

## **Jeffrey Robert Church**

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### ***Contact Information***

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### ***Citizenship***

Canadian

### ***Education and Professional Qualifications***

- Ph.D., Economics, University of California, Berkeley 1989, specialization in Industrial Organization and International Trade. Supervisory Committee Richard Gilbert, Michael Katz, and Jeffrey Perloff.
- B.A. First Class Honours (Economics), University of Calgary 1984.
- Qualified as an expert witness before the Copyright Board of Canada, Competition Tribunal, the National Energy Board, the Alberta Energy Utilities Board and the Alberta Utilities Commission, the Canadian Radio-Television and Telecommunications Commission, the Federal Court of Canada, the Federal Court of Australia, and the Supreme Court of British Columbia.

### ***Positions Held***

#### **Academic Appointments**

- Professor, Department of Economics, University of Calgary (since July 1, 2001).
- Program Director, Digital Economy Program, School of Public Policy, University of Calgary (May 1, 2013-June 30, 2015).
- IAPR Professor, Institute for Advanced Policy Research, University of Calgary, *Coordinator of the Markets, Institutions, and Regulation Working Group* (July 1, 2006 to June 30, 2009).
- Associate Professor, Department of Economics, University of Calgary (1994-2001).
- Assistant Professor, Department of Economics, University of Calgary (1989-1994).

#### **Other Appointments**

- Chairperson, Terra Nova Reference Price Committee, Newfoundland (2007 and 2010-2014).

- Founding Academic Director, Centre for Regulatory Affairs in the Van Horne Institute for International Transportation and Regulatory Affairs, University of Calgary (1998-2001).
- T.D. MacDonald Chair in Industrial Economics, Competition Bureau, Industry Canada, Hull, Quebec (1995-1996).
- President, Church Economic Consultants Ltd. (1992-).
- Managing Director, Berkeley Research Group (2010-)
- Member, C.D. Howe Institute Competition Policy Council (2011-).

### ***Academic Awards and Distinctions***

#### **Teaching Awards**

- Faculty of Social Science Distinguished Teacher Award, University of Calgary 1994 and 2004.
- Superior Teaching Award, Department of Economics, University of Calgary, 1997, 1999, 2000, 2002, 2003, 2004, 2011, 2013, 2015.
- Students' Union Teaching Excellence Award, University of Calgary 1994-95.

#### **Major Distinctions**

- Faculty of Social Sciences Gold Medal, University of Calgary 1984.
- *Who's Who Legal Canada 2015*. London: Global Competition Review.
- *The International Who's Who of Competition Lawyers and Economists*. London: Global Competition Review annually from 1998-2016.
- Behavioural Matter of the Year – Americas Team Award, Global Competition Review 2014 for *The Commissioner of Competition v. Visa Canada Corporation and MasterCard International Incorporated* (Winner).
- Behavioural Matter of the Year – Americas Team Award, Global Competition Review 2014 for *The Commissioner of Competition v. The Toronto Real Estate Board* (Nominated).

### ***Research Interests***

- Industrial Organization
- Economics of Regulation
- Competition Policy

### ***Publications***

#### **Google Scholar Page**

<https://scholar.google.ca/citations?user=8EbOoNEAAAJ&hl=en>

#### **Refereed Journal Articles**

- “Direct and Indirect Network Effects are Equivalent: A Comment on “Direct and Indirect Network Effects: Are They Equivalent?” (with N. Gandal), *International Journal of*

*Industrial Organization* 30: 708-712, 2012.

- “Indirect Network Effects and Adoption Externalities.” (with N. Gandal and D. Krause) *Review of Network Economics* 7: 325-346, 2008.
- “The Church Report’s Analysis of Vertical and Conglomerate Mergers: A Reply to Cooper, Froeb, O’Brien and Vita.” *Journal of Competition Law & Economics* 1: 797-802, 2005.
- "Specification Issues and Confidence Intervals in Unilateral Price Effects Analysis." (with O.Capps, Jr. and H.A. Love) *Journal of Econometrics* 113, 3-31, 2003.
- "Systems Competition, Vertical Merger, and Foreclosure." (with Neil Gandal) *Journal of Economics and Management Strategy* 9, 25-52, 2000.
- "Abuse of Dominance under the 1986 Canadian *Competition Act*." (with Roger Ware) *Review of Industrial Organization* 13, 85-129, 1998.
- “Strategic Entry Deterrence: Complementary Products as Installed Base.” (with Neil Gandal) *European Journal of Political Economy* 12, 331-354, 1996.
- "Delegation, Market Share and the Limit Price in Sequential Entry Models." (with Roger Ware) *International Journal of Industrial Organization* 14, 575-609, 1996.
- "Complementary Network Externalities and Technological Adoption." (with Neil Gandal) *International Journal of Industrial Organization* 11, 239-260, 1993.
- "Bilingualism and Network Externalities." (with Ian King) *Canadian Journal of Economics* XXVI, 337-345, 1993. Reprinted in *Economics of Language*. ed. D. Lamberton. International Series of Critical Writing in Economics, Vol. 150, Northampton, MA.: Edward Elgar Publishing, 2002.
- "Comment on ‘Energy Politics in Canada, 1980-81: Threat Power in a Sequential Game’." *Canadian Journal of Political Science* XXVI, 61-64, 1993.
- "Integration, Complementary Products and Variety." (with Neil Gandal) *Journal of Economics and Management Strategy* 1, 651-675, 1992.
- "Network Effects, Software Provision and Standardization." (with Neil Gandal) *Journal of Industrial Economics* XL, 85-104, 1992.

#### **Invited Papers**

- “Too Many Tweets: Internet Billing Practices in Canada,” *Policy Options* May 2011: 54-59.
- "Trade-Dress and Pharmaceuticals in Canada: Efficiency, Competition and Intellectual Property Rights," (with Roger Ware) *Policy Options* 18: 9-12, 1997.

#### **Books and Monographs**

- *The Impact of Vertical and Conglomerate Mergers on Competition* Brussels: European Commission, 2004 at <http://bookshop.europa.eu/en/the-impact-of-vertical-and->

- conglomerate-mergers-on-competition-pbKD7105158/. Published as European Commission, 2006, *The Impact of Vertical and Conglomerate Mergers on Competition* Luxembourg: Office for Official Publications of the European Communities.
- *Industrial Organization: A Strategic Approach* (with Roger Ware) San Francisco: IRWIN/McGraw-Hill, 2000. Second edition forthcoming from Cambridge University Press.
  - *Traditional and Incentive Regulation: Applications to Natural Gas Pipelines in Canada* (with Robert Mansell) Calgary: Van Horne Institute, 1995.
  - *Econometric Models and Economic Forecasts: A Computer Handbook Using MicroTsp* New York: McGraw-Hill, 1990.

### **Chapters in Books**

- "Conglomerate Mergers." in W.D. Collins ed., *Issues in Competition Law and Policy* Volume 2 Chicago: American Bar Association, pp. 1503-1552, 2008.
- "Vertical Mergers." in W.D. Collins ed., *Issues in Competition Law and Policy* Volume 2 Chicago: American Bar Association, pp. 1455-1502, 2008.
- "Platform Competition in Telecommunications." (with N. Gandal) in M. Cave, S. Majumdar, and I. Vogelsang eds., *Handbook of Telecommunications* Vol. 2 Amsterdam: North-Holland, pp. 119-155, 2005.
- "Mergers and Market Power: Estimating the Effect on Market Power of the Proposed Acquisition by The Coca-Cola Company of Cadbury-Schweppes' Carbonated Soft Drinks in Canada." (with A. Abere, O. Capps, Jr. and H.A. Love) in D. Slottje ed., *Economic Issues in Measuring Market Power*, Contributions to Economic Analysis, Vol. 255, Amsterdam: North-Holland, pp. 233-294, 2002.
- "The Economics of Coordinated Effects and Merger Analysis." in D. Houston ed., *CBA Competition Law Conference 2000* Juris Publisher: Yonkers, N.Y., pp. 561-575, 2001.
- "Network Industries, Intellectual Property Rights, and Competition Policy." (with Roger Ware) in N. Gallini and R. Anderson eds., *Competition Policy, Intellectual Property Rights and International Economic Integration* Calgary: University of Calgary Press, pp. 227-285, 1998.

### **Papers and Proceedings**

- "The Interface Between Competition Law and Intellectual Property in Canada: An Uneasy Alliance or Holy War?" on CD-ROM, *2005 Annual Fall Conference on Competition Law*. Ottawa: Canadian Bar Association, 2005.
- "The Economics of Exclusionary Contracts and Abuse of Dominance in Canada." on CD-ROM, *2003 Annual Fall Conference on Competition Law*. Ottawa: Canadian Bar Association, 2003.

- "Competition Policy and the Intercity Passenger Transportation System in Canada." in M. Duncan, ed. *Directions: A New Framework for Transportation* Calgary: Van Horne Institute, pp. 21-25, 1993.
- "Commodity Price Regulation in Canada: A Survey of the Main Issues." (with Robert Mansell) *Papers and Proceedings of the Fifth Annual Regulatory Educational Conference*, Canadian Association of Members of Public Utility Tribunals, 1991.

### **Public Reports**

- *Wireless Competition in Canada: Damn the Torpedoes! The Triumph of Politics over Economics* (with A. Wilkins). School of Public Policy, University of Calgary Research Paper, 7(20), 2014. Available at <http://policyschool.ucalgary.ca/sites/default/files/research/church-wirelessupd2014-v6.pdf>.
- *Wireless Competition in Canada: An Assessment* (with A. Wilkins). School of Public Policy, University of Calgary Research Paper, 6(27), 2013. Available at <http://www.policyschool.ucalgary.ca/sites/default/files/research/j-church-wireless-online.pdf>.
- *Transmission Policy in Alberta and Bill 50* (with William Rosehart and John MacCormack). School of Public Policy, University of Calgary Research Paper, 2009.
- *Buyer Power: Background Note*. Competition Committee, Directorate for Financial and Enterprise Affairs, OECD, Paris, 2009, Available at <http://www.oecd.org/dataoecd/38/63/444445750.pdf>.
- *Vertical Mergers: Background Note*. Competition Committee, Directorate for Financial and Enterprise Affairs, OECD, Paris, 2007. Available at <http://www.oecd.org/dataoecd/25/49/39891031.pdf>.
- *An Evaluation of Traditional and Incentive Regulation for Canadian Natural Gas Pipelines*. (with Robert Mansell) Study submitted to, and available from, the National Energy Board of Canada, 1992.
- *Methodology for Evaluating Natural Gas Transmission System Reliability Levels and Alternatives*. (with Robert Mansell) Study prepared for, and available from, the Canadian Petroleum Association, 1991.

### **Public Regulatory Interventions**

- Submission of The Director of Investigation and Research to Industry Canada re: Canada Gazette Notice No. DGTP-008-95 Review of Canadian Overseas Telecommunications and Specifically Teleglobe Canada's Role October 27, 1995 (with David Smith).
- Reply Comments of The Director of Investigation and Research to Industry Canada re: Canada Gazette Notice No. DGTP-008-95 Review of Canadian Overseas Telecommunications and Specifically Teleglobe Canada's Role December 11, 1995 (with

David Smith).

- Submission of The Director of Investigation and Research to The Canadian Radio-Television and Telecommunications Commissions re: Telecom Notice CRTC 95-36 Implementation of Regulatory Framework, Local Interconnection and Network Component Unbundling January 26, 1996 (with Cal Gundy and Patrick Hughes).
- Final Argument of The Director of Investigation and Research to The Canadian Radio-Television and Telecommunications Commissions re: Telecom Notice CRTC 95-36 Implementation of Regulatory Framework, Local Interconnection and Network Component Unbundling October, 1996 (with Cal Gundy and Patrick Hughes).
- Final Oral Argument of The Director of Investigation and Research to The National Energy Board in PanCanadian Petroleum Limited application dated 26 July 1996 for an order requiring Interprovincial Pipe Line Inc. to transport natural gas liquids for PanCanadian Petroleum Limited from Kerrobert, Saskatchewan (MH-4-96) November 1996 (co-author).
- Opening Statement to the Alberta Utilities and Energy Board in Federated Pipe Lines Ltd. Application to Construct and Operate a Crude Oil Pipeline from Valhalla to Doe Creek, Alberta Energy and Utilities Board March (Decision 98-12) March 1998.
- Final Argument of The Director of Investigation and Research to The Canadian Radio-Television and Telecommunications Commissions re: Telecom Notice CRTC 98-10 Local Competition Start-Up Proceeding November, 1998 (with Cal Gundy).
- *Commissioner of Competition Intellectual Property Enforcement Guidelines*, Hull, Quebec: Competition Bureau. External member Commissioner of Competition's Drafting Team, first draft released in June 1999, second draft released April 2000, final version released September 2000.
- Final Argument of The Commissioner of Competition to The Canadian Radio-Television and Telecommunications Commissions re: Telecom Notice Public Notice 2001-37 - Price Cap Review and Related Issues October 2001 (with Cal Gundy).
- Comments of The Commissioner of Competition to The Canadian Radio-Television and Telecommunications Commissions re: Telecom Notice Public Notice 2001-47 Framework for the expansion of local calling areas and related issues November 2001 (with Cal Gundy and Masood Qureshi).
- Written Comments of the Competition Bureau to the Alberta Electricity Industry Structure Review February 2002 (with David Krause and Mark Ronayne).
- Final Submission of the Commissioner of Competition to the Ontario Energy Board's Natural Gas Forum Consultation on the Ontario Natural Gas Market November 2004 (with Mark Ronayne).

- The Commissioner of Competition Evidence, Final, and Reply Argument, The Canadian Radio-Television and Telecommunications Commissions re: Telecom Notice Public Notice 2005-2, Forbearance from Regulation of Local Exchange Services June, September, and October 2005 (part of the Competition Bureau's drafting team).
- *Market Power and the Mackenzie Gas Project*, Evidence filed before the National Energy Board, Mackenzie Gas Project, GH-1-2004, June 2005.
- The Commissioner of Competition Evidence, Supplementary Material, Final Argument, and Reply Argument, The Canadian Radio-Television and Telecommunications Commissions re: Telecom Notice Public Notice 2006-14, Review of Regulatory Framework for Wholesale Services and Definition of Essential Service 2007 (part of the Competition Bureau's drafting team).
- Commissioner of Competition, *Abuse of Dominance Provisions as applied to the Telecommunications Industry*, Hull, Quebec: Competition Bureau. External member Commissioner of Competition's Drafting Team, first draft released September 2006, final version released June 2008.
- *Foreign Ownership Restrictions of Canadian Telecoms: An Analysis of Industry Canada's Proposals* (with assistance of BRG), re Industry Canada Consultation on Opening Canada's Doors to Foreign Investment in Telecommunications: Options for Reform, July 2010. Available online at [http://www.ic.gc.ca/eic/site/smt-gst.nsf/vwapj/Rogers.pdf/\\$file/Rogers.pdf](http://www.ic.gc.ca/eic/site/smt-gst.nsf/vwapj/Rogers.pdf/$file/Rogers.pdf).
- *Spectrum Policy as Competition Policy: A Good Choice for Canada?* (with assistance of BRG) re Industry Canada Consultation on a Policy and Technical Framework for the 700 MHz Band and Aspects Related to Commercial Mobile Spectrum Gazette Notice SMSE-018-10, February 2011. Available online at [http://www.ic.gc.ca/eic/site/smt-gst.nsf/vwapj/smse-018-10-jeffreychurch-rogers.pdf/\\$FILE/smse-018-10-jeffreychurch-rogers.pdf](http://www.ic.gc.ca/eic/site/smt-gst.nsf/vwapj/smse-018-10-jeffreychurch-rogers.pdf/$FILE/smse-018-10-jeffreychurch-rogers.pdf).
- *Economic Principles and Usage Based Billing*, The Canadian Radio-Television and Telecommunications Commissions re: Telecom Notice of Consultation CRTC 2011-77 Review of billing practices for wholesale residential high-speed access services March 2011. Available online at <https://services.crtc.gc.ca/pub/ListeInterventionList/Documents.aspx?ID=156065&Lang=e>.
- *The Competitive Effects of Vertical Integration: Content and New Distribution Platforms in Canada* (with assistance of BRG), The Canadian Radio-Television and Telecommunications Commissions re: Broadcasting Notice of Consultation CRTC 2010-783 Review of the regulatory framework relating to vertical integration, April 2011. Available online at

- <https://services.crtc.gc.ca/pub/ListeInterventionList/Documents.aspx?ID=156953&Lang=e>  
[Documents.aspx?ID=156065&Lang=e](https://services.crtc.gc.ca/pub/ListeInterventionList/Documents.aspx?ID=156065&Lang=e).
- *In the Matter of a Complaint by Imperial Oil with Respect to Enbridge Southern Lights GP (ESL) Tariffs No. 1 and 2 Expert Evidence* (with assistance of BRG), The National Energy Board, Hearing Order RH-1-2011, July 2011 and *Reply Evidence* September 2011. Available online at <https://www.neb-one.gc.ca/ll-eng/livmlink.exe?func=ll&objId=704264&objAction=browse> and <https://www.neb-one.gc.ca/ll-eng/livmlink.exe?func=ll&objId=718914&objAction=browse>.
  - *Western Alberta Transmission Line Application Evidence of Dr. Jeffrey Church and Mr. John MacCormack*, Application No. 1607067, Proceeding ID 1045, Alberta Utilities Commission, September 2011.
  - *Market Definition and Competitive Effects in Air Freight*, December 22, 2011 and *Reply* August 16, 2012 *Australian Competition & Consumer Commission v. Air New Zealand Limited*, Federal Court of Australia, NSD534/2010.
  - *Critical Transmission Review Committee Request for Information*, Submission of Dr. Jeffrey Church and Mr. John MacCormack, January 2012.
  - *In the Matter of The Ontario Energy Board Act, and in the Matter of an Application By Toronto Hydro- Electric System Limited for an Order Pursuant to Section 29 of The Ontario Energy Board Act, Expert Report of Jeffrey Church*, June 2013. Available online at [http://www.rds.ontarioenergyboard.ca/webdrawer/webdrawer.dll/webdrawer/search/rec?s\\_m\\_udf10=EB-2013-0234&sortd1=rs\\_dateregistered&rows=200](http://www.rds.ontarioenergyboard.ca/webdrawer/webdrawer.dll/webdrawer/search/rec?s_m_udf10=EB-2013-0234&sortd1=rs_dateregistered&rows=200).
  - *Review of Wholesale Services and Policies Expert Report*, The Canadian Radio-Television and Telecommunications Commissions Review of Wholesale Services and Policies Telecom Notice of Consultation 2013-551, January 2014. Attachment 1 to the Intervention of Bell Canada. Available online at <https://services.crtc.gc.ca/pub/ListeInterventionList/Documents.aspx?ID=212344&Lang=e>.
  - *The Competitive Effects of TransAlta's Timing of Discretionary Outages, Expert Report and Reply Report*, Application of the Market Surveillance Administrator File No. 0630, March 2014. Available online at [https://www.auc.ab.ca/eub/dds/eps\\_Query/ProceedingSubmissionSearch.aspx?ProceedingId=3110](https://www.auc.ab.ca/eub/dds/eps_Query/ProceedingSubmissionSearch.aspx?ProceedingId=3110).
  - *Competitive Royalties for Retransmitted Distant Signals in Canada Expert Report and Reply Expert Report*, Copyright Board of Canada, Television Retransmission (2014-2018), 2015.
  - *The Competitive Effects of the Historical Trading Report: A Response to the MSA's*



*Application and Update*, Market Surveillance Administrator Section 51(1)(b) Notice and Application, Alberta Utilities Commission Proceeding 21115, 2016.

### **Public Expert Competition Filings**

- *Expert Report of Jeffrey Church in The Commissioner of Competition v. Visa Canada Corporation and MasterCard International Incorporated*, The Competition Tribunal CT-2010-010, April 2012. Available online at [http://www.ct-tc.gc.ca/CMFiles/CT-2010-010\\_Expert%20Report%20of%20Jeffrey%20Church\\_239\\_45\\_4-10-2012\\_4211.pdf](http://www.ct-tc.gc.ca/CMFiles/CT-2010-010_Expert%20Report%20of%20Jeffrey%20Church_239_45_4-10-2012_4211.pdf)
- *Expert Report of Jeffrey Church in The Commissioner of Competition v. The Toronto Real Estate Board*, The Competition Tribunal CT-2011-003, July 2012. Available online at [http://www.ct-tc.gc.ca/CMFiles/CT-2011-003\\_Expert%20Report%20of%20Jeffrey%20Church\\_202\\_53\\_7-27-2012\\_7764.pdf](http://www.ct-tc.gc.ca/CMFiles/CT-2011-003_Expert%20Report%20of%20Jeffrey%20Church_202_53_7-27-2012_7764.pdf)
- *Expert Report of Jeffrey Church in The Commissioner of Competition v. The Toronto Real Estate Board*, The Competition Tribunal CT-2011-003, May 2015. Available online at [http://www.ct-tc.gc.ca/CMFiles/CT-2011-003\\_Expert%20Report%20of%20Jeffrey%20Church\\_332\\_38\\_6-15-2015\\_4965.pdf](http://www.ct-tc.gc.ca/CMFiles/CT-2011-003_Expert%20Report%20of%20Jeffrey%20Church_332_38_6-15-2015_4965.pdf)

### **Book Reviews**

- *The Political Economy of Pipelines* (by Jeff Makhholm) for *The Energy Journal*, 36, 355-357, 2015.
- *Competition Policy: A Game -Theoretic Perspective* (by Louis Phlips) for *The Economic Journal*, 107, 1590-1592, 1997.

### **Websites**

- *Industrial Organization: A Strategic Approach*. URL: <http://www.econ.ucalgary.ca/iosa/>
- *Industrial Organization: A Strategic Approach Instructor's Manual*. URL: <http://www.econ.ucalgary.ca/iosa/IM/>

### **Research In Progress**

- "Network Externalities, Technological Progress, and Competitive Upgrades." (with Michael Turner) Mimeo, Department of Economics, University of Calgary 2002.
- "Direct and Indirect Strategic Effects: A Taxonomy of Investment Strategies." (with L. Moldovan) Mimeo, Department of Economics, University of Calgary 2006.
- "Exclusive Provision and Standardization in a Two-Sided Market." (with J. Mathewson) Mimeo, Department of Economics, University of Calgary 2009.
- "Asymmetries, Simulation and the Assessment of Input Foreclosure in Vertical Mergers." (with A. Majumdar and M. Baldauf) Mimeo, Department of Economics, University of Calgary 2010.
- "Capacity Constraints in Durable Goods Monopoly: Coase and Hotelling." (with John

- Boyce and Lucia Vojtassak) Working Paper 2012-07, Department of Economics, University of Calgary 2012.
- “The Market Consequences of ‘Mad Cows’.” (with Dan Gordon) Mimeo, Department of Economics, University of Calgary 2014.
  - “Market Power in the Alberta Electric Industry.” (with Richard Kendall-Smith) Mimeo, Department of Economics, University of Calgary 2014.
  - “Residential Wireline Telecommunications Services in Canada: Primary Exchange Services and Broadband.” (with Andrew Wilkins) Working Paper, Department of Economics, University of Calgary, 2014-34, January 2014. Available on line at [http://econ.ucalgary.ca/sites/econ.ucalgary.ca/files/unitis/publications/1-4876092/Wireline\\_Database\\_January\\_2014.pdf](http://econ.ucalgary.ca/sites/econ.ucalgary.ca/files/unitis/publications/1-4876092/Wireline_Database_January_2014.pdf).
  - “Residential Wireline Telecommunications Services in Canada: Primary Exchange Services and Broadband 2015.” (with Andrew Wilkins) Working Paper, Department of Economics, University of Calgary, 2015-07, March 2015. Available on line at [http://econ.ucalgary.ca/sites/econ.ucalgary.ca.manageprofile/files/unitis/publications/1-6291150/DEP\\_Wireline\\_Database\\_2015\\_March\\_25\\_2015.pdf](http://econ.ucalgary.ca/sites/econ.ucalgary.ca.manageprofile/files/unitis/publications/1-6291150/DEP_Wireline_Database_2015_March_25_2015.pdf).

### ***Presentations***

- “*Managing Competition in Local Telecommunications: Regulatory Failure at the CRTC.*” Association Canadian General Counsel Conference , Vancouver, May 2016.
- “Economic Analysis for Merger Review.” CBA Economics and Law Committee, TeleSeminar, March 2016.
- “Where Did My Monopoly Go?” Canadian Association of Managers of Public Utilities Tribunals Annual Conference, Calgary, May 2015.
- “Defining the Public Interest.” Energy and Resources Council, C.D. Howe Institute, Calgary, March 2015.
- “Economic Fundamentals of Abuse of Dominance.” Canadian Bar Association National Competition Law Section Economics & Law and Young Lawyers Committee, TeleSeminar, March 2015.
- “Top 10 Changes That Should be Made to Canadian Competition Law and Institutions,” Canadian Bar Association National Competition Law Section 2014 Annual Competition Law Fall Conference Ottawa, September 2014.
- “Market Power in the Alberta Electric Industry.” Annual Meeting of the Canadian Economics Association, Vancouver, May 2014.
- “To Regulate or Not to Regulate—Is that the Question?” Canadian Bar Association National Competition Law Section Spring Forum, Toronto, May 2014.

- “Vertical Mergers under Canadian Competition Law.” Panel Discussion, Canadian Bar Association National Competition Law Section Mergers Committee, TeleSeminar, March 2014.
- “How Competitive is Canada’s Wireless Sector?” Panel Discussion, International Institute of Communications (Canadian Chapter), Ottawa, November 2013.
- “Presentation to the Critical Transmission Review Committee.” Critical Transmission Review Committee, Calgary, January 2012.
- “Spectrum Policy as Competition Policy.” Workshop on Auction Design and Competition in Canadian Wireless Markets, Centre for Digital Economy, University of Calgary, Ottawa, September 2011.
- “Issues in the Economic Regulation of Pipelines in Canada.” Canada’s Pipeline and Energy Transportation Infrastructure, C.D. Howe Institute, Banff, June 2011.
- “Competition Issues in Network Industries.” Canadian Bar Association National Competition Law Section, Competition Law Spring Forum 2011: Focus on Civil, Toronto, May 2011.
- “Regulatory Governance and the Alberta Integrated Electric System.” 11th Annual Alberta Power Summit, Calgary, November 2010.
- “Asymmetries, Simulation and the Assessment of Input Foreclosure in Vertical Mergers.” Bates White Seventh Annual Antitrust Conference, Washington, D.C., June 2010 and Annual Meeting of the Canadian Economics Association, Ottawa, June 2011.
- “The Competition Act and the Fair Efficient and Open Competition Regulation.” Workshop for the Alberta Utilities Commission, Calgary, April 2010 (with Barry Zalmanowitz).
- “Transmission Policy in Alberta and Bill 50.” School of Public Policy Workshop, Electricity Transmission Policies: Issues and Alternatives, Calgary, October 2009 and the National Energy Board, Calgary, February 2010.
- “Economics of Vertical Mergers.” British Institute for International and Comparative Law, 7th Annual Merger Conference, London, November 2008.
- “Telecommunications in Canada: Market Structure and the State of the Industry.” 2008 Telecommunications Invitational Forum, Landgon Hall, Ontario, April 2008.
- “Cartel Cases Under Section 45: Is Proof of Market Definition the Achilles Heel?” Panelist, Competition, Crime and Punishment, Canadian Bar Association National Competition Law Section Spring Conference, Toronto, April 2008.
- “Forbearance of Local Telecommunications in Canada: One Back, Two Forward?” Telecommunications and Broadcasting Current Regulatory Issues and Policy Insight Communications Conference, Ottawa, April 2007.

- “The Economics of Non-Horizontal Merger Guidelines.” ENCORE Workshop on the Assessment of Non-Horizontal Mergers, The Hague, April 2007.
- “Stumbling Around in No Man’s Land is Dangerous: Competition Policy, the CRTC, and Deregulation of Local Telecom in Canada.” Competition Policy in Regulated Industries: Principles and Exceptions, C.D. Howe Institute Policy Conference, Toronto, November 2006.
- “ Competition in Local Telecommunications in Canada: Grading the CRTC.” Delta Marsh Annual Conference, Department of Economics, University of Manitoba, Winnipeg, October 2006.
- “Grading the CRTC: Forbearance from the Regulation of Retail Local Exchange Services Telecom Decision 2006-15.” part of the Panel on Local Competition at the Annual Meetings of the Canadian Economics Association, Montreal, May 2006.
- “The Interface Between Competition Law and Intellectual Property in Canada: An Uneasy Alliance or Holy War?” Presented at the Canadian Bar Association Annual Fall Conference on Competition Law, Gatineau, November 2005.
- “Game Theory and Industrial Organization: An Introduction.” Competition Tribunal, Knowlton, Quebec, October 2005.
- “The Impact of Vertical and Conglomerate Mergers on Competition: An Overview of the Survey And Implications for Competition Policy.” DG IV European Commission, Brussels, July 2004, UK Competition Commission, London, September 2005, British Institute of International and Comparative Law/Competition Law Forum, Brussels, September 2005 and Conference on Economics in Competition Policy, Ottawa, April 2006.
- “The Economics and Competition Policy of Exclusionary Agreements.” Competition Bureau, Gatineau, April 24-25, 2005.
- “Intellectual Property Issues and Abuse: The IP/Competition Policy Interface in Canada.” 2004 Competition Law and Policy Forum, Langdon Hall, Cambridge, Ontario, April 2004.
- “Efficiencies Gained and Paradise Lost? Or the Inverse? Comments on the Propane Case.” Economics Society of Calgary Seminar Regulation vs. Competition: Different Shades of Grey, Calgary, October 2003.
- “The Economics of Exclusionary Contracts and Abuse of Dominance in Canada” Presented at the Canadian Bar Association Annual Fall Conference on Competition Law, Hull, October 2003.
- “Network Externalities, Technological Progress, and Competitive Upgrades” Presented at PIMS-ASRA Alberta Industrial Organization Conference, Calgary, November 2002.
- Panelist, The Changing Competition Law Landscape, Osler, Hoskin & Harcourt, Calgary,

- June 2002.
- Panelist, Efficiencies in Mergers Under the Competition Act, Annual Meeting of the Canadian Economics Association, Calgary, June 2002.
  - "Specification Issues and Confidence Intervals in Unilateral Price Effects Analysis" Presented at the Annual Meeting of the Canadian Economics Association, Calgary, June 2002.
  - "The Economics and Econometrics of Unilateral Effects Analysis." Competition Bureau, Gatineau, January 7th and 8th, 2002 (with Oral Capps, Jr. and H. Alan Love).
  - "Economics and Antitrust of Network Industries." Competition Bureau, Gatineau, January 2001.
  - "The Economics of Coordinated Effects and Merger Analysis." Presented at the Canadian Bar Association Annual Fall Conference on Competition Law, Ottawa, September 2000.
  - "Network Externalities, Technological Progress, and Competitive Upgrades." Presented at the Annual Meeting of the Canadian Economics Association, Vancouver, June 2000.
  - "Competition Policy for Network Industries." Presented at Centre for the Study of Government and Business New Challenges for Competition Policy Panel, Annual Meeting of the Canadian Economics Association, Vancouver, June 2000.
  - "Applying Antitrust Concepts in IT Industries." Presented at Roundtable on Reassessing the Role of Antitrust in Mega-Mergers and IT Industries Faculty of Law, University of Toronto, June 2000.
  - "The Economics of Electricity Restructuring: The Case of Alberta." Canadian Law and Economics Conference, Toronto, September 1999.
  - "Refusals to License and the IP Guidelines: Abuse of Dominance and Section 32." McMillan Binch Symposium on Intellectual Property Rights and Competition Policy, Toronto, June 1999.
  - "The Economics of Electricity Restructuring: The Alberta Case." presented at Economic Society of Calgary conference Alberta's Electricity Market—Moving Towards Deregulation, Calgary, May 1999.
  - "Competition in Natural Gas Transmission: Implications for Capacity and Entry." presented at Van Horne Institute conference The New World in Gas Transmission: Regulatory Reform and Excess Capacity, Calgary, April 1999.
  - "Bill 27: The Regulatory Framework." presented at Canadian Institute of Resources Law conference on Restructuring Alberta's Electricity System: How will It Work?, Calgary, June 1998.
  - Panelist, Antitrust and Telecommunications, Global Networking '97 Conference, Calgary, June 1997.

- "Network Industries, Intellectual Property Rights, and Competition Policy." presented at Author's Symposium on Competition Policy, Intellectual Property Rights and International Economic Integration, Ottawa, May 1996.
- Panelist, Symposium on Barriers to Entry, Bureau of Competition Policy, Ottawa, March 1995.
- "Branded Ingredient Strategies," presented at the Summer Conference on Industrial Organization, University of British Columbia, Vancouver, August 1994.
- "Equilibrium Foreclosure and Complementary Products," the Annual Meetings of the European Association for Research in Industrial Economics, Tel-Aviv, September 1993, the Annual Meeting of the Canadian Economics Association, Ottawa, June 1993 and the Mini-Conference on Network Economics at Tel Aviv University, July 1992.
- "Competition Policy and the Intercity Passenger Transportation System in Canada," presented at the Van Horne Institute for International Transportation and Regulatory Affairs symposium on *The Final Report of the Royal Commission on National Passenger Transportation*, The University of Calgary, February 1993.
- "Integration, Complementary Products and Variety," presented at the Annual Meeting of the Canadian Economics Association, Prince Edward Island, June 1992 and Telecommunications Research Policy Conference, Solomons Island, MA, September 1991.
- "The Role of Limit Pricing in Sequential Entry Models," presented at the Twenty-Fifth Annual Meeting of the Canadian Economics Association, Kingston, June 1991.
- "Commodity Price Regulation in Canada: A Survey of the Main Issues," presented at the Fifth Annual Regulatory Educational Conference, Canadian Association of Members of Public Utility Tribunals, May 1991.
- "Complementary Network Externalities and Technological Adoption," at the Twenty-Fourth Annual Meeting of the Canadian Economics Association, Victoria, June 1990 and at the Fifteenth Canadian Economic Theory Conference, Vancouver, June 1990.

#### ***Invited Seminars***

- Department of Economics, University of Montreal, June 2011
- Faculty of Commerce and Business Administration, University of British Columbia, April 2002
- Department of Economics, University of Toronto, March 2002
- School of Business & Economics, Wilfred Laurier University March 2002
- Competition Bureau, January 2002
- Department of Economics, University of Laval, April 1996
- Department of Economics, Carleton University, Ottawa, January 1996

- Stern School of Business, New York University, December 1995
- Bureau of Competition Policy, Industry Canada, Ottawa, March 1994
- Department of Economics, Simon Fraser University, November 1992
- Department of Economics, University of Victoria, November 1992
- Department of Economics, University of Toronto, October 1991
- Department of Economics, Queen's University, Kingston, October 1991
- Department of Economics, University of Alberta, February 1990

### ***Refereeing***

American Economic Journal: Microeconomics, American Economic Review, Canadian Journal of Agricultural Economics, Canadian Journal of Economics, Canadian Journal of Political Science, Canadian Public Policy, Canada Research Chairs, C.D. Howe Institute, Econometrica, Energy Journal, European Economic Review, FCAR, Information Economics and Policy, International Economics and Economic Policy, International Economic Review, International Journal of the Economics of Business, International Journal of Industrial Organization, Israel Science Foundation, Journal of Econometrics, Journal of Economic Behavior and Organization, Journal of Economic Education, Journal of Economic Psychology, Journal of Economics, Journal of Economics and Business, Journal of Economics and Management Strategy, Journal of Industrial Economics, Journal of International Economics, Journal of Law, Economics, & Organization, Management Science, Marketing Science, National Science Foundation, RAND Journal of Economics, Journal of Economic Surveys, Review of Industrial Organization, Review of Network Economics, Routledge, SSHRC, University of Cambridge Press.

### ***Professional Service***

- Chair, Canadian Bar Association National Competition Law Section Economics and Law Committee, 2005-2007.
- Vice-Chair Canadian Bar Association National Competition Law Section Economics and Law Committee, 2004-2005.
- Juror, James M. Bocking Memorial Award, Canadian Bar Association National Competition Law Section, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, and 2015.
- Co-Editor, *Journal of Economics & Management Strategy*, 2001-2007.
- Editorial Board, *Canadian Journal of Economics*, 1993-1996.
- Theme Head Economics Sessions and Programme Committee, International Telecommunications Society and the International Council for Computer Education Global Networking '97 Conference, Calgary, June 1997.

- Organizer, Roundtable on Vertical Mergers, Competition Committee, Directorate for Financial and Enterprise Affairs, OECD, Paris, 2007. See <http://www.oecd.org/dataoecd/25/49/39891031.pdf>
- Organizer, Roundtable on Buyer Power, Competition Committee, Directorate for Financial and Enterprise Affairs, OECD, Paris, 2008. See <http://www.oecd.org/dataoecd/38/63/44445750.pdf>
- External Examiner for E. Croft Ph.D., Policy Programme, Faculty of Commerce and Business Administration, University of British Columbia, April 1999, B. Isaacs Ph.D., Department of Economics, Simon Fraser University, May 2000, J. Landa Ph.D., Department of Economics Carleton University, May 2001, J. Latulippe Ph.D, Department of Economics, University of Montreal, June 2011.
- House of Commons Standing Committee on Industry, Science and Technology Roundtable Participant on Competition Policy, December 2001.
- House of Commons Standing Committee on Industry, Science and Technology, Deregulation of Telecommunications, February 2007.

### *Teaching Experience*

#### **Graduate**

- Ph.D. Micro Theory
- Industrial Organization
- Regulatory Economics
- Markets and Public Policy (School of Public Policy)

#### **Undergraduate**

- Regulatory Economics
- Competition Policy
- Honours Micro Theory
- Industrial Organization
- Intermediate Microeconomics

#### **Professional**

- Regulatory economics through the Centre for Regulatory Affairs.
- Principles of Microeconomics, Industrial Organization and Competition Policy for the Competition Bureau.

### *Graduate Student Supervision/Examination*

#### **Completed**

- Supervisor, M. Ec. Programme, Mark Larsen, "Calgary Crossfield Sour Gas: A Case Study in the Costs of Regulation," Department of Economics, University of Calgary, 1993.



- Supervisor, M. A. Programme, George Given, "The Dynamics of Industries Characterized by Complementary Network Externalities," Department of Economics, University of Calgary, 1994.
- Supervisor, M. Ec. Programme, R. Allan Wood, "Subsidies to Municipal Golfers in Calgary, AB. ," Department of Economics, University of Calgary, 1995.
- Supervisor, M. A. Programme, Marcy Cochlan, "Branded Ingredient Strategies," Department of Economics, University of Calgary, 1995.
- Supervisor, M. Ec. Programme, Shaun Hatch, "Optimal Pricing and the Allocation of Water Under Uncertainty: A Stochastic Nonlinear Programming Approach," Department of Economics, University of Calgary, 1995.
- Supervisor, M. A. Programme, Denelle Peacey, "Priority Pricing," Department of Economics, University of Calgary, 1995.
- Supervisor, M.A. Programme, Michael Turner, "Analysis of Product Upgrades in Computer Software," Department of Economics, University of Calgary, 1999.
- Supervisor, M.A. Programme, Kurtis Hildebrandt, "Market Dominance and Innovation in Computer Software Markets," Department of Economics, University of Calgary, 1999.
- Supervisor, M.A. Programme, Alex Harris, "Optimal Multiproduct Tolling on an Oil Pipeline," Department of Economics, University of Calgary, 2000.
- Supervisor, M.A. Programme, Noelle Bacalso, "Conceptual Hazards Associated with Power Purchase Arrangements," Department of Economics, University of Calgary, 2000.
- Supervisor, M.A. Programme, Laura Jolles, "Antitrust Logit Model," Department of Economics, University of Calgary, 2005.
- Supervisor, M.A. Programme, Mohamed Amery, "The Procurement of Ancillary Services in Alberta," Department of Economics, University of Calgary, 2007.
- Supervisor, M.A. Programme, Graham Thomson, "Optimal Price Cap Regulation," Department of Economics, University of Calgary, 2008
- Supervisor, M. A. Programme, Kevin Wipond, "Market Power in the Alberta Electrical Industry," Department of Economics, University of Calgary, 2008.
- Supervisor, M.A. Programme, Nicholas Janota, "Introducing Competition into Regulated Network Industries: From Hierarchies to Markets in Canada's Railroad Industry," Department of Economics, University of Calgary, 2009.
- Supervisor, M.A. Programme, Cory Temple, "A Beggars' Banquet? Copyright, Compensation Alternatives, and Music in the Digital Economy," Department of Economics, University of Calgary, 2010.
- Supervisor, M.A. Programme, Susan Baker, "Loyalty Programs: A Review of the Competition Commissioner versus Canada Pipe Case," Department of Economics,

- University of Calgary, 2011.
- Supervisor, M.A. Programme, Michael Ata, “A Bayesian Approach to Antitrust Liability: Exclusive Dealing and Predation,” Department of Economics, University of Calgary, 2011.
  - Supervisor, M.A. Programme, Richard Kendall-Smith, “An Analysis of Market Power in the Alberta Electricity Market ,” Department of Economics, University of Calgary, 2013.
  - Supervisor, M.A. Programme, Grant Freudenthaler, “The Implications of Uniform Pricing in Restructured Electricity Wholesale Markets: Evidence from Alberta,” Department of Economics, University of Calgary, 2016.
  - Supervisor, Master of Public Policy Programme, Jennifer Rumas, “Economic Evaluation of Wind Power in Alberta,” School of Public Policy, University of Calgary, 2012.
  - Supervisor, Ph.D. Programme, David Krause, "Internalizing Network Externalities," Department of Economics, University of Calgary, 2002.
  - Supervisor, Ph.D. Programme, Hongru Tan, "The welfare implication of lifting the no surcharge rule in credit card markets," Department of Economics, University of Calgary, 2016.
  - Supervisory Committee, Ph.D. Programme, Lucia Vojtassak, “Equilibrium Concepts in Exhaustible Resource Economics.” Department of Economics, University of Calgary, 2006.
  - Examination Committee Member, M. Ec. Programme, Murray Sondergard, "An Examination of the Efficient Markets Hypothesis for the Toronto Stock Exchange," Department of Economics, University of Calgary, 1992.
  - Examination Committee Member, M.A. Programme, Denise Froese, "Auctioning Private Use of Public Land," Department of Economics, University of Calgary, 1993.
  - Examination Committee Member, M.Ec. Programme, Merrill Whitney, "Economic Espionage as a Form of Strategic Trade Policy" Department of Economics, University of Calgary, 1994.
  - Examination Committee Member, M.Ec. Programme, Robert Richardson, "North-South Disputes Over IPRs" Department of Economics, University of Calgary, 1994.
  - Examination Committee Member, M. Ec. Programme, Eva Cudmore, "The Viability of New Entry into the Alberta Electrical Generation Industry," Department of Economics, University of Calgary, 1997.
  - Examination Committee Member, M. A.. Programme, Geok (Suzy) Tan, Course Based M.A, Department of Economics, University of Calgary, 1997.
  - Examination Committee Member, M.A. Programme, Kris Aksomitis, "Strategic Behaviour in the Alberta Electricity Market," Department of Economics, University of

Calgary, 2002.

**Current**

- Supervisor, Ph.D. Programme, Michael Ata, Department of Economics, University of Calgary.
- Supervisor, M.A. Programme, Lars Renborg, Department of Economics, University of Calgary.

***University Service***

- University Research Grants Committee 1994/95
- Dean's Academic Appointment Committee, Department of Mathematics and Statistics 2001
- ISEEE Tier II Chair in Energy and Climate Change Search Committee 2005/06
- Faculty of Social Sciences Academic Program Review Committee 2000/01
- Faculty of Social Sciences Executive Council 2002/03
- Department of Economics, Ad Hoc Outreach Committee 2001/02
- Curriculum Fellow, Department of Economics, 2001
- Department of Economics Representative on Van Horne Institute Sub-Committee on Centre for Regulatory Affairs 1997/98
- Department of Economics Advisory Committee 1997/98 and 2013/14
- Department of Economics Undergraduate Curriculum Committee 1993/94, 1994/95, 1996/97, 1997/98, 1999/00, 2000/01, 2001/02, 2010/11
- Department of Economics Honours Advisor 1992/93, 1993/94, 1994/95, 2006/07
- Department of Economics Hiring Committee 1990/91, 1991/92, 1994/95, 1998/99, 1999/00, 2002/03, 2003/04, 2004/05, 2005/06, 2015/2016
- Department of Economics Computer Committee 1992/93, 1993/94, 1996/97, and 1997/98
- Department of Economics Ph.D. Ad Hoc Committee 1990/91 and 1992/93
- Department of Economics Ad Hoc Committee on the Status of Women 1991/92
- Department of Economics Striking Committee 1991/92
- Department of Economics Guest Lecturers Committee 1990/91 and 1991/92
- Department of Economics Graduate Curriculum Committee 1989/90
- Department of Economics Library Coordinator 2006/07
- Department of Economics Graduate Studies Committee 2007/08 and 2008/09
- Department of Economics Fund Raising Coordinator 2006/07, 2007/08, 2008/09, 2012/13 and 2013/14
- Department of Economics Microeconomics Coordinator 2013/14, 2014/2015, 2015/2016
- University of Calgary Appointment Appeals Committees 2008
- Haskayne School of Business, Academic Appointment Review Committee 2007/08,

2008/09

- Haskayne School of Business, Advisory Decanal Selection Committee for the Dean, 2012/2013
- Haskayne School of Business, Senior Recruiting for Finance, 2013/14
- Haskayne School of Business, Recruiting for Accounting, 2014/15
- General Promotions Committee, University of Calgary 2008/2009, 2010/2011

### ***Consulting Experience***

President of Church Economic Consultants Ltd., for whom I have written consulting reports and provided advice on issues in regulatory and antitrust economics for a number of companies and agencies, including the Alberta Beef Producers, Apotex, Australian Competition and Consumer Commission, Bell Canada Enterprises, Bayer CropScience, BC Ferries, BP Canada Energy Company, the Canadian Association of Petroleum Producers, the Canadian Cattlemen's Association, the Canadian Competition Bureau, The Coca-Cola Company, The Conference Board of Canada, Enbridge Pipelines, ENMAX, EPCOR, European Commission, Foothills Pipelines, Google Inc., James Richardson International Limited, Mackenzie Explorers Group, Maple Leaf Foods, Market Surveillance Administrator Alberta, MasterCard, Microcell, Nokia, Nova Gas Transmission, OECD Competition Division, Pacific Gas & Electric, Pan Alberta Gas, PanCanadian Petroleum, Peace Pipe Line, Perimeter Transportation, Rogers Communications, Superior Propane, Toronto Hydro-Electric System, Toronto Real Estate Board, TransAlta, TransCanada Pipelines, Williams Energy, Visa, and eight major motion picture film studios.

### ***Other***

- 3M National Coaching Certification Program Level 1 Softball January 2002
- 3M National Coaching Certification Program Coach Level Hockey November 2002
- 3M National Coaching Certification Program Level 1 Baseball September 2003