Aidan Hollis

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Education

1990 – 1996 Ph.D., Economics, University of Toronto Dissertation: The Application of Economic Theory to Competition Policy
1989 – 1990 M.A., Economics, University of Toronto
1982 – 1985 M.A., English, Cambridge University

Professional Experience

2016 –	President and Director, Incentives for Global Health
2009 –	Professor (with tenure), University of Calgary
2008 – 2016	Vice-President and Director, Incentives for Global Health
2003 – 2009	Associate Professor (with tenure), University of Calgary
2003 – 2004	T.D. MacDonald Chair of Industrial Economics, Competition Bureau, Industry Canada, Ottawa
1996 – 2003	Assistant Professor, University of Calgary
1994 – 1995	Instructor, University of Toronto
1987 – 1989	Loans Officer, Midland Bank Seoul Branch
1985 – 1987	Trainee, Midland Bank International Division, London

Awards, Grants

Honours

2023	Office of Health Economics Innovation Policy Prize (£40,000), Winner
2022	Panmure House Prize (Co-applicant), (\$75,000)
2021 –	Fellow, Global Justice Program, Yale University

- 2018 Associate Professor (Status only), Faculty of Pharmacy, University of Toronto
- 2013 2014 Assistant Professor (Status only), Faculty of Pharmacy, University of Toronto
- 2008-13 Adjunct Professor, Centre for Applied Philosophy and Public Ethics, Charles Sturt University, Canberra, Australia
- 2006-9 Research Fellow, Institute for Advanced Policy Research
- 2005-6 Academic Director, Centre for Regulatory Economics, Van Horne Institute
- 2004 "Eminent Scientist of the Year" in the field of Health Economics for Canada, as chosen by International Research Promotion Council (www.irpc.org)
- 2002 6 Research Fellow, Institute of Health Economics

Research Grants

Hong Kong RGC Senior Research Fellowship Scheme. "Access to Vaccines in a Post-COVID-19 World: Sustainable Legal and Policy Options" (HK\$7,798,380) [Collaborator] 2023-2027.

CIHR Project Grant "Evaluating and Informing Canada's Proposed Pharmaceutical Price Regulations" (\$760,000) [Coapplicant] 2022-2025.

CIHR Network for Global Governance Research on Infectious Diseases "One Health Network for the Global Governance of Infectious Diseases and Antimicrobial Resistance" (\$2,000,000) [Principal Applicant] 2019-2023

Alberta Major Innovation Fund, "Antimicrobial Resistance One Health Consortium", (\$6,315,000) [Principal Investigator] 2018-2022.

JPIAMR 5th Call Project Grant. €473,068 [Principal Investigator] 2017-2020

CIHR Project Grant (\$328,950) [Principal Investigator] 2017-2020

CIHR Project Grant (\$240,975) [Co-investigator] 2017-2020

CIHR Dissemination Grant (\$25,000) [Co-investigator] 2014

European Research Council, (€1,924,738) [Co-investigator] 2014-2019

Government of Quebec (\$50,000) [Principal Investigator] 2012

CIHR Team Grant (\$1,450,166) [Co-investigator] 2011-2016

CIHR Development Grant (\$15,000) [Principal Investigator] 2010-2011

CIHR/Health Canada Team Grant (\$1,500,000) [Co-investigator] 2009-2013

SSHRC Standard Research Grant (\$45,000) [Principal Investigator] 2007-2010

Centre for Regulatory Affairs (\$6,000) 2006

Institute of Health Economics Research Grant (\$5,500) 2005

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University of Calgary SSHRC Development Grant (\$1,000) 2002 SSHRC Standard Research Grant (\$50,450) [Principal Investigator] 1999-2002 University Research Grants Committee, Starter Grant (\$9,376) 1997 - 1999 University of Calgary "Research Excellence Envelope" (\$6,000) 1996 -1997

Scholarships

SSHRC Fellowship, 1992 - 1994 Ontario Graduate Scholarship, 1991 - 1992 Connaught Fellowship, 1990 - 1992 Tallow Chandlers' Award, 1984

Publications

Books

- [1] Hollis, Aidan, and Thomas Pogge, *The Health Impact Fund: Making New Medicines Accessible for All*, Incentives for Global Health, 2008.
- [2] Walls, W.D., and Aidan Hollis, eds., *The Alberta Power Market*, Calgary: Van Horne Institute, 2007.

Peer-Reviewed Journal Articles (* indicates student)

- [1] Zhang W, Guh DP, Grootendorst P, Hollis A, Anis AH. "The impact of changing the reference countries on the list prices for patented medicines in Canada: a policy analysis." *Health Policy*, forthcoming 2024.
- [2] Zhang W, Sun H, Guh DP, Grootendorst P, Hollis A, Anis AH. "The impact of the proposed price regulations on new patented medicine launches in Canada: a retrospective cohort study." *Canadian Medical Association Journal*, forthcoming 2024.
- [3] *Matthey M, Hollis A. "Pull Me Push You? The disparate financing mechanisms of drug research in global health." *Globalization and Health*, 2024; 20:14. https://doi.org/10.1186/s12992-024-01019-x.
- [4] Memedovich A, Orr T, Hollis A, Salmon C, Hu J, Zinszer K, Williamson T, Beall R. "Social Network Risk Factors and Covid-19 Vaccination: A Cross-Sectional Survey Study." Vaccine, 2024; <u>https://authors.elsevier.com/sd/article/S0264-410X(24)00005-7</u>.
- [5] Hollis A. "An Optional Delinked Reward System: Making Pharmaceutical Innovation Work for Everyone." *Applied Health Economics and Health Policy*, 2024; 22: 155-164. <u>https://doi.org/10.1007/s40258-023-00860-2</u>.

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- [6] Memedovich A, *Farkas B, Hollis A, Salmon C, Hu J, Zinszer K, Williamson T, Beall R. "COVID-19 vaccine's speed-to-market and vaccine hesitancy: A crosssectional survey study." *Healthcare Policy* 2023; 19(1): 99-113. <u>https://doi.org/10.12927/hcpol.2023.27153</u>.
- [7] *Roth B, Hollis A, Kistler S, *Matthey M, Nkobo Z. "Der Green Impact Fund for Technology: Ein Anwendungsbeispiel für die Homann'sche Ordnungsethik?" *Zeitschrift für Wirtschafts-und Unternehmensethik (zfwu)*, 2023; 24(2): 164-183. <u>https://doi.org/10.5771/1439-880X-2023-2-164</u>.
- [8] *Rahman S, Hollis A. "The effect of antibiotic usage on resistance in humans and food-producing animals: a longitudinal, One Health analysis using European data." *Frontiers in Public Health*, 2023; 11. <u>doi:</u> <u>10.3389/fpubh.2023.1170426</u>.
- [9] *Rahman S, Kesselheim A, Hollis A. "Persistence of resistance: a panel data analysis of the effect of antibiotic usage on the prevalence of resistance." *Journal of Antibiotics*, 2023. <u>https://doi.org/10.1038/s41429-023-00601-6</u>.
- [10] *Doolan C, *Sahragard B, Leal J, Sharma A, Kim J, Spackman E, Hollis A, Pillai D. "Clostridioides difficile near patient testing versus centralized testing: A pragmatic cluster randomized cross-over trial." Clinical Infectious Diseases, ciad046, 2023. <u>https://doi.org/10.1093/cid/ciad046</u>
- [11] Moradpour J, Zhang W, Anis A, Grootendorst P, Hollis A. "Modeling tiered pricing frameworks: a simulation approach." *Value in Health*, 2023; 26(3): 351-358. <u>https://doi.org/10.1016/j.jval.2022.11.003</u>
- [12] Zhang W, Sun H, Guh DP, Lynd LD, Hollis A, Grootendorst P, Anis AH. The impact of tiered-pricing framework on generic entry in Canada. International Journal of Health Policy and Management. 2022;11(6): 768-76. <u>https://doi.org/10.34172/ijhpm.2020.215</u>.
- [13] Beall R, Kesselheim A, Hollis A. "Pre-market development times for innovative vaccines to what extent are the COVID-19 vaccines outliers?" *Clinical Infectious Diseases*, 2022. <u>https://doi.org/10.1093/cid/ciab389</u>.
- [14] Beall R, Moradpour J, Hollis A. "The private versus public contribution to the biomedical literature during the COVID-19, Ebola, H1N1, and Zika public health emergencies." *PLoS One*, 2021; 16(10) <u>https://doi.org/10.1371/journal.pone.0258013</u>.
- [15] *McCubbin, K, Anholt, R, DeJong E, Hollis A, *et al.* "Knowledge gaps in the understanding of antimicrobial resistance in Canada." *Frontiers in Public Health*, 2021; 9, 1523. <u>https://doi.org/10.3389/fpubh.2021.726484</u>
- [16] Beall R, Hollis A, Kesselheim A, Spackman E. "Reimagining pharmaceutical market exclusivities: Should the duration of guaranteed monopoly periods be value-based?" Value in Health, 2021; 24(9): 1328-1334. <u>https://doi.org/10.1016/j.jval.2021.04.1277</u>

- [17] Lang R, Benham J, *Atabati O, Hollis A, *et al.* "Attitudes, Behaviours and Barriers to Public Health Measures For COVID-19: A Survey to Inform Public Health Messaging." *BMC Public Health*, 2021; 21 (765), <u>https://doi.org/10.1186/s12889-021-10790-0</u>.
- [18] *Moradpour J, Hollis A. "The economic theory of cost-effectiveness thresholds in health: domestic and international implications." *Health Economics*, 2021; 30(5): 1139-1151. <u>https://doi.org/10.1002/hec.4247</u>.
- [19] *Rahman S, Lindahl O, Morel C, Hollis A. "Market Concentration of New Antibiotic Sales." *Journal of Antibiotics*, 2021; 74(6): 421-423, <u>https://doi.org/10.1038/s41429-021-00414-5</u>.
- [20] *Sahragardjoonegani B, Beall R, Kesselheim A, Hollis A. "Repurposing existing drugs for new uses: A cohort study of the frequency of FDA-granted new indication exclusivities since 1997." *Journal of Pharmaceutical Policy and Practice*, 2021; 14: 3, <u>https://doi.org/10.1186/s40545-020-00282-8</u>.
- [21] Zhang W, Sun H, Guh D, Lynd L, Hollis A, Grootendorst P, Anis A. "The impact of tiered pricing framework on generic entry in Canada." *International Journal of Health Policy and Management*, 2020. <u>https://doi.org/10.34172/ijhpm.2020.215</u>
- [22] *Sharma A, Leal J, Kim J, Pearce C, Pillai D, Hollis A. "The Cost of Contact Precautions: A Systematic Analysis." *Canadian Journal of Infection Control*, 2020; 35(4): 163-169. (Winner of the 2020 IPAC Canada Editorial Award & \$1000)
- [23] *Moradpour J, Hollis A. "Patient income and health innovation." *Health Economics*, 2020; 29(12): 1795-1803. <u>https://doi.org/10.1002/hec.4160</u>.
- [24] Beall R, Hollis A. "COVID-19's unprecedented global clinical trial mobilization: Higher, faster, stronger." *Drug Discovery Today*, 2020. <u>https://doi.org/10.1016/j.drudis.2020.08.001</u>
- [25] Zhang W, Guh D, Sun H, Lynd L, Hollis A, Grootendorst P, Anis A. "Factors Associated with Drug Shortages in Canada: A Retrospective Cohort Study." *CMAJ Open*, 2020; 8(3): E535-E544. <u>https://doi.org/10.9778/cmajo.20200036</u>
- [26] Morel C, Lindahl O, Harbarth S, de Kraker M, Edwards S, Hollis A. "Industry incentives and antibiotic resistance: an introduction to the antibiotic susceptibility bonus" *Journal of Antibiotics*, 2020; 73: 421-428. <u>https://doi.org/10.1038/s41429-020-0300-y</u>
- [27] *Sharma A, Pillai D, Lu M, *Doolan C, Leal J, Kim J, Hollis A. "Impact of Isolation Precautions on Quality of Life: A Meta-Analysis" *Journal of Hospital Infection*, 2020; 105(1): 35-42. <u>https://doi.org/10.1016/j.jhin.2020.02.004</u>
- [28] Beall R, Clement F, Hollis A, Hardcastle L. "How will recent trade agreements that extend market protections for brand-name prescription pharmaceuticals impact expenditures and generic access in Canada?" *Health Policy* 2019;123(11), 1251-1258.

- [29] Hollis A. "Orphan Drug Pricing and Costs: A Case Study of Kalydeco and Orkambi." *Healthcare Policy* 2019;15(1), 70-80.
- [30] *Jayasundara K, Hollis A, Krahn M, Mamdani M, Hoch J, Grootendorst P. "Estimating the clinical cost of drug development for orphan versus non-orphan drugs." *Orphanet Journal of Rare Diseases* 2019;14:12. doi.org/10.1186/s13023-018-0990-4
- [31] *Memedovich KA, Manns B, Beall R, Hollis A, Clement F. "The impact of pharmaceutical rebates on patients' drug expenditures" *Canadian Medical Association Journal* 2019;191(11) E308-E312.
- [32] Aidara-Kane A, Angulo FJ, Conly JM, Minato Y, Silbergeld EK, McEwen SA, Collignon PJ, for the WHO Guideline Development Group: Hanan Balkhy, Peter Collignon, John Conly, Cindy Friedman, Aidan Hollis, Samuel Kariuki, Hyo-Sun Kwak, Scott McEwen, Gérard Moulin, Antoinette Ngandjio, Bernard Rollin, Flávia Rossi, and David Wallinga. World Health Organization (WHO) guidelines on use of medically important antimicrobials in food-producing animals. Antimicrobial Resistance & Infection Control. 2018 Dec; 7:1-8. https://doi.org/10.1186/s13756-017-0294-9
- [33] Hollis A. "Bill C-30: Who wins and who loses in Canada's pharmaceutical patent battles?" *Expert Opinion On Therapeutic Patents*, 2018; 28(1): 1-3.
- [34] Hollis, A. and P. Grootendorst, "A comparison of mechanisms for setting generic drug prices in Canada." *Journal of Generic Medicines*, 2017, Jan;13(1):19-27.
- [35] Hollis, A., "Sustainable Financing of Innovative Therapies: A Review of Approaches." *PharmacoEconomics*, 2016; 34(10):971-80. doi: 10.1007/s40273-016-0416-x.
- [36] Hollis, A., "Generic drugs in Canada: an examination of tiered pricing." Canadian Medical Association Journal, DOI:10.1503/cmaj.150395. 2015, Oct; 187(14):1033-1034
- [37] Hollis, A. and P. Grootendorst, "Canada's new generic pricing policy: a reasoned approach to a challenging problem." *Healthcare Policy*, 2015 Aug;11(1):10-14.
- [38] Hollis, A. and P. Maybarduk, "Antibiotic resistance is a tragedy of the commons that necessitates global cooperation." *Journal of Law, Medicine & Ethics* 2015; 43(2): S33-S37.
- [39] *Shajarizadeh, A, P. Grootendorst, and A. Hollis, "Newton's first law for pharmacies: why entry order matters for generics." *International Journal of the Economics of Business* 2015; 22(2):201-217.
- [40] Roberts, E, M. Herder, and A Hollis, "Fair pricing of 'old' orphan drugs: considerations for Canada's orphan drug policy." *Canadian Medical Association Journal* 2015; 187(6):422-425.
- [41] *Shajarizadeh, A. and A. Hollis, "Price-Cap Regulation, Uncertainty and the Price Evolution of New Pharmaceuticals." *Health Economics* 2015; 24: 966-977.

- [42] Hollis, A. and Z. *Ahmed, "The path of least resistance: paying for antibiotics in non-human uses." *Health Policy* 2014, 118: 264-270.
- [43] *Shajarizadeh, A. and A. Hollis, "Delays in the Submission of New Drugs in Canada." *Canadian Medical Association Journal* 187: E47-51, 2014, cmaj.130814.
- [44] Hollis, A. and Z. *Ahmed, "Preserving Antibiotics, Rationally." *New England Journal of Medicine* 2013, 369(26): 2474-2476.
- [45] Fellows, GK, and A. Hollis, "Funding innovation for treatment for rare diseases: adopting a cost-based yardstick approach." *Orphanet Journal of Rare Diseases* 2013, 8:180.
- [46] Hollis, A., "Synthetic Biology: Ensuring the Greatest Value." *Systems and Synthetic Biology*, 7(3): 99-105, 2013.
- [47] Grootendorst, P., R. Bouchard, and A. Hollis, "Canada's Laws on Pharmaceutical Intellectual Property: The Case for Fundamental Reform." *Canadian Medical Association Journal*, 184(5): 543-549, 2012.
- [48] Grootendorst, P. and A. Hollis, "The 2011 Canada-European Union Comprehensive Economic and Trade Agreement: an economic impact assessment of the EU's proposed pharmaceutical intellectual property provisions." *Journal of Generic Medicines*, 8(2): 81-103.
- [49] Grootendorst, P., A. Edwards, A. Hollis, D. Levine, and T. Pogge, "New approaches to rewarding pharmaceutical innovation." *Canadian Medical Association Journal*, 183(6): 681-685, 2011.
- [50] Bouchard, R., Cahoy, D., Domeij, B, Dutfield, G., Faunce, T., Hollis, A., Jones, P., Khader, F., Lexchin, J., Nam, H. and Serrano, J., "Structure-Function Analysis of Global Pharmaceutical Linkage Regulations". *Minnesota Journal of Law, Science & Technology* 12(2): 391-457, 2011.
- [51] Pogge, T., and A. Hollis, "Epilogue New Drugs for Neglected Diseases." *Cambridge Quarterly of Healthcare Ethics* 20(2), 329-334, 2011.
- [52] *MacCormack, J., A. Hollis, H. Zareipour, and W. Rosehart, "The Large-Scale Integration of Wind Generation: Impacts on Price, Reliability and Non-Wind Suppliers." *Energy Policy*, 38(7): 3837-3846, 2010.
- [53] Peterson, M., A. Hollis, and T. Pogge, "A Critique in Need of Critique." *Public Health Ethics*, 3(2): 175-185, 2010.
- [54] Banerjee, A., A. Hollis, and T. Pogge, "The Health Impact Fund: Incentives for Improving Access to Medicines." *Lancet* 375 (9709): 166-169, January 9 2010. Reprinted in Labonte R et al, *Global Health Ethics, Public Policy and Challenges for the Future*, Sage, 2011.
- [55] Hollis, Aidan, "Commentary on 'Getting what we pay for: The value-for-money challenge." *HealthcarePapers* 9(4): 32-35, October 2009.

- [56] Flynn, Sean, Aidan Hollis, and Mike Palmedo, "An Economic Justification for Open Access to Essential Medicine Patents in Developing Countries," *Journal of Law, Medicine & Ethics*, 37(2): 184-208, Summer 2009.
- [57] Hollis, Aidan, "The Health Impact Fund: A useful supplement to the patent system?" *Public Health Ethics*, 1(2): 124-133, July 2008.
- [58] Boyce, John R. and Aidan Hollis, "Preliminary injunctions and damage rules in patent law." *Journal of Economics & Management Strategy*, 16(2): 385-405, Spring 2007.
- [59] Hollis, Aidan and Arthur Sweetman, "The role of local depositors in controlling expenses in small-scale financial intermediation: an empirical analysis." *Economica*, 74: 713-734, November 2007.
- [60] Hollis, Aidan and Peter Ibbott, "How Parallel Trade Affects Drug Policies and Prices in Canada and the United States." *American Journal of Law & Medicine*, 32 (2&3): 193 218, Spring 2006.
- [61] Hollis, Aidan, "How do brands' "own generics" affect drug prices?" *Review of Industrial Organization*, 27(4), 329-350, December 2005.
- [62] Hollis, Aidan, "Comment on 'The Economics of Follow-on Drug Research and Development' by diMasi and Paquette." *Pharmacoeconomics*, 23(12): 1187-1192, December 2005.
- [63] Boyce John R. and Aidan Hollis, "Governance of Electricity Transmission Systems" *Energy Economics* 27(2): 237-255, March 2005. Reprinted in Hollis, Aidan and W. D. Walls, eds., *Alberta Power Market*, Calgary: Van Horne Institute, 2007.
- [64] Hollis, Aidan and Stephen Law, "A National Formulary for Canada." *Canadian Public Policy*, 30(4): 445-452, December 2004.
- [65] Hollis, Aidan, How cheap are Canada's drugs really? *Journal of Pharmacy and Pharmaceutical Sciences*, 7(2): 215-216, June 2004. Reprinted in *Pharma Marketing News* 3(8), September 2004.
- [66] Hollis, Aidan, and Arthur Sweetman. "Microcredit and Famine: The Irish Loan Funds during the Great Famine" *World Development*, 32(9): 1509-1523, September 2004.
- [67] Hollis, Aidan and Lasheng Yuan, "Competition Policy in Open Economies" *International Economic Journal*, 18(2): 179-194, June 2004.
- [68] Hollis, Aidan, "The Anti-Competitive Effects of Brand-Controlled 'Pseudo-Generics' in the Canadian Pharmaceutical Market," *Canadian Public Policy* 29(1): 21-31, March 2003.
- [69] Hollis, Aidan, "Industrial Concentration, Output, and Trade: An Empirical Exploration," *Review of Industrial Organization*, 23(2): 103-119, March 2003.
- [70] Hollis, Aidan, "The Importance of Being First: Evidence from Canadian Generic Pharmaceuticals," *Health Economics* 11: 723-734, December 2002.

- [71] Hollis, Aidan, "The Link between Publicly Funded Health Care and Compulsory Licensing," *Canadian Medical Association Journal* 167: 765-767, October 2002.
- [72] Hollis, Aidan, "The Strategic Implications of Learning by Doing," *International Journal of the Economics of Business* 9(2): 157-174, July 2002.
- [73] Hollis, Aidan, and Arthur Sweetman, "The Life-Cycle of a Microfinance Institution: An Economic Analysis of the Irish Loan Funds," *Journal of Economic Behavior and Organization* 34(3): 291-311, November 2001.
- [74] Hollis, Aidan, "Coauthorship and the Output of Academic Economists," *Labour Economics* 8(4): 503-530, October 2001.
- [75] Hollis, Aidan, "Adverse Selection, Extended Warranties, and Aftermarkets," *Journal of Risk and Insurance*, 66(3): 321-344, September 1999.
- [76] Gallini, N.T., and Aidan Hollis, "A Contractual Approach to Gray Markets," *International Review of Law and Economics*, 19(1): 1-21, March 1999.
- [77] Hollis, Aidan, and Arthur Sweetman, "Microcredit: What Can We Learn From the Past?" *World Development* 26(10): 1875-1891, October 1998.
- [78] Hollis, Aidan, and Arthur Sweetman, "Microcredit in Pre-Famine Ireland," *Explorations in Economic History* 35: 347-380, October 1998.

Peer-Reviewed Policy Studies

- [1] CCA (Council of Canadian Academies). (2023). "<u>Overcoming Resistance</u>." Ottawa (ON): Expert Panel on Antimicrobial Availability, CCA.
- [2] Global AMR R&D Hub (2021). <u>Estimating Global Patient Needs and Market</u> Potential for Priority Health Technologies Addressing Antimicrobial Resistance.
- [3] Gallini, Nancy and Aidan Hollis. "To Sell or Scale-Up: Canada's Patent Strategy in a Knowledge Economy." IRPP Study #72, August 2019.
- [4] Grootendorst, Paul, and Hollis, Aidan "Managing pharmaceutical expenditure: overview and options for Canada." Canadian Health Services Research Foundation, February 2011.
- [5] Hollis, Aidan, "Generic Drug Pricing and Procurement: A Policy for Alberta." School of Policy Studies Research Papers, Volume 2, Issue 1, February 2009.
- [6] Hollis, Aidan, "Prizes, Advanced Market Commitments, and Pharmaceuticals for Developing Countries." International Centre for Trade and Sustainable Development, October 2007.
- [7] Hollis, Aidan, "The City of Calgary's Ownership of ENMAX Energy Corporation: Value at Risk." Institute for Advanced Policy Research Technical Paper #TP-06010, October 2006.
- [8] Hollis, Aidan, and Aslam Anis "Rx for Canada: Close the Internet Pharmacies." C.D.Howe Commentary 205, October 2004.

Peer-Reviewed Book Chapters

- [1] Hollis, Aidan and Paul Grootendorst. "Canada and the United States." In Sabine Vogler, ed., Medicine Price Surveys, Analyses and Comparisons: Evidence and Methodology Guidance. Elsevier 2018, pp. 31-43. <u>https://doi.org/10.1016/B978-0-12-813166-4.00004-8.</u>
- [2] Hollis, Aidan and Paul Grootendorst. "The Price of Exclusivity: The Economics of Patent Extensions and Data Protection." In Bryan Mercurio, Daria Kim, eds., Contemporary Issues in Pharmaceutical Patent Law: Setting the Framework and Exploring Policy Options, Routledge, 2017, pp. 189-202.
- [3] Grootendorst, Paul, Aidan Hollis, and Aled Edwards "Patents and Other Incentives for Pharmaceutical Innovation." In AJ Culyer, ed., *Encyclopedia of Health Economics*, Elsevier, 2014, pp. 434-442.
- [4] Outterson, K, Pogge T and Hollis A, "Combating Antibiotic Resistance through the Health Impact Fund." In *The Globalization of Health Care*, Glenn Cohen, ed., Oxford University Press, 2013.
- [5] Hollis, A, T. Pogge, and D. Schroeder, "Beyond benefit sharing: steps towards realizing the human right to health." In Schroeder, Doris and Lucas, Julie (eds) *Benefit Sharing From Biodiversity to Human Genetics*, Springer: Berlin, forthcoming 2013.
- [6] Hollis, Aidan, "When patents are not enough: supplementary incentives for pharmaceutical innovation." In *Incentives for Research, Development, and Innovation in Pharmaceuticals* Walter Garcia-Fontes (ed.), Springer, 2011, pp. 39-47.

Translated into Spanish as "Cuando las patentes no bastan: Incentivos adicionales para la innovación farmacéutica." In Incentivos a la I+D+i de Medicamentos, Walter Garcia-Fontes (ed.), Springer, 2012

- [7] Comment on "Effects of authorized generics on Canadian drug prices." In *Competition Policy and Intellectual Property*, Marcel Boyer, Michael Trebilcock, and David Vaver (eds.), 2009, pp. 311-315.
- [8] Hollis, Aidan, "Drugs for Neglected Diseases: Incentives for Innovation" in *Pharmaceutical Innovation: Incentives, Competition, and Cost-Benefit Analysis in International Perspective,* Frank Sloan and Chee-Ruey Hsieh (eds.) Cambridge University Press, 2007, pp. 75-90.
- [9] Hollis, Aidan, "Drugs for Rare Diseases: Paying for Innovation" in *Health Services Restructuring in Canada: New Evidence and New Directions*, Charles Beach (ed.) McGill-Queen's University Press, 2006, pp. 155-177.
- [10] Hollis, Aidan, "Neglected Disease Research: Health Needs and New Models for R&D." in P. Illingworth, U. Schlukenk, and G.C. Cohen, *The Power of Pills*, Pluto Press, 2006, pp. 125-133.
- [11] Hollis, Aidan, "Women and Microcredit in History: Gender in the Irish Loan Funds," in Gail Campbell, Beverly Lemire and Ruth Pearson, eds., *Women and*

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Credit: Researching the Past, Refiguring the Future, Oxford: Berg Press, 2002, pp. 73-89.

Non-Peer Reviewed Articles

- Zhang W, Guh D, Sun H, Tam A, Bansback N, Hollis A, Grootendorst P, Anis A.
 "AB1591 Policy drivers for market penetration of anti-TNF biosimilars: multicountry comparisons." *Annals of the Rheumatic Diseases*. 2023; 82(Supp 1):2029-2030. <u>https://doi.org/10.1136/annrheumdis-2023-eular.1464</u>
- [2] Hollis A. "High prices for high profits?" *Healthcare Papers*. 2023; 21(1): 34-37. https://doi.org/10.12927/hcpap.2023.26998.
- [3] Hollis A, Pogge T. "Pharma can shine even more." <u>G-20 Digest</u>. 2021; 1(2): 17-26.
- [4] Hollis A, Busby C. "International fund could drive equitable development of COVID-19 vaccine." *Policy Options*, 3 April 2020.
- [5] Gallini N, Hollis A. "Why do foreign firms own so many patents on Canadian inventions?" *Policy Options*, 24 September 2019.
- [6] Fellows G, Dutton D, Hollis A. "Making sure orphan drugs don't get left behind." <u>School of Public Policy Communiqué</u> 10:6. August 2018. doi.org/10.11575/sppp.v11i0.53048.
- [7] Haider, N., A. Hollis and J. Love, "Delinkage proposals and the measurement of health benefits." *Whittier Law Review* 2014; 35(3):349-362.
- [8] Banerjee, A., A. Hollis, and T. Pogge, "The Health Impact Fund: Meeting the Challenge of Health Impact Assessment." Journal of Epidemiology and Community Health, August 2011, 65(Supp 1): A69-A70.
- [9] Hollis, Aidan, and Bryan A. Liang, "Assessing the Effects of Authorized Generics on Consumer Prices." *Journal of Biolaw & Business*, January 2007, 10(1): 10-18.
- [10] Hollis, Aidan, "The economics of compulsory licensing of essential medicines." *Recent Advances and Research Updates*, September 2004, 5(2): 219-225.
- [11] Hollis, Aidan, "The use of the 'pseudo-generic' strategy in the Canadian pharmaceutical market." *World Markets Series Business Briefing: Pharmagenerics*, September 2002, pp. 99-102.
- [12] Hollis, Aidan, "Closing the FDA's Orange Book," *Regulation* 24(4): 14-17, Winter 2001.

Book Reviews and Letters

- [1] Hollis A, "In defense of Canada's drug plan managers." *CMAJ* 2018 290(25) E771-E772. doi.org/10.1503/cmaj.69951 .
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- [4] Banerjee, A., A. Hollis, and T. Pogge, "The Health Impact Fund." *Lancet* 375:1393.
- [5] Hollis, Aidan, Review of An Irish Working Class: Explorations in Political Economy and Hegemony, 1800-1950 by Marilyn Silverman. *Journal of Interdisciplinary History* 33(3): 469-470, Winter 2003.

Reports for government and industry

- [1] Hollis, Aidan. "Competitive Dynamics in the Generic Drug Market in Canada." 2020. Report commissioned by Health Canada.
- [2] Hollis, Aidan. "Economic commentary on Raising Canada: A case for investing in children" O'Brien Institute and Children First Canada. 2018. Available from: https://obrieniph.ucalgary.ca/Economic-analysis-Raising-Canada
- [3] Hollis, A. "Acceso a medicamentos y políticas de control de precios de fármacos en Ecuador." pp. 81-87. In Acceso Publico a Medicamentos de Calidad: Las Compras Publicas como mecanismo para garantizar el derecho a la salud. Servicio Nacional de Contratación Pública, Quito, Ecuador, 2016.
- [4] Cambourieu C, Grootendorst P, Hollis A, Pomey M-P. Fixation des prix des médicaments génériques au Québec. June 2013 Commissaire à la santé et au bien-être du Québec. (58 pages)
- [5] Hollis A, Grootendorst P. Tendering generic drugs: what are the risks? October 2012. Canadian Generic Pharmaceutical Association. (29 pages)
- [6] Hollis A, Grootendorst P. Drug market exclusivity in the EU and Canada: Problems with Norton Rose's Comparative Analysis. January 2012. Canadian Generic Pharmaceutical Association. (7 pages)
- [7] Grootendorst P, Hollis A. The Canada-European Union Comprehensive Economic & Trade Agreement: An economic impact assessment of proposed pharmaceutical intellectual property provisions. February 2011. Canadian Generic Pharmaceutical Association. (82 pages)

Op-eds

- [1] Arawi T, Attali J, Benn C, Hollis A, Jaravel X, Joly E, Ngcobo Z, Pogge T, Serre V. "Nous proposons la création d'un fonds d'impact sanitaire international financé par les pouvoirs publics pour réduire les inégalités de santé." Le Monde, 1 August 2023.
- [2] Morgan S, Hollis A, McCabe C, Herder M, Paulden M. "Canada's misguided changes to drug regulation could fast-track unproven medications and divert funds from other health needs." <u>The Conversation</u>. 26 June 2023.

- [3] Hollis A. "Patent law is hampering climate mitigation. We have a solution." <u>Grist:</u> <u>Fix</u>. 16 August 2022.
- [4] *Matthey M, Holzer F, Hollis A, Daly T, "Verdient Malaria kein Biontech?" *Der Freitag*, 27 November 2020.
- [5] Hollis A, Daly T, Holzer F, Pogge T. "Le Fonds d'impact sanitaire, pour une recherche pharmaceutique plus equitable." *Libération*, 9 November 2020.
- [6] Holzer F, Pogge T and Hollis A. "COVID-19 and beyond: how to pay for new pharmaceuticals." *Journal of Medical Ethics* <u>Blog</u>. 25 May 2020.
- [7] Hollis, Aidan. "Create a health impact fund to spur development and equitable use of a Covid-19 vaccine." *STAT*, 3 June 2020.
- [8] Hollis, Aidan. "What's the future for Alberta's electricity market?" *Calgary Herald*, 24 May 2019.
- [9] Hollis, Aidan. "Carbon tax is short-changing Albertans in electricity sector." *Calgary Herald*, 13 April 2019.
- [10] Edwards, Aled, and Hollis, Aidan. "Open Source Drug Discovery." Canadian Science Policy Centre. <u>http://sciencepolicy.ca/news/open-source-drug-discovery</u> 28 February 2018.
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- [12] Hollis, Aidan, "Charge fees for farm antibiotics to slow the spread of superbugs." *The Conversation*, 8 January 2014.
- [13] Pogge, Thomas, and Aidan Hollis, "Hvordan kan udvikling af nye lægemidler sikres?" *Information* (Copenhagen), 20 July 2010.
- [14] Hollis, Aidan, "The price is wrong." *National Post*, 18 May 2010.
- [15] Pogge, Thomas and Aidan Hollis, "New-drug fund can fix thorny pricing problem." *BusinessDay* (Johannesburg), 11 March 2010.
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- [17] Pogge, Thomas and Aidan Hollis, "En realistisk plan." *Dagbladet* (Oslo), 25 August 2008.
- [18] Hollis, Aidan, "Secret rebates amount to a tax on patients." *Victoria Times Colonist*, 29 June 2008.
- [19] Hollis, Aidan, "Enmax Energy exposes Calgarians to too much risk." *Calgary Herald*, 16 May 2008.
- [20] Hollis, Aidan, "Canada needs policy on orphan drugs." *Winnipeg Free Press*, 19 December 2006. Reprinted in *Calgary Herald*, 6 January 2007.
- [21] Hollis, Aidan, "Prof defends his argument for selling Enmax." *Calgary Herald*, 4 November 2006.

[22] Hollis, Aidan, "Close down our web pharmacies." *National Post* 29 October 2004, p. A16.

Presentations in Conferences and Universities

I have made over 100 invited presentations at conferences and universities.

Teaching

I have taught graduate and undergraduate courses in microeconomics, industrial organization, and economic regulation at the Universities of Calgary and Toronto.

Supervision of Graduate Students Current students

- Tong Liu, PhD thesis. [Co-supervisor]. TBD
- Jason Lee, PhD thesis. University of Toronto [Thesis committee member]. TBD

Past students

- Sakib Rahman, PhD thesis [Supervisor] 2023, "The Silent Pandemic: Essays on the Interplay of Antimicrobial Use, Resistance and External Cost."
- Babak Sahragardjoonegani, MA thesis [Supervisor] 2021. "When the truth hurts: ordinary selling price regulation in a monopoly."
- Anuj Sharma, MA thesis [Supervisor] 2020. "Economic Analysis of Near-Patient Testing for *C. difficile* Implemented in a Large Hospital in Calgary, Canada."
- Javad Moradpour, PhD thesis [Supervisor], 2020, "Economics of Pharmaceutical Innovation."
- Tianjiao (Hilary) Bao, MA thesis [Supervisor] 2018, "Solutions for the Resource Adequacy Issue: Capacity Market, Scarcity Pricing, or Single Buyer Model".
- Robin Lau, PhD thesis, University of Alberta [Thesis committee member] 2017. "Policy Analysis of the Continuous Subcutaneous Insulin Infusion – Access With Evidence Development Scheme in Alberta: A Cost Effectiveness, Value of Information and SWOT Analysis"
- Ali Shajarizadeh, PhD thesis [Supervisor] 2016, "Dynamic pricing in pharmaceutical markets."
- G. Kent Fellows, PhD thesis [Supervisor] 2015, "Select Issues in Applied Regulatory Theory."
- Ethar Ismael, MPharm, University of Toronto, 2013 "Generic drug pricing and substitution in private drug plans in Canada." [Thesis committee member]
- John MacCormack, PhD thesis, 2012 "Prices, Reliability of Supply and Large Scale Wind Generation in Electricity Markets" [Thesis committee member]
- Kent Fellows, MA thesis, 2010, Negotiated Settlements [Supervisor]

- L. So, PhD thesis, 2009, "Microeconometric analyses of health care." [Cosupervisor]
- E. Sawatzky, MEc project, 2009, "The effect of patent duration on pharmaceutical R&D investment." [Supervisor]
- M. Amery, MA thesis, 2007, "A more efficient method for picking standby reserves in the Alberta power market." [Co-supervisor]
- M. Tepczynska, MA thesis, 2003, "An Economic Analysis of the Regulating Reserves Market in Alberta." [Supervisor]
- W. Brown, MEc project, 2002, "Strategic Issues in the Electrical Power Generation Industry." [Supervisor]
- H. Wang, MA thesis, "An Empirical Study of Economies of Scale in the Chinese Railway System." [Supervisor]
- R. Williams, MA thesis, 2002, "Williams on Electricity." [Supervisor]
- K Aksomitis, MA thesis, 2002, "Strategic Behavior in the Alberta Electricity Market." [Supervisor]

I have also acted as examiner for several PhD candidates at University of Calgary, University of Alberta, University of Toronto, and McMaster University.

Other Professional Activities

- Member, Expert Panel, Canadian Council of Academies Panel on Pull Incentives for High-Value Antimicrobials 2022-2023.
- Member, Expert Advisory Group, <u>Global AMR R&D Hub</u>. 2019-2021.
- Member, World Health Organization <u>Guideline Development Group on the use in</u> food animals of critically important antimicrobial agents for human medicine, 2016-17.
- I have acted as referee for books, institutes, and granting agencies (Research Council of Norway, Netherlands Organization for Scientific Research, Agence Nationale de Recherche de France, Social Science and Humanities Research Council of Canada, Canadian Institute for Health Research, National Science Foundation, Rockefeller Foundation), and for over twenty journals (including American Economic Review, Canadian Journal of Economics, Health Affairs, Health Economics, International Journal of Industrial Organization, Journal of Economics & Management Strategy, Journal of Health Economics, Journal of Industrial Economics, Journal of Political Economy, Management Science, Quarterly Journal of Economics, RAND Journal of Economics, and World Development).

- I have provided economic commentary from time to time on television news programs and in newspapers.
- Member of the Patented Medicine Prices Review Board's Working Group on Therapeutic Substitution, 2007-8.
- Member of Pfizer Canada Health Technology Assessment Advisory Board, 2010.
- Member of Pfizer Canada Intellectual Property Advisory Board, 2012.
- I have provided evidence in cases before the Federal Court, Federal Court of Appeals, the Supreme Court of Canada, the Ontario Superior Court of Justice, the Competition Tribunal, and the Alberta Energy and Utilities Board, and have consulted for firms, consumer groups, and governments.
- I have acted as an external referee for tenure and promotion decisions at York University, the University of Alberta, Harvard University, University of Waterloo, and Dalhousie University.

Community Service

- President, Board of Directors, <u>Amici String Program Association</u>, 2009-2012.
- <u>Brentwood</u> Girls U-12 soccer coach, 2008, 2009

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