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Genome Alberta

- Myriad Genetics Controversy Workshop - November 28th-29th, 2006



Right in the midst of the first of many cold snaps in Edmonton's notoriously trying winter season, this event set out to examine and re-examine exactly what happened in 2001 when the Myriad Genetics controversy erupted, as well as its subsequent treatment in the media and hypothesized impact on policy. The participants were either academics who have written on the Myriad controversy and related issues, or were actually directly implicated in the matter. To this end, there were representatives present from Myriad Genetics, Health Canada, and an affected Calgary genetics laboratory.

The event was helmed by Richard Gold, director of the Centre for Intellectual Property Policy and frequent collaborator with GE³LS

Alberta team members. Discussion with Myriad Genetics and Health Canada officials quickly revealed that the actual events which occurred were quite dissimilar to what was reported on in the popular press. Matters in fact were much more complex and multifaceted, as will be reported in publications resulting from the event.

Discussion also explored the topic of the Myriad controversy as a kind of archetype of the general objection to gene patents limiting access to health care, particularly given that the Myriad debacle has proven to be a relatively isolated incident.

The event was made possible due to the generous support of SSHRC, CIHR, the NIH, Genome Alberta, and the National Centres of Excellence.

Upcoming GE³LS Events

2007.03.15-17:

Resource Allocation and Emerging Genetic Technologies: An Exploration of Practice, Policies, Evidence and Emerging Issues - Banff, AB

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Multifaceted Public Consultation Process Explores Plant Molecular Farming



Far left image: the consultation team takes a break for a group shot.

Right image: the consultation in progress.

By Ruth Klinkhammer, Project Manager

Two consultations tapping into public sentiment on the third generation of genetic modification are nearing completion. The project has offered Canadian citizens the opportunity to present their opinions on Plant Molecular Farming (PMF), which is the genetic engineering of plants to produce drugs, vaccines and industrial proteins and enzymes. The consultations are part of Dr. Edna Einsiedel's ongoing work focusing on the role of publics and stakeholders in shaping new technologies.

Currently there are no federal regulations which allow for commercialization of PMF. The Canadian Food Inspection Agency (CFIA) is seeking input from stakeholders and the public before developing regulations; this project will feed into the CFIA's consultation process. It is this strong connection with policy development that has given citizen panellists an increased sense of purpose.

The face-to-face consultation was held over two weekends in Calgary at the end of November and January. There were a number of unique dimensions to the consultation - for example, participants knew each other. In 1999, 15 western Canadians took part in a Citizens' Consultation on Genetically Modified Foods and twelve members of this group agreed to reconvene for the 2006-7 consultation.

Panellists were also given the opportunity to design their own consultation process. During the 1999 consultation, panellists and experts were seated at two opposing tables. Panellists left those meetings feeling that the table configuration led to a confrontational, divided atmosphere. To eliminate that tension, panellists decided to sit with experts at a U-shaped table. In addition, panellists designed a "speed-dating" approach to interview experts. Experts were seated alone at tables while panellists, working in pairs, interviewed experts for 15 minutes before being prompted to move to the next table. In follow-up interviews, panellists indicated they felt more confident asking questions of experts because the forum was less public. The speed dating forum also gave less vocal participants an opportunity to ask questions. One participant observed that the speed dating method also gave experts the opportunity to drive home the most important parts of their agendas.

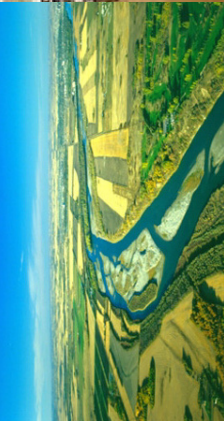
The online consultation was also designed with a number of unique features. In the fall of 2006, Dr. Einsiedel's team worked with a national polling firm to find a group of "involved" Canadians. In January, invitations to participate in the study were sent to 1077 people across Canada, including Francophones in Quebec. Just over 600 people completed the first of four surveys. This number dropped to 505 in the second survey, the most recent consultation. (The final two surveys were yet to be completed at the time of this article.)

The surveys are more than sets of questions. Each survey opens with detailed information about PMF. For instance, the second survey provided information about the major, minor and non-food crops used in PMF while survey three explored environmental risks and methods of containment. After reading this information, participants were prompted to respond to a few quantitative questions. The surveys end with an open-ended discussion question, the answers to which can be viewed by all participants. This method of revealing responses to the group was used in an attempt to stimulate dialogue and debate between participants.

Organizers also brought experts into the online consultation process. Responses to the open-ended questions have been closely monitored to identify common concerns and questions. Experts are then asked to respond to these questions and the answers are posted for participants. For instance, many participants raised questions about the safety of the food chain. Industry experts, scientists and regulators were asked how the food supply chain could be kept safe from PMF contamination. The website shows that 135 of 505 respondents accessed the responses to these questions.

The final report from participants in the face-to-face consultation is expected by the end of February and the final online survey was launched February 15. The results from this innovative consultation process will provide fascinating insight into the views of Canadians on this new technology.

News from University of Saskatchewan PI Peter Phillips



1. Phillips appointed to IAS, UWA, Perth

Dr. Peter W.B. Phillips, Professor in the Department of Political Studies, has been appointed for 2006-8 Professor at Large in the Institute of Advanced Studies, University of Western Australia, Perth. This UWA program is designed to enable individuals who have achieved distinction through broad intellectual interests to visit the university and roam widely across disciplines and the intellectual life of the campus community. His appointment, in conjunction with the School of Agricultural and Resource Economics, involved an initial nine week visit in April-June 2006, when he undertook academic exchanges with scholars in the School, the colleges of agriculture and law, the department of political science and the Aboriginal studies centre. During his visit he also convened a Masterclass on governing transformative change for graduate students from UWA, Curtin and Murdoch Universities, directed a series of graduate seminars and presented a series of public lectures. He will be making his second visit for about 2 weeks in June 2007, when he will give a public talk, convene a Masterclass and engage in research related to public private partnerships in life science research.

2. NEWS: Phillips has three books in press

Professor Phillips has three books currently in press and expected in print before the end of 2007. The manuscript he wrote while on sabbatical last year, entitled *Governing Transformative Technological Innovation: Who's in Charge?* is scheduled to be published in June by Edward Elgar. Kluwer/Springer plans to release later in the year a volume edited with Professor Chika Onwuekwe (University of Calgary) entitled *Accessing and Sharing the Benefits of the Genomics Revolution*. Finally, Jean Porter and Peter Phillips have contracted with U. of T. Press to publish during the next year the proceedings of a recent conference, under the title *Public Science in Liberal Democracy*.

3. Brief synopses of the contents of the three books

Phillips, P. [Contracted in August 2006; forthcoming May 2007.] *Who's in Charge? The Challenge of Governing Transformative Technological Innovation*. Oxford: Edward Elgar.

Change is now pervasive and inexorable. New technologies, processes and institutions appear to many to be beyond the control of any existing governing systems. This is especially so for transformative technologies, such as information technologies, biotechnologies and nanotechnologies. In the evolving knowledge economy, the key asset is the ability to innovate, i.e. the facility to develop, adopt and adapt new ideas, products, and organizational structures by combining existing ideas, products and structures in new ways. Ultimately, this process involves the identification, assembly and use of disparate types of information and knowledge through a wide range of governing systems. This is at root an institutional challenge. This book examines the deep governing structures of transformative technology and innovation in an effort to identify which actors can be expected to act when and under what conditions and to what effect. Ultimately, it is not a question of finding a single entity that has control. Rather it is a matter of finding how a complex system of institutions and actors operates and how they can be made to enhance economic and social welfare. The book examines the life cycle of an array of examples where converging technologies have created transformations and governing challenges.

News from Saskatchewan (Continued)

Phillips, P. and C. Onwuekwe (eds). *Accessing and Sharing the Benefits of the Genomics Revolution*. Kluwer/Springer. [Contracted July 2006; forthcoming 2007.]



Dr. Peter W.B. Phillips
Department of
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There is a veritable gold rush mentality in the life science world as scientists, entrepreneurs and multinationals are staking claims to the 'code of life' embodied in the world's current stock of plants, animals, microbes and human populations. In response, the communities that see themselves as the custodians of both that traditional knowledge and specific genetic resources have demanded greater recognition of their role in creating and conserving this resource, access to any resulting improvements and a share of the benefits arising from their patrimony. This has precipitated a widespread effort—in local communities, in the marketplace, in many developing and developed countries and at the talks in the Doha Round of the WTO—to reconcile the interests and concerns of the two opposing groups. This edited volume explores the legal, economic and political context for the debate about intellectual property rights for traditional knowledge and genetic resources and critically analyses the theory and practice of access and benefits sharing efforts around the world. The book also investigates the current flashpoints—the David and Goliath battle between Monsanto and Percy Schmeiser over farmers' rights; the dispute over coexistence of GM and organic production; and the ownership and control of human genetic materials stored in human gene banks around the world. This book includes contributions from David Castle (Philosophy, U. of Ottawa), Donna Craig (Law, Macquarie U.), Richard Gold (Law, McGill), Lara Khoury (Law, McGill), Bartha Knoppers (Law, U. de Montréal), Jorge Cabrera Medaglia (Environmental Law, U. of Costa Rica), Ikechi Mgbeoji (Law, Osgoode Hall, York U.), Chika Onwuekwe (Law and Society, U. of Calgary), Peter Phillips (Political Studies, U. of Sask) and Lorraine Sheremeta (Health Law Institute, U. of Alberta).

Porter, J. and P. Phillips (eds). *Public Science in Liberal Democracy*. University Toronto Press. [Contracted December 2006.]

Science and its products have always had a public goods character to them. Whether contributing to the conduct of war or the conduct of medicine, scientific knowledge eventually becomes available to those who had no hand in producing it. Controversies abound in the history of science, but toward the end of the twentieth century, the generation, application and diffusion of scientific knowledge became matters of intense public concern in Western democracies. Science, much of it produced by public funds, is now forcing on policy makers unprecedented calculations regarding risk and benefit. Regulatory challenges now tax the knowledge of the state, and public interest groups are forming in response to perceived dangers. Science has become a public issue in the sense that its conduct and direction are now subject to political pressures as never before. Not only has bureaucratic and political debate been changed by the addition of a strong scientific component, but public discourse is now subject to the participation of scientists themselves. Public demand for explanations of scientific research has been joined by an even more vociferous demand for justifications. These demands have drawn scientists into public discussions and have begun to sharpen differences in the ways in which scientists and the lay public evaluate scientific research agendas. Scientific education and the epistemology followed by scientists are not particularly compatible with public discourse. It makes little sense, for example, to call for negotiation and compromise in a chemistry or mathematics class. The personal or ethical stake of the person in the discussion is irrelevant to the knowledge claim. Yet, public discourse requires compromise, negotiation, and sensitivity to the position and stake of the participants. The interconnectedness of public policy issues with human well-being means that scientific knowledge will be a necessary element in public policy formation. But the tensions this produces cannot be glossed over. Scientists are recruited as privileged contributors to the substantive policy discussions, but the democratic pressures on public policy formation require scientists to take part in the discourse as one of many participants.

The 18 chapters in the book address three key questions: (1) Can science retain independence and objectivity in the face of demands to meet commercial and public policy objectives? (2) In what ways is scientific discourse privileged in the formation of public policy? And (3) How can scientific knowledge and scientific methodology be made compatible with the interdisciplinarity and integration required of public policy discourse and formation?

GE³LS Alberta Team: Notable Recent Developments

Spotlight: Principal Investigator Michele Veeman

Volinskiy, D., W.L. Adamowicz, M.M. Veeman, L. Srivastava. 2007. Are Country of Origin and non-GM Premia Invariant to Experimental Auction Structure? Presented at the 51st Annual Conference of the Australian Agricultural and Resource Economics Society, Queenstown, New Zealand from February 13-16, 2007.

ABSTRACT: A revealed preference auction experiment is used to elicit values for two attributes, one relating to genetic modification and the other to country of origin of the food product, canola oil. A premium for a non-GM canola oil is found to approximate CA\$0.4 to \$0.6 per litre. Auction format effects are found and hypotheses as to why these may occur are suggested.

McKay White, R., and M.M. Veeman. A Survey of Literature on Genetically Modified Crops: Economics, Ethics and Society. Department of Rural Economy, Faculty of Agriculture, Staff Paper.

<http://www.re.ualberta.ca/Research/Staff%20Papers/sp-07-01.pdf>

ABSTRACT: This paper reports on a review of literature in the form of academic papers and published research on ethical and consumer issues for GM crops in North America, with particular emphasis on GM wheat. The issues raised in these papers and the findings and arguments posed by the authors are outlined. A general conclusion that can be drawn from this overview is that public attitudes toward GM foods are diverse and sometimes quite strongly held. The strong negative views of GM food held by some appear to be grounded in individuals' ethical or moral values. Ethical and risk assessment issues have not been fully explored. There is a general consensus in the applied economics literature that GM crops result in economic benefits, although benefits to individual consumers may not be great enough to overcome perceived risk. Carefully planned provision of credible information informing members of the public of benefits and related issues associated with agricultural biotechnology may have benefits for farm and industry groups but maintenance of trust in information sources and content is vital to credibility. The discovery and use of genomic techniques that express explicit consumer benefits may lead to more favorable attitudes by many consumers.

Publications and Reports:

Bubela, T. 2006. Science Communication in Transition: Genomics Hype, Public Engagement, Education and Commercialization Pressures. *Clinical Genetics* 70: 445-450.

Caulfield, T., E. Einsiedel, J.F. Merz and D. Nicol. 2006. Trust, patents and public perceptions: The governance of controversial biotechnology research. *Nat. Biotech.* 24: 1352-1354.

Coenen, L., J. Moodysson, C.D. Ryan, B. Asheim and P.W.B. Phillips. 2006. Knowledge bases and spatial patterns of collaboration: comparing the pharma and agro-food bioregions Scania and Saskatoon. *Industry and Innovation.* 13(4): 393-414.

Gray, R., S. Malla and P. Phillips. 2006. Product innovation in the Canadian canola sector. *Supply Chain Management.: An International Journal* 11(1): 65-74.

Sheremeta, L., M. Plant & B.M. Knoppers. 2006. The Future of Cord Blood Banking in Canada. *Health Law Review* 14:3.

GE³LS Alberta Team: Notable Recent Developments

Trainees:

Cami Ryan – Post Doctoral Fellow with the Faculty of Communication & Culture at the University of Calgary – was invited to and recently presented at the National Research Council's CISTI Infoconference in Ottawa on October 25, 2006. Her presentation titled Using Social Network Analysis to Predict & Evaluate Performance in R&D Networks is a summary of her doctoral dissertation examining the role of social networks in the performance of Genome Canada funded projects.

Jyoti Mistry who received her Master's in Biotechnology from the University of Calgary in 2005 has just been hired by the Canadian Food Inspection Agency (CFIA) Office of Biotechnology to work as Policy Analyst and Communications Officer. Jyoti worked as a GE³LS Research Assistant for Edna Einsiedel on the plant molecular farming project.

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Newsletter Compiled by Robyn Hyde-Lay and CJ Murdoch.

This project is supported by Genome Alberta and Genome Canada, a private, non-profit corporation whose mandate is to develop and implement a national strategy in genomics and proteomics research for the benefit of all Canadians. For this purpose, it has received \$600 million in funding from the Canadian government.

