

ISSP

INSTITUT DE RECHERCHE SUR LA SCIENCE,
LA SOCIÉTÉ ET LA POLITIQUE PUBLIQUE
INSTITUTE FOR SCIENCE, SOCIETY AND POLICY

Annual Report

2011-2012

Annual Report 2011-2012

Creating a Network



uOttawa

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About the Institute for Science Society and Policy

The Institute for Science, Society and Policy (ISSP) offers a unique, holistic approach to understanding the social implications of science and technology. The Institute informs science and technology policy through various channels and points of view.

Centered at the University of Ottawa, the ISSP carries out research, teaching, and public engagement on the relationship between society and science, innovation and technology, and fosters networks of people and organizations interested in this relationship.

The objective of the Institute is to improve the governance of science, technology and innovation. It does this by integrating research, education and public engagement at every stage of innovation – from developing science policy and improving how science and technology are regulated to understanding their social implications.

The ISSP's long-term goal is to develop highly skilled people and produce top quality research that will inform and improve decision-making about science and technology, both at home and internationally.

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I. Note from the Director



The future is here. Science and technology are transforming our world, our politics and our lives in ways that many of us never dreamed possible. The ISSP aims to facilitate discussion, inform good governance, and ensure the smooth adaptation to this future.

The Institute takes a broad perspective on science policy and technology governance. We embrace a diversity of methods and outlooks in our teaching, research and public engagement activities.

2011-2012 was an exciting year for the ISSP, a time that saw significant progress in each of the Institute's major files.

This annual report – the Institute's first public annual report – presents the ISSP's progress in five areas:

1. Capacity Building;
2. Network Building;
3. Education Development;
4. Interdisciplinary Research; and
5. Public Engagement.

As you can see in this report, we achieved considerable progress in all of these areas. I thank the Advisory Committee, Core Group, Affiliates and Fellows, as well as the dedicated ISSP staff for making this possible.

It is a huge privilege to lead the ISSP and I am looking forward to an exciting academic year 2012-2013.

Marc Saner
Director, ISSP
University of Ottawa

II. Capacity Building

The ISSP made significant strides in capacity building during 2011-2012, both in terms of its team and communication materials. The result is an institute with considerable human capital, spanning disciplines and sectors, and the means to get its message out to various audiences through several communication channels that are constantly being adapted to changing technology.

People Make the Difference

Every member of the team counts. The ISSP is made up of members in several categories, all playing an important part in ensuring the success of the Institute. From the Advisory Committee to the Core Group, Affiliates, Fellows and our dedicated staff, everyone at the ISSP contributes to the Institute's accomplishments.

ISSP Membership

The Institute finalized the categories of ISSP members with the University of Ottawa administration and began to build its membership in several categories. Accomplishments here include:

- Assembling the ISSP Advisory Committee (see Appendix 1A), the group of stakeholder representatives from the academic, public and private sectors working for the success of the Institute. The mandate of the Committee includes both a review and a challenge role in relation to the scope of ISSP activities.
- Assembling the Institute's Core Group, the team of uOttawa professors that participates in planning and executing Institute operations (see Appendix IB for a list of Core Members). Several Core Members have taken on leadership roles in ISSP activities:
 - Scott Findlay, Professor of Biology, became Director of the ISSP Education program.
 - Daniel Paré, Professor of Communications, became Director of the ISSP Academic Outreach program.
 - Jonathan Linton, Power Corporation Professor in the Management of Technological Enterprises, continued to lead the Bromley Lecture and Event and became Co-Director of the G20 Ingenuity Network (with Marc Saner and Nicholas Vonortas, George Washington University)
- Recruiting eleven ISSP Affiliates. These uOttawa professors provide support to the ISSP and take part in Institute activities (see Appendix IC for a list of Affiliates).

- Welcoming five Fellows. ISSP Fellows are professors, researchers or professionals from organizations other than the University of Ottawa who work with the ISSP in various capacities, including consultation, strategic advice and collaboration on projects (see Appendix ID for a list of Fellows).

ISSP Staff

Full-time Institute staff Marc Saner and Jeremy Geelen welcomed several additions to the ISSP team:

- Jackie Dawson, Canada Research Chair in Environment, Society and Policy. (Dr. Dawson is also a member of the Core Group.)
- Research Consultant Carin Christou, who works for the ISSP on a full-time basis.
- Several undergraduate and graduate students who contributed to the work of the ISSP in various capacities.

Engaging Stakeholders

In April 2011, the ISSP presented the current state and direction of the Institute to a group of 30 uOttawa faculty and administrators, who then provided feedback on what they heard. During the summer months following the event the ISSP distilled and reflected upon their comments and advice.

Getting the Word Out: Website and Communication Materials

The ISSP made significant strides in building its website, which now contains information on its mission and goals, members and staff, education, research, outreach and network activities.

The Institute also developed its brochure and stand-up banner as well as other promotional materials, such as pens, pins, and a template for ISSP publications.

The ISSP's newsletter, *SSP News*, currently has over 400 subscribers. News items sent through *SSP News* are archived on an external blogging site. (Visit <http://isspuottawa.posterous.com/> to read back issues of *SSP News*.)

The Institute also developed a dedicated external website for its symposium, *Synthetic Biology at the Interface of Science and Policy*, held in September 2011.

The ISSP has also established a *LinkedIn* Company Page that allows professionals associated with the Institute to identify themselves as such.

Other Accomplishments: ISSP Governance and Administration Support

In addition to the accomplishments mentioned above, the ISSP wrote its Statutes, which are currently being reviewed by the University of Ottawa's Faculty of Arts. The Institute was also honoured to receive generous financial support from uOttawa's Vice-President Research Office to support Institute activities.

III. Network Building

During 2011-2012 the ISSP made significant strides in network building, both on the uOttawa campus and internationally. In addition to strengthening the profile of the ISSP, these networks help to raise awareness of the policy challenges at the interface of science, society and policy and bring together talented people to work towards addressing them. The Institute has also created a network of over 400 opt-in contacts (and growing) for its e-newsletter, *SSP News*.

Networks Begin at Home: The uOttawa Science, Society and Policy Network

The ISSP brought together several centres of expertise to form the University of Ottawa Science, Society and Policy (SSP) Network.

Some of the network members are located on the uOttawa campus; others are external organizations with a significant presence at the University of Ottawa. In either case, as part of the uOttawa SSP Network they aim to support and connect member activities and to strengthen university capacity in the study of the intersection between science, technology and society. Network members are particularly interested in the ethical, legal, managerial and social implications of cutting-edge science and emerging technologies. (See Appendix II for information on current members.)

The SSP Network has a page on the ISSP website, and the ISSP distributed materials by and about the Network at the 2011 Canadian Science Policy Conference and elsewhere. The ISSP's newsletter, *SSP News*, is meant to be a vehicle for all Network members to spread their message.

International Networks Addressing International Themes

The themes the ISSP works on are global in scope. They aren't confined to national boundaries and often require international collaboration. The ISSP has facilitated this collaboration by joining or helping to build international networks.

Secretariat of the G20+ Ingenuity Network

With its secretariat at the Institute for Science, Society and Policy, the *G20+ Ingenuity Network* is comprised of universities in G20 national capitals (or universities with equivalent access to policymakers) and elsewhere and aims to be an international science, technology and innovation policy community that promotes international collaboration and further forges a relationship between universities and national government policymakers. This network was founded at the conclusion of the 2012 Bromley Event in Ottawa in May 2012 (see below for additional information on the Bromley event and Appendix III for a list of current *Ingenuity Network* members).

Interim Secretariat for the International Risk Governance Council in Canada

In May 2011, the ISSP hosted a high-level meeting with various participants from the public, private, academic and NGO sectors to discuss the creation of a Canadian node of the International Risk Governance Council (IRGC). The meeting included a roundtable discussion where participants listed Canadian 'Needs' and 'Expertise' from the perspective of risk governance. Following the meeting it was decided that the ISSP would act as the Interim Secretariat for the IRGC in Canada, serving as a contact and liaison point for potential stakeholders in the IRGC network.

IV. Education Development

The ISSP's research, public engagement activities, and even its networks are designed to enhance the development of its education program – the Institute's top priority. The Institute aims to *educate* people about science and technology, science and technology policy and governance and the social implications of science and technology. The education program will be the thread running through all ISSP activities – it will both inform and be informed by the activities the Institute undertakes. The Institute is excited by its emerging program and is proud to have made significant progress on this file.

Director of ISSP Education Program and Assembly of Education Committee

Scott Findlay, Professor of Biology at the University of Ottawa and ISSP Core Member, was nominated as Director of the ISSP education program. Dr. Findlay has assembled and is consulting with the ISSP Education Committee, comprised of ISSP Fellow Paul Dufour and ISSP Core Members Dan Paré and Marc Saner.

Financial Support for the Education Program

The ISSP applied for and won a University of Ottawa Interdisciplinary Initiatives Grant (10K) to support the development of the Institute's education program.

Market Research

The Institute made great strides in its market research by mapping hundreds of programs and organizations focusing on science, technology, innovation and society. Though the Institute will continue to scan the environment to add new organizations and programs and delete those that become defunct, the map is an extensive picture of the current science, technology and innovation studies landscape.

Development of a Graduate Course

Marc Saner developed and introduced for the first time the graduate course "Integration of Science and Policy in Decision-Making", which he taught in winter 2012.

Student Engagement

Though the ISSP does not currently have an education program, the Institute has been able to engage students in meaningful ways.

- *Bromley 2012 Event: Student Exchange*

The May 2012 Bromley Memorial Lecture and Event allowed six selected uOttawa Graduate Students to meet approximately thirty international guests, William Bonvillian (the Bromley 2012 lecturer), top level decision-makers in Ottawa (such as the Executive Director of NSERC and the President of the CFI) as well as the Honourable Dr. Gary Goodyear (Minister of State for Science and Technology), Dr. Marc Garneau (Liberal Party House Leader) and H el ene LeBlanc (NDP Industry Critic and former NDP Science and Technology Critic).

- *SSP Group and Intern Program*

The Institute assembled and in May 2012 held the first meeting of its *Science, Society and Policy (SSP) Group*, which is a collection of likeminded graduate students and young professionals and will hold various events on SSP themes, such as reading groups, lectures and other events. Members of the SSP Group have also been invited to provide input into the development of the ISSP's emerging graduate and continuing education programs and will take part in a workshop on this theme during summer 2012.

The Institute has also received requests for information on ISSP education programs and internships. An internship program is in development.

V. Interdisciplinary Research

The ISSP had significant research output in 2011-2012, including the first ISSP publications, contracted research for the Government of Canada and Institute-relevant research by its Core and Affiliate members. This research, conducted by members from various fields, reflects the interdisciplinary nature of the Institute and illustrates the range of issues to be investigated at the interface of science, society and policy.

Neurons at Work: ISSP Research Output

In 2011-2012 the ISSP produced its own reports and did research on contract for the Government of Canada.

ISSP Publications

The ISSP produced several reports for distribution and inclusion on its website:

- *Looking at Innovation from a Uniquely Canadian Perspective*

The ISSP's first official publication, this paper was written by Richard Hawkins (ISSP Fellow and Canada Research Chair in Science, Technology and Innovation Policy). It was distributed to key decision makers in Ottawa and over the ISSP's listserv, and has been posted on the Institute's website. The paper received considerable attention and Dr. Hawkins was interviewed in Re\$earch Money and University Affairs.

- *Synthetic Biology at the Interface of Science and Policy Conference Report*

The ISSP summarized the proceedings of its conference, *Synthetic Biology at the Interface of Science and Policy*.

- *Advancing Knowledge at the Frontier: The AAAS and the Saga of Science Societies in Canada*

Written by ISSP Fellow Paul Dufour, this historical analysis is currently being reviewed for publication as an ISSP Report.

ISSP staff also conducted research for publication in peer-reviewed journals and monographs:

- *Streamlined Regulations and Converging Technologies*

Marc Saner and Abdallah Daar's paper, *Streamlined Regulations and Converging Technologies*, was accepted as the lead paper in the September 2011 issue of *Optimum Online*. This paper explores innovation based on interdisciplinary (or "convergent") technologies within the context of the Government of Canada's science and technology strategy and SMART (specific, measurable, attainable, realistic and timely) regulation strategy.

- *On The Diversity of Nanomaterials Definitions in International Regulatory Policy*

Written by Marc Saner and Anna Stoklosa (former research assistant at the ISSP), *On The Diversity of Nanomaterials Definitions in International Regulatory Policy* was submitted for publication in the *Journal of Business Ethics'* Special Issue on nanotechnology, ethics and policy. In light of the challenges nanotechnology presents to regulators, policy makers and ethicists, the paper examines definitions of nanomaterials in use by various scientific and international bodies with the aim to improving communication and understanding among regulators, the regulated, academics and the public at large.

- *Identity in a Technological Society: Governance Implications*

Written by Marc Saner and Jeremy Geelen for inclusion in *The Handbook of the Technoself*, this paper explores the way technology shapes personal and societal identity and draws some conclusions from the point of view of technology governance.

Contracted Research for the Government of Canada

ISSP staff and members conducted research and produced publications for several federal departments and agencies:

- *Innovation, Red Tape and Regulation*

Marc Saner, along with ISSP Core Members Jennifer Chandler and Jonathan Linton, produced a background paper on innovation and regulation for the Red Tape Reduction Commission. The paper, *Innovation, Red Tape and Regulation: An Integrated Perspective*, outlines the relationship between innovation and compliance burdens and investigates how well federal innovation and regulation policies are aligned, identifying tensions in the areas of communication, policy direction and performance management.

- *A Primer on Nanotechnology Regulation*

Marc Saner and Eve Heafey (ISSP Technology and Regulation Advisor) finished *A Primer on Nanotechnology Regulation*, under contract with Health Canada.

- *Governance of Emerging Technologies: A Scan of International Institutions*

Marc Saner and Carin Christou conducted research and produced a report for Health Canada on current and planned activities in other nations (including the United States, United Kingdom, Australia and Japan, and the European Union) with respect to policy development, regulation, and new governance structures related to emerging technologies.

- *Policy Horizons Canada*

The ISSP has agreed to write briefs for Deputy Ministers on issues in the area of science policy and emerging technologies. The Institute's first brief will concern the policy implications of emerging technologies, and the ISSP and Policy Horizons will discuss the possibility of future briefs once the first brief is submitted.

Grant Success

Marc Saner applied for and won a Social Sciences and Humanities Public Outreach Grant (ranked first out of 124 applications). Focusing on knowledge dissemination activities on the theme of science/policy integration, the project is in partnership with the Federal Science and Technology Community Management Secretariat and is supported by the *Assistant Deputy Minister Science and Technology Integration Board* and the *Professional Institute of the Public Service of Canada (PIPSC)*. The project's knowledge mobilization activities will involve the development of (1) five policy briefs, (2) a workshop designed for public servants, and (3) a follow-up report based on the outcome of the workshop and wide dissemination of these materials. This project will support two graduate students.

A Network of Active Minds: Core and Affiliate Member Research

ISSP Core and Affiliate members are active researchers. Some examples of their institute-relevant research are listed below:

Core Members

- *Kevin Brand*

V Welch, M Petticrew, E Ueffing, MB Jandu, K Brand (2012, May). "Does Consideration and Assessment of Effects on Health Equity Affect the Conclusions of Systematic Reviews? A Methodology Study" *PLoS ONE*.

- *Jennifer Chandler*

Chandler, J.A. (forthcoming). "Obligatory Technologies': Explaining why people feel compelled to use certain technologies" *Bulletin of Science, Technology and Society*.

Scassa, T., Chandler, J.A., Bedard, Y., Gervais, M. (2012). "Working at the intersection of law and science: Reflections on a fruitful collaboration," in Nicholas Chrisman & Monica Wachowicz, eds., *Spatially Enabling Government, Industry and Citizens: Research and Development Perspectives*.

Chandler, J.A. (2012). "Does a patient have a constitutional right to freedom of medical research? Regenerative medicine and therapeutic cloning research in Canada," *McGill Journal of Law and Health* 6(2), 1-53.

- *Jackie Dawson*

Stewart, E.J., Dawson, J., and Johnston, M.J. (in press). Sea ice change and cruise tourism in Arctic Canada's Northwest Passage: Implications for local communities. *Polar Geography*.

Dawson, J., Scott, D. and Havitz, M.E. (2011). Behavioral Adaptation of Alpine Skiers to Climate Change: Examining Activity Involvement and Place Loyalty. *Journal of Travel & Tourism Marketing*, 28(4), 388-404.

- *Scott Findlay*

Findlay, C.S. and Linton, J., 2012 (submitted). Towards a more effective policy process: Cognitive mapping and the design of rational evidence-based policy. *Journal of Science and Technology Policy*.

- *Rees Kassen*

Kassen, R. Experimental evolution as a policy tool (2012). *GYA General Assembly*, Johannesburg, South Africa, May 2012.

Kassen, R. Getting evidence into political decision-making (2011). *World Economic Forum 'Summer Davos'*, Dalian, China.

Kassen, R. If you want to win the game, you must join in (2011). *Nature* 480: 153.

- *Ian Kerr*

Kerr, I. and Millar, J (2013). "Delegation, Relinquishment and Responsibility: The Prospect of Robot Experts" in *We, Robot*, ed. A. Michael Froomkin (Cambridge: MIT Press).

Kerr, I. and Szilagyi, K. (2013). "Asleep at the Switch? How Lethal Autonomous Robots Become a Force Multiplier of Military Necessity" in *We, Robot*, ed. A. Michael Froomkin (Cambridge: MIT Press).

Caulfield, T., Chandler, J., Kerr, I. (2012). "Emerging Health Technologies" in *Canadian Health Law and Policy*, 3rd ed, eds. Jocelyn Downie, Timothy Caulfield, Colleen Flood (Toronto: Butterworths).

- *Jonathan Linton*

Linton, J.D., Walsh, S.T. (2012). "The Relation Between Learning and Technology Characteristics for Acquiring Competencies in High Technology Small Firms", *International Journal of Entrepreneurial Behaviour & Research*.

Linton, J.D. (2012). "Technology Innovation Management and Design: An Editor's Perspective", *Design 2012*, Cavtat, Croatia.

Casault, S., Groen, A. J., Linton, J.D. (2011). "Towards a Framework for Assessing High-Risk High-Return Science," Invited Lecture, Princeton Plasma Physics Laboratory, Princeton, NJ, July.

- *Daniel Paré*

Paré, D. (In Press). « Telecommunications in Canada: Plus ça change, plus c'est la même chose? » In Ira Wagman and Peter Urquhart (eds.) *Canadian Cultural Industries*. (James Lorimer and Company).

Paré, D., and Smeltzer, S. (2011). "ICTs as a catalyst for social justice? A capabilities perspective," in Suzan Ilcan (ed). *Mobilities, Knowledge, and Social Justice*. (McGill-Queens University Press)

Paré, D. (2012). "Social Media Platforms: Aid or Hindrance to Democracy?" Paper presented at the *Canadian Communication Association, Annual Conference*

Affiliate Members

- *Steffany Bennett*

Dr. Bennett was on the planning committee of *Frontiers in Research 2011: Our Post Human Future*, where she provided highly valued advice.

- *Patrick Fafard*

Murphy, K., Fafard, P. (2011). "Knowledge Translation and Social Epidemiology: Taking Power, Politics, and Values Seriously", in P. O'Campo and J. Dunn, (eds.), *Rethinking Social Epidemiology: Towards a Science of Change*, (New York: Springer).

Fafard, P. (2011). "Science and Social Justice Provide an Inadequate Theory of the Policy Process". Paper presented to *the Annual Conference of the Canadian Public Health Association*.

- *Elizabeth Judge*

Judge, E. (accepted). "Curious Judge: Judicial Notice of Facts, Independent Judicial Research, and the impact of the Internet," *Annual Review of Civil Litigation*.

Judge, E. "Open Data, Open Government, and Open Licensing," *Creative Commons Canada Launch*, Ottawa.

- *Eda Kranakis*

Kranakis, E. (2011). "‘And it is, it is a glorious thing / To be a pirate king’: Adrian Johns, *Piracy* [essay review]," *Technology and Culture* 52, No. 4, 796-800.

- *Rocci Luppicini*

Luppicini, R. (2012) *Technoethical Inquiry and Human Enhancement* (Eds. Nuno Sotero Alves da Silva and Gonalo Jorge Morais da Costa). *Ethical Dimensions in Bio-Nanotechnology* (IGI Publishing, US)

Galvan, J., & Luppicini, R. (in press). The Humanity of the Human Body. Is Homo Cybersapiens a New Species? *International Journal of Technoethics*, 3 (2).

- *Catherine Mavriplis*

Organized the information and workshop session (with L. Laroche), *Cultural Diversity in Technical Professions*, at the Pratt & Whitney Canada Mississauga plant (100 participants, 50% managers), April 2012.

Organized and spoke at CASI Ottawa Branch Meeting at University of Ottawa, *Women in Aerospace Then and Now*, March 2012 (covered the life and work of Elsie MacGill – engineer and advocate for women’s progress).

- *Robert McLeman*

McLeman, R. and Brown, O. (2011). "Climate change and human migration," in K. Koser & S. Martin (eds) *The Migration-Displacement Nexus: Patterns, Processes and Policies*, Berghahn Books, New York.

McLeman, R. & Smit, B. (2012). "Climate Change and Canadian Security," in C. Leuprecht et al. (eds) *Evolving Transnational Threats and Border Security: A New Research Agenda*. Martello Papers no. 37, Centre for International and Defence Policy, Kingston ON.

McLeman, R. (2011). *Climate change, migration, and critical international security considerations*. Research series publication no 42 of International Organization for Migration, Geneva (50p).

- *Andrew Pelling*

Dr. Pelling was on the planning committee of *Frontiers in Research 2011: Our Post Human Future*, where he provided highly valued advice.

- *Mitia Rioux-Beaulne*

Rioux-Beaulne, M. (2013). *Diderot : dynamique de l'esprit, de la science aux beaux-arts*. Paris/Montréal, Vrin/Presses de l'Université de Montréal (Coll. « Analytiques »).

Co-organiser (with David Robichaud, Université d'Ottawa) : *La Philosophie interlocutrice des arts et des sciences*, Congrès 2013 de la Société de Philosophie du Québec, ACFAS, Palais des Congrès, Montréal, mai 2012.

- *Brenda Wilson*

Etchegary H., Potter B., Perrier C., Wilson, B. (in press). Cultural differences in family communication about inherited cancer: Implications for cancer genetics research. *Journal of Cultural Diversity*.

Bombard Y., Miller F.A., Hayeems R.Z., Wilson B., Carroll J.C., Paynter M., Little J., Allanson J., Bytautas J.P., Chakraborty P. (2012). Healthcare providers' views on pursuing reproductive benefit through newborn screening. *European Journal of Human Genetics* (20), 498-504.

Carroll J.C., Wilson B.J., Allanson J., Grimshaw J., Blaine S.M., Meschino M.S., Permaul J.A., Graham I.D. (2011). GenetiKit: a randomized controlled trial to enhance delivery of genetics services by family physicians. *Family Practice* (28), 615-23.

VI. Public Engagement

Addressing the big issues requires genuine dialogue – open discussion between opposing views and disparate groups. During 2011-2012 the ISSP fostered dialogue and engaged various publics. It brought together supporters and critics of emerging technologies, connected with Parliamentarians and reached out to the general public.

Let's Talk S&T: Conferences, Public Lectures and Major Events

The Institute organized, co-organized and partnered on several highly successful events, and is currently planning a conference for autumn 2013.

- *Synthetic Biology at the Interface of Science and Policy*

In September 2011, the ISSP hosted the colloquium, *Synthetic Biology at the Interface of Science and Policy*. As part of the 24th annual conference of *Les Entretiens du Centre Jacques Cartier*, this one-day event was the first international conference on synthetic biology to take place in the nation's capital and brought together experts from academia, government and the NGO sector to discuss the science of synthetic biology as well as its legal, ethical, social, economic and political implications. The colloquium involved supporters and critics of this new technology and was sponsored by Health Canada, the Embassy of France in Canada, Situating Science, the Canadian Commission for UNESCO, the Canadian Centre for Ethics in Public Affairs, the University of Ottawa and the University of Ottawa's Faculty of Arts. The Embassy of France in Canada hosted participants and organizers after the event.

- *Synthetic Biology Regulators Meeting*

In collaboration with the Public Health Agency of Canada, the ISSP organized a meeting with regulators from several Federal Science departments and Michele Garfinkel (European Molecular Biology Organization and J. Craig Venter Institute) to discuss the regulation of synthetic biology processes and products.

- *Frontiers in Research 2011: Our Post-Human Future*

On November 15, 2011, the University of Ottawa's Office of the Vice-President, Research hosted its 13th annual Frontiers in Research conference, *Our Post-Human Future*. Developed in partnership with the ISSP, this was the first international conference on post-humanism – the prospect of radically enhancing human capabilities through scientific and technical means – held at a Canadian University. The event featured talks by and discussions with Arthur Carty (Waterloo Institute for Nanotechnology and former Science Advisor to the Prime Minister), Michèle Stanton-Jean (Quebec representative for UNESCO), Andrew Hessel (Singularity University and Pink Army Cooperative), Nadia Magnenat-Thalmann (University of Geneva), Gregor

Wolbring (University of Calgary), health policy scholar Fiona Miller (University of Toronto) and award-winning journalist John Hockenberry. The day concluded with a reception hosted by the ISSP.

- *Geoengineering Our Climate: Science, Ethics and Governance*

The ISSP was a partner with CIGI in the conference, *Geoengineering Our Climate: Science, Ethics and Governance*, held from January 18 to 20, 2011. The event was organized by ISSP Advisory Committee member Jason Blackstock and moderated by ISSP Fellow Peter Calamai.

- *Governance and Research Opportunities in the EU: The Case of Life Sciences and Biotechnology*

The ISSP promoted and hosted a workshop by Greek scholar George Sakellaris on the subject of biotechnology funding, institutional infrastructure and knowledge transfer in the EU.

- *D. Allan Bromley Memorial Event*

From May 14-16, the ISSP hosted the *2012 Bromley Memorial Lecture and Event*. Organized in collaboration with ISSP Core Member Jonathan Linton (Telfer School of Management) and Nicholas Vonortas (Center for International Science and Technology Policy, George Washington University), the event allowed graduate students to meet with senior Canadian science and policy advisors (see above). This year's Bromley lecture was delivered by William B. Bonvillian, Director of MIT's Washington D.C. Office and former senior policy advisor in the U.S. Senate. The event attracted professors and students from the following countries: Canada, China, France, Germany, India, Israel, Mexico, Russia, South Africa, South Korea, Taiwan, Turkey, United Kingdom and the United States, and culminated in the formation of the *G20+ Ingenuity Network* hosted by the ISSP.

- *Canadian Science Policy Conference*

The ISSP supported the *2011 Canadian Science Policy Conference* as a Bronze Sponsor. The Institute had a booth at the conference, which took place from November 16 to 18, and distributed its own materials as well as materials of SSP Network members. The ISSP is a community partner of the Canadian Science Policy Centre.

- *Science and Society 2013*

The Institute has partnered with the *Professional Institute of the Public Service of Canada* and *Situating Science* in planning a major conference on the subject of Science and Society. The conference will take place in October 2013, during national science week.

- *Science and Society Distinguished Speaker Series*

Daniel Paré, as Director of Academic Outreach, took the lead in developing the Institute's *Science and Society Distinguished Speaker Series* and began preparing the speaker roster. The talks will take place in autumn and winter 2012.

A Director Dedicated to Public Engagement

Marc Saner also participated in various workshops and conferences involving academics, top decision makers and the general public:

- *Regulating Differently*

Given at a Health Canada Policy Café, this talk concerned the complexities of predicting scientific and technological development and the role of forecasting when crafting innovation and regulatory policy.

- *A Map of Nanomaterials Regulation in Canada*

This talk was given at *Nanoparticles: Tools for Toxicology*, organized by The Toxicology Forum and Carleton University's Regulatory Governance Initiative.

- *Kyoto STS Forum*

Marc Saner was invited by University of Ottawa President Allan Rock to attend the annual Science, Technology and Society (STS) Forum in Kyoto, Japan, from October 2 to October 4.

- *Science in Society: For Better or For Worse*

Given on a panel at a Café Scientifique at the Canada Science and Technology Museum, this talk discussed risk analysis of emerging sciences and technologies.

- *Interdisciplinary Conference in Honour of Hans-Jürgen Lüsebrink*

Marc Saner commented on a paper by Hans-Jürgen Lüsebrink at a conference in honour of the latter's work on interdisciplinarity. The ISSP supported this workshop, which was hosted by the University of Ottawa's Institute for Canadian Studies.

- *Science in Decision Making*

Marc Saner participated in this high-level workshop organized by the Commissioner for Sustainable Development, Scott Vaughn.

- *Telfer Innovation Policy Seminar (TIPSS)*

Marc Saner was invited to give a presentation at the uOttawa *Telfer Innovation Policy Seminar Series* on the relationship between innovation and regulation.

- *Centre for Law, Science and Innovation at Arizona State University Workshops*

Marc Saner participated in two workshops entitled *Soft Law Governance* and *Pacing Governance with Technology*, hosted by Gary Marchant at Arizona State University, where he gave a talk on upstream engagement with stakeholders and regulators on emerging technologies.

Communicating en Masse: Print, Online and TV Media

The ISSP partnered with *SciencePages* in producing its note on toxicology. In its role as partner, the ISSP provided editorial expertise, research assistance and advice on content covered in the brief. The ISSP also provided *SciencePages* Interns with workspace as well as access to the Institute's and the University of Ottawa's research resources. The note was sent to Parliamentarians and is available online.

In April 2012, the ISSP published the first issue of its online *SSP News*. The publication was sent to nearly 400 recipients, all of whom had 'opted-in' to receive the publication.

ISSP members were featured in various print and telecommunications media. Noteworthy media exposure includes:

- Marc Saner being interviewed in *Le Devoir* on the subject of synthetic biology in the weeks before the ISSP conference on the same theme.
- Marc Saner appearing on *The Agenda* with Steve Paikin (TVO), discussing "The Coming of Technopolitics" alongside guests Elizabeth May, John Duffy and Darin Barney.
- ISSP Fellow Richard Hawkins being interviewed in *Re\$earch Money and University Affairs* in response to the publication of his ISSP paper, *Looking at Innovation from a Uniquely Canadian Perspective*.

Political Support Strategy

The ISSP conducted research on current Parliamentarians and began reaching out to MPs and Senators to inform them of the Institute and its activities. Marc Saner has met with Dr. Kelvin Ogilvie and the ISSP has had repeated contact with H el ene LeBlanc's office. In June, ISSP members will meet with Parliamentarians to discuss the creation of an *Innovation Manifesto*.

Appendix I - ISSP Network

Appendix IA – Advisory Committee Members



Tom Brzustowski, (Interim Chair)
RBC Financial Group Professor in the
Commercialization of Innovation
Telfer School of Management
University of Ottawa

Past President
Natural Sciences and Engineering
Research Council of Canada
(NSERC)



Denise Amyot
Board of Governors Member
University of Ottawa

President and CEO
Canada Science and Technology
Museums Corporation



Jason Blackstock
Visiting Fellow
Institute for Science, Innovation and
Society (InSIS)
University of Oxford



Christine Donoghue
Assistant Deputy Minister
Executive Head
Policy Horizons Canada



David Forrest
Director
Innovation Watch



Michael Geist

Canada Research Chair of Internet
and E-commerce Law
Faculty of Law
University of Ottawa



Yves Gingras

Professor
Université du Québec à Montréal



Anne Golden

President and CEO
Conference Board of Canada



Ruby Heap

Professor
Faculty of Arts
Associate Vice-President, Research
University of Ottawa



Michèle S. Jean

Quebec's Permanent Representative
to UNESCO
The Canadian Commission for
UNESCO



Avrim Lazar

President and CEO
Forest Products Association of
Canada



Bill Leiss
Scientist
Institute of Population Health
University of Ottawa

Past-President
Royal Society of Canada



Gordon McQuat
Professor of Humanities
University of King's College

Project Director
Situating Science



Errol Mendes
Professor
Faculty of Law
University of Ottawa

Commissioner
Ontario Human Rights Commission



Penny Park
Executive Director
Science Media Centre of Canada



Joseph Thornley
Chairman and CEO
Thornley Fallis



David Zussman
Jarislowsky Chair on Management in
the Public Sector
Graduate School of Public and
International Affairs
University of Ottawa

Appendix IB - ISSP Core Group



Kevin Brand
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Telfer School of Management



Jennifer Chandler
Associate Professor
Common Law Section
Faculty of Law



Jackie Dawson
Assistant Professor
Department of Geography
Faculty of Arts

Canada Research Chair in Environment, Society and Policy



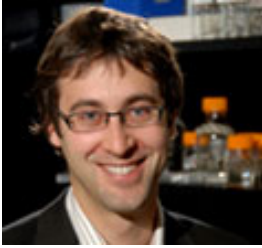
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Faculty of Arts



Gwynne Jones
Full Professor
Department of Critical Care
Faculty of Medicine



Rees Kassen

Associate Professor
Department of Biology
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University Research Chair in Experimental Evolution



Ian Kerr

Associate Professor
Common Law Section
Faculty of Law

Canada Research Chair in Ethics, Law, and
Technology



Jonathan Linton

Full Professor
Telfer School of Management

Power Corporation Professor in Management of
Technological Enterprises



Daniel Paré

Associate Professor
Department of Communication
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Appendix IC - ISSP Affiliates



Steffany Bennett
Associate Professor
Department of Biochemistry,
Microbiology and Immunology
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Community Medicine
Faculty of Medicine
University of Ottawa

Appendix ID - ISSP Fellows



Peter Calamai

Adjunct Research Professor
School of Journalism and Communication
Carleton University



Paul Dufour

Principal
Paulicyworks



Richard W. Hawkins

Canada Research Chair
Science, Technology and Innovation Policy
University of Calgary



Andrew Hessel

Co-chair of Biotechnology and Bioinformatics
Singular University
Co-founder
Pink Army Cooperative



Gregor Wolbring

Assistant Professor
Faculty of Medicine
University of Calgary

Appendix II – SSP Network

University of Ottawa Centre for Law, Technology and Society (CLTS)

The Centre for Law, Technology and Society aims to study, analyze and shed light on the relationships between law, technology and society. Devoted equally to research, education and knowledge dissemination, the Centre brings together professors and independent scholars whose work deals with various topics relating to these themes.

The CLTS is represented by its Executive Director, Madelaine Saginur.

The Emerging Technologies and Innovation Management Laboratory (ETIM)

The University of Ottawa's new Emerging Technologies and Innovation Management Laboratory brings together researchers who use modelling and statistical software in a multidisciplinary environment to deal with the complex problem of determining how innovations can be used most effectively. The work at ETIM aids businesses and organizations in various areas of innovation and technology management, including decision making, policy planning and best practices to make the most of innovations as they are developed.

The ETIM is represented by its Director, Jonathan Linton.

Loeb Chair and Research Consortium (LCRC)

The Loeb Chair in Organ and Tissue Donation (OTD) at the University of Ottawa is the first of its kind in the world. By collaborating with existing organizations, the Loeb Chair and Research Consortium (LCRC), representing the fields of law, religion, ethics, biomedical technology, medicine, nursing, society, philosophy and public policy, provides an innovative approach to the study of global queries, obstacles and barriers surrounding OTD. View the LCRC website [here](#).

The LCRC is represented by the Loeb Chair in Organ and Tissue Donation, Sam D Shemie MD, and the Consortium's Program Coordinator, Paulina Mirsky.

The University of Ottawa School of Electrical Engineering and Computer Science (EECS)

EECS is the University of Ottawa's centre for research and teaching in all areas related to computing, computers and communications. It offers four major degree programs and is home to more than a thousand students. Advanced research, carried out in EECS's fifteen research areas, is funded by grants and contracts in the millions of dollars and the School enjoys excellent relationships with many local companies.

EECS is represented by Emil Petriu.

Gender, Science and Technology Working Group

This emerging working group is represented by Ruby Heap.

The Foresight Synergy Network (FSN)

The FSN is a network of professionals interested in the practical application of foresight tools and practices to better anticipate and understand the uncertainties of the future. The focus of the FSN is cross-sector collaboration and joint brainstorming of ways that public, university, and industry members can align themselves for common purposes.

The FSN is represented by Jack Smith.

Technovation: The International Journal of Technological Innovation, Entrepreneurship and Technology Management

Technovation is a peer-reviewed journal that publishes papers on all facets of the process of technological innovation, from conceptualization of a new technology-based product or process through commercial utilization. Case studies which illustrate how innovation occurs from business and technical standpoints are also included, together with reviews and analyses of governmental and industrial policy which inhibit or stimulate technological innovation.

Technovation is represented by its Editor-in-Chief, Jonathan Linton.

International Journal of Technoethics (IJT)

The International Journal of Technoethics is a peer-reviewed journal that advances scholarship on the impact of ethics in technological advances and applications, whether in established or new areas of research. The journal publishes empirical research, theoretical studies, innovative methodologies, practical applications, case studies and book reviews.

IJT is represented by its Editor-in-Chief, Rocci Luppicini.

Appendix III – G20+Ingenuity Network

Canada

Jonathan D. Linton holds the Power Corporation Professor in the Management of Technological Enterprises and is a full professor at the University of Ottawa. His research focuses on managing emerging technologies and on closed-loop supply chains. Linton's recent and current work with emerging technologies has focused on areas such as opportunity recognition, forecasting, valuation for decision support, recognition and assessment of technical competencies and managerial capabilities, process technologies and advanced materials (such as MEMS and nanotechnologies).

He is editor-in-chief of *Technovation* (2010 Impact factor 2.993) and co-author of the book *Principle Concepts of Technology and Innovation Management: Critical Research Models*. Professor Linton is on the Editorial Boards of *Foresight*, *IEEE Transactions on Engineering Management*, *International Journal of Innovation and Technology Management* and the *Journal of Engineering and Technology Management* and the Technical Advisory Board of *Technological Forecasting and Social Change*. His research is supported by the Emerging Technology and Innovation Management Laboratory and has received funding from NSERC, SSHRC, and other granting organizations.

Marc Saner is the inaugural Director of the Institute for Science, Society and Policy (since July 1, 2010), and an Associate Professor in the University of Ottawa Department of Geography. Prior to this appointment, he served as Executive Director, Regulatory Governance Initiative, School of Public Policy and Administration, at Carleton University, and Director of Assessments and Executive Vice-President of the Council of Canadian Academies. Previously, Dr. Saner was a Director at the Institute on Governance where he built the Ethics and Risk Management Sector and co-managed the Technology and Governance Program.

For the last decade, his primary interest has been multi-disciplinary work at the intersection of science, ethics, and governance. He holds a PhD in applied ecology from the University of Basel, Switzerland (1991) as well as an MA in applied ethics from Carleton University (1999). Dr. Saner publishes in peer-reviewed journals in the areas of technology ethics, bioethics, risk management, biotechnology and ecology and has been invited to speak at seminars, workshops and international conferences around the world. He was also appointed Adjunct Research Professor in Philosophy and in Biology at Carleton.

China

Quanhong Jiang is an associate professor in the School of Foreign Studies of Beihang University (BUAA) of China. His educational training includes a BA (English Language and Literature), and an MA (Economics). He is now working towards his doctoral degree in the School of Economics and Management of Beihang University. His research interest focuses on innovation management, including patenting behaviour and strategic

management in industrial innovation, quality management by experimental design in industrial innovation, and so on. As an academic visitor sponsored by Canada-China

Scholar Exchange Program (CCSEP), he is currently doing some relevant research work under the supervision of Professor Jonathan Linton in the New Emerging Technologies and Innovation Management Laboratory of the University of Ottawa, particularly on modeling and statistical analysis in innovation management with some specific techniques.

Germany

Alexander Cuntz currently works as a Junior Research Fellow at the Berlin-based Federal Expert Commission of Innovation and Research (EFI) established by the German cabinet. Before he was grant holder with a focus on European Research Area policies at the European Commission, Institute of Prospective Technological Studies in Seville, Spain. Alexander holds a PhD in Innovation Economics from Berlin Institute of Technology and a Diploma with honours in International Economics from University in Tuebingen, the Universidade do Porto, Portugal, and the Universidad Nacional de Córdoba, Argentina. His primary research interests lay in the economic, sociological and behavioural aspects of the science, innovation and governance nexus. Alexander also contributed to various OECD working group proceedings, e.g. “Open innovation in global networks”, and has published a number of articles in *Science & Public Policy* as well as *Research Policy*.

Israel

Morris Teubal is Emeritus Professor of Economics at the Hebrew University of Jerusalem, Israel. During the last 10 years Teubal has systematically attempted to apply system evolutionary approaches to innovation policy, including VC policy, policies for the promotion of entrepreneurial systems, and the emerging area of Strategic Innovation Policy, including heading the international panel evaluating Chile’s Innovation Council in 2010. He has and is currently involved in work in these areas both with PhD students, and colleagues abroad, and is keenly interested in further international networking in these areas.

Russia

Dirk Meissner has over 10 years of experience in top level consulting to key decision makers in industry and public policy. He has a strong background in innovation management especially intellectual property and risk management and innovation / technology policy consulting and technology and research strategies. Dirk has worked with and led elite teams on a body of case work that includes market studies and industry analysis, intellectual property management audits, R&D portfolio management, research strategies, R&D in- and outsourcing, market entry strategies innovation and technology policy evaluation and design, innovation campaign design and client coaching. His responsibilities included building and management of teams as well as project management and client interaction. Dirk occasionally represented Switzerland in the OECD Working Party on Technology and Innovation Policy on behalf of the Swiss delegate and current working group chairman. Dirk headed the business unit industry studies and research with T.A. Cook Consultants which he successfully established. Currently Dirk is deputy head and research professor at National Research University -

Higher School of Economics, Institute for Statistical Studies and Economics of Knowledge, Laboratory for Science and Technology Studies in Moscow, Russian Federation.

South Africa

Anastassios Pouris is Director of the Institute for Technological Innovation of the University of Pretoria, South Africa. He specializes in science, technology and innovation policy studies, including assessments and international benchmarking. He has acted as consultant for a number of government departments in South Africa (i.e. National Advisory Council on Innovation, Department of Science and Technology, Department of Trade and Industry and others) and various international organizations (i.e. UNESCO, NEPAD, WIPO and others). His educational background includes an MSc in Engineering from the University of Thessaloniki Greece, an MSc in Economics from the University of Surrey Guildford and PhD from the University of Cape Town, South Africa. He has published more than 60 articles in internationally refereed journals including *Scientometrics*, *Technovation*, *South African Journal of Science*, *South African Journal of Industrial Engineering* and other ISI indexed academic journals

Turkey

Altan Küçükçinar held various science and technology policy related posts until very recently and had the chance to shape and observe the R&D and innovation arena in Turkey, which in the last decade is experiencing a comprehensive transformation in this field. With all the prospects and pitfalls ahead, the policy tools to be developed need careful examination, visionary foresight and dedicated implementation, and not to be sacrificed for myopic political interests. My primary motivation for the attendance is the opportunity to share the Turkish experience, exchange views on what the right instruments are and discuss policy implications with the fellow researchers in other countries.

United Kingdom

James Wilsdon is Professor of Science and Democracy at SPRU (Science & Technology Policy Research) at Sussex University and an Associate Fellow at NESTA, the UK foundation for innovation. From 2008-2011, he was Director of Science Policy at the Royal Society, the UK's national academy of science, where he oversaw major studies on topics such as geoenvironment, food security, science diplomacy and the future of the UK science and innovation system. He also led the Royal Society's evidence-gathering and advocacy for investment in research through the 2010 UK General Election and subsequent Spending Round, which contributed to the relatively positive 'flat-cash' settlement which was achieved. Prior to this, he spent seven years as Head of Science and Innovation at the public policy think-tank Demos. He has researched and written widely on science and innovation policy, emerging technologies and the globalization of research, and his publications include *The Scientific Century* (2010), *The Atlas of Ideas* (2007), *China: the next science superpower?* (2007), *The Public Value of Science* (2005) and *See-through Science* (2004). He writes and reviews regularly for the *Financial Times* and *Times Higher Education*.

United States

Nicholas Vonortas is Professor of Economics and International Affairs at the George Washington University in Washington D.C. He is a faculty member of the Department of Economics and the Director of both the Center for International Science and Technology Policy and of the graduate program in International Science and Technology Policy at GW's Elliott School of International Affairs. Professor Vonortas' teaching and research interests are in industrial organization, in the economics of technological change, and in science and technology policy. He specializes on strategic partnerships, innovation networks, technology transfer, technology and competition policy, and the appraisal of the economic returns of R&D programs.

The Institute for Science, Society and Policy

The Institute for Science, Society and Policy offers a unique, holistic approach to understanding the social implications of science and technology. We're interested in how to use these different perspectives to inform science and technology policy.

Centered at the University of Ottawa, the ISSP carries out research, teaching and public outreach on the relationship between society and science, innovation and technology.

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