at the University of Toronto

In the 1960s, the Physics Department at the University of Toronto built a custom nuclear laboratory to house a new electron linear accelerator (linac). This paper argues that it was not the scientific merit of nuclear research that won funding from the National Research Council and the University, but the personal effort of Professor Kenneth McNeill, the head of the nuclear laboratory, and the social and political factors of the time. The research is based on McNeill's personal notes and private correspondence, and on oral history interviews with the two surviving Emeritus Professors who contributed to the efforts to acquire the linac. This paper attempts to present a neutral, balanced narrative of the history of the linac laboratory, by presenting facts from the standpoints of historical documents, institutional memory, and the personal memories of linac researchers. This research has engaged with historians from IHPST and researchers at the Physics Department.

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Instrumental Relationships: Preserving Toronto's Astronomical Heritage in Partnership with the Dunlap Institute

The University of Toronto Scientific Instruments Collection (UTSIC) has over the past two years enjoyed a highly fruitful relationship with the Department of Astronomy and Astrophysics. Unlike many science departments, the Astronomy Department has full awareness of the public interest in their field and the importance of public outreach, all falling under the umbrella of the Dunlap Institute. While most of the Dunlap's public engagement has focused on current projects in astronomy, through UTSIC's partnership with them we have been able catalogue instruments from the decommissioned Dunlap Observatory and to make the material history of astronomical observation associated with the University of Toronto available to the public.

Projects have included an exhibit and symposium on the Transit of Venus, culminating in UTSIC's participation in a massive public viewing event of the June 2012 transit, organized by the Dunlap, in which members of the public were able to observe the transit through an 1830 Gregorian reflecting telescope. Subsequently, UTSIC's partnership with the Dunlap Institute and the Faculty of Information Science resulted in an exhibit on astronomical instrumentation, which formed the Master's level project for a group of Museum studies students and brought together departments from the humanities, the sciences and practical education.

Session 7 Energy in the Regions / L'énergie dans les régions

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“What is taken for granted:” The Royal Commission on Electrical Power Planning and Appropriate Technology in Ontario, 1974-1983

The rise and fall of “Appropriate Technology,” an ideology which emphasized small, local, and environmentally conscious technologies, from the mid-1960s to the mid-1980s has fascinated both historians of technology and environmental historians. Although Appropriate Technology is often thought of as an American movement, similar attitudes towards energy and the environment were developed in, imported to, and uniquely adapted to Canada. The Royal Commission on Electrical Power Planning was established in 1975 to study the long-range planning prospects of Ontario Hydro. In this work, I reassess the final report from the Commission, published in 1980, in the context of Ontario's environmental movement, energy policy, and Ontario Hydro's growth strategy, to uncover the adaptation of conservation values found within Appropriate Technology. While often remembered as a failed attempt at altering Ontario Hydro's momentum, I argue that the Commission offers a novel window into a rethinking of the intersection of technology, energy, and the environment in 1970s Ontario.

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Renegade Science: The Scientist, The Statesman, and The Haeckel Hill Wind Turbines

In 1977, the Science Council of Canada (SCC) outlined two major issues related to the development of technologies for the Northern Canada – is there a net benefit impact on the native peoples of the region and will the technology be adequately adapted to the northern environment. Answering these two fundamental questions became the litmus test for northern projects in the years that followed. Starting in the late 1980s, Douglas Craig of Indian and Northern Affairs, undertook the basic research which led to the first large scale wind turbine in the Territory. By the 1990s, the Yukon Energy Corporation built a second turbine next to the first but that is where the research ended. Why did the experiment with wind energy end so abruptly? This paper will explore the short rise and fall of commercial scale wind energy

development in the Yukon Territory and how environmental, personal, professional, and technological limitations worked together to create and kill the type of project that the SCC set out to foster.

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Is that energy public or private? Reinvigorating the discussion on large energy projects in Canada

While many of the critical responses to the establishment and trajectory of energy production in Canada have explored ramifications of private and public ownership, more research is required addressing how energy technologies operating in Canada contribute to kinds of human disciplining and social stratification. In this paper I will argue that the well-versed public vs. private ownership discourse obscures exploration of how large energy projects in Canada have historically, presently and meaningfully configured life in quotidian contexts. Paying close attention to the development of Ontario's hydro-electric system as well as Alberta's bitumen mining industry, I re-examine the development of large energy projects in Canada with some of the theoretical tools of Langdon Winner and Bruno Latour. In doing so, I suggest that the social orientations relayed by these technological systems both supersede questions of ownership and require fresh analysis to grasp at the significant tensions surrounding Canada's energy production.

Session 8 History of Science: Institutions / Histoire des sciences: les institutions

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EXPLORING CANADIAN LEADERSHIP WITHIN THE BRITISH IMPERIAL SCIENCE PROJECT: THE CASE OF THE BRITISH ASSOCIATION

Canadians organised and financed the the four Canadian Meetings: Montreal (1884), Toronto (1897 and 1924), and Winnipeg (1909). In addition to the scientific sessions this meant receptions, cultural events and excursions. Especially noteworthy was the the Transcontinental Railway Excursion from Toronto to Victoria, and return, in 1924.

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Présentation du projet de recherche «Le Planétarium Dow de Montréal»

Je souhaite présenter un résumé de mon projet de recherche concernant l'histoire du Planétarium Dow de Montréal. J'y explore le rôle de l'exploration spatiale sur le développement de la vulgarisation de l'astronomie au Québec. Puisque ce projet est en cours de rédaction, je compte me limiter à la présentation de mon sujet, de l'historiographie, des sources et de mon plan de recherche.

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The Significance of Correspondence Networks of Late Victorian Canadian Scientists: Exploring Evidence in Archival and Published Records through Social Network Analysis

Communication is the "essence of science" William Garvey declared in a 1979 book about scientific communities. Globally, scientists and amateur naturalists pursued active communication through the postal systems a century earlier. Extant correspondence, largely understudied to date, supplies ample evidence that publications distributed through correspondence were important in developing understanding of natural resource reserves as well as shaping scientific activities generally. For example, correspondence records of Edwin Gilpin, a Nova Scotian Mining Engineer and government official,

highlight the relevance of the exchange of scientific information locally, nationally, and internationally. The extent of correspondence is illustrated by the Canadian Experimental Farm system, which in its first decade and a half distributed over 2.25 million publications nationally and internationally by mail. In this paper we will show how social network analysis can be used to mine large bodies of correspondence in both exploratory and systematic ways. We will demonstrate how analytical techniques can be applied to visually present data for interpretation and how data can be analysed to increase understanding of the exchange of large quantities of scientific information.

Session 9 Energy Development: successes and challenges / Développement de l'énergie: les succès et les défis

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A Model Development: The St. Lawrence and Niagara Power Projects

The transnational Canadian-American construction of the Niagara and St. Lawrence hydro-electric megaprojects in the 1950s represented a significant step in North America's energy history. Planning and engineering of the project also represented a significant technological step because of the extensive and intensive reliance on scale models to plan the massive reengineering of major river basins. Focusing on Ontario Hydro in particular, this paper will explore the history, conceptions, and utilization of these models. I will argue that these models and megaprojects are examples of negotiated high modernism, which I contend is a Canadian (and North American) variant of high modernism recalibrated for capitalist liberal-democracies in the early Cold War period. I argue that there are unique Canadian and American national views of the interplay between energy, environment, and technology – in particular a Canadian hydraulic nationalism with hydro-electric energy development at its core.

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The Atlantic Triangle and Atomic Energy 1945-1953: A Missed Opportunity?

This paper will use the lens of Anglo-Canadian civil atomic relations to investigate transatlantic interdependence in energy research. In the technological sector, Canada's post-war political 'drift' from Britain was mirrored by failure to continue the fruitful tripartite wartime programmes at Montreal and Chalk River as bilateral Empire undertakings. Keen to offer Canada's cheap power to a joint effort, Canadian diplomats and scientists were rebuffed by Westminster's desire for domestic plant and weapons capability, weakening relations and condemning subsequent attempts at reconciliation. This missed opportunity will focus discussion on relations between an 'energy-rich' Dominion possessing space and minerals, and an industrialised metropole economically compelled to pioneer the world's first civil nuclear power programme. Canadian thirst for technology and British attempts to negotiate uranium and manpower tested political links already strained by the growing pre-eminence of the United States and therefore, by tracing the history of Atlantic technological interaction in this manner, this paper will ascertain the role of energy politics in redefining Commonwealth co-operation.

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The Maple Project: a Technical Failure?

La communication porte sur l'un des aspects les plus singuliers de la crise des isotopes médicaux qui a éclaté en 2007, soit l'annulation du projet Maple par le gouvernement canadien. Les isotopes médicaux sont des atomes radioactifs injectés aux patients à des fins de diagnostic dans des indications tel que cardiopathie et cancer. L'isotope au centre de la crise de 2007 est le Molybdenum-99 (Mo-99). Cet

isotope est produit par cinq réacteurs nucléaires de recherche dans le monde. Le plus important parmi ceux-ci est le réacteur NRU de Chalk River en Ontario, qui est opéré par la société de la Couronne Atomic Energy of Canada Limited (AECL). Le projet Maple, conçu en 1996 par AECL et Nordion, la firme canadienne qui purifie et distribue les isotopes produits par AECL, devait prendre la relève du NRU en 2000, quand celui-ci serait arrivé en fin de vie. Curieusement, alors que la crise venait de confirmer l'extrême fragilité de l'offre mondiale d'isotopes médicaux et les multiples tensions qui peuvent en résulter, le gouvernement Harper a annoncé le 16 mai 2008 qu'il mettait un terme au projet Maple. L'un des motifs invoqués par AECL et le gouvernement fédéral est que le projet présentait un problème technique "insurmontable". La communication montrera que cet "échec" est contesté par plusieurs acteurs et tentera d'identifier d'autres causes à l'annulation du projet Maple.

Session 10 — Aviation / L'aviation

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Testing, testing: Pratt & Whitney Canada and its Boeing Model 720 engine test bed

Pratt & Whitney Canada is one of the most successful manufacturers of turboprop and small turbofan engines in the world. For more than two decades, between 1988 and 2010, the Québec-based company flight tested its engines on a specially-modified Boeing Model 720 jetliner. The Model 720 was a shorter, lighter and slightly faster, short- to medium-range version of the Model 707, one of the most successful airliners of the 20th century. All in all, Pratt & Whitney Canada's flying test bed proved invaluable in validating electronic controls software and various performance parameters for nearly all turboprops and turbofans developed by the company. Eager to preserve this historically significant aircraft, Pratt & Whitney Canada and the Canada Aviation and Space Museum came to an agreement that will see the Model 720 go on loan to the National Air Force Museum of Canada, in Trenton, Ontario, which graciously agreed to cover all storage and maintenance costs for the airplane. This tripartite agreement will allow Pratt & Whitney Canada and the two federally-funded museums to make possible the preservation of a very important test bed - indeed, the sole example of a Model 707 type airliner in Canada - for generations to come.

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Bridging the North Atlantic: Canada's Role in the Development of Transatlantic Flight

Canada enjoys a privileged geographical position for flight between North America and Europe. Despite its relatively small population and industrial base, Canada used its position to gain significant influence over the development of flight on the North Atlantic corridor during the 1930s and 1940s. Its imperial ties to Britain and close association with the United States, both keenly interested in building an air route between their countries, made Canada a natural bridge. Canada, and then-separate Newfoundland, built the infrastructure necessary to realize transatlantic flight just as the Second World War made the corridor a top military priority. British and American studies likewise saw potential in routes through the country and were instrumental in planning and funding much of the development. Through analysis of Canadian, British, and American archival materials, this study will show how Canada shaped the creation and operation of this vital and busiest of international air routes.

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"The most pressing issue we face in the airports world": An overview of flight impact simulation research in Canada

While it is true that bird strikes are not a major cause of aircraft accidents and fatalities, they do represent a serious safety hazard. From the 1940s onward, specialized tools were developed to make aircraft as bird resistant as possible. Canada and - more specifically - the National Research Council of Canada have played a significant role in this work for almost half a century. Two of the tools designed, built and used in Canada by NRC since the mid 60s are known as flight impact simulators, i.e. "bird guns" or "chicken cannons". These powerful compressed air guns were used to test various aircraft components, as well as "nuclear" pacemakers and flight data recorders. Their acquisition by the Canada Aviation and Space Museum will preserve for posterity a little known aspect of Canada's contribution to the development of the global airline and aerospace industries.

Session 11 — Museums: Studying Instruments (Organized Session) / Musées: l' études des instruments (un séance organisée)

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Artifact research in science museums (from provenance to product)

Provenance information (the documented origins and succession of ownership of an artifact) is a powerful yet surprisingly underutilised tool for studying the history of science and technology. By tracing the history of an artifact from its creation to present, we build basic cataloguing information, create meaningful connections to people, places, events and activities, raise questions about authenticity, and confront ethical and legal issues related to ownership. Above all, by tenaciously following an artifact's "life story," provenance researchers uncover surprising, alternative historical perspectives. In this talk I shall provide examples of provenance research from the Canada Science and Technology Museum, and show how these studies point to new ways of looking at and communicating the history of science and technology in Canada.

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Beyond Technological Significance. Challenges in Building a Representative and Meaningful National Energy Collection

CSTMC has a world-class collection in energy production, delivery, and consumption. It includes 10,000 artifacts, 4300 pieces of trade literature, and contains treasures such as the earliest existing Ferranti transformer; the only complete AC generator made for the Adams Station by Westinghouse and Tesla; and a switchboard from the Sault Ste Marie canal, the first canal in the world to be electrified. Yet, there is much more that goes into the building of the national collection than the technological significance of acquired artifacts.

This paper looks at challenges of curating a national energy collection. Specifically, it discusses:

- the complexity of an ideal collection in this area;
- the limitations of the collection: practical considerations, gender-related issues, acquisitions of proprietary and new technologies;
- exhibiting and interpretation of energy collection in the context of a national and regional representation, and relationship with sponsors;
- access to the reserve collection

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“I think that’s where the testicles go”: Artifact Study in the History of Electricity

This paper examines the use of artifacts and material culture methodologies for traditional historical papers, with a focus on electric goods. The author draws from three examples to contextualize the exciting, though sometimes frustrating, process of using objects to explain history. Technological artifacts present specific challenges, but examining them can reveal information that would otherwise remain obscure within any historical narrative.