E. Richard Gold

Dr. Richard Gold is a James McGill Professor at McGill University's Faculty of Law where he is the Director of the Centre for Intellectual Property Policy. He teaches in the area of intellectual property and innovation. His research centers on the nexus between innovation, development and commerce, particularly with respect to biotechnology. Professor Gold has provided advice to Health Canada, Industry Canada, the Canadian Biotechnology Advisory Committee, the Ontario Ministry of Health and Long-Term Care, the Organisation for Economic Cooperation and Development (where he was the lead author of the OECD Guidelines on the Licensing of Genetic Inventions and a report on Collaborative Mechanisms in Life Science Intellectual Property), the World Health Organization, the World Intellectual Property Organization and UNITAID. His research has been supported by the Social Sciences and Humanities Research Council, the Canadian Institutes of Health Research, Genome Canada, the National Centres for Excellence and the National Institutes of Health. He is a Research Associate at the Health Law Institute at the University of Alberta and was both a Fernand Braudel Senior Fellow and a Jean Monnet Fellow at the European University Institute. His research has been published in high-impact journals in science, law, philosophy, international relations including Nature Biotechnology, The Lancet, PLoS Medicine, the McGill Law Journal, Public Affairs Quarterly, International Studies Quarterly and the European Journal for International Relations.

Le Professeur Richard Gold enseigne dans les domaines de la propriété intellectuelle et de l'innovation à la Faculté de droit de l'Université McGill, où il a par ailleurs été parmi les fondateurs (et premier directeur) du Centre des politiques en propriété intellectuelle. Ses travaux de recherche se concentrent sur les liens entre innovation, développement et commerce, notamment dans le domaine des biotechnologies. Le Professeur Gold a conseillé Santé Canada, Industrie Canada, Le Comité consultatif canadien sur les biotechnologies, le ministère ontarien de la Santé, l'Organisation pour la coopération et le développement économique (il est l'auteur principal des Lignes directrices de l'OCDE relatives aux licences sur les inventions génétiques et du rapport sur les mécanismes collaboratifs de la propriété intellectuelle dans le domaine des sciences de la vie), l'Organisation mondiale de la santé, l'Organisation mondiale de la propriété intellectuelle et UNITAID. Ses travaux de recherche sont financés par le CRSH, les IRSC, les RCE et les NIH. Il est chercheur associé au Health Law Institute de l'Université de l'Alberta et fut Jean Monnet fellow à l'Institut Universitaire Européen. Ses travaux ont été publiés dans d'importantes revues dans le domaine des sciences, du droit, de la philosophie et des relations internationales telles que Nature Biotechnology, The Lancet, PLoS Medicine, la revue de droit de McGill, Public Affairs Quarterly, International Studies Quarterly, et le European Journal for International Relations.

EMPLOYMENT		
2001-present	Faculty of Law, McGill University (Montreal) One of the world's leading law faculties with a unique transsystemic legal teaching program	
2020-present	Director, Centre for Intellectual Property Policy	
-	A leading international research centre focusing on research and policy in respect of innovation and intellectual property in Canada and globally	
2011-present	James McGill Professor	
	 Member, Advisory Committee for the Selection of the Principal and Vice-Chancellor, McGill University (2022) 	
	• Teaching courses on innovation, property, intellectual property and patent theory and policy at McGill	
	• Senior Fellow, Centre for International Governance Innovation (since 2016)	
	 Taught comparative industrial property at Sciences Po (Paris) and eco-patents at the University de Paris Sud Chair, Open Science Evaluation Committee, Montreal Neurological Institute 2016-2018 	
	Member, Board of Directors, Jalon Mtl, from 2018	
	 Member, Board of Directors, Green Aviation Research & Development Network (GARDN) 2015-2018 	
	• Chair, Knowledge and Technology Exploitation Committee, BioFuelNet from 2013 to 2017	
	 Member, Intellectual Property Institute of Canada, Biotechnology Patents Committee, 2015-2016 	
	 Chair, Intellectual Property Appeals Committee, 2013-2017 Member, Statutory Selection Committee, 2013-2019 	
	Member, Committee on the Rights of Senate, 2016-2019	
	Member of McGill's Centre for Intellectual Property Policy	
	Member of McGill's Centre of Genomics and Policy	
	Member, McGill University Senate A six No. 1	
	 Associate Member, Department of Human Genetics, Faculty of Medicine 	
	• Member, Stem Cell Oversight Committee, Canada Health Institutes of Health 2013-2015	
	• Member of Quartier d'Innovation Committee 2011-2012	
	• Holder of the Gide Loyrette Nouel Chair to visit Sciences Po (Paris) in 2011	

- Member of McGill University's Transformation Research and Innovation Committee
- Member of McGill's Centre of Genomics and Policy
- Associate Member, Department of Human Genetics, Faculty of Medicine

2010-present

Full Professor

2015-2019

Associate Dean, Graduate Studies

- Responsible for recruitment and admission of graduate students at the Faculty of Law
- Supervised Graduate Office staff and budget of more than \$1.3 million
- Led effort to review and revise the Faculty's LLM programmes and add structure to its DCL program

2001-2010

Associate Professor

- Chair of the International Expert Group on Biotechnology, Innovation and Intellectual Property that released its landmark report and case studies in the fall of 2008 around the world
 - o Report and case study among top 10 downloaded documents from SSRN in September 2008-10-24
 - o Led to significant media coverage on every continent
 - Policy and media briefings in Canada, the UK, the US, France and Mali
- Received largest ever grant from the Social Sciences and Humanities Research Council in Canada for work on biotechnology and intellectual property and among the highest grant recipients at the Faculty of Law
- Published peer-reviewed articles, book chapters and government reports in law, science, management and public affairs
- Taught courses on patent law, intellectual property law, property law and innovation at McGill, Sciences Po (France) and University de Paris V (France)
- Significant supervision of post-doctoral fellows, doctoral, masters and undergraduate students
- Frequent speaker on intellectual property, innovation and biotechnology internationally
- Chair of a Committee on Research Misconduct, 2010
- Member of NSERC Expert Group on IP, Council of Canadian Academies Expert Group on Nanotechnology,

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NSERC/CIHR/SSHRC peer review committee for the Intellectual Property Mobilization programme

• Significant contribution to Faculty and University committees

2003-2008

Centre for Intellectual Property Policy, McGill University Founding Director

Management Responsibilities:

- Strategy, research leadership, external communication and network-building resulting in the Centre becoming a leader in intellectual property policy within its four three years
- Grant writing and fundraising leading to the award, as Principal Investigator, of the largest grant (Cdn\$3 million) ever provided by the Social Science and Humanities Research Council of Canada and 8 other grants (as PI or Co-Applicant) including 2 from the Canadian Institutes for Health Research, 2 from Genome Canada, 1 from the National Centres for Excellence and 1 from the Foundation for Sustainable Enterprise and Development for total annual budget of approx. Cdn\$1 million
- Communication and outreach to policy communities (foundations, governments, industry) leading to the development of national and international research projects and partnerships
- National and international media relations leading to publication of interviews and opinion articles
- Managing a team of 25+ researchers from 8 disciplines, students and 3 staff members
- Managing conference and workshop organisation leading to one international conference and 6 international workshops

Research Responsibilities:

• Developed innovative research and outreach methodology to coordinate the input of individuals from different disciplines Supervised and drafted policy reports, including for the World Health Organization and the Canadian Biotechnology Advisory Committee

2023-present

Commissioner, Lancet Commission on Societal Resilience in a New Pandemic Age

• Member of a commission established *The Lancet* to investigate how to render countries better able to address a future health crisis

2023-present Strategic Lead, Policy and Training • Lead the efforts of Conscience, a Canadian non-profit organization creating an open science drug discovery network (www.conscience.ca) 2008-2013 **The Innovation Partnership** (Montreal) A non-profit consulting firm dedicated to the better use and management of intellectual property in developed and developing countries **President** Establish strategy for the organisation, including the selection and negotiation of projects Develop communication and media relations in respect of the organisation and its work Network and develop projects in conjunction with the management team Supervise a team of three managers and a dozen experts Lead author on a study for **UNITAID** on legal issues relating to the implementation of an Essential Medicines Patent Pool Supervised project reviewing intellectual property policies for the **Canadian Breast Cancer Foundation** Provided policy advice and drafted report for **Health Canada** on technology transfer and on mechanisms to ensure accessibility of genetic inventions Supervised project on technology transfer at institutions of higher education for Industry Canada Created a training program in Eastern Africa for senior scientists and policy-makers on intellectual property management 2000-2016 **Policy Consultant** Drafted the OECD Council Guidelines on the Licensing of Genetic Inventions as Consultant to Organisation for Economic Cooperation and Development (2003-05) • Acted as Consultant to the World Intellectual Property **Organization** on health-related IP in Indonesia (2004-05) Was Legal Policy Advisor to the **Ontario Ministry of Health &** Long-Term Care leading to a report on genetic inventions and litigation in the Supreme Court of Canada (2001-2003) Acted as Senior Advisor to the Canadian Biotechnology

patenting of higher life forms (2000-01)

Advisory Committee leading to the publication of a report on the

1997-2001	 Faculty of Law, University of Western Ontario (London, ON) Faculty with specific focus on business-related law Assistant Professor Taught Common Law Property; Company Law; and Advising a New Economy Business Prepared and participated in 7 successful grant applications as Principal Investigator or Co-Applicant Prepared and published over 12 monographs, peer-reviewed journal articles and book chapters Taught courses at the Université de Montpellier (1999) and the University of Puerto Rico (1999)
1990, 1993-97	 Torys (Toronto) A leading Canadian law firm in corporate-commercial law Associate, Technology Practice Group Founding associate of the Technology Practice Group, supervising and training over a dozen associates Involved in corporate-commercial transactions related to technology outsourcing, strategic alliances and joint ventures, financing of technology companies, licensing and mergers and acquisitions
1990-91	Supreme Court of Canada (Ottawa) Clerk to Hon. Mr. Justice Peter deC. Cory
1988-89	Ontario Court of Appeal (Toronto) Law Clerk to the Chief Justice and Justices of the Court of Appeal
EDUCATION AND QUALIFICATIONS	
1992-95	University of Michigan Law School Doctor of Laws (S.J.D.) • Prepared thesis entitled Body Parts: Property Rights and the Ownership of Human Biological Materials later published by Georgetown University Press (Washington) in 1996
1991-92	University of Michigan Law School Master of Laws (LL.M.)
1990	Law Society of Upper Canada Call to the Bar of Ontario
1985-88	Faculty of Law, University of Toronto Bachelor of Laws (Honours)

	• Dean's Honour List and prizes in Property Law, Torts, Civil Liberties, writing and academic excellence	
1981-84	Faculty of Science, McGill University Bachelor of Science (Computer Science and Mathematics) • Significant entry scholarship • Graduated with great distinction and various awards	
FELLOWSHIPS		
2022	Fernand Braudel Fellow, European University Institute A fellowship to conduct research in the Department of Law at the European University Institute on open science and regulatory capitalism.	
2016-Present	Centre for International Governance Innovation	
	A legal independent Canadian think-tank that examines issues related to innovation, the environment and international governance	
2000-Present	Health Law Institute, University of Alberta Leading Canadian research institute on health, biotechnology and commercialisation Research Associate	
2003	Robert Schuman Centre for Advanced Studies, European University Institute (Florence) One of the leading interdisciplinary centres with a specific focus on international relations and politics in Europe Jean Monnet Fellow • Developed a transdisciplinary research methodology on biotechnology intellectual property leading to a publication in <i>Public Affairs Quarterly</i>	
2000-2002	Einstein Institute for Science, Health and the Courts US institute developing and providing training to judges Senior Fellow	

APPENDIX A PUBLICATIONS

PART I: PEER REVIEWED PUBLISHED AND FORTHCOMING WORKS

Monograph:

1. **Gold, E. Richard,** *Body Parts: Property Rights and the Ownership of Human Biological Materials* (Washington, D.C.: Georgetown University Press, 1996).

Edited Monograph:

- 2. Bubela, Tania and **E. Richard Gold**, eds, *Genetic Resources and Traditional Knowledge: Case Studies and Conflicting Interests* (Cheltenham: Edward Elgar, 2012).
- 3. **Gold, E. Richard** and Bartha Maria Knoppers, eds, *Biotechnology IP & Ethics*, (Toronto: LexisNexis, 2009). Lead editor and author of one chapter.

Peer Reviewed Journals:

- 4. **Gold, E. Richard.** "What the COVID-19 pandemic revealed about intellectual property" (2022) 40 *Nature Biotechnology* 1428-1430, https://doi-org.proxy3.library.mcgill.ca/10.1038/s41587-022-01485-x.
- 5. **Gold, E. Richard**, and Edwards, Aled M. "Overcoming Market Failures in Pandemic Drug Discovery Through Open Science: A Canadian Solution" (2022) 2 *Frontiers in Drug Discovery* doi:10.3389/fddsv.2022.898654.
- 6. Herder, Matthew, **Gold, E. Richard**, and Murthy, Srinivas. "University Technology Transfer Has Failed to Improve Access to Global Health Products during the COVID-19 Pandemic" (2022) 17:4 *Healthcare Policy*, 5-25, doi:10.12927/hcpol.2022.26830
- 7. Herder, Matthew, **Gold, E. Richard**, and Murthy, Srinivas. "A Status Quo of Failure: Time to Fix University Technology Transfer to Address Global Health" (2022) 17:4 *Healthcare Policy*, 45-47 doi:10.12927/hcpol.2022.26827
- 8. Jha, Srivardhini K., **Gold, E. Richard,** and Dubé, Laurette. "Modular Interorganizational Network Governance: A Conceptual Framework for Addressing Complex Social Problems" (2021) *Sustainability* 13, no. 18: 10292. https://doi.org/10.3390/su131810292.
- 9. **Gold, E. Richard**, "The Fall of the Innovation Empire and its Possible Rise Through Open Science" (2021) Research Policy 50:5 104226 https://doi.org/10.1016/j.respol.2021.104226.
- 10. Bubela, Tania, **Gold, E. Richard**, Goel, Vivek, *et al.* "Open drug discovery of anti-virals critical for Canada's pandemic strategy" (2021) FACETS 5(1): 1019-1036, https://doi.org/10.1139/facets-2020-0079
- 11. Herder, Matthew, Graham, Janice E., **Gold, Richard**. "From discovery to delivery: public sector development of the rVSV-ZEBOV Ebola vaccine" (2020) J. of L. and the Biosciences 1-14, doi:10.1093/jlb/lsz019.

- 12. **Gold, E. Richard**, Ali-Khan, Sarah E., Allen, Liz, *et al.* "An open toolkit for tracking open science partnership implementation and impact" (2019) Gates Open Res 2019, **3**:1442, https://doi.org/10.12688/gatesopenres.12958.2.
- 13. **Gold, E. Richard** and Meland, Rachel, "Locating the Public Interest in Patent Law" (2019) 90 Sup. Ct. Law Rev. (2d) 347-380.
- 14. Nicol, Dianne, Dreyfuss, Rocheele C, **Gold, E Richard**, Li, Wei, Liddcoat, John, and Van Overwalle, Geertrui, "International Divergence in Gene Patenting" (2019) 20 Annual Rev. of Genomics and Human Genetics 519-541, https://doi.org/10.1146/annurev-genom-083118-015112
- 15. Granados Moreno P, Ali-Khan SE, Capps B, Caulfield T, Chalaud D, Edwards A, **Gold ER**, Rahimzadeh V, Thorogood A, Auld D, Bertier G, Breden F, Caron R, César PMDG, Cook-Deegan R, Doerr M, Duncan R, Issa AM, Reichman J, Simard J, So D, Vanamala S, and Joly Y, "Open science precision medicine in Canada: Points to consider" (2019) FACETS 4: 1–19. https://doi.org/10.1139/facets-2018-0034.
- 16. Ali-Khan, Sarah E., Jean, Antoine, and **Gold, E. Richard**, "Identifying the challenges in implementing open science" (2018) *MNI Open Res* 2018, **2**:5m https://doi.org/10.12688/mniopenres.12805.1
- 17. Ali-Khan, Sarah E., Jean, Antoine, MacDonald, Emily and **Gold, E. Richard**, "Defining Success in Open Science" (2018) *MNI Open Res* 2018, 2:2 doi: 10.12688/mniopenres.12780.2
- 18. **Gold, E. Richard**, Shadeed, Erica, Morin, Jean-Frédéric, "Does Intellectual property Lead to Economic Growth? Insights from an Improved IP Dataset", (2019) *Regulation & Governance* 13:107-124, doi:10.1111/rego.12165
- 19. Ali-Khan, Sarah E., Harris, Liam W., **Gold, E. Richard**, "Point of view: Motivating participation in open science by examining researcher incentives" (2017) eLife 2017;6:e29319, DOI: 10.7554/eLife.29319
- 20. Bubela, Tania, Bonter, Katherine, Lachance, Silvy, Delisle, Jean-Sébastien, and **Gold, E. Richard**, "More Haste, Less Speed: Could Public-Private Partnerships Advance Cellular Immunotherapies?", (2017), *Frontiers in Medicine* https://doi.org/10.3389/fmed.2017.00134
- 21. Ali-Khan, Sarah E. and **Gold, E. Richard**, "Gene patents still alive and kicking: their impact on provision of genetic testing for long QT syndrome in the Canadian public health-care system", (2017) *Genetics in Medicine* doi:10.1038/gim.2017.43
- 22. **Gold, E. Richard**, "Accelerating Translational Research through Open Science: The Neuro Experiment", (2016) *PLoS Biology* http://dx.doi.org/10.1371/journal.pbio.2001259
- 23. Morin, Jean-Fréderic and **E. Richard Gold**, "International socialization at the state and individual levels: mixed evidence from intellectual property", (2016), *Cambridge Review of International Affairs*. http://dx.doi.org/10.1080/09557571.2016.1230734.
- 24. Bubela, Tania and **E. Richard Gold**, "Cell Therapy Licensing: A Web for the Unwary in *Kimble v. Marvel Entertainment*", (2016), *Regenerative Medicine*, doi: 10.2217/rme.15.86
- 25. Rivoire, Maxence and **E. Richard Gold**, "Propriété intellectuelle, Cour Suprême du Canada et droit civil" (2015) 60:3 *McGill Law Journal*, 381-430.

- 26. Grant, Emily, Megan Van de Hof and **E. Richard Gold**, "Patent landscape analysis: A methodology in need of harmonized standards of disclosure" (2014) 39 *World Patent Information*, 3-10.
- 27. **Gold, E. Richard** and Michael Shortt, "The Promise of the Patent in Canada and Around the World" (2014) 30:1 *Canadian Intellectual Property Review*, 35-77.
- 28. Morin, Jean-Frederic and **E. Richard Gold**, "An Integrated Model of Legal Transplantation: The Diffusion of Intellectual Property Law in Developing Countries" (2014) 58 *International Studies Quarterly* 781-792.
- 29. **Gold, E. Richard**, Robert Cook-Deegan, and Tania Bubela, "AMP v Myriad: A Surgical Strike Against Blockbuster Business Models" (2013) 5:192 *Science Translational Medicine*, 1-2.
- 30. **Gold, E. Richard**, "Patents and Human Rights: A Heterodox Analysis" (2013) 41:1 *Journal of Law, Medicine and Ethics*, 185-198.
- 31. Bubela, Tania, **E. Richard Gold**, Gregory D. Graff, Daniel R. Cahoy, Dianne Nicol, and David Castle, "Patent Landscaping for Life Sciences Innovation: Toward Consistent and Transparent Practices" (2013) 31 *Nature Biotechnology*, 202-206.
- 32. **Gold, E. Richard** and Andrew Baker, "Evidence-Based Policy: Understanding the Technology Landscape" (2012) 22:1 *Journal of Law, Information and Science*, 76-97.
- 33. **Gold, E. Richard** and Robert Carbone, "(Mis)Reliance on Social Science Evidence in Intellectual Property Litigation: A Case Study" (2012) 28:2 *Canadian Intellectual Property Review*, 179-196.
- 34. **Gold, E. Richard** and Jean-Frederic Morin, "Promising Trends in Access to Medicines" (2012) 3:2 *Global Policy*, 231-237.
- 35. **Gold, E Richard**, "Patenting of Genes: Discoveries or Inventions?" (2012) in *eLS*. John Wiley & Sons, Ltd: Chichester. DOI: 10.1002/9780470015902.a0005183.pub2
- 36. Bubela, Tania, G.A. FitzGerald **E. Richard Gold**, "Recalibrating intellectual property rights to enhance translational research collaborations" (2012) 4:122 *Science. Translational Medicine*, 122cm3.
- 37. Morin, Jean-Frederic, Kevin Daley, and **E. Richard Gold**, "Having Faith in IP: Empirical Evidence of IP Conversions" (2011) 3:1 *WIPO Journal*, 93-102.
- 38. Bubela, Tania, **E. Richard Gold** and Jean-Frederic Morin, "Wicked Issues for Canada at the Intersection of Intellectual Property and Public Health: Mechanisms for Policy Coherence" (2011) 4:2 *McGill Journal of Health Law*, 3-41. This article was based on a project that I supervised.
- 39. Morin, Jean-Frederic and **E. Richard Gold**, "Consensus-Seeking, Distrust, and Rhetorical Entrapment: The WTO Decision on Access to Medicines" (2010) 16:4 *European Journal of International Relations*, 563-587. Second author of this article prepared by my post-doctoral fellow.
- 40. Carbone, Julia, **E. Richard Gold**, Bhaven Sampat, Subhashini Chandraskharan, Lori Knowles, Misha Angrist, and Robert Cook-Deegan, "DNA patents and diagnostics: not a pretty picture" (2010) 28:8 *Nature Biotechnology*, 784-791. This article arose out of a workshop that I co-sponsored with Robert Cook-Deegan.
- 41. **Gold, E. Richard**, & Julia Carbone, "Response to Dr. Palombi" (2010) 12:7 *Genetics in Medicine*, 471-472. I conceived and prepared this letter.

- 42. **Gold, E. Richard**, & Julia Carbone, "Myriad Genetics: In the eye of a policy storm" (2010) 12:4 *Genetics in Medicine*, S39-S70. I was lead author on this article that was prepared under a grant on which I was Principal Investigator.
- 43. **Gold, E. Richard**, Warren Kaplan, James Orbinski, Sarah Harland-Logan, Sevil N-Marandi, "Are Patents Impeding Medical Care and Innovation?" (2010) 7:1 *PLoS Med*: e1000208. I prepared one of three related opinions that were published together.
- 44. **Gold, Richard**, "Avoiding the Mistakes of Biotech: How Intellectual Property Can Be Better Managed to Advance Nanotechnology Research" (2009) 3:3 *Studies in Ethics, Law, and Technology*.
- 45. **Gold, E. Richard** and Jean-Frederic Morin, "The missing ingredient in medicine patent pools" (2009) 374:9698 *The Lancet*, 1329-1330. This letter was jointly prepared by me and my post-doctoral fellow.
- 46. **Gold, E. Richard**, Tania Bubela, Fiona Miller, Dianne Nicol, and Tina Piper, "Gene patents more evidence needed, but policymakers must act" (2007) 25 *Nature Biotechnology*, 388-389. I was lead author on this letter responding to an article in Nature Biotechnology.
- 47. **Gold, E. Richard**, "Intellectual architecture as place brand" (2006) 2 *Place Branding*, 220-228.
- 48. **Gold, E. Richard** & Karen L. Durell, "Innovating the Skilled Reader: Tailoring Patent Law to New Technologies" (2005) 19:1 *Intellectual Property Journal*, 189
- 49. **Gold, E. Richard**, Wendy Adams, David Castle, Ghislaine Cleret de Langavant, L. Martin Cloutier, Abdallah S. Daar, Amy Glass, Pamela J. Smith, and Louise Bernier, "The Unexamined Assumptions of Intellectual Property: Adopting an Evaluative Approach to Patenting Biotechnological Innovation" (2004) 18:4 *Public Affairs Quarterly*, 299-344.
- 50. **Gold, E. Richard**, "The Reach of Patent Law and Institutional Competence" (2004) 1 *University of Ottawa Law and Technology Journal*, 263-284.
- 51. Smith, Richard D, Halla Thorsteinsdóttir, Abdallah S. Daar, Peter A. Singer, and **E. Richard Gold**, "Equity and Genomics Knowledge: A 'Global Public Good' Perspective of the Patent System" (2004) 82:5 *World Health Organization Bulletin*, 385-389. I was one of several authors on this article prepared under a project headed by Peter Singer.
- 52. **Gold, E. Richard**, "SARS genome patent: symptom or disease?" (2003) 361:9374 *The Lancet*, 2002-2003. (invited article).
- 53. Caulfield, Timothy A, Bartha M Knoppers, **E. Richard Gold**, Lorraine E Sheremeta, and Peter J Bridge, (2003) 63:1 "Genetic technologies, health care policy and the patent bargain" *Clinical Genetics*, 15-18. I was one of several authors on this article.
- 54. **Gold, E. Richard** and Daniel Lam, "Balancing Trade in Patents: Public Non-Commercial Use and Compulsory Licensing" (2003) 6:1 The Journal of World Intellectual Property, 5-31. This article was prepared under a project under which I was Principal Investigator.
- 55. **Gold, E. Richard**, "From Theory to Practice: Health Care and the Patent System" (2003) Special Edition 2003 *Health Law Journal*, 21-40.
- 56. **Gold, E. Richard** and Wendy Adams, "Reconciling Private Benefit and Public Risk in Biotechnology: Xenotransplantation as a Case Study in Consent" (2002) 10 *Health Law Journal* 31-75. This article was prepared under a project under which I was Principal Investigator.

- 57. **Gold, E. Richard** and Caulfield, Timothy, "The moral tollbooth: a method that makes use of the patent system to address ethical concerns in biotechnology" (2002) 359(9325) *The Lancet* 2268-2270.
- 58. **Gold, E. Richard,** Timothy Caulfield, and Peter Ray, "Gene Patents and the Standard of Care" (2002) 167:3 *Canadian Medical Association Journal*, 256-257.
- 59. **Gold, E. Richard,** David Castle, L. Martin Cloutier, Abdallah S. Daar, and Pamela J. Smith, "Needed: Models of Biotechnology Intellectual Property" (2002) 20:8 *Trends in Biotechnology*, 327-329. This article was written as part of a project on which I was Principal Investigator.
- 60. **Gold, E. Richard,** "Gene Patents and Medical Access" (2002) 49 *Intellectual Property Forum*, 20-27.
- 61. **Gold, E. Richard** and Alain Gallochat, "The European *Biotech Directive*: Past As Prologue" (2001) 7:3 *European Law Journal*, 331-366.
- 62. **Gold, E. Richard** "Biotechnology patents: strategies for meeting economic and ethical concerns" (2001) 30 *Nature Genetics*, 359.
- 63. **Gold, E. Richard** and Adams, Wendy, "The *Monsanto* Decision: the edge or the wedge" (2001) 19 *Nature Biotechnology*, 587.
- 64. **Gold, E. Richard** "Finding Common Cause in the Patent Debate" (2000) 18 *Nature Biotechnology*, 1217 (comment).
- 65. **Gold, E. Richard**, "Moving the Gene Patent Debate Forward" (2000) 18 *Nature Biotechnology*, 1319 (comment).
- 66. Caulfield, Timothy A., **E. Richard Gold** and Cho, Mildred, "Patenting Human Genetic Material: Refocusing the Debate" (2000) 1:3 *Nature Reviews Genetics*, 227-231.
- 67. Caulfield, Timothy A. and **E. Richard Gold**, "Genetic Testing, Ethical Concerns, and The Role of Patent Law" (2000) 57:5 *Clinical Genetics*, 370-375.
- 68. **Gold, E. Richard,** "Biomedical Patents and Ethics: A Canadian Solution" (2000) 45:2 *McGill Law Journal*, 413-435.
- 69. **Gold, E. Richard,** "Partial Copyright Assignments: Safeguarding Software Licensees Against the Bankruptcy of Licensors" (2000) 33 *Canadian Business Law Journal*, 193.
- 70. **Gold, E. Richard**, "Hope, Fear, and Genetics: Judicial Approaches to Biotechnology" (1999) 83 *Judicature*, 132.
- 71. **Gold, E. Richard**, "Owning our bodies: An Examination of Property Law and Biotechnology" (1995) 32:4 *San Diego Law Review*, 1167.
- 72. **Gold, E. Richard** "A Structural Dynamic Theory of Law" (1991) 16 *Queen's Law Journal*, 347.
- 73. **Gold, E. Richard**, "From Right to Remedy: Putting Equality to Work" (1989) 14 *Queen's Law Journal*, 214.

Peer Reviewed Book Chapters:

74. **Gold, E. Richard**, "Institutions of Innovation and Productivity: The role of open science" in *Handbook of Innovation and Intellectual Property Rights: Reflections, Analyses, Welfare*, Walter Park, ed. (New York: Edward Elgar, 2024)

- 75. De Beer, Jeremy and **Gold, E. Richard**, "International Trade, Intellectual Property, and Innovation Policy: Long-Term Lessons from the COVID-19 Crisis" in *Vulnerable: The Law, Policy and Ethics of COVID-19*, eds Flood, Colleen M., MacDonnell, Vanessa, Philpott, Jane, Thériault, Sophie, Venkatapuram, Sridhar (Ottawa: University of Ottawa Press, 2020).
- 76. **Gold, E. Richard** and Meland, Rachel, "Locating the Public Interest in Patent Law" in *Public Interest Litigation in Canada*, eds Milne, Cheryl and Roach, Kent (Toronto: LexisNexis Canada, 2019) 347-380 (republication of article of same name).
- 77. **Gold, E. Richard**, "Legal Foundations of the U.S. Dollar, 1933-1934 and 1971" in *Orderly Change: International Monetary Relations since Bretton Woods*, ed David Andrews (Ithaca: Cornell University Press, 2008), 177-188.
- 78. **Gold, E. Richard**, "Exclusive Rights in Life: Biotechnology, Genetic Manipulation, and Intellectual Property Rights" in *Molecular Methods of Plant Analysis*, ed JF Jackson, HF Linskens, RB Inman (Heidelberg: Springer-Verlag, 2003), 1-22.
- 79. **Gold, E. Richard,** "Genes and patents: discoveries or inventions?" in *Encyclopedia of the Human Genome*, ed David Cooper (London: Nature Publishing Group, 2003).
- 80. **Gold, E. Richard,** "Merging Business And Ethics: New Models For Using Biotechnological Intellectual Property" in *Genetically Modified Foods: Debating Biotechnology*, ed Michael Ruse and David Castle (New York: Prometheus Press, 2002), 163.
- 81. **Gold, E. Richard,** "Health Care Reform and International Trade" in *Health Care Reform in Canada and the Law in Canada Meeting the Challenge*, ed Timothy A Caulfield and Barbara von Tigerstrom (Edmonton: University of Alberta Press, 2002), 223-244.

Peer Reviewed Reports:

- 82. McCabe, C., Boadway, R., Lange, F., **Gold, E.R.**, Cotton, C., Adamowicz, W., Breznitz, D., Elgie, S., Forget, E., Jones, E., de Marcellis-Warin, N., Peacock, S., Tedds, L. Renewing the Social Contract: Economic Recovery in Canada from COVID-19. Royal Society of Canada. 2020.
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APPENDIX B RESEARCH GRANTS AND CONTRACTS

One Health AMR Study related to Intellectual Property (IP) and Innovation Issues Co-Lead, 2023, CHF 30,000 (4 months)

World Intellectual Property Organization, Global Health / Global Challenges Division

The project aims at assisting WIPO in developing a program on intellectual property and innovation related to antimicrobial resistance (AMR). Take a One Health approach, the study will map out the role of intellectual property strategies (including open science) to advance and disseminate technologies and practices aimed at preventing, managing, and addressing AMR in the health, agricultural, and environmental fields.

Open Science Drug Development Network

Co-Lead, 2023, \$49 million, 5 years (Conscience)

Strategic Innovation Fund – Stream 5

The project supports the development of an open science drug development network in Canada along three pillars: 1) computational drug discovery; 2) open science drug development from lead to end of pre-clinical trials; 3) advisory and support services for open science drug development. I will be leading work on IP course development and training, the creation of open science template agreements, policy development, and providing advisory services to universities and SMEs. More information is available at conscience.ca

TRIDENT: TRanslational Initiative to DE-risk NeuroTherapeutics

Co-Principal Investigator, 2023, \$24 million, 6 years (Ravi Menon, Network PI)

New Frontiers in Research Fund – Transformation

This project builds an open science platform through which to assess the cognitive effect of proposed health interventions. My team will study how open science works in practice and investigate incentives for participation and investment.

Canadian Network for Learning Healthcare Systems and Cost-Effective 'Omics Innovation (CLEO)

Co-Investigator, 2020, \$2,517,839, 4 years (Dan Regier, Tania Bubela and Timothy Hanna Co-PIs)

Genome Canada

The project uses interdisciplinary case studies to inform the development of platforms and practices for Learning Healthcare Systems in precision oncology.

Regroupement Stratégique: Justice et changement

Co-chercheur, 2020, \$1,528,919, 7 years (Vincent Gautrais, PI)

Fonds de recherche-Société et culture

This interdisciplinary network investigates issues of justice and change in society, including innovation and law.

Open Science Policy Knowledge Mobilization

Principal Investigator, 2018, \$97,410

Healthy Brains for Healthy Lives Knowledge Mobilisation Program

This project builds policies to deal with patient consent issues in open science as well as builds a toolkit of legal agreements, such as material transfer agreement and collaboration agreements, for use in open science partnerships.

Collaboration Agreement

Principal Investigator, 2018, £40,000 (£24,724 in cash and the remaining in paying travel)

The Wellcome Trust

This agreement supports the organization and holding of an international workshop on open science indicators in London.

McGill University Open Science Evaluation Project

Principal Investigator, 2018, £20,000 (effective from 2017-2018)

UK Secretary of State for Business, Energy and Industrial Strategy

This grant supports work on developing indicators of open science research and innovation.

Determining When Open Science Works: Measurement and Indicators

Principal Investigator, 2017, US\$50,000 in cash and approx. US\$50,000 in kind, 4 years

The Bill and Melinda Gates Foundation

Work with stakeholders to define what success of open science looks like to later develop into corresponding indicators that can be assessed through quantitative and qualitative means.

Healthy Brains for Health Lives

Chair, 2016, Open Science Monitoring and Evaluation Committee, \$84 million, 7 years Canada First Research Excellence Fund

This interdisciplinary program in neuroscience aims at delivering implementable, clinically effective outcomes in brain and mental health by shifting the paradigm in our understanding of brain disorders and university-industry partnerships, notably through open science.

Intellectual Property and Innovation

Principal Investigator, 2016, \$23,530 cash, 1.5 years, approximately \$125,000 in-kind. Total budget approximately \$148,530.

Centre for International Governance Innovation

This funding supports my organization, videotaping and policy essays investigating various aspects of innovation and intellectual property.

Genomics and personalized health Ge3LS Network

Co-Applicant, 2016, Genome Canada: \$998,473; Total budget: \$1,996,945, 2.5 years

Genome Canada

This network grant advances translation of GELS research into policy in the field of personalized medicine.

Montreal Neurological Institute Open Science Project

Principal Investigator, 2015, \$20,0000, 6 months

Montreal Neurological Institute

We investigate the meaning of open science to researchers and students working at the Montreal Neurological Institute, their concerns over the effect of open science on their work and propose principles to advance open science within the context of the Institute.

BIOSMART: Managing the transition to a "smart" bioeconomy

Partner, 2015, 39,960,000 NOK

The Research Council of Norway

BIOSMART promotes a "smart" transition by conducting a major foresighting exercise on stakeholders in the bioeconomy. An initial extensive foresighting process will cover 1500 businesses from the farming, forestry, fisheries, bio-science and industry sectors to develop separate industry scenarios of bioeconomic development.

An Intellectual Property Index: Creating a firm foundation for transdisciplinary study, policy-making and business strategy

Principal Investigator, 2013, \$139,980.00, 3 years (extended by one year)

Social Sciences and Humanities Research Council, Insight Grant

This project brings together a multidisciplinary team to construct and validate an index of intellectual property rights protection around the world.

PACE - 'Omics: Personalized, Accessible, Cost-Effective applications of 'Omics technologies

Co-Investigator and Co-Lead of Intellectual Property Theme, grant co-PIs, Chris McCabe & Tania Bubela, 2013, \$4,502,080, 4 years

Genome Alberta and Genome Ouebec

This multi-disciplinary team investigates how best to connect those who innovate in respect of personalized medicine with those who conduct technology assessment. My role on the grant is to investigate innovation systems, intellectual property and to lead knowledge translation activities.

Enhancing Translational Stem Cell Research: Innovative Models for Multi-Sectoral Collaboration

Co-Investigator, grant PI Tania Bubela, 2011, \$350,000, three and a half years **Stem Cell Network**

We investigate, in this interdisciplinary project, model structures to enhance collaboration between public and private sector researchers working on new health technologies.

Building Social Capital for Health Innovation

Principal Investigator, 2013, \$113,000, 1.5 years

Grand Challenges Canada: Stars in Global Health

I lead a team that will identify technology developed in Kenya with the potential of contributing

to increased health in the region. We will assess the technology both for its technical merits and its contribution and will assist in gaining intellectual property rights.

International Bar-Code of Life (iBOL) GE³LS Working Group

Co-Investigator and Project Leader, grant held by David Castle, 2010, \$999,259, five years Will support one doctoral student at McGill

Genome Canada

This project involved conducting a patent landscape with respect to bar-code technology – used to identify species and pathogens – and develop models through which to make the technology accessible.

Value Addition to Genomics and GE³LS (VALGEN)

Co-Investigator and Member of the Scientific Management Executive Committee, grant held by Peter Phillips & David Castle, 2009, \$5,413,000, four years

Will support 2 doctoral students at McGill

Genome Canada

The project provides a single platform for GELS research in the ag-biotechnology domain

The functionality of the "three-step test"

Co-Investigator, grant held by Edson Rodrigues Jr., 2008, \$75,000, one year 1 doctoral student at McGill

International Development Research Centre (IDRC)

The project aims at investigating the research exception under patent law in light of international trade agreements.

Eastern Africa Intellectual Property Training

Principal Investigator, 2007, \$50,000, one year

Supported 1 doctoral student at McGill

Foundation for Sustainable Enterprise and Development

This grant supported training of senior health and agricultural researchers in Eastern Africa as well as government policy-makers on intellectual property and technology transfer. The aim of the training was for the participants to carry out studies of the intellectual property practices in their home institutions.

Regenerative Medicine and Ethics Network (RMEthNet)

Co-applicant, grant led by Abdallah S. Daar, 2007, \$301,000, three years Supported 1 doctoral student at McGill

Canadian Institutes for Health Research

Multi-institutional and interdisciplinary team examining ethical and legal issues related to regenerative medicine.

Intellectual property governance and non-state actors: the case of Bill C-9

Principal Investigator, 2006, \$175,042, two years

22 students at McGill (1 post-doc, 2 doctoral, 19 undergraduate) – 3 undergraduate students at U of Alberta – 1 doctoral student at U of Toronto

Canadian Institutes for Health Research

Study of the role of non-state actors (NGOs and industry groups) in having Member States of the WTO agree to paragraph 6 of the Doha Agreement and subsequent passage of Bill C-9 in Canada that gave effect to this paragraph.

Inventors as investigators: an empirical study of patent holding and ethics in human gene transfer research

Co-Applicant, grant led by Jonathan Kimmelman, 2006, \$104,826, two years 1 doctoral student at McGill

Canadian Institutes for Health Research

Study examining whether clinical investigators disclose conflicts-of-interest related to patent holdings.

Performance, Modélisation, Coordination et Transformation des Entreprises de Biotechnologie

Co-Investigator, grant held by Martin Cloutier, 2006, \$482,880, four years

Fonds québécois de la recherche sur la société et la culture

A grant to support the creation of a new research group to model the biotechnology industry.

Mobilising Health Knowledge and Technology in Latin America

Co-Principal Investigator with Maristela Basso, 2006, \$15,000, one year

International Development Research Centre, Teasdale-Corti Development Grant

This grant was awarded to develop a full grant application that combines research, capacity-building and knowledge mobilisation in the health care sector in developing countries.

Advanced Food and Materials Network (AFMNet)

Project Leader, grant led by Ricky Yada, 2003, \$22.2 million, two and a half years 2 graduate and 1 undergraduate students at McGill

Network of Centres of Excellence

This project investigated intellectual property and intellectual property management issues relating to ag-biotechnology in multi-institutional project.

Genomics and global health: Developing a global CIHR network to address ethical, policy and regulatory issues

Co-Applicant, grant led by Abdallah S. Daar, 2003, \$62,700, one year

Canadian Institutes for Health Research

This project built a network on ethical and policy issues related to genomics globally.

Legal Models of Biotechnological Intellectual Property Protection: A Transdisciplinary Approach

Principal Investigator, 2003, \$2,989,500, five years

28 undergraduate, 9 graduate students and 14 visiting scholars at McGill, 2 graduate students and 1 post-doc at UQAM, 1 graduate student at U of Alberta, 1 graduate student at U of Minnesota, 1 post-doc at U of Ottawa

Social Sciences and Humanities Research Council, Initiative on the New Economy, Collaborative Research Initiative

Interdisciplinary grant to investigate alternative intellectual property regimes with respect to agricultural biotechnology.

Translating genetic discoveries into appropriate health policy and services: enhancing research capacity and developing an interdisciplinary approach

Co-Applicant, grant led by Brenda Wilson and Timothy Caulfield, 2003, \$998,665, four years **Canadian Institutes for Health Research**

Interdisciplinary team grant investigating the impact of genetic innovation on health policy.

Bridging the Emerging Genomics Divide

Co-Investigator, grant led by Peter Singer, 2002, \$2.83 million, five years

Genome Canada

A multi-disciplinary project investigating ways to avoid creating a 'genomics divide' between high-income and low-income countries.

Modules for the New Economy

Co-Principal Investigator with David Lametti, 2002, \$8,000, one year

Supported one undergraduate law student at McGill

Fondation du barreau du Québec

Project to identify case studies that will eventually be used to create a series of published, widely available and independent modules that can be incorporated into existing law school, bar formation, or continuing education courses.

Reconciling growth with ethics: Models of intellectual property protection for biotechnological innovation

Principal Investigator, 2002, \$288,626, three years

1 graduate and 1 undergraduate student at McGill

Canadian Institutes for Health Research

Project to develop and critique models of intellectual property relating to biotechnological innovation in the health care field.

Canadian Program in Genomics and Global Health

Investigator, grant led by Peter Singer, 2001, \$7.2 million, five years

Genome Canada

A multi-disciplinary project investigating ways that the developing world can benefit from biotechnology.

APPENDIX C SUPERVISION OF HIGHLY-QUALIFIED PERSONNEL SINCE 2012

Research Associate

Ali-Khan, Sarah 2013-2018

Graduate Student Supervision since 2013

	Graduation Date (or	
Name	Degree	Expected)
Silva, Ghilherme	LLM NT	2013
Weberrus, Jochen	LLM NT	2015
Mantle, Michael	LLM T	2015
Adebiyi, Tomilola	LLM T	2015
Faelli, Adrien	LLM NT	2015
Quijano, Patricia Dias	LLM NT	2016
Nnadozie, Kent	DCL	2016
Zara Bouyema	LLM NT	2017
Granados Moreno, Palmira	DCL	2019
Cesar, Priscilla	DCL	2022
Bhattacharjee, Maushumi	LLM T	2022
Valentine Mouradian	LLM NT	2023
Oyku Oksuz	LLM T	2024

Research Assistant Supervision Since 2010

Name	Dates
Lewensohn, Danielle	2010-2012
Choudry, Nafay	2011-2012
Daley, Kevin	2011-2012
Shortt, Michael	2011-2013
Baker, Andrew	2012-2013
Toneli-Sasarksy, Rachel	2012-2013
Shaheed, Erica	2012-2014
Holden, Paul	2013
Trafford, Brittany	2013
Torti, Nicholas	2013
van Zyl, Claudette	2013-2015

Duffy, James	2012-2014
Jarvie, Max	2013
Janzen, David	2013
Van den Hof, Megan	2013-2014
Grant, Emily	2013-2014
Allen, Clarissa	2013
Kumarasamy, Jeyachandran	2013
Mishra, Lipi	2013
Lacas, Laurant	2014-2015
Rivoire, Maxence	2014
Pracha, Nadir	2014
Sathananthan, Gagan	2014
McCrea, Lana	2014
Hodges, Megan	2014
Valiquette, Pierre-Olivier	2014-2016
Gashirabake, Moses	2014
Horwood, Frédérique	2014
Kohut, Rachel	2014
Roy, Joel	2014
Beaubien, Olivier	2014
Cesar, Priscilla	2012-present
McCarron, Elissa	2014
Goddard, Kate	2014
Cina, Margherita	2014
Lee, Allison	2014
Lord, Phil	2015
Helke, Matthias	2015
McFarland, Kate	2015-2017
Lurie, Doron	2015-2016
Levasseur, Kendra	2015-2016
Harris, Liam	2015-present
Meland, Rachel	2015-present
Malone, Matthew	2015-present
Gardiner, Michael	2015-present
Drouin, Elena	2015-present
Bird, Brian	2016
Lafreniere, Guillaume	2016

GOLD, E. Richard

Medeiros, Andrew	2017-2018
MacDonald, Emily	2017-2018
Squire, Matthew	2017-2018
Jean, Antoine	2017-2020
Nicole Spadatto	2018-2020
Sophie Kassel	2018-2020
Valmi Dufour-Lusier	2018-2021
Alexandre Perron	2021-2022
Austin McDougall	2021-2022
Charlotte Tyhurst	2022-2023
Joy Kheterpal	2023-
Rachel McKenzie	2023-
Narges Jamili	2023-
Chantal Prousse	2023-

APPENDIX D SELECTED PRESENTATIONS

Open Science

Montreal, November 8, 2023

Initiative for Translational Neuroscience meeting: How to Accelerate Drug Discovery Through Public-Private Partnership?

Open Science as a Team Sport

Montreal, October 11, 2023

2nd Workshop for Learning Healthcare Systems: Policy and RWE frameworks for lifecycle technology assessment, Canadian Network for Learning Health care Systems and Cost-Effective 'Omics Innovation (CLEO)

Too much of a good thing: when too much intellectual property harms innovation Wuhan China (online), June 28, 2023

2023 WIPO Summer School China

Legal Subjects, Regulation and the Law Montreal, May 15, 2023 LawTech Consortium Annual Workshop

Legal Subjects, Regulation and the Law Florence, Italy, March 13, 2023 Law Department, European University Institute

Open Science and Intellectual Property: the Dilemma

Online, November 10, 2022

Foundation for Research on Law and Business Global Digital Encounters

Intellectual Property Law and Science Literacy Masterclass Montreal, October 28, 2022

Centre for Intellectual Property Policy

The Fall of the Innovation Empire and its Possible Rise Through Open Science Trento, Italy via video, October 28, 2022

Open Science and Open Data in biomedical research workshop

The WTO's 12th Ministerial Conference and the Future of Multilateral Trade Cooperation Ottawa, via video, October 27, 2022

Canadian Council on International Law, 51st Annual Conference

Collaborative approaches to realise social and economic opportunities of critical health technologies

Seoul, Korea, via video, September 28, 2022

OECD Korea Workshop: Policy directions for critical health technology innovation and access

Public Health Transformation in Canada: The inevitable need for a global health approach Ottawa, via video, June 15, 2022

Canadian Public Health Association 2022 Symposium

Declining research productivity and the initial, failed, promise of the pandemic to fix it Florence, Italy, May 12, 2022

European University Institute, Information Society Working Group

Introduction

Waterloo, via video, April 7, 2022

University of Waterloo and the Centre for International Governance Innovation, Toward a World-Class Health Data System

COVID-19 Vaccines: the limited positive role of IP

Montreal, via video, February 16, 2022

McGill Journal of Law and Health COVID & IP Colloquium

Seminar on intellectual property and licensing of genetic inventions, OECD Recommendations

Costa Rica via video, May 4, 2022

Costa Rican Ministry of Science, Innovation, Technology & Telecommunications

Co-Moderator, IP in a Digital World and Lessons from the COVID-19 Pandemic Ottawa via video, March 24, 2022

5th Annual IP Data & Research Conference

Open Science Partnerships to Accelerate Innovation and Access to Essential Medicines Brisbane via video, December 10, 2021

Australian Centre for Health Law Research at the QUT Faculty of Business and Law, The TRIPS Waiver: Intellectual Property, Access to Essential Medicines, and the Coronavirus

Addressing Wicked Problems of Health and Access to Affordable Food/Medicines and Healthcare through Open Science Partnerships

Online, November 5, 2021

McGill Faculty of Management, The Convergent Innovation Webinar Series

Addressing Innovation's Efficiency Problem

Paris via videoconference, October 28, 2021

CEIPI, Les Grandes Idées en propriété intellectuelle / Big Ideas in Intellectual Property

Vaccination: Quand les brevets font barrage

Montreal via videoconference, June 2, 2021

Cœur des sciences de l'UQAM

Open Science and Drug Discovery: Removing Barriers to Accelerate Research

Edinburg via videoconference, April 22, 2021

Research Data Alliance's 17th Plenary meeting

Open science for sustainable AMR therapeutics development

London via videoconference, April 22, 2021

Feeding the Antimicrobial Therapeutics Pipeline, organized by the UK Medical Research Council (MRC) with support from the Swedish Research Council (SRC), the South African Medical Research Council (SAMRC), the National Research Foundation of Korea (NRF), the French National Research Agency (ANR), and the Canadian Institutes of Health Research (CIHR) on behalf of the Joint Programming Initiative on Antimicrobial Research (JPIAMR).

Open Science as a Solution to Declining Research Productivity

Montreal via videoconference, March 29, 2021

McGill University, Pharmacology and Therapeutics Seminar Series

Patent Strategy in the Life Sciences

Online, March 26, 2021

Investments for Front Row Venture

Barriers to Open Science Adoption

Online, December 10, 2020

Research Data Canada, Data Ownership Series Part 5: The Open Science and Open Data Context

Based on my research, I described barriers that researchers face in adopting open science practices.

COVID-19 and Economic Recovery

Online, November 23, 2020

Royal Society of Canada, COVID-19 and Economic Recovery

I, together with my co-authors, present our report on economic recovery post-COVID-19.

Open Science Collaborations to Develop Pandemic Antivirals

Paris, June 17, 2020

Organization for Economic Co-operation and Development, Biotechnology,

Nanotechnology and Converging Technology Health Steering Group

I presented efforts to proactively develop antiviral drugs in order to address future pandemics.

Open Science and Traditional Knowledge

Montreal, January 30, 2020

Atelier pratique ISDE/CIPP sur la propriété intellectuelle

et les savoirs et expressions culturelles autochtones

I examined open science practices through the lens of indigenous and traditional knowledge.

Implementing Open Science: MTAs, Contracts, Collaboration and Commercialization

Montreal, November 18, 2019

Open Science in Action: Inaugural Symposium

I and my co-presenter discussed our work on standard form contracts that support open science practices.

Scientific Progress Through Open Science

Montreal, November 15, 2019

Emerging ethical questions in psychiatry: Clinical practice and research

I discussed the application of open science in the psychiatry field.

Canada's IP Legacy: Creating a Robust Public-Private Ecosystem

Toronto, May 15, 2019

CCI & BDC Spring Intellectual Property Symposium: Supporting Canada's IP Future

I was a member of a panel discussing intellectual property at universities and technology transfer.

Beyond Open Data: How Open Science Aims to Transform Science Partnerships

Ottawa, January 24, 2019

National Data Services Framework Summit 2019

In this keynote address, I discussed the potential of open science partnerships to transform the research and innovation ecosystems in Canada.

100 Years of Innovation: the case for new research and innovation models

Lausanne, Switzerland, November 30, 2018

EPFL MTEI-ITPP Seminar

I reviewed 100 year trends in research and innovation and the need to develop new models of partnership, including open science.

Open Science at the Montreal Neurological Institute

Trento, Italy, October 25, 2018

Not for Profit: The role of Universities in Open Science, University of Trento

I discussed the motivations and issues faced by researchers at the Montreal Neurological Institute in developing and implementing their open science platform.

100 Years of Innovation: the case for new research and innovation models

Montreal, August 9, 2018

Neuroinformatics 2018

I reviewed 100 year trends in research and innovation and the need to develop new models of partnership, including open science.

A Theory of Open Science and its Contributions to Innovation

Paris, France, July 19, 2018

OECD Brown Bag Lunch Series

I discussed the theory behind open science, research and innovation.

Policy contests for innovation: the case of open science

Washington, DC, June 27, 2018

Wilson Center Conference: Advancing Open Science in the EU and US

The presentation surveyed problems in research and innovation and how open science across borders may help solve them.

Designing Indicators for Open Science Performance

London, UK, May 31, 2018

Wellcome Trust Workshop: Defining Success in Open Science: A Leadership Forum

I set out the need for a toolkit through which to measure the performance and effect of open science collaborations.

CETA Building Blocks for Canadian-EU Open Science Partnerships

Halifax, May 18, 2018

Dalhousie University: CETA Implementation: Next Steps

I reviewed Canadian-EU scientific cooperation in light of potential partnerships using open science.

The Push for Open Science in the Academy and Beyond

Paris, France, April 9, 2018

OECD Global Science Forum – NESTI Workshop

I addressed science leaders from around the OECD on how open science can help address problems of scientific productivity and cost.

The Indicator Project: Assessing the Impact of Open Science

Paris, France, April 9, 2018

OECD Global Science Forum – NESTI Workshop

I discussed the international effort to develop metrics through which to assess the impact of open science on research and innovation.

Open Science and the Public Good

Montreal, March 23, 2018

McGill University's Leaders Alliance

Through interactive tools, I engaged academic, business and community leaders in thinking through the implications and potential of open science for innovation.

Litigating Patents in the Public Interest

Toronto, March 2, 2018 (with Rachel Meland)

Asper Centre Public Interest Litigation Conference

We present our analysis of public interest litigation in the patent law field, drawing on a comparative study of cases in Europe, the United States, Australia and Canada. We provide a unique insider view of the decisions that took place in the Canadian litigation.

The end of innovation as we know it

Montreal, February 19, 2018

McGill Innovation Week 2018 – Putting Innovation in a Box

In this presentation, I provide the results of several empirical studies showing that innovation is not only costing more but is becoming less productive. I then discuss mechanisms to address this problem.

Open Science and AI: Partners in Next Generation Health Innovation

Ottawa, February 9, 2018

HPFB-SPB Science Symposium: Understanding the Actual and Potential Impacts of Deep Learning and Machine Learning on Health

I discussed how open science and artificial intelligence can help reverse declining innovation productivity in Canada and internationally.

Open Science and Canadian Leadership in Innovation

Montreal, December 13, 2017

Open Government Team at Treasury Board of Canada Secretariat

I discussed the opportunities of open science in advancing Canadian leadership in innovation.

Scaling-up to Cheat Chaos

Montreal, November 18, 2017

Innovation in Context²: Scaling-Up

In this presentation, I discuss ways in which life sciences innovation is failing and how a combination of open science and artificial intelligence may rejuvenate the system.

What is Open Science?

Washington, DC, October 5, 2017

Defining Success in Open Science: A Leadership Forum

I provided a background on open science, what it is and its potential to reshape life sciences innovation in front of an audience of industry, philanthropy, governments, researchers and patient organizations.

Intellectual Property and Technology Transfer

Ottawa, June 8, 2017 (by video)

House of Commons Standing Committee on Industry, Science and Technology

I testified on management of intellectual property by universities and policies needed to accelerate innovation in Canada, such as open science. Link to my comments: https://www.ourcommons.ca/DocumentViewer/en/42-1/INDU/meeting-66/evidence

Tiered Governance for Food and other Wicked Problems

Online presentation, April 27, 2017

The Convergent Innovation Webinar Series Pulse Program

I discuss the governance of public-private partnerships aimed at resolving complex social problems.

The Open Road of Open Science

Frankfurt, Germany, April 24, 2017

Frankfurt Open Access/Open Science Symposium

I discussed how open science can both accelerate research and bolster innovation in the life sciences.

Jump Starting Neurological Research and New Models of Collaboration

Boston, MA, February 17, 2017, with Guy Rouleau

American Association for the Advancement of Science Annual Meeting

Guy Rouleau, Director of the Montreal Neurological Institute, and I presented the Open Science Initiative at the Institute.

The Context of Innovation

Montreal, Quebec, November 19, 2016

Innovation in Context Workshop

This introductory keynote highlights the social context in which innovation is developed and firms developed. I organized this international workshop.

Predatory IP Law and Canadian Innovation

Montreal, Quebec, November 2, 2016

The Social Costs of Innovation: Law, Society, and the Greater Good

This presentation focused on the distribution between states of costs and benefits of intellectual property systems and its implications for innovation and intellectual property policy.

Open Science and ethical transparency

Montreal, Quebec, October 27, 2016

IRB Data Sharing Forum

I discussed the effect of open science on ethical concerns such as consent and on monitoring research on an ongoing basis.

Current and Future Approaches to Governance: Open Science

Washington DC, September 14, 2016

OECD Workshop on Neurotechnology and Society: Strengthening Responsible Innovaiton in Brain Science

I discussed how open science can contribute to identifying ethical concerns early in research.

The IP and Innovation Landscape in the Global Economy: Canada in a Comparative Perspective

Toronto, September 8, 2016

Thinking Through IP Issues: Improving Ontario's Innovation Performance

In this workshop co-organized by the Government of Ontario and the Centre for International Governance Innovation, I spoke about the challenges in aligning Canadian innovation policy with intellectual property policy.

Intellectual Property, Innovation and Building Local Innovation Capacity

Trondheim, Norway, August 24, 2016

Biosmart Workshop on Property and Intellectual Property

I discussed how countries and regions could create local innovation capacity through building open collaborations

TransPacific Partnership Town Hall

Montreal, June 6, 2016

Town Hall Organized by Minister of International Trade

I provided an introduction to intellectual property issues covered by the proposed TransPacific Partnership Agreement at the request of the Minister of International Trade.

Open Science, IP and Converging Technologies

Washington DC (by video), May 26, 2016

Biotechnology, Nanotechnology and Converging Technologies Working Party of the Organisation for Economic Co-operation and Development

I spoke about developing local innovation capacity through the use and deliberate avoidance of intellectual property rights.

Innovating Innovation Policy

Montreal, QC, February 23, 2016

Innovation and Intellectual Property Think Ahead

In this address, I discussed how Canada suffers from a lack of innovation policy and overemphasis on intellectual property.

Impact of IP on Innovation and Translation

Montreal, QC, February 11, 2016

Commercialization of NIPT Workshop

This presentation focuses on how intellectual property affects the development of non-invasive prenatal testing in Canada.

IP and Trade: much ado but innovation

Montreal, QC, January 29, 2016

Understanding the TPP: IP Protection and Investment Protection, CIPP and CIGI

I discussed the link between trade and intellectual property policy, showing how the combination inhibit business innovation.

IP and Trade: much ado but innovation

Toronto, ON, January 14-15, 2016

The Trans Pacific Partnership: Options for Canada and the World, Munk School of Global Affairs

I discussed the link between trade and intellectual property before the federal Minister of Trade and other select guests.

Governing Research: Design and Governance

Washington, DC, December 1-3, 2015

International Summit on Human Gene Editing: A Global Discussion, National Academy of Science, National Academy of Medicine, the Royal Society and the Chinese Academy of Science

I discussed how open science could help mitigate concerns over the use of human gene editing tools in front of an international audience.

Building a Framework for Open Science at the MNI

Esterel, QC, November 13, 2015

Montreal Neurological Institute Annual Retreat

I presenting findings of a qualitative study of researchers on their attitudes and concerns about open science.

Changing the landscape of gene patents: social science at work

Edmonton, AB, June 18, 2015

Genomics & Personalized Medicine - Health Policy and Barriers to Adoption

I discussed how social science research interacts with real time decision making through a discussion of how researchers can contribute to a test case before the courts.

Intellectual Property in the National Centres of Excellence: Too limited an approach to knowledge translation

Ottawa, ON, March 31, 2015

National Centres of Excellence Annual Meeting

I discussed how research granting agencies place too much emphasis on intellectual property as a means of knowledge translation rather than a broader range of mechanisms.

Patenting Genetic Materials: Biotechnology and Intellectual Property Law

Montreal, QC, March 18, 2015

Patenting Human Genes, McGill Faculty of Law

I discussed a Canadian test case on the patentability of human genes and associated methods.

Collaborative Research Consortia: When are They more Effective than Market Contracting? Toronto, ON, November 6-7, 2014

Driving Regenerative Medicine to the Market and Clinic

I organized and chaired a discussion of how to best structure collaborative research so as to spur innovation.

Future directions in Canadian science, technology and innovation policy

Ottawa, ON, September 23, 2014

The Future of Canada's Bioscience and Agricultural Innovation

I chaired a panel examining policies needed to advance Canadian innovation in the biosciences and agriculture.

Secondary Use Patents: An international and Canadian perspective

Washington, DC, June 5, 2014 (via teleconference)

Secondary Use Pharmaceutical Patents: Litigation and Trade Policy Briefing

This policy briefing, jointly sponsored by American University and Public Citizen, aimed at informing US policy-makers on the current state and law and associated policy with respect to second use claims over pharmaceutical products.

Science and the Courts

Washington, DC, March 13-14, 2014

The Future of Gene Patents – making sense of the Supreme Court's decision in the Myriad case

I facilitated a discussion among a leading geneticist, patent expert and judge of the United States Court of Appeals for the Federal Circuit on the intersection of science and law with a particular focus on decisions related to the patenting of genes.

Myriad (Gene Patent) Problems? Past, Present and Future

Halifax, NS, February 13, 2014

Schulich School of Law, Law and Technology Institute

I discussed the holding and implications of the US Supreme Court decision in AMP v. Myriad and its implications for Canada.

Is Canada out of Step?

Toronto, Canada, 2013

University of Toronto Patent Law Colloquium

In the context of a panel discussing how Canadian patent law compares to those in other countries, I discussed the lack of any formal or informal standard with respect to substantive patent law and what this implies for trade disputes concerning that law.

A World of Confusion: Patent Law and the Life Sciences

Toronto, Canada, 2013

Canadian Science Policy Conference

I highlighted how Canadian law relating to patentable subject-matter has been put in doubt by developments beyond Canada's borders, namely public interest litigation in the US, Australia and Europe.

Myriad and Beyond: The fallout of the US Supreme Court decision

Vancouver, Canada, 2013

UBC Science and Technology Studies Colloquium

I discussed the background to the US decision in AMP v. Myriad and how that decision was viewed and understood by various audiences.

Collaborative Mechanisms re Synthetic Biology

Edinburgh, Scotland, 2013

Synthetic Biology, Innovation and Intellectual Property: Toward a UK Strategy

I examined the role of collaborative research in life science research, its justifications and concerns.

International Policy Dimensions of Gene Patents

Cold Spring Harbor, USA, 2013

Genes & Diagnostics: A Myriad of Issues in Biotech IP

In the context of an international discussion of human gene patents, I provided a discussion of the international policy context, focusing on Canada, Europe and Australia.

Designing, Building and Managing Research Collaborations

Bellagio, Italy, 2012

Bellagio Workshop on Convergent Innovation

I discussed how to design and manage collaborative scientific research projects, drawing on theory from economics and innovation studies.

Échange et exclusivité : la nouvelle propriété industrielle

Gréoux-les-bains, France, 2012

Université européenne d'été de l'IHEST 2012: Sciences, éthique et droit : dynamique et concurrence des normes

As part of a week-long discussion of the role of norms in science, ethics and law, I discussed the role of norms as sometimes supplementing and sometimes supplanting legal norms relating to intellectual property.

The State of Canadian Patent Law

Ottawa, Canada, 2012

Standing Committee on Industry, Science and Technology

I was invited to present my views on the current state of Canadian patent laws, its compliance with international norms and recommendations to improve it.

Intellectual Property and Human Rights: A Heterodox Approach

Toronto, Canada, 2012

2012 National Health Law Conference: Global Health Challenges and the Role of Law I discussed the intersection of intellectual property rights and human rights, critiquing current approaches that place both at the same institutional (international) and normative (fundamental rights) level.

Plenary Debate Session: Owning the Genome: The Patenting and Licensing of Genes and Their Impact on Medical Genetics

Montreal, October, 2011

International Congress on Human Genetics 2011/American Association of Human Genetics Annual Meeting 2011

This plenary session, before over 2,500 participants, discussed the benefits and dangers of patenting human genetic material.

Genomics Research and Intellectual Property

Ottawa, April 2011

Genome Canada

This presentation discussed the need for intellectual property management policies within Genome Canada and other funding agencies in Canada.

New Mechanisms for Collaboration

Ottawa, April 2011

Canadian International Council: Intellectual Property Workshop

This workshop of experts in intellectual property policy and business discussed how Canada can develop an intellectual property policy that furthers Canadian economic and social interests.

A qui appartiennent les œuvres et inventions de vos salariés? Regard de l'Amérique du Nord Paris, February 2011

Gide Loyrette Nouel breakfast conference

In this conference aimed at the business community in Paris, I discussed US and Canadian law on employee rights in works and inventions.

Knowledge Networks and Markets in the Life Sciences

Banff, January 2011

VALGEN IP Workshop

Based on a report I completed for the OECD, I presented the current state of knowledge on knowledge networks and markets.

Technology Transfer, Universities and Eco-Innovation

Paris, November 2010

University of Paris Sud

In this seminar, I discussed how universities and industry can take advantage of new models of public-private collaborations.

Intellectual Property and Synthetic Biology

Montreal, September 2010 **Science Café public talk**

Development and Innovation

Toronto, Canada, 2010

Munk Centre: Governing Global Development: The Role of the G8 in Health, Nutrition and Food

Beyond Open Source: Patents, Biobanks and Sharing

Trento, Italy, 2010

University of Trento: Comparative Issues in the Governance of Research Biobanks

Intellectual Property: Why it Matters to Global Health

Montreal, Canada, 2010

McGill Colloquium on Health and Law

Toward a new era of intellectual property: Building collaborations as a means to access knowledge

Ottawa, Canada, 2009

International Development Research Centre: Accessing Patented Knowledge for Innovation

Toward a new era of intellectual property: "facts' in light of international trends and pressures

Montreal, Canada, 2009

National Judicial Institute: Federal Court Annual Education Seminar

IPRs and Innovation Governance

Toronto, Canada, 2009

Conference Board of Canada: Intellectual Property Rights: Innovation and

Commercialization in Turbulent Times

Toward a new era of intellectual property: the need for research partnerships

Toronto, Canada, 2009

York University: Entrepreneurship and Commercialization in Biomedical Science

Toward a new era of intellectual property: capacity building from the bottom up

Montreal, Canada, 2009

Building and Maintaining Sustainable Global Health Partnerships

Translating Research into Policy: technology transfer

Toronto, Canada, 2009

Universities, Innovation and Global Medicine Access

Toward a new era of intellectual property: from confrontation to negotiation

Barbados, 2009

SGC Barbados Epigenetics Probe Meeting

Innovation and the failure to collaborate

Boston, USA, 2009

The Impact of Patent Law on the Economy: Stimulus or Impediment?

Toward a New Era in Intellectual Property: Implications and Opportunities for CIPO

Ottawa, Canada, 2009

Canadian Intellectual Property Office

Innovation, propriété intellectuelle et transfert de technologie: vers de nouveaux modèles

collaboratifs

Montreal, Canada, 2009

La Direction du développement économique et urbain de la Ville de Montréal

The Patent Paradox: Patents and Access to Medical Discoveries

Collingwood, Canada, 2008

Georgian Triangle Lifelong Learning Institute: Ethical Dilemmas of the New Genetics

La propriété intellectuelle confrontée aux données économiques et politiques

Paris, France, 2008

Propriété intellectuelle, biotechnologies, et enjeux sociaux à l'heure de la globalization

Myriad Genetics: In the eye of a policy storm

Paris, France, 2008

Propriété intellectuelle, biotechnologies, et enjeux sociaux à l'heure de la globalization

Innovation, Intellectual Property, and Collective Value Creation

Montreal, Canada, 2008

From Crisis to a New Convergence of Agriculture, Agri-food and Health

From Anarchy to Organised Chaos

Montreal, Canada, 2008

In Support of A Whole-of-Society Approach to Population Health and Global Health Diplomacy for Chronic Disease Prevention

Toward a new era of intellectual property: aligning competition and IP policy

Montreal, Canada, 2008

Innovative to abuse? Exploring the interactions between intellectual property and competition law

From Confrontation to Negotiation: Toward a New Era of Intellectual Property

Washington, DC, USA, 2008

Policy briefing on Capitol Hill

From Confrontation to Negotiation: Toward a New Era of Intellectual Property

London, UK, 2008

Science Media Centre

From Confrontation to Negotiation: Toward a New Era of Intellectual Property

Ottawa, Canada, 2008

Policy briefing

Transfert technologique & propriété intellectuelle: le contexte québécois

Quebec, Canada, 2008

Transfert technologique, commercialisation et propriété intellectuelle,

Symposium sur les Créneaux d'excellence québécois et les Pôles de compétitivité français

Patents and Biotechnology: Where are we? Where are we going?

Montreal, Canada, 2008

Montreal InVivo Breakfast Seminar

Industry/Agriculture Intellectual Property

Paris, France, 2008

OECD International Futures Program

Health Intellectual Property

Paris, France, 2008

OECD International Futures Program

Intellectual Property and Biotechnology

Ottawa, Canada, 2008

Carleton University Panel Discussion on Valuing Life: Futurity, Regulatory Regimes and Contemporary Biosociality

Myriad Genetics: In the eye of a policy storm

Toronto, Canada, 2007 University of Toronto

Innovation Systems

Beijing, China, 2007

Global Forum on Health Research

Canada's Access to Medicines Regime: Politics over Praxis

Beijing, China, 2007

Global Forum on Health Research

Intellectual Property Policy: The work of the CIPP and the case of Myriad Genetics Tokyo,

Japan, 2007

Research Office on Economy, Trade and Industry, Japanese Parliament

An Anti-Retroviral Medicines Patent Pool: A partial solution

Tokyo, Japan, 2007

National Graduate Institute for Policy Studies

Moving forward on suggested IGWG actions related to IP and Health

Ottawa, Canada, 2007

Canada's Managing IP for Health Technical Workshop

Genetic Data and Intellectual Property: Levels of Data and of Protection

Trento, Italy, 2007

University of Trento conference on Genetic Data: Opportunity and Threats

Canada's Access to Medicines Regime: Policy over Praxis

Edinburgh, Scotland, 2007

University of Edinburgh

Preliminary Legal Review of a Medicines Patent Pool

Geneva, Switzerland, 2007, with Jean-Frederic Morin

UNITAID Board Meeting

General Overview of the International Gene Patents and Licensing Practices Landscape

Washington, DC, USA, 2007

Secretary of Health's Advisory Committee on Genetics, Health and Society

BRCA Testing in Canada

Washington, DC, USA, 2007

Secretary of Health's Advisory Committee on Genetics, Health and Society

Legal Interpretation and Ontologies: Law, institutions and practices and the case of Myriad

Genetics

Trento, Italy, 2007

University of Trento

Domestic and International Canadian Policy re IP and Access to Medicines

Ottawa, Canada, 2007

Health Canada: Trade and Health Workshop

Compulsory Licensing and Competition

Ottawa, Canada, 2007

Competition Bureau: IP/Competition Policy Symposium

Knowledge and Property: Unraveling the relationship

Exeter, UK, 2007

University of Exeter: Governing Genomics Conference

Of Mice and Women: Looking for new business models

Durham, USA, 2006 with Tania Bubela

Duke University: Center for Genome, Ethics, Law and Policy

Biotech Patents: A rational policy response

Edmonton, Canada, 2006

Health Law Institute Seminar Series 2006/2007

Myriad Genetics: Case study

Edmonton, Canada, 2006 with Julia Carbone

Workshop on Policy Response to Breast Cancer Patents

Droits de propriété intellectuelle et droit de la concurrence : Convergence ou Divergence ?

Paris, France, 2006

Cour de Cassation: Droits de propriété intellectuelle : Approches juridiques et

économiques.

Challenges in Innovation

Cairo, Egypt, 2006

Global Forum on Health Research

The Latin American Consortium on Biotechnology IP

Buenos Aires, Argentina 2006

Intellectual Property Biotechnology Capacity and Development

From Research to Policy: the work of the Intellectual Property Modeling Group

Durham, USA, 2006

Duke University, School of Law

Comparative Intellectual Property Issues in Biotechnology

Victoria, Canada, 2006

Food, Health and Biotechnology: Consumer and Social Issues in Canada's New Food and

Health Product Industries

From Research to Policy: the work of the Intellectual Property Modeling Group

Ottawa, Canada, 2006

Canadian Intellectual Property Office

Cutting Edge IP Law

St. John's, Canada, 2006

Canadian Bar Association Canadian Legal Conference

Biotechnology and Boundaries

Trento, Italy, 2006

Life, Technology, and the Law

Rational Policy Responses?

Banff, Canada, 2006

Workshop: Biotechnology Patents and Policy: What's the Evidence?

De la recherche à la décision politique : l'expérience du groupe de modélisation en propriété

intellectuelle

Montreal, Canada, 2006

Colloque ACFAS 2006

Implementing the OECD Guidelines in Canada

Vancouver, Canada, 2006

Health Canada Symposium on Human Genetics Licensing

IP as Place Brand

Montreal, Canada, 2006

McGill University Meredith Memorial Lectures

A Private Law Perspective on 20th Century Monetary History Claremont, US, 2006 Bretton Woods Revisited Workshop

Patent Scope in Genes: A comparative analysis of scope London, UK, 2005, with Karen L. Durell Patenting Lives Conference

Commercializing University Research: Beyond economic incentives St. Louis, US, 2005 Conference on Commercializing Innovation

The Public Face of IP Management
Florence, Italy, 2005
Centre for Intellectual Property Policy

Essential Medicine, Gene and Stem Cell Patents Garrison, NY, 2005 Hastings Centre for Bioethics

Round Table: Intellectual Property and Biotechnology in respect of developing countries Buenos Aires, Argentina, 2005 University of Buenos Aires