

**William O. Harper**

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Mr. Harper has over 35 years experience in the design of rates and the regulation of electricity utilities. While employed by Ontario Hydro, he has testified as an expert witness on rates before the Ontario Energy Board from 1988 to 1995, and before the Ontario Environmental Assessment Board. He was responsible for the regulatory policy framework for Ontario municipal electric utilities and for the regulatory review of utility submissions from 1989 to 1995. Mr. Harper also coordinated the participation of Ontario Hydro (and its successor company Ontario Hydro Services Company) in major public reviews involving Committees of the Ontario Legislature, the Ontario Energy Board and the Macdonald Committee. He has served as a speaker on rate and regulatory issues for seminars sponsored by the APPA, MEA, EPRI, CEA, AMPCO and the Society of Management Accountants of Ontario. Since joining ECS, Mr. Harper has provided consulting support for client interventions on energy and telecommunications issues before the Ontario Energy Board, Manitoba Public Utilities Board, Québec's Régie de l'énergie, British Columbia Utilities Commission, Saskatchewan Rate Review Panel and CRTC. He has also appeared before the Manitoba's Public Utilities Board, the Manitoba Clean Environment Commission, the Ontario Energy Board and Quebec's Régie de l'énergie.

**EXPERIENCE**

**Econalysis Consulting Services – Associate  
August 2011 - Present**

**Econalysis Consulting Services- Senior Consultant  
July 2000 to July 2011**

- Responsible for supporting client interventions in regulatory proceedings, including issues analyses & strategic direction, preparation of interrogatories, participation in settlement conferences, preparation of evidence and appearance as expert witness (where indicated by an asterix). Some of the more significant proceedings included:
  - Electricity (Ontario)
    - IMO 2000 Fees (OEB)
    - Hydro One Remote Communities Rate Application 2002-2004
    - OEB Transmission System Code Review (2003)
    - OEB Distribution Service Area Amendments (2003)
    - OEB Regulated Asset Recovery (2004)
    - OEB- 2006 Electricity Rate Handbook Proceeding\*
    - 2006 Rate Applications by Various Electricity Distributors

- OEB - 2006 Guidelines for Regulation of Prescribed Generation Assets
  - 2007 Rate Applications by Various Electricity Distributors
  - OEB - 2007 Cost of Capital and 2<sup>nd</sup> Generation Incentive Regulation Proceeding
  - Hydro One Networks 2007/2008 Transmission Rate Application
  - 2008 Rate Applications by Various Electricity Distributors
  - OEB – Cost of Capital for Ontario’s Regulated Utilities (2009)
  - Hydro One Networks 2009/2010 Transmission Rate Application
  - 2009 Rate Applications by Various Electricity Distributors
  - 2010 Rate Applications by Various Electricity Distributors
  - Hydro One Networks 2011/2012 Transmission Rate Application
  - 2011 Rate Applications by Various Electricity Distributors
  - 2012 Rate Applications by Various Electricity Distributors
  - OEB – 2012 Renewed Regulatory Framework for Electricity Distributors
  - Hydro One Networks 2013/2014 Transmission Rate Application
  - 2013 Rate Applications by Various Electricity Distributors
  - 2014 Rate Applications of Various Electricity Distributors
  - OEB Residential Rate Design Policy (2014)
  - 2015 Rate Applications for Various Electricity Distributors
  - Hydro One Networks 2015/2016 Transmission Rate Application
  - 2016 Rate Applications of Various Electricity Distributors
  - Hydro One Networks 2017/18 Transmission Rate Application
  - Hydro One SSM (formerly Great Lakes Power Transmission) 2017 Rate Application
  - 2017 Rate Applications for Various Electricity Distributors
- Electricity (British Columbia)
    - BC Hydro IPP By-Pass Rates
    - BC Hydro Heritage Contract Proposals
    - BC Hydro’s 2004/05 & 2005/06; 2006/07 & 2007/08; 2008/09 & 2009/10; 2010/2011; 2011/12-2013/14 and 2016/17 – 2018/19 Revenue Requirement Applications
    - BC Hydro’s CFT for Vancouver Island Generation – 2004
    - BC Hydro’s 2005 Resource Expenditure and Acquisition Plan
    - BC Hydro’s 2006 Residential Time of Use Rate Experiment Application
    - BC Hydro’s 2006 Integrated Electricity Plan
    - BC Hydro’s 2007 Rate Design Application
    - BC Hydro’s 2008 Residential Inclining Block Rate Application
    - BC Hydro’s 2008 Long Term Acquisition Plan
    - BC Hydro’s 2009 GS Rate Design Application
    - BC Hydro/Fortis BC 2013 Purchase Power Agreement
    - BC Hydro 2013 Residential Inclining Block Rate Re-Pricing
    - BC Hydro’s 2015 Rate Design (and Cost of Service) Application
    - BC Transmission Corporation – Open Access Transmission Tariff Application -2004

- BCTC's 2005/06; 2006/07, 2008/10 and 2010/2011 Revenue Requirement Applications
- BCTC's – 2005 Vancouver Island Transmission Reinforcement Project
- BCTC's – 2007 Interior-Lower Mainland Transmission Application
- BCTC's 2009-2018 Capital Plan
- BCTC's 2011 Capital Plan Update
- Fortis BC's 2005 Revenue Requirement and System Development Application
- Fortis BC's 2006; 2007, 2008, 2009, 2010, 2011, 2012 and 2013 Revenue Requirement Applications
- Fortis BC's 2007/08 and 2009/10 Capital Plan and System Development Plans
- FortisBC's 2007 Rate Design Application
- Fortis BC's 2009 Cost Allocation and Rate Design Application
- Fortis BC's 2011 Residential Inclining Block Rate Application
- Fortis BC's 2011 Capital Plan
- FortisBC's 2012 Integrated System Plan Review
- BCUC - 2012 Generic Cost of Capital Review
- FortisBC's 2014-2018 PBR Plan and Annual Reviews
- FortisBC 2016 Long Term Energy Resource and Demand-Side Management Plan
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- Electricity (Quebec)
  - Hydro Québec - Distribution's 2002-2011 Supply Plan\*
  - Hydro Quebec - Distribution's 2002-2003 Cost of Service and Cost Allocation Methodology\*
  - Hydro Québec - Distribution's 2004-2005 Tariff Application\*
  - Hydro Québec - Distribution's 2005/2006 Tariff Application\*
  - Hydro Québec - Distribution's 2005-2014 Supply Plan\*
  - Hydro Québec - Distribution's 2006/2007 Tariff Application\*
  - Hydro Québec - Transmission's 2005 Tariff Application\*
  - Hydro Québec - Distribution's 2006 Interruptible Tariff Application
  - Hydro Québec - Distribution's 2006 Cost Allocation Work Group
  - Hydro-Québec - Transmission's 2007 Tariff Application
  - Hydro-Québec - Distribution's 2007/08 Tariff Application\*
  - Hydro-Québec - Transmission's 2008 Tariff Application
  - Hydro-Québec - Distribution's 2008/09 Tariff Application\*
  - Hydro Québec - Distribution's 2008-2017 Supply Plan
  - Hydro-Québec - Transmission's 2009 Tariff Application
  - Hydro-Québec - Distribution's 2009/10 Tariff Application\*
  - Hydro Québec - Distribution's 2014-2023 Supply Plan
- Electricity (Manitoba)
  - Manitoba Hydro's Status Update Re: Acquisition of Centra Gas Manitoba Inc.\*
  - Manitoba Hydro's Diesel 2003/04 Rate Application
  - Manitoba Hydro's 2004/05 and 2005/06 Rate Application\*

- Manitoba Hydro/NCN NFAAT Submission re: Wuskwatim\*
- Manitoba Hydro's 2005 Cost of Service Methodology Submission\*
- Manitoba Hydro's 2007 Rate Adjustment Application
- Manitoba Hydro's 2008 General Rate Application\*
- Manitoba Hydro's 2008 Energy Intensive Industry Rate Application
- Manitoba Hydro's 2009 Rate Adjustment Application
- Manitoba Hydro's 2010-2012 General Rate Application
- Manitoba Hydro's 2010 and 2011 Diesel Community Rate Applications
- Manitoba Hydro's 2013-2014 General Rate Application
- Manitoba Hydro's 2013 NFAAT Submission re: Keeyask and Conawapa\*
- Manitoba Hydro's 2015-2016 General Rate Application
- Manitoba Hydro's 2016 Interim Rate Application
- Manitoba Hydro's 2015 Cost of Service Methodology Review\*
  
- Electricity (Saskatchewan)
  - Saskatchewan Power's 2008 Cost Allocation Methodology Review
  
- Natural Gas Distribution
  - Enbridge Consumers Gas 2001 Rates
  - BC Centra Gas Rate Design and Proposed 2003-2005 Revenue Requirement
  - Terasen Gas (Vancouver Island) LNG Storage Project (2004)
  - BCUC – 2012 Generic Cost of Capital Proceeding
  
- Telecommunications Sector
  - Access to In-Building Wire (CRTC)
  - Extended Area Service (CRTC)
  - Regulatory Framework for Small Telecoms (CRTC)
  
- Other
  - Acted as Case Manager in the preparation of Hydro One Networks' 2001-2003 Distribution Rate Application
  - Supported the implementation of OPG's Transition Rate Option program prior to Open Access in Ontario
  - Prepared Client Studies on various issues including:
    - The implications of the 2000/2001 natural gas price changes on natural gas use forecasting methodologies.
    - The separation of electricity transmission and distribution businesses in Ontario.
    - The business requirements for Ontario transmission owners/operators.
    - Various issues associated with electricity supply/distribution in remote First Nations' communities
  - Member of the OEB's 2004 Regulated Price Plan Working Group
  - Member of the OEB's 2005/06 Cost Allocation Technical Advisory Team
  - Member of the OEB's 2008 3<sup>rd</sup> Generation Incentive Regulation Working Group

- Member of the IESO Technical Panel (April 2004 to April 2010)
- Member of the OEB's 2011 Cost Allocation Working Group
- Member of the OEB's 2012 Network Investment Planning Work Group
- Member of the OEB's 2012 Defining and Measuring Performance (4<sup>th</sup> Generation Incentive Regulation) Work Group
- Member of the OEB's Unmetered Load Cost Allocation Working Group (2012-2015)
- Member of the OEB's 2013 Reliability Work Group
- Member of the OEB's 2013 Standby Rate Working Group
- Member of the OEB's 2015 Residential Rate Design Working Group
- Member of the OEB's 2016 Pole Access Charge Working Group
- Member of the OEB's 2016 Regional Planning and Cost Allocation Working Group

### **Hydro One Networks**

#### **Manager - Regulatory Integration, Regulatory and Stakeholder Affairs (April 1999 to June 2000)**

- Supervised professional and administrative staff with responsibility for:
  - providing regulatory research and advice in support of regulatory applications and business initiatives;
  - ensuring regulatory requirements and strategies are integrated into business planning and other Corporate processes;
  - providing case management services in support of specific regulatory applications.
- Acting Manager, Distribution Regulation since September 1999 with responsibility for:
  - coordinating the preparation of applications for OEB approval of changes to existing rate orders; sales of assets and the acquisition of other distribution utilities;
  - providing input to the Ontario Energy Board's emerging proposals with respect to the licences, codes and rate setting practices setting the regulatory framework for Ontario's electricity distribution utilities;
  - acting as liaison with Board staff on regulatory issues and provide regulatory input on business decisions affecting Hydro One Networks' distribution business.
- Supported the preparation and review before the OEB of Hydro One Networks' Application for 1999-2000 transmission and distribution rates.

### **Ontario Hydro**

#### **Team Leader, Public Hearings, Executive Services (Apr. 1995 to Apr. 1999)**

- Supervised professional and admin staff responsible for managing Ontario Hydro's participation in specific public hearings and review processes.
- Directly involved in the coordination of Ontario Hydro's rate submissions to the Ontario Energy Board in 1995 and 1996, as well as Ontario Hydro's input to the Macdonald Committee on Electric Industry Restructuring and the Corporation's

appearance before Committees of the Ontario Legislature dealing with Industry Restructuring and Nuclear Performance.

**Manager – Rates, Energy Services and Environment (June 1993 to Apr. 95)**

**Manager – Rate Structures Department, Programs and Support Division  
(February 1989 to June 1993)**

- Supervised a professional staff with responsibility for:
  - Developing Corporate rate setting policies;
  - Designing rates structures for application by retail customers of Ontario Hydro and the municipal utilities;
  - Developing rates for distributors and for the sale of power to Hydro's direct industrial customers and supporting their review before the Ontario Energy Board;
  - Maintaining a policy framework for the execution of Hydro's regulation of municipal electric utilities;
  - Reviewing and recommending for approval, as appropriate, municipal electric utility submissions regarding rates and other financial matters;
  - Collecting and reporting on the annual financial and operating results of municipal electric utilities.
- Responsible for the development and implementation of Surplus Power, Real Time Pricing, and Back Up Power pricing options for large industrial customers.
- Appeared as an expert witness on rates before the Ontario Energy Board and other regulatory tribunals.

**Section Head – Rate Structures, Rates Department**

**November 1987 to February 1989**

- With a professional staff of eight responsibilities included:
  - Developing rate setting policies and designing rate structures for application to retail customers of municipal electric utilities and Ontario Hydro;
  - Designing rates for municipal utilities and direct industrial customers and supporting their review before the Ontario Energy Board.
- Participated in the implementation of time of use rates, including the development of retail rate setting guidelines for utilities; training sessions for Hydro staff and customers presentations.
- Testified before the OEB on rate-related matters.

**Superintendent – Rate Economics, Rates and Strategic Conservation Department**

**February 1986 to November 1987**

- Supervised a Section of professional staff with responsibility for:
  - Developing rate concepts for application to Ontario Hydro's customers, including incentive and time of use rates;
  - Maintaining the Branch's Net Revenue analysis capability then used for screening marketing initiatives;

- Providing support and guidance in the application of Hydro's existing rate structures and supporting Hydro's annual rate hearing.

**Power Costing/Senior Power Costing Analyst, Financial Policy Department  
April 1980 to February 1986**

- Duties included:
  - Conducting studies on various cost allocation issues and preparing recommendations on revisions to cost of power policies and procedures;
  - Providing advice and guidance to Ontario Hydro personnel and external groups on the interpretation and application of cost of power policies;
  - Preparing reports for senior management and presentation to the Ontario Energy Board.
- Participated in the development of a new costing and pricing system for Ontario Hydro. Main area of work included policies for the time differentiation of rates.

**Ontario Ministry of Energy  
Economist, Strategic Planning and Analysis Group  
April 1975 to April 1980**

- Participated in the development of energy demand forecasting models for the province of Ontario, particularly industrial energy demand and Ontario Hydro's demand for primary fuels.
- Assisted in the preparation of Ministry publications and presentations on Ontario's energy supply/demand outlook.
- Acted as an economic and financial advisor in support of Ministry programs, particularly those concerning Ontario Hydro.

**EDUCATION**

**Master of Applied Science – Management Science**

- University of Waterloo, 1975
- Major in Applied Economics with a minor in Operations Research
- Ontario Graduate Scholarship, 1974

**Honours Bachelor of Science**

- University of Toronto, 1973
- Major in Mathematics and Economics
- Alumni Scholarship in Economics, 1972



## **Pelino Colaiacovo, Managing Director**

### **Professional Profile**

- Well-known participant in the Ontario electricity sector
- Deep understanding of the Canadian utilities, energy, infrastructure and greentech sectors
- Over 20 years of experience in investment banking, government, corporate strategy, policy development, consulting

### **Professional Experience**

August 2005 – Present                                      Managing Director, MPA Morrison Park Advisors Inc.

- MPA is an employee-owned independent investment bank focusing on mergers & acquisitions, capital raising, and other strategic advisory services to public and private companies, as well as governments, crown corporations, regulators and not-for-profit enterprises (note that MPA's name pre-2007 was Energy Fundamentals Group)
- As Managing Director and Shareholder, responsibilities include marketing, client origination, transaction analysis, senior counsel, and transaction execution

October 2003 – August 2005                              Chief of Staff, Office of the Ontario Minister of Energy

- Most senior advisor to the Minister
- Managed Minister's staff of 12

July 1993 – October 2003                                  Various Positions, GPC International

- Consulting firm providing policy analysis, government relations, public affairs, public relations, corporate communications and management consulting services
- Positions held in Toronto, Ottawa and Washington DC
- Progress from junior consultant to Vice President and Practice Leader
- As Practice Leader, managed both a permanent team, as well as flexible multidisciplinary teams for individual client campaigns

### **Education**

1993                              Bachelor of Laws, University of Toronto

1990                              Honours Bachelor of Arts, University of Toronto (International Relations and Economics)

## Detailed Experience

August 2005 – Present

Managing Director, MPA Morrison Park Advisors Inc.

- Focus on utility and energy sector clients, and to a lesser extent on infrastructure projects, crown corporations, and greentech (MPA also covers mining, technology, real estate and public company M&A)
- Advisor to the Alberta Electric System Operator: Capital market consequences of transition to Coal Exit and Capacity Market
- Financial Advisor to PowerStream in its merger with Horizon Utilities, Enersource and Hydro One Brampton to create Alectra Utilities
- Expert Witness for and consultant to the Public Utilities Board of Manitoba: Commercial valuation of Manitoba Hydro's multi-billion dollar plan to build new hydroelectric facilities and export-focused transmission lines
- Expert Witness for and consultant to the Nova Scotia Public Utilities Board: Commercial valuation of the proposed Maritime Link interprovincial electricity transmission line
- Report to the Market Surveillance Administrator of Alberta on the commercial viability of new electricity generation facilities in the Alberta competitive electricity market
- Advisor to British Columbia Transmission Co (now part of BC Hydro) with respect to proposed new transmission lines to the United States and Alberta
- Financial Advisor to the City of Toronto with respect to the sale of the City's minority interest in Enwave
- Financial Advisor to the City of Toronto with respect to the proposed financing for and development of the Tower Renewal energy conservation program
- Numerous assignments as financial advisor to electricity distribution companies with respect to financial valuations, strategic reviews and mergers & acquisition opportunities (e.g., Milton Hydro, Oshawa PUC, Woodstock Hydro, Enwin Utilities, Oakville Hydro, Hydro One)
- Numerous assignments as financial advisor to buyers and sellers of renewable energy generation assets (wind, solar and hydroelectric) and district energy facilities
- Numerous assignments as financial advisor to project developers raising capital for new energy and infrastructure projects, and/or bidding into competitive procurement processes
- Energy policy and strategy advisor to the Ontario Energy Association
- Typically, clients are Boards of Directors of public companies, or senior management of private companies or government entities
- Numerous presentations before City Councils, utility regulators, and other public bodies
- Speeches and appearances at energy conferences and roundtables, guest lectures at university courses on energy policy and utility regulation, expert opinion resource for media

October 2003 – August 2005

Chief of Staff, Office of the Ontario Minister of Energy

- Principal political and policy advisor to the Minister
- Primary liaison with the Office of the Premier and with the public service
- Managed Minister's staff of 12
- Final decision-maker for the Minister's public communication and stakeholder interaction

- Key accomplishments included:
  - Restructuring of the Ontario electricity sector through the passage of Bills 11 and 100
  - Development of a detailed plan to retire Ontario's coal-fired electricity generation fleet
  - Development of a smart metering strategy for Ontario
  - Creation of the Ontario Power Authority, selection of Board, appointment of CEO
  - New Board and senior management for Ontario Power Generation, new Board for the Independent Electricity System Operator
  - Review and approval of proposed refurbishment of Pickering A 1 nuclear unit
  - Negotiation of Bruce A nuclear refurbishment
  - Successful Requests For Proposals for new renewable energy facilities, and new gas-fired electricity generation plants

July 1993 – October 2003

Various Positions, GPC International

- Vice President and Corporate Practice Group Leader, Toronto
- Vice President responsible for integration of acquired offices in the United States, including Boston and Washington DC
- Senior Consultant, Ottawa
- Consultant, Toronto
- Focus on regulated sectors of the economy, including energy, transportation, media, healthcare and finance
- Leader of multi-disciplinary public affairs projects including policy development, government relations, media relations, stakeholder communications and polling
- Management consultant for large national and multi-national corporations with respect to public affairs

## SUMMARY OF QUALIFICATIONS

Engineering leader with 25 years of professional experience in electrical and power engineering. He was recently the leader of a large asset management division with responsibilities for planning, smart grid engineering, reliability analysis, system studies, record management, data quality, mobility and GIS improvements where he has been recognized for transforming an existing older culture of engineering practice to a dynamic powerhouse of technical innovation and knowledge. Strong technical background in transmission and distribution engineering with leadership in innovation of asset management principles with specific focus on smart grid planning. One of the founders of the Health Index Methodology in utility asset condition assessment and has lead the comprehensive implementation of a risk based investment methodology at a major utility. In his previous consulting career, he has had experience with over 30 well known electrical power companies around the world. He is intimately familiar with Ontario Electricity Board's filing requirements for electricity distribution applications and has direct hands on experience in preparing Distribution System Plans for a number of local distribution companies in OEB prescribed formats during the past 2 years. In his previous role at Toronto Hydro he played a leading role for the Asset Management part of the company's rate filings from 2007 - 2012.

## CAREER HISTORY

### Education

#### University of Iceland, Reykjavik, Iceland

- B.Sc. Electrical Engineer, 1988

#### University of British Columbia, Vancouver

- M.A.Sc. Electrical Engineering, 1990

### Professional Associations

Licensed Professional Engineer, Ontario, Canada

The Icelandic Chartered Engineers—Member

The Icelandic Society of Electrical Engineers

- Member
- President 1993–1994

Institute of Electrical and Electronics Engineers (IEEE)—Senior Member

### Since Sept 2012

#### Partner and CEO, METSCO Energy Solutions Inc.

Managing projects and leading engineering teams in research and developmental projects in Smart Grid and Asset Planning. Projects include:

- Development of Risk Based AM models for Portland General Electric
- Development of Risk Based AM models for distribution system of EPCOR in Edmonton
- Development of Maintenance Optimization Model for Toronto Hydro
- Development of Asset Condition Guides for CEATI International on distribution and transmission assets

- Planning Development and Consulting for Several Utilities in Ontario and elsewhere to support their Rate Filing Requirements including Distribution System Plans, utilities include Whitby Hydro, North Bay Hydro, Guelph Hydro, Entegrus Powerlines and Hydro Ottawa
- Development of a risk based models for Underground Cables and Overhead Conductors for ENMAX in Calgary
- Various Planning and Engineering projects for Medicine Hat Utilities (Both Electric and Gas Utilities) including an Asset Management Plan
- Smart Grid Workshop for Mongolian Power Sector via World Bank

**July 2007 to  
August 2012**

### **Manager of System Reliability Planning, Toronto Hydro**

Director level position leading an engineering division consisting of seven sub-departments with total staff of about 90. Reporting directly to the VP of Asset Management.

Played a major and leadership role in the following operational aspects:

- Regulatory rate filing leadership for asset management plans (Capital and O&M), witness assistant for Ontario Energy Board rate filing in 2007, proposed witness for 2009, 2010 and 2011, 3-year filing for the years of 2012-2014 submitted successfully with a long term distribution system plan based on risk based methodology implemented. Participation in Technical Conferences at the OEB.
- Asset management decision support tools and methods development including a full implementation of asset health assessment and risk based investment planning methodology
- Smart Grid development and related asset deployment (feeder automation, transformer smart metering and asset analytics)
- Reliability analysis and reporting of KPIs, program development for systemic and specific improvements.
- System studies and engineering analysis on urban system configurations, contingency improvements and secondary networks.
- Introduced and lead PAS-55 project implementation.
- Record management for Enterprise Asset Systems, including Geographical Information Systems. Managed Data Quality experts to analyze databases and develop improvement projects to transform data into quality information.

### **2005 to Dec. 2006 Principal Engineer and Asset Management Lead, Kinectrics Inc**

Participated as a lead consultant and/or project manager on asset management projects (specifically for asset strategy, asset condition assessment, maintenance management and decision models), for

generating and T&D assets in North America and Europe. Through these projects, provided deliverables to support increased system and asset knowledge providing tools and methods for timely decision-making and better performance.

- Project Manager for a condition and risk assessment project for Powerstream's Station Transformers
- Health Index and risk expert for an asset analysis of Hydro Turbines for Hydro OGK of Russia.
- Project Manager for an asset management project with ENMAX of Calgary. This involved a comprehensive review of ENMAX's asset management strategies and decision making processes and resulted in the development of an action plan for development and implementation of a decision support system to objectively measure and monitor the health of major assets, evaluate failure risks and determine optimal level of investments to mitigate risks.
- Project Manager for condition and risk assessment of Exelon's large autotransformers.
- Health index lead for a condition assessment project for Toronto Hydro in relation to their regulatory application.
- Kinectrics Project Lead on a condition and risk assessment project for Yakutenergo of the Russian Federation. Project involves assessment of selected asset groups and determining a short and long term investment plan for the sustainability of the asset base.
- Project Manager on a Research and Development project for CEA Technologies of Canada, developing a health index tool for power transformers.
- Project Manager for an asset management project with Hydro Ottawa Limited. Project scope was to suggest to and assist Hydro Ottawa Limited in building a complete asset management framework for the company taking into consideration current regulatory environment, best practices, reliability centered maintenance and Hydro Ottawa's corporate values.

## **2002 to 2005**

### **Senior Supervising Engineer, Acres International**

Responsible for the Asset Management product line within Acres' Transmission and Distribution Division. Project responsibilities included:

- On-site Team Leader and Manager of Client Relations for the asset condition assessment project for Hydro One Networks Inc. Coordinated data mining and analysis, and document production. The project involved an audit of processes and tools/techniques in use by the client, evaluation of actual condition of assets through Health Indices using historical test and survey data, and preparation of the final report documenting the condition of all T&D assets.

- Project Manager for condition assessment of all distribution assets at Hydro One Networks. This project was an update of a previous project undertaken in 2002.
- Project Lead for condition assessment of distribution assets at NYPA. Moses Hydroelectric Station in NY, USA.
- Deputy Project Manager for an asset condition assessment project for British Columbia Transmission Corporation. The project's scope was to develop an asset health measurement system and to undertake the development of a baseline condition assessment of BC Hydro's transmission system equipment. This allowed BCTC to implement an asset condition assessment system and methodology to objectively measure the health and condition of all BC Hydro's transmission system assets on a periodic basis.
- Asset Management Lead for the UMS Group in assisting the Federal Grid Company of Russia in a major liberalization process. The project involved assistance to executive management in organizing and shaping business processes of the company. Role included identifying the company's current asset management processes, such as for asset strategy, investment planning, maintenance planning and work management, recommending best-practice processes applicable to the company, identifying the gaps between the two and suggesting an implementation methodology with a journey map. The Federal Grid Company was then a newly formed transmission grid company of Russia and had staff of approximately 40,000.
- Project Engineer for asset condition assessment project, focused on substations owned by Newfoundland and Labrador Hydro.
- Project Engineer for asset condition assessment project, focused on two transmission lines owned by Yukon Energy.

**2001 to 2002****President, 21sta Inc., Iceland**

Principal of a consulting firm providing services to the restructured power industry in Iceland. Assignments included:

- Analysis of effects of deregulation on the Iceland State Electricity Company looking at current operations and favored international pricing schemes. Factors considered include capital investments and depreciation, operation and maintenance costs, and Transmission and Distribution losses.
- Research and reporting on distributed generation as seen from the distributing business looking at Icelandic considerations.

**2000 to 2001****Director of Innovation, L4 Solutions, Philadelphia, Pennsylvania**

Directed the development of web-based executive decision tools for the transmission and distribution business assisting in investment analysis, asset management, resource allocation, regulatory advising, business scenario analysis, environment and safety analysis, benchmark comparisons,

performance targeting, and management overview. Techniques and tools were designed to harness information from the client's existing systems and databases.

**1990 to 2000****Technical Manager, Iceland State Electricity, Iceland**

Management of engineering and technical staff, including approximately 20 persons, responsible for operation and investment in North-Eastern Iceland for the utility.

Construction supervision of

- Design and installation of a total of 250 km of 11-kV underground cable
- Design and construction of a total of 50 km of 11-kV line
- Design and refurbishment of Thorshofn 33-kV substation
- Refurbishment of Olafsjordur-Skeidsfoss 33-kV line
- Design and refurbishment of Husavik 22-kV substation
- Design and construction of new Arskogur 33-kV substation
- Refurbishment of Dalvik-Arskogur 33-kV line
- Design and installation of a 55-km, 33-kV underground cable, Kopasker-Bruarland
- Design and refurbishment of Kopasker 66-kV substation
- Design and refurbishment of Rangarvellir 66-kV substation
- Design and refurbishment of Bruarland 33-kV substation
- Design and refurbishment of Raufarhofn 33-kV substation.

Chairman of committee for the design and implementation of standardization in design, materials and operational procedures. Standards published included 33-kV and 11-kV lines design and materials, 33/11-kV line-to-cable design and materials, 11-kV distribution transformer stations, 11/66-kV splices and line connections, 11/66-kV cable connections, 11/132-kV surge arresters, and road lighting. All standards were published and officially implemented with an extensive program of courses and training.

**Selected  
Technical  
Publications and  
Presentations**

*Smart Grid and Asset Management*

Smart Grid Conference India, January 2013, New Delhi, India

*Grid Modernization Tools*

Transmission and Distribution Smart Grids Asia 2011, Thailand, January 2012

*Addressing Risk Associated With Aging Infrastructure*

Asset Management Conference – Toronto, October 2011



*Management when Planning for Data Management Solutions in T&D*  
3rd National Smart Grids Forum for Australia, September 2011

*Asset Management and Smart Grid Data*  
Smart Grid News - Web Conference (on YouTube) –, December 2010

*Sustainment Actions Take a New Direction*  
Cover Story: Transmission & Distribution World, October 2010 Issue

*Asset Management Planning Methodology*  
EEI Conference – Transmission, Distribution and Metering, Denver, 2010

*Smart Grid Implementation*  
CEATI Investment Planning Workshop, Toronto, ON, 2010

*Future Challenges for Urban Electrical Companies*  
EUCI Conference on Asset Management, Vancouver, BC, 2009

*2 presentations on Asset Management: Planning Tools and RCM  
Maintenance*  
Mexican Distribution Utility Conference, Guadalajara, Mexico, 2008

*Feeder Investment Model Planning*  
EUCI Conference on Asset Management, St. Louis, USA, 2008

*Smart Grid Vision at Toronto Hydro*  
EUCI Conference on Smart Grid, Toronto, ON, 2008

*Aging Infrastructure: Health and Risk Assessment*  
ENARD/CIREC Conference, Vienna, Austria, 2007

*Asset Management and Sustainment of Power Transformers*  
Weidman Conference, Albuquerque, New Mexico, 2006

*Principles of Asset Management and Framework for Decisions*  
Mexican Distribution Utility Conference, Monterrey, Mexico, 2006

*Program for Asset Management using condition and risk*  
Hydro OGK Conference, Moscow, Russia, 2006

*Predicting Future Asset Condition based on Current Health Index and  
Maintenance Level*  
IEEE ESMO Conference, Albuquerque, New Mexico, 2006

*Deriving Asset Probabilities of Failure: Effect of Condition and Maintenance  
Levels*  
IEEE General Meeting, Montreal, Canada, 2006

*Health Indices for Distribution Asset Condition Assessment*  
Distributech Conference, San Diego, USA, 2005

*Health Indices for Substation Asset Condition Assessment*  
EDIST Conference, Markham, Ontario, Canada, 2004

*Development of Health Indices for Asset Condition Assessment*  
IEEE-PES T&D Conference, Dallas, Texas, 2003.

*Implementation of Underground Cables in Icing Areas*  
International Workshop on Atmospheric Icing on Structures, Reykjavik,  
Iceland, 1998.

*Principles in operation and maintenance of Station Batteries and Chargers*  
Several courses in Iceland 1998-2001

*Reactive Power Compensation in Iceland.*  
Conference on Power System Stability, Reykjavik, Iceland, 1992

*Application of Catastrophe Theory to Voltage Stability Analysis of Power  
Systems*  
Master's Thesis, University of British Columbia, Vancouver, 1990.

## SUMMARY OF QUALIFICATIONS

Alexander Bakulev has over 14 years of experience in delivering asset management solutions and regulatory support across North America. He has developed asset management plans and led regulatory filing procedures with detailed economic justification of the company's operational and capital spending. He has experience leading an operational emergency centre of a large Canadian distribution utility where he led initiatives to realize maximum value out of real-time data management systems. He also understands in detail OEB filing requirements for Distribution System Plan (DSP) submission, reviewed numerous DSP on behalf of the OEB, and has direct experience in preparing DSP to be included in the filing application. He is responsible for the Asset Management practice at METSCO and has led many consulting projects across North America within the practice. Alexander also has excellent project management experience and has led a variety of corporate strategic projects, including business case development, project initiation with detailed planning and budgeting, as well as managing team resources and third party vendors for successful project delivery. With an excellent economics background, Alexander created several unique approaches on the edge of engineering and economic fields for asset management practices in major transmission, distribution, and power generation companies. He graduated from the Saint-Petersburg University, Russia and obtained Ph.D. in Economics at the Graduate School of Management, Saint-Petersburg University.

## CAREER HISTORY

### Education

#### **Saint-Petersburg University, Russia**

- Ph.D in Economics, 2003-2006

#### **Saint-Petersburg State University, Russia**

- Degree in Economics, Graduated with Honors, 2003  
Major: Mathematical Methods of Economics

### Professional Associations

Institute of Electrical and Electronic Engineers (Member)

### Other Training

Mr. Bakulev has participated in training workshops and seminars throughout his career and obtained training in financial analysis, financial modelling, strategy development, project management, time management, staff supervision, and negotiations.

### 2014 to Present

#### **Vice President, Strategy and Assets, METSCO Energy Solutions Inc.**

Responsible for management consulting and risk-based asset management practice

### 2014

#### **Manager, Regulatory Filing, Toronto Hydro**

Responsible for 2015-2019 Regulatory Filing Application for the Ontario Energy Board

### 2012 to 2014

#### **Manager, Power System Planning and Logistics, Toronto Hydro**

Responsible for Corporate-wide Productivity Improvement Program,  
Emergency Dispatch Center

**2010 to 2011**      **Team Leader, Asset Management Long-Term Planning and Strategy, Toronto Hydro**

Responsible for Asset Management plan, Risk-based modelling and justification, Asset Risk Management, Asset Records, and Data Quality

**2008 to 2010**      **Project Leader, Business Automation, Toronto Hydro**

Responsible for development of business cases for strategic initiatives and execution of the strategic projects

**2004 to 2007**      **Project Manager / Consultant, Strategy Partners**

Managed strategic projects - Strategy Development, Financial modelling, Asset Management planning, and Risk-based modelling

**2001 to 2004**      **Consultant, Labrium Consulting**

Financial modelling, Business Plans, Business cases, Business evaluation, and Real-estate evaluation

**Relevant Project Experience**      **Justification of cable replacement project by comparing various timing of replacement for each cable segment and feeder protection schemas (2015-ongoing):**

Mr. Bakulev led the project to analyze the existing cable condition and feeder configuration in specific areas, recommend new design options, and recommend optimal timing for cable replacement and feeder re-configuration to minimize the total life-cycle costs of the system and minimize long-term impact on customer reliability.

**Review of the Distribution System Plans submitted by distribution utilities to support the rate applications on behalf of the Ontario Energy Board (Ontario regulatory agency) (2015):**

Mr. Bakulev reviewed in detail 5-year Distribution System Plans submitted as part of the rate application. The review is performed on behalf of the Ontario Energy Board and includes a preparation of interrogatory questions, provision of expert opinion, and participation in the technical conference and oral hearings. The plans are scrutinized to ensure the compliance to the regulatory guidelines, asset management best practice, and the prudence and need for projects in system renewal, system service, system access, and general plant categories.

**Review of the existing Organizational Structure and implementation of the new structure of a Distribution and Transmission company in Alberta, Canada (2014-2015):**

Mr. Bakulev led the project to analyze the current processes within the company, identify key gaps, provide a new corporate structure optimized

for future strategic needs of the company, and develop and implement the change management plan.

**Development of the business case for the combined plant of a Solar generation and Energy Storage solution (2014-2015):**

Mr. Bakulev developed a business case to justify the investments of the combined Solar and Energy storage plans acting as one solution. The assignment covered a review of the three electricity markets: Ontario, Alberta, and California. Detailed analysis of each of the market services and its impact on the financial outcome of the case was conducted. An optimization algorithm was developed to include real-time market, regulation, and ancillary services opportunities together to analyze the synergies between the solar plant and energy storage as well as financial attractiveness of each of the service. The assignment also included a sensitivity analysis of the key model parameters and their impact on the net present value and payback period of the case.

**Development of the Asset Risk Management Framework, Long-term and Short-term investment and maintenance plans for major distribution asset classes for a Transmission and Distribution company in Alberta, Canada (2014-ongoing):**

Mr. Bakulev developed the Asset Risk Framework model for the Asset Management division as a first phase of the project. The framework included key concepts of asset condition assessment, total life-cycle cost considerations, and risk-based project justification. The roadmap of implementing the asset risk framework was also developed. The second phase included a detailed asset condition assessment, probability of failure, and consequence cost impact for major asset classes including underground cables, poles, transformers, switches, and network vaults. Maintenance programs have been optimized and long-term and short-term plans for each asset class are being developed to minimize the total life cycle cost and impact on the customers.

**Business Case justification for the Regulatory filing application for the Distribution company in Ontario, Canada (2014):**

Mr. Bakulev developed business cases for the asset management plan to be included in the regulatory filing application for rate approvals. The assignment covered the development of the business case template and constructing the business cases for asset replacement, feeder extension, and station expansion projects.

**Smart Grid roadmap development for a Transmission and Distribution company in USA (2014):**

Mr. Bakulev led the project to analyze the current smart grid initiatives carried out by the company and develop a roadmap for the integration of smart grid technologies into the system.

**Regulatory Filing at Toronto Hydro, Canada (2011, 2014):**

Mr. Bakulev led the regulatory filing process in 2014 for the company's rate application for the years 2015 to 2019. Alexander coordinated the filing

process with over 100 subject matter experts, provided project management services, and coordinated internal business expertise to merge the regulatory filing needs with the company's business needs and language. Mr. Bakulev also led the asset management portion of the filing application in 2011 along with the risk-model based justification of the asset investments and long-term asset management plan submission.

**Corporate-wide Productivity Improvement Program at Toronto Hydro (2012-2014):**

Mr. Bakulev led the corporate-wide productivity improvement program that included a detailed econometric benchmarking analysis as well as a process-by-process analysis with identification of key gaps in the productivity. As a result of the program, a list of recommendations was developed and a high-level cost/benefit analysis was conducted for each of the initiatives. A productivity improvement roadmap was developed.

**Development of Risk models for the Asset Management group at Toronto Hydro (2010-2012):**

Mr. Bakulev led the group to further enhance the development of the risk-based modelling techniques used for project justification. Total Cost Ownership criteria was developed and incorporated for a variety of different project types, including in-kind and non-in-kind replacement projects, system improvements, and system expansion projects.

**Development and Execution of the GPS Mobile solution at Toronto Hydro (2008-2010):**

Mr. Bakulev developed a detailed business case to justify the GPS Mobile solution project. Alexander also developed a financial template to be used to justify all corporate projects in the company. He also led the execution of the GPS Mobile solution project for one year, including the budget, scope, and schedule management.

**Development and Implementation of Asset Management Plan for a Distribution company in the Central Region of Russia (2006-2007):**

Mr. Bakulev led the project to develop the Asset Management plan for the company that covers transmission and distribution assets. Review of the existing asset management practice and structure was conducted. The risk models were developed to support the economic justification of the replacement needs of the company. Soft benefits were evaluated and monetary values were assigned to each of the soft benefit to cover the social impact of the asset replacement strategy, including willingness to pay for reliability services, safety, and environmental concerns.

**Implementation of the new Asset Management practice and Review of the Asset Management division structure of the Power company in Far East Russia (2006):**

Alexander led the project to implement new Asset Management practices in the company, closely working with the Chief Technology Officer on the review of the current organizational structure, future vision of the division, needs and gaps assessment, and the development of a new structure. The

project also included an analysis of the current asset management practice compared to the best world practices, as well as the development and implementation of health indices, failure curves, consequence costs, and risk models to justify the company's investments across Generation, Transmission and Distribution assets. Risk models included an economic justification of the asset projects across all the asset classes, using financial concepts of total life-cycle costs, equivalent annualized costs, discounted cash flow analysis, and net present value. The project also included a monetary evaluation of non-financial benefits and risk avoidance such as customer's willingness to pay, safety, and environmental concerns.

**Implementation of the new Asset Management plan for hydro generation turbines in Russia (2006):**

Mr. Bakulev developed the methodology and calculated a long-term investment program using condition and risk assessment model for hydro generation turbines. The fleet included more than 700 turbines across the service territory. Each model identified an optimal strategy for the turbine replacement, by part or as a whole, including the optimal timing for each of the replacement action.

**Development of Financial models for a variety of projects (2003-2007):**

Mr. Bakulev developed numerous financial models to help a number companies with the strategic decision, investment proposals, or business plans. All models included the financial statements: income and cash flow statements and balance sheets. Some examples include:

- Telecommunication, Cellular division strategy;
- Cable TV, Strategic development;
- Food and Beverage manufacturing company, Investment proposal;
- Recreational sector, business evaluation;
- Publishing and Book retail, strategic development and initial public offering;
- Real-estate developer, business evaluation.

**"Financial modelling in MS Excel" course provider (2002-2007):**

Mr. Bakulev provided a 16-hour course at the Graduate School of Management, Saint-Petersburg University, Executive Education. Alexander also provided several training courses in Excel for Strategy Partners such as "Financial Modeling in Excel" and "Risk-analysis in Excel". Mr. Bakulev also developed and delivered a strategic training course for the MBA executive program at the Russian Economic Academy.

## SUMMARY OF QUALIFICATIONS

Dmitry Balashov is an experienced electric utility professional with nearly of decade of experience, spanning government policy development, regulatory filing preparation and defense, utility finance, maintenance and supply chain functions support, and implementation of productivity and performance measurement projects in both the public utility and private sectors. Dmitry's areas of focus include qualitative and quantitative utility benchmarking in the areas of professional front office functions, asset maintenance, supply chain, and back office operations. To date, he contributed his knowledge and passion for regulatory process innovation to over 20 high-profile Ontario Energy Board (OEB) regulatory policy proceedings, and rate applications. Dmitry is currently supplementing his technical expertise with an Executive MBA at University of Toronto's Rotman School of Management, where he concentrates on energy project finance, strategy and operating efficiency. While at Rotman, Dmitry was a Capstone Course Instructor on Utility Productivity for the Full-Time Program Students.

## CAREER HISTORY

### Education

#### **University of British Columbia, Vancouver**

- B.A. Political Science, 2005

#### **Queen's University School of Policy Studies, Kingston**

- MPA, Energy Policy, Trade Policy, 2008

#### **Rotman School of Management, Toronto**

- MBA, General Management, (completing Oct. 2017)

### May 2017 to Present

#### **Senior Associate, Special Projects, METSCO Energy Solutions Inc.**

Providing expert advisory services to select utility and government clients in the areas of economic regulation, asset management, benchmarking and utility sector productivity.

- Conducting studies and preparing expert third-party reports
- Developing and implementing client outreach strategies
- Leading knowledge management exercises

### March 2015 to May 2017

#### **Lead, Regulatory Process and Analytics, Toronto Hydro**

Led a team of legal, finance and policy professionals in preparation and prosecution of applications for regulated tariffs for the largest municipal electric utility in Canada.

- Facilitated the development and implementation of compliance programs in the areas of customer care, operations management and investment coordination and planning.
- Oversaw the research and development of policy advocacy



submissions to the Ontario Energy Board (OEB) in areas of customer care, cost of capital, and reliability.

- Collaborated with internal subject matter experts on development and implementation of business planning process enhancements and productivity programs.
- Supported senior leadership in preparation and delivery of strategic planning and advocacy documents, including executive and Board of Directors briefings.

**May 2013 to  
March 2016**

### **Regulatory Affairs Consultant, Toronto Hydro**

Led research, analysis, planning and drafting of performance measurement, productivity and OM&A evidence for Toronto Hydro's 2015-2019 tariffs application.

- Conducted inter-jurisdictional research and proposed frameworks for CIR ratemaking model and productivity evidence presentation;
- Coordinated preparation, research and drafting of Interrogatory and Undertaking responses on the subjects of productivity, OM&A and performance measurement;
- Coordinated work of four expert working groups tasked with development of complex and strategically significant evidence (Productivity, KPIs, ERP, Operations Support);
- Liaised with Provincial Government officials and OEB staff on a range of ongoing policy consultations, mutual undertakings and logistical matters;

**2011 to 2013**

### **Senior Policy Advisor, Regulatory Affairs and Strategic Policy, Ontario Ministry of Energy.**

Led the Government's analysis of Hydro One's ratemaking strategies, capital investment plans and business planning assumptions. Conducted financial analysis of the impact on the Province's fiscal plan of policies and programs contemplated by Hydro One and Ontario Power Generation.

- Contributed to planning and governance policy development and drafting of the Ontario Electricity System Operator Act, 2012;
- Led options development and advised senior officials on potential changes to content and appearance of consumer electricity bills, and transition to fixed distribution billing;
- Provided strategic analysis of key stakeholder submissions to the Ontario Distribution Sector Review Panel;
- Regularly liaised with Hydro One staff and Executive Officers to

provide the Ministry's feedback on key regulatory and financial issues.

**2008 to 2011****Policy Analyst, Transmission and Distribution Policy, Ontario Ministry of Energy.**

Researched and drafted policy papers, briefing materials, and cabinet submissions on a variety of topics, including network upgrade planning and grid investment incentives.

- Led and supported government consultation activities with the First Nations and Metis communities affected by contemplated energy infrastructure projects;
- Prepared communications documents for senior civil service and political staff to communicate complex concepts in simple and effective manner;
- Conducted analysis of customer rate impacts of anticipated regulatory decisions by the OEB and procurement programs by the Ontario Power Authority (OPA);
- Advised stakeholders on technical issues and legislative/regulatory tools that govern development and approvals of transmission projects;
- Participated in drafting of the Green Energy Act, 2009 and the development of the Ontario Feed-In Tariff grid connection rules.

## SUMMARY OF QUALIFICATIONS

A results-oriented senior engineering and business manager with several years' experience in the utility, industrial and regulatory sectors. Proven record in:

- Leading strategic planning and organizational change;
- Delivering operational excellence in the regulated utility business;
- Leading infrastructure building and asset management initiatives in the current electricity market; and
- Managing the mergers, amalgamations and acquisitions and divestitures (MAADs) process in the Ontario energy regulatory sector.

A successful team builder and team player with an exceptional track record in employee leadership, labour relations and staff development.

## CAREER HISTORY

**February 2005 –  
June 2016  
(July 2009 – June  
2016)**

### **Ontario Energy Board. – Manager, Facilities & Infrastructure Applications**

- led and managed a group of six employees responsible for Leave to Construct, MAADs and other unique or specialized applications (e.g. IESO Fees and Revenue Requirements, East-West Tie Transmission Designation Process);
- advised other Sections on Capital Investment and Distribution System Plan matters;
- advised other Departments on Transmission System Code, Distribution System Code and other engineering/technical matters;
- participated on, and provided technical advice to, various management committees.

Prior to 2009, held various senior roles in Licensing and Facilities Departments. Significant cases managed and led include gas and electricity facility Leave to Construct applications; OPA 2006, 2007 and 2009 Revenue Requirements and Proposed Fees Submissions; Hydro One Bruce-Milton 500 kV Transmission Line Application; and the OPA IPSP Application (a very large, complex case with upwards of 40 cost-eligible intervenors).

**January 2002 –  
January 2005**

### **Independent Consultant**

Provided advice independently to individual clients. Also worked collaboratively with other consulting organizations.

**January 2004-  
January 2005**

### **Independent Contract, Independent Contract**

- Provided M&A advice to a large North American Utility; and
- provided transmission system planning services along with Integrated Resource Planning advice to a municipal government in the Greater Toronto Area.

**April 2003 –  
January 2004**

**Kinectrics, Senior Power Systems Consultant**

Kinectrics was a member of the AEA Technology Group, an organization with a global engineering footprint and more than 20,000 employees. The Kinectrics Business Unit was a Toronto-based company and was established from the former Ontario Hydro Technologies Division. The more than 250 engineers and scientists who made up this group were involved in all aspects of utility and industrial power systems.

- Carried out a feasibility study on transmission and power delivery options for a large mining project in north western Canada; and
- Participated in the development of condition assessment and asset management service offerings for electrical utilities and large industrial customers.

**January 2002 –  
July 2002**

**Acres International, Chief Executive Officer (Acting)  
Oshawa Power & Utilities Corporation**

Acres was a large engineering consulting company with over 1,000 employees and annual revenues in 2002 of nearly \$100M. Acres had a broad engineering and technology presence and carried out assignments in more than 110 countries.

- Led a successful Market Readiness initiative;
- Established two subsidiary companies and prepared a three-year business plan for all companies; and
- Established a balanced scorecard type of management structure and accountability matrix for the entire organization.

**May 2001 –  
January 2002**

**Senior Project Manager**

- Carried out a valuation and condition assessment of the power delivery assets for two medium-sized municipal utilities in Ontario

**1981 – 2001**

**Toronto Hydro**

Toronto Hydro is Canada's largest municipal utility with assets of over \$2.0 Billion and more than 680,000 customers. In addition, Toronto Hydro distributes nearly one quarter of the electricity consumed in Ontario.

**1998 – 2001**

**Vice President, Stations and Engineering Services**

The Stations and Engineering Services Division carried out a variety of technical functions including planning, design, engineering, construction and maintenance. The Division consisted of more than 200 employees who reported through three managers and various supervisors. Total annual budgets (capital and operating) were in excess of \$40M.

Significant achievements include:

- played a significant role in the amalgamation of the six former utilities in Metro Toronto including a resourcing and succession planning strategy for the Electrical Distribution Division;
- sponsored a Team that developed a new capital budget allocation strategy (Asset Management) for Toronto Hydro; and
- coordinated a strategic planning exercise for the Electrical Distribution Division which resulted in a number of departmental and organizational changes.

**1993 – 1998****Manager, Station Planning and Construction**

The Station Planning and Construction Department had responsibility for all substation activities at Toronto Hydro. These activities included planning, design, construction and maintenance. The Department consisted of approximately 100 employees and the total capital and operating budget (in 1998) was approximately \$12M.

Significant achievements include:

- developed and led a revised Safety Program for the Department to achieve the Organization's best accident frequency and severity record for 1996 and 1997;
- reorganized and restructured two departments which were under-performing and achieved significant improvements in efficiency, effectiveness and employee morale; and
- was a key contributor to Toronto Hydro's role in the restructuring of the electricity marketplace and provided significant input to various Market Design Committee initiatives.

**1988 - 1993****Manager, Station Planning and Design**

The Station Planning and Design Department had responsibility for electrical, structural and architectural design activities for all stations, office buildings and service buildings at Toronto Hydro. This Department consisted of more than 60 employees and had capital and operating budget responsibility of approximately \$10M (1993).

Significant achievements include:

- chaired a Committee which selected a location, prepared a conceptual design and retained a builder for a new Service Centre.

**1987 – 1988****Assistant Manager, Distribution Construction****1986 – 1987****Supervisor, Station Construction****1984 – 1987****Supervisor, Station Planning and Design****1981 – 1984****Project Engineer, Station Planning and Design****1978 - 1981****Ontario Hydro, Design and Development Engineer****Toronto Head Office**

At the time, Ontario Hydro was a large, fully integrated provincial utility and a Crown Corporation with more than 25,000 employees and a peak load of more than 20,000 MW.

**1970 - 1978****International Nickel Company of Canada Ltd.****Supervisor, Electrical Protection and Communications****Technical Assistant to the Superintendent of Power****PROFESSIONAL  
QUALIFICATIONS**

- Professional Engineer licensed to practice in Ontario since 1976 (PEO #38877015)
  - Accreditation achieved through Queen's University of Kingston and the (then) Association of Professional Engineers of the Province of Ontario (APEO)

- Member of the Institute of Electrical and Electronics Engineers (IEEE)  
Member # 02216778

**OTHER  
INVOLVEMENT**

Board of Directors and Member of the Audit Committee of a publicly traded company on the Canadian Venture Exchange (DCT.V) from February 2003 to November 2004

# DOUGLAS J. GOTHAM

130 COLONY ROAD • WEST LAFAYETTE, IN 47906 • PHONE  
(765) 463-5390  
WORK PHONE (765) 494-0851 • FAX (765) 494-6298 • EMAIL:  
gotham@purdue.edu

## **PROFESSIONAL EMPLOYMENT**

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August 1992 to present      State Utility Forecasting Group, Purdue  
University, West Lafayette, IN 47907-1293

July 2005 to present              *Director*

November 1998 to July 2005      *Associate Director*

May 1997 to November 1998      *Senior Analyst*

May 1994 to May 1997              *Research Analyst*

August 1992 to May 1994          *Graduate Research Assistant*

The State Utility Forecasting Group (SUGF) is an independent research and analysis group, established by the Indiana General Assembly, funded by the state government through the Indiana Utility Regulatory Commission (IURC), and dedicated to providing forecasts of electricity consumption, production, and prices for eight utilities in the state. SUGF has performed several policy studies for the IURC, analyzing such diverse topics as new construction needs, impacts of environmental regulation, renewable and intermittent resources, demand-side management and load conservation, advanced metering infrastructure, and the impacts of proposed deregulation of Indiana's electricity generation industry on Indiana customers and utilities.

In 2014, SUGF was selected to provide a series of long-term forecasts for the Midcontinent Independent System Operator (MISO). This entails the construction of 15 forecasting models at the individual state level, as well as models to allocate the statewide projections to the MISO Local Resource Zone (LRZ) level and the development of models to determine the peak demand projections at the LRZ and MISO system-wide levels.

The Director is responsible for the daily operation and planning of SUGF; serves as the primary liaison with the IURC, MISO, various stakeholders at the Indiana and MISO levels, press, and other interested parties; is responsible for the preparation of staff reports; prepares and presents regulatory and legislative testimony; supervises the SUGF staff on the development, maintenance, and improvement of various SUGF models; works with various University faculty on the direction of graduate student research; negotiates and writes research proposals; and manages the budgets and expenditures of active research projects.

Previous duties included serving as one of two Indiana delegates and subsequently as an engineering/modeling consultant to the Eastern Interconnection States Planning Council (EISPC), an organization consisting of 39 states, the District of Columbia and various Canadian provinces. EISPC worked with various stakeholders to perform long-term resource planning for the Eastern Interconnection. Additional EISPC responsibilities included serving as head of the Modeling Work Group and as a member of various other work groups, task forces, and teams.

June 1983 to June 1989                      *Nuclear Operator, United States Navy*

Controlled electric power generation and power distribution for a nuclear powered warship. Operated nuclear propulsion plant. Performed preventive and corrective maintenance on electric motors, generators, control panels, and switchgear. Supervised electric maintenance and administrative workcenters. Prepared and delivered training lectures to other nuclear operators.

## **EDUCATION**

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December 1996                      *Doctor of Philosophy*  
 Major Professor: Dr. Gerald T. Heydt  
 Purdue University  
 West Lafayette, IN 47907

December 1993                      *Master of Science in Electrical Engineering*  
 Major Professor: Dr. Gerald T. Heydt  
 Purdue University  
 West Lafayette, IN 47907

May 1992                              *Bachelor of Science in Electrical Engineering*  
 Magna Cum Laude  
 Michigan Technological University  
 Houghton, MI 49934

## **THESES**

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Gotham, D. J. Ph.D. Dissertation. "Flexible AC Transmission Systems in Power Network Analysis and for Power Flow Control," December 1996.

Gotham, D. J. MSEE Thesis. "Automatic Generation Control Response in Power Systems Using Short Term Load Forecasting Information," December 1993.

## **MEMBERSHIPS**

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IEEE (1992-present)	Member Power Engineering Society Journal Article Reviewer
Indiana Energy Conference Planning Committee (2010-present)	Member
Organization of PJM States Independent States' Agencies	



Committee (2012-present)	Member
Indiana Biomass Working Group (2008-2013)	Member
Vectren Energy Efficiency Oversight Board (2006-2012)	Member
Indiana Wind Working Group (2005-2011)	Member
Eastern Interconnection States' Planning Council (2009-2011)	Delegate Reference Workgroup Modeling Workgroup - leader
	Case

### **EXPERT TESTIMONY**

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Indiana General Assembly Regulatory Flexibility Committee and Interim Study Committee on Energy, Utilities, and Telecommunications, annual reporting on the status of renewable energy resources in the state of Indiana and various other SUFG reports, September 2005 - 2016.

Manitoba Public Utilities Board Needs for and Alternatives To (NFAT) proceedings for Manitoba Hydro's proposed hydroelectric expansion, April 2014, regarding Manitoba Hydro's load forecast and export price projections.

Indiana General Assembly Senate Utilities Committee, February 2013, on natural gas prices.

Indiana General Assembly House Commerce Committee, January 2010, on SUFG's forecast.

Indiana General Assembly House Ways and Means Committee, February 2005, on SUFG's forecast.

IURC Cause No. 42145, July 2002, regarding the need for proposed new capacity from both a statewide and individual utility basis, the appropriateness of the type of proposed new capacity, and the adequacy of the bulk transmission system to transfer the output of the proposed new capacity to the customers.

### **CLASSROOM TEACHING EXPERIENCE**

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ECE 432, "Elements of Power System Engineering," Spring semester 2005, Purdue University. Student instructor evaluation score, 3.38 on a 4.0 scale; department average for undergraduate courses, 3.04.

Guest lecturer, IE 590, "Power Systems and Smart Grid," February 2012, Purdue University.

Guest lecturer, V600: Capstone in Public and Environmental Affairs, "Electricity Future," March 2009, School of Public and Environmental Affairs, Indiana University.

Guest lecturer (two weeks), ECE 532, "Computational Methods for Power System Analysis," October 2000, Purdue University.

## **OTHER TEACHING EXPERIENCE**

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Instructor, 2006 - 2016, Advanced Regulatory Studies Programs, Institute of Public Utilities, Michigan State University.

Instructor, 2007 - 2011, 2013 - 2016, Camp NARUC, Institute of Public Utilities, Michigan State University.

Instructor, 2010 - 2011, 2013 - 2014, Grid Schools, Institute of Public Utilities, Michigan State University.

Instructor, 2010 - 2012 Forecasting Workshops/Schools, Institute of Public Utilities, Michigan State University.

Short-course instructor, "Tutorial on Electric Power Systems," October 1993.

Training lecturer, U. S. Navy nuclear operators, USS Arkansas, CGN-41, 1987-1989.

## **SPONSORED RESEARCH**

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"Year 4 Independent Load Forecast for the Midcontinent Independent System Operator (MISO)," Midcontinent Independent System Operator, July 2017 - December 2017, Principal Investigator, \$208,148, pending.

"To Continue the Work of the State Utility Forecasting Group from July 2017 through June 2019," Indiana Utility Regulatory Commission, July 2017 - June 2019, Co-Principal Investigator, project budget \$1,139,653, pending.

"Coal-power plants rejuvenated with biomass: An economic, social, and environmental sustainable transition to clean power," National Institute of Food and Agriculture, April 2017 - March 2021, Co-Principal Investigator, project budget \$492,099.

"To Continue the Work of the State Utility Forecasting Group," Indiana Utility Regulatory Commission, July 2015 - June 2017, Co-Principal Investigator, project budget \$1,389,653.

"A Proposal to Provide Independent Energy and Peak Demand Forecasts to the Midcontinent System Operator (MISO)," Midcontinent Independent System Operator, January 2014 - June 2017, Principal Investigator, \$1,527,055.

"Proposal to Provide Assistance and Expert Testimony to the Need For and Alternatives To (NFAT) Proceeding Regarding Manitoba Hydro's Proposed Keeyask Hydroelectric Facility," Public Interest Law Centre, September 2013 - May 2014, Principal Investigator, \$34,994.

"Proposal to Provide Transmission Engineering Assistance to the Eastern Interconnection States' Planning Council (EISPC)," National Association of Regulatory Utility Commissioners, September 2013 - November 2014, Principal Investigator, \$180,671.

"To Continue the Work of the State Utility Forecasting Group," Indiana Utility Regulatory Commission, July 2013 - June 2015, Co-Principal Investigator, project budget \$1,139,653.

“Assessing the Prospects for Biopower,” U.S. Department of Agriculture Office of the Chief Economist, September 2012 - December 2013, Co-Principal Investigator, project budget \$46,698.

“Proposal to Assist the Eastern Interconnection States’ Planning Council (EISPC) Members with Transmission Planning Services,” National Association of Regulatory Utility Commissioners, February 2011 - August 2013, Principal Investigator, \$152,023.

“To Continue the Work of the State Utility Forecasting Group,” Indiana Utility Regulatory Commission, July 2011 - June 2013, Co-Principal Investigator, project budget \$1,139,653.

“A Proposal to Develop a Statewide Database of Energy Efficiency Efforts in Indiana,” Indiana Office of the Lieutenant Governor, Office of Energy Development, May 2010 - May 2012, Principal Investigator, project budget, \$97,474.

“To Continue the Work of the State Utility Forecasting Group,” Indiana Utility Regulatory Commission, July 2009 - June 2011, Co-Principal Investigator, project budget \$1,298,974.

“Development of a Primer to Aid Rural Utilities in the Evaluation of Renewable Power Opportunities,” U.S. Department of Agriculture Office of the Chief Economist, August 2008 - December 2010, Co-Principal Investigator, project budget \$66,196.

“Long-term Electricity Forecast for the State of Mississippi,” Mississippi Development Authority, July 2008 - December 2008, Principal Investigator, project budget \$17,906.

“To Continue the Work of the State Utility Forecasting Group,” Indiana Utility Regulatory Commission, July 2007 - June 2009, Co-Principal Investigator, project budget \$1,299,166.

“To Continue the Work of the State Utility Forecasting Group,” Indiana Utility Regulatory Commission, July 2005 - June 2007, Co-Principal Investigator, project budget \$1,293,617.

“Economics of Criticality in the Restoration of Energy Infrastructures,” Sandia National Laboratories, August 2004 - September 2005, Principal Investigator, project budget \$8,758.

“Center for Security of Large Scale Systems/Task 5,” P. C. Krause and Associates, Inc./U. S. Army, March 2004 - August 2005, Co-Principal Investigator, personal portion of the task budget \$30,000.

“Enhancing the Operation of Highly Varying Industrial Loads to Increase Electric Reliability, Quality, and Economics,” DOE research program with NIPSCO and Colorado School of Mines, 2000 - 2002, Principal Investigator, Purdue University portion of the project budget \$441,572.

“Costs and Proper Charges for Serving Widely Varying Loads,” Electric Power Research Institute, July 1997 - June 1998, Co-Principal Investigator, total project budget \$61,500.

## **THESIS COMMITTEES**

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Emrah Ozkaya, Doctor of Philosophy, Industrial Engineering, in progress.

Sayanti Mukhopadhyay, Doctor of Philosophy, Civil Engineering, in progress.

Marco Velastegui, Doctor of Philosophy, Agricultural Economics, in progress.

Hyungkwan (James) Kim, Doctor of Philosophy, Agricultural Economics, in progress.

Juan Giraldo, Doctor of Philosophy, Agricultural Economics, "Welfare Impacts of Virtual Trading on Wholesale Electricity Markets," 2017.

Liwei Lu, Doctor of Philosophy, Agricultural Economics, "An Assessment of the Efficacy and Cost of Alternative Carbon Mitigation Policies for the State of Indiana," 2015.

Juan Giraldo, Master of Science, Agricultural Economics, "An Economic Analysis of the Electricity Generation Potential from Biogas Resources in the State of Indiana," 2013.

Clay Davis, Doctor of Philosophy, Agricultural Economics, "Three Essays on the Effect of Wind Generation on Power System Planning and Operations," 2013.

Benjamin Allen, Master of Science, Agricultural Economics, "An Economic and Emissions Analysis of Electricity Generation Using Biomass Feedstock in Co-fired and Direct Fired Facilities," 2011.

Samuel Brown, Master of Science, Agricultural Economics, "Rural Electric Cooperatives' Adoption of Renewable Energy Technologies, 2010.

Devendra Canchi, Doctor of Philosophy, Agricultural Economics, "Financial Transmission Rights Valuation and Auction Structure," 2010.

Monique Fahie, Master of Science, Agricultural Economics, "Cap-and-trade Policy: The Influence on Investments in CO<sub>2</sub> Reducing Technologies in Indiana," 2010.

Suriya Ruangpattana, Doctor of Philosophy, Industrial Engineering, "Analysis of Load Factor for Fuel Diversification," 2010.

Liwei Lu, Master of Science, Agricultural Economics, "Assessment of the Reliability of Indiana's Electricity Generation System," 2009.

Veeradech Siriariyaporn, Doctor of Philosophy, Industrial Engineering, "Reducing the Cost of Serving Uncertain Loads Via the Portfolio of Supply Contracts," 2005.

Ramu Naidoo, Doctor of Philosophy, Industrial Engineering, "Planning Models for Electricity Transmission Network Expansion," 2004.

## **BOOK CHAPTERS**

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Gotham, D. J., Angel, J. R., Pryor, S. C., "Vulnerability of the Electricity and Water Sectors to Climate Change in the Midwest," in the book *Climate change impacts, risks, vulnerability and adaptation in the Midwestern United States*, 2012, Indiana University Press.

## **REFEREED JOURNAL PUBLICATIONS**

---

Lu, L., Preckel, P., Gotham, D., Liu, A., "An Assessment of the Efficacy and Cost of Alternative Carbon Mitigation Policies: Case Study for the State of Indiana," *Energy Policy*, v. 96, pp. 661-672, September 2016.

Davis, C. D., Gotham, D. J., Preckel, P. V., Liu, A., "Determining the Impact of Wind on System Costs via the Temporal Patterns of Load and Wind Generation," *Energy Policy*, v. 60, pp. 122-131, September 2013.

Ruangpattana, S., Preckel, P., Gotham, D., Muthuraman, K., Velastegui, M., Morin, T., Uhan, N., "Diversification of Fuel Costs Accounting for Load Variation," *Energy Policy*, v. 42, pp. 400-408, March 2012.

Sparrow, F. T., Preckel, P. V., Bowen, B. H., Yu, Z., Gotham, D. J., "Regional Electricity Markets and the Cost of Natural Flow Dam Operation," *Energy Systems*, v. 2, No. 3-4, pp.325-357, November 2011.

Gotham, D., Muthuraman, K., Preckel, P., Rardin, R., Ruangpattana, S. "A Load Factor Based Mean-Variance Analysis for Fuel Diversification," *Energy Economics*, v. 31, No. 2, pp. 249-256, March 2009.

Gotham, D. J., Holland, F. D., and Nderitu D. G. "The Projected Impacts of NOx Emissions Reductions on Electricity Prices: A Case Study for the State of Indiana." *Utilities Policy*, v. 9, No. 2, June 2000.

Gotham, D. J. and Heydt G. T. "Power Flow Control in Systems with FACTS Devices." *Journal of Electric Machines and Power Systems*, v. 26, No. 9, pp. 951-962, November 1998.

Gotham, D. J. and Heydt G. T. "Steady State Power Flow Control and Power Flow Studies for Systems with FACTS Devices." *IEEE Transactions on Power Systems*, v. 13, No. 1, pp. 60-65, February 1998.

## **CONFERENCE PROCEEDINGS**

---

Kim, H., Preckel, P., Gotham, D., Eales, J., "Impact Assessment of Time-of-Use Pricing: Evidence from a Natural Experiment in Ontario," Agricultural and Applied Economics Association 2015 Annual Meeting, San Francisco, CA, July 26-28, 2015.

Canchi, D., Preckel, P. V., Gotham, D. J., Sparrow, F. T., "Easy Money in FTR Auctions," Agricultural and Applied Economics Association 2010 Annual Meeting, Denver, CO, July 25-27, 2010.

Lu, L., Preckel, P., and Gotham, D., "Assessment of the Reliability of Indiana's Electricity Generation System," *Proceedings of the 41st Annual North American Power Symposium*, Mississippi State University, Starkville, MS, October 4-6, 2009.

Preckel, P. V., Sparrow, F. T., Bowen, B. H., Yu, Z., Gotham, D. J., "Preserving Low Cost Electricity While Improving the Riverine Environment: Part Two - Model Results," 2009 IEEE Power Engineering Society General Meeting, July 26-30, 2009.

Preckel, P. V., Sparrow, F. T., Bowen, B. H., Yu, Z., Gotham, D. J., Yang, Z., "Preserving Low Cost Electricity While Improving the Riverine Environment: A

Case Study of Ghana's Akosomobo Dam Complex," 2008 IEEE Power Engineering Society General Meeting, July 20-24, 2008.

Ruangpattana, S., Gotham, D., Muthuraman, K., Preckel, P., Rardin, R., "Applying Load Factors to the Mean-Variance Analysis for Fuel Diversification," *The 10th International Conference on Probabilistic Methods Applied to Power Systems (PMAPS 2008)*, May 25-29, 2008, Rincon, PR.

Gotham, D., Muthuraman, K., Rardin, R., Ruangpattana, S., "A Load Factor Based Mean-Variance Analysis for Fuel Diversification," Third Annual Carnegie Mellon Electricity Conference, March 13-14, 2007, Pittsburgh, PA.

Siriariyaporn, V., Sparrow, F. T., Gotham, D. J., "A Two-Stage Stochastic Unit Commitment with Electricity Derivatives," *The Proceedings of the 38<sup>th</sup> Annual North American Power Symposium*, September 17-19, 2006, Carbondale, IL.

Siriariyaporn, V., Sparrow, F. T., Gotham, D. J., "Modeling Power Portfolio with Supply Contracts for Mitigating Risks of Serving Uncertain Demand," *The 9th International Conference on Probabilistic Methods Applied to Power Systems (PMAPS 2006)*, June 11-15, 2006, Stockholm, Sweden.

Siriariyaporn, V., Gotham, D., Sparrow, F. T., "Determining the Incremental Cost to Electric Utilities in Serving Highly Varying Loads," *The Proceedings of the 2<sup>nd</sup> IEEE Conference on Electric Utility Deregulation, Restructuring, and Power Technologies*, v. 2, pp. 580-585, April 5-8, 2004, Hong Kong.

Rardin R. L., Naidoo, R., Ong, C. M., Sparrow, F. T., Gotham, D., Yu, Z., "Multi-Period Electric Transmission Expansion Using AC Power Flow Equations," *Institute for Operations Research and the Management Sciences Annual Meeting (INFORMS)*, October 24-27, 2004, Denver, CO.

Siriariyaporn, V., Gotham, D. J., Kramer, R. A., Sparrow, F. T., "Measuring the Cost of Providing the Regulation Ancillary Service with Highly Varying Loads," *The Proceedings of the 34<sup>th</sup> Annual North American Power Symposium*, October 14-15, 2002, Tempe, AZ.

Nderitu, D. G., Yu, Z., Gotham, D. J., Sparrow, F. T., "Quantifying the Benefits of Distributed Generation in Imperfectly Competitive Electricity Markets," *Proceedings of the Power System 2002 Conference: Impact of Distributed Generation*, March 13-15, 2002, Clemson, SC.

Yu, Z., Sparrow, F. T., Gotham, D. J., Holland, F. D., Nderitu, D. G., Morin, T. L. "The Impact of Transmission on Imperfect Electricity Competition," *Proceedings of the IEEE Power Engineering Society Winter Meeting*, January 27-31, 2002, New York, NY.

Yu, Z., Sparrow, F. T., Gotham, D. J., Holland, F. D., Nderitu, D. G., Morin, T. L. "A Large Oligopoly Competition Model with an Application to the Midwest Electricity Markets," *Proceedings of the IEEE Power Engineering Society Summer Meeting*, July 15-19, 2001, Vancouver, BC.

Yu, Z., Sparrow, F. T., and Gotham, D., "Evaluating the Effect of Mergers on Deregulated Electricity Markets," *Proceedings of the Conference on Large Engineering Systems - Power Engineering, 2001*, July 2001, Halifax, NS.

Yu, Z, Nderitu, D. G., Sparrow, F. T., Gotham, D. J. "Optimal and Reliable Dispatch of Supply and Demand Bids for Competitive Electricity Markets," *Proceedings of the IEEE Power Engineering Society Summer Meeting*, July 16-20, 2000, Seattle, WA.

Sparrow, F. T., Yu, Z., Gotham, D. J., Bowen, B. H., Nderitu, G., Wang, J., Smardo, F. J., Stamber, K. "A Multi-Regional Electricity Trade Study for the Southern African Power Pool," *Proceedings of the American Power Conference, 60<sup>th</sup> Annual Meeting, April 14-16, 1998*, Chicago, IL, Vol. 60, pp. 715-720.

Yu, Z., Sparrow, F. T., Gotham, D. J., Gupta, R. "A Linear Mixed Integer Formulation of Multi-Area Energy Production Simulation with Unconditional Constraints," *Proceedings of the American Power Conference, 59<sup>th</sup> Annual Meeting, April 1-3, 1997*, Chicago, IL, Vol. 59-I, pp. 365-370.

Gotham, D. J. and Heydt G. T. "FACTS Device Models for Power Flow Studies," *The Proceedings of the 27<sup>th</sup> Annual North American Power Symposium, October 2-3, 1995*, Montana State University, Bozeman, MT, pp. 514-519.

Gotham, D. J. and Heydt G. T. "The Response of Systems under AGC Using Load Forecasting Information," *The Proceedings of the 26<sup>th</sup> Annual North American Power Symposium, September 26-27, 1994*, Kansas State University, Manhattan, KS, pp. 508-516.

## **TECHNICAL & STAFF REPORTS**

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Gotham, D. J., Lu, L., Wu, F., Phillips, T. A., Preckel, P. V., and Velastegui, M. A., "2016 MISO Independent Load Forecast," prepared for the Mid-Continent Independent System Operator, November 2016.

Nderitu, D., Song, J., Gotham, D., Lu, L., Mize, D., Phillips, T., Preckel, P., Velastegui, M. and Wu, F., "2016 Indiana Renewable Energy Resources Study," prepared for the Indiana Utility Regulatory Commission and the Interim Study Committee on Energy, Utilities, and Telecommunication of the Indiana General Assembly, September 2016.

Phillips, T., Velastegui, M., Gotham, D., Lu, L., Nderitu, D., Preckel, P., Wu, F., and Mize, D., "Indiana Electricity Projections: The 2015 Forecast," prepared for the Indiana Utility Regulatory Commission, November 2015.

Gotham, D. J., Lu, L., Wu, F., Phillips, T. A., Preckel, P. V., and Velastegui, M. A., "2015 MISO Independent Load Forecast," prepared for the Mid-Continent Independent System Operator, November 2015.

Nderitu, D., Gotham, D., Mize, D., Phillips, T., Preckel, P., Velastegui, M. Wu, F., and Lu, L., "2015 Indiana Renewable Energy Resources Study," prepared for the Indiana Utility Regulatory Commission and the Interim Study Committee on Energy, Utilities, and Telecommunication of the Indiana General Assembly, September 2015.

State Utility Forecasting Group, "Electricity and Natural Gas Price Forecast Methodology 2015," prepared for the Mid-Continent Independent System Operator, July 2015.

State Utility Forecasting Group, "Forecast Band Methodology," prepared for the Mid-Continent Independent System Operator, July 2015.

Hadley, S. W., Gotham, D. J., and Luciani, R. L., "Additional EIPC Study Analysis: Final Report," Oak Ridge National Laboratory report ORNL/TM-2014/480, December 2014.

Gotham, D. J., Phillips, T. A., Velastegui, M. A., Wu, F., Giraldo, J. S., and Preckel, P. V., "2014 MISO Independent Load Forecast," prepared for the Mid-Continent Independent System Operator, November 2014.

Nderitu, D., Gotham, D., Mize, D., Phillips, T., Preckel, P., Velastegui, M. Wu, F., and Young, J., "2014 Indiana Renewable Energy Resources Study," prepared for the Indiana Utility Regulatory Commission and the Regulatory Flexibility Committee of the Indiana General Assembly, September 2014.

State Utility Forecasting Group, "Independent Load Forecast Results," prepared for the Mid-Continent Independent System Operator, September 2014.

State Utility Forecasting Group, "Growth Rates for State Level Forecast Drivers," prepared for the Mid-Continent Independent System Operator, July 2014.

State Utility Forecasting Group, "State Electricity Price Forecasting Model Summary," prepared for the Mid-Continent Independent System Operator, July 2014.

State Utility Forecasting Group, "MISO Allocation Factors: State Level and MISO Local Resource Zone," prepared for the Mid-Continent Independent System Operator, July 2014.

State Utility Forecasting Group, "MISO LRZ Annual Energy to Summer/Winter Peak Demand Conversion Factors," prepared for the Mid-Continent Independent System Operator, July 2014.

Nderitu, D. G., Preckel, P. V., Gotham, D. J., and Dobis, E. A., "Assessment of the National Prospects for Electricity Generation from Biomass," prepared for the US Department of Agriculture, April 2014.

Hadley, S. W. and Gotham, D. J., "Additional EIPC Study Analysis: Interim Report on Medium Priority Topics," Oak Ridge National Laboratory report ORNL/TM-2013/561, March 2014.

Phillips, T., Velastegui, M., Gotham, D., Nderitu, D., Preckel, P., and Mize, D., "Indiana Electricity Projections: The 2013 Forecast," prepared for the Indiana Utility Regulatory Commission, December 2013.

Gotham, D., Nderitu, D., Giraldo, J., Preckel, P., "Natural Gas Market Study," prepared for the Indiana General Assembly and the Indiana Utility Regulatory Commission, November 2013.

Nderitu, D., Carnegie, R., Gotham, D., Preckel, P., Mize, D., Velastegui, M. and Phillips, T., "2013 Indiana Renewable Energy Resources Study," prepared for the Indiana Utility Regulatory Commission and the Regulatory Flexibility Committee of the Indiana General Assembly, September 2013.



Davis, C., Gotham, D., and Preckel, P., "Valuation of Energy Storage with Wind Generation," August 2013.

Giraldo, J., Preckel, P., and Gotham, D., "An Assessment of the Potential for Electricity Generation in Indiana from Biogas Resources," June 2013.

Carnegie, R., Gotham, D., Nderitu, D., and Preckel, P., "Utility Scale Energy Storage Systems: Benefits, Applications, and Technologies," June 2013.

Davis, C., Gotham, D., and Preckel, P., "The Impact of Wind on Electricity Generation Costs in Indiana," June 2013.

Giraldo, J., Gotham, D., Nderitu, D., Preckel, P., and Mize, D., "Fundamentals of Nuclear Power," prepared for the Indiana Utility Regulatory Commission, December 2012.

Nderitu, D., Ozkaya, E., Gotham, D., Preckel, P., Mize, D., Velastegui, M. and Phillips, T., "2012 Indiana Renewable Energy Resources Study," prepared for the Indiana Utility Regulatory Commission and the Regulatory Flexibility Committee of the Indiana General Assembly, September 2012.

State Utility Forecasting Group, "Statewide Database of Energy Efficiency Efforts in Indiana: 2011," prepared for the Indiana Office of Energy Development, June 2012.

Velastegui, M., Gotham, D., Phillips, T., Preckel, P., and Nderitu, D., "The Impacts of Federal Environmental Regulations on Indiana Electricity Prices," prepared for the Indiana Utility Regulatory Commission, January 2012.

State Utility Forecasting Group, "Statewide Database of Energy Efficiency Efforts in Indiana: 2010," prepared for the Indiana Office of Energy Development, January 2012.

Holland, F., Velastegui, M., Gotham, D., Nderitu, D., Preckel, P., Phillips, T., and Mize, D., "Indiana Electricity Projections: The 2011 Forecast," prepared for the Indiana Utility Regulatory Commission, September 2011.

Nderitu, D., Ji, T., Allen, B., Gotham, D., Preckel, P., Mize, D. Holland, F., Velastegui, M. and Phillips, T., "2011 Indiana Renewable Energy Resources Study," prepared for the Indiana Utility Regulatory Commission and the Regulatory Flexibility Committee of the Indiana General Assembly, September 2011.

Brown, S., Nderitu, D., Preckel, P., Gotham, D., and Allen, B., "Renewable Power Opportunities for Rural Communities," prepared for the US Department of Agriculture, April 2011.

Velastegui, M., Gotham, D., Preckel, P., Nderitu, D., and Holland, F., "Wind Generation's Contribution to the Management of Average Cost and Cost Volatility for Indiana," March 2011.

Davis, C., Gotham, D., and Preckel, P., "Determining the Impact of Wind on System Costs via the Temporal Patterns of Load and Wind Generation," March 2011.

Nderitu, D., Allen, B., Gotham, D., Holland, F., Velastegui, M., and Preckel, P., "2010 Indiana Renewable Energy Resources Study," prepared for the Indiana

Utility Regulatory Commission and the Regulatory Flexibility Committee of the Indiana General Assembly, September 2010.

Holland, F., Velastegui, M., Gotham, D., Nderitu, D., and Preckel, P., "Indiana Electricity Projections: The 2009 Forecast," prepared for the Indiana Utility Regulatory Commission, December 2009.

Nderitu, D., Gall, E., Gotham, D., Holland, F., Velastegui, M., and Preckel, P., "2009 Indiana Renewable Energy Resources Study," prepared for the Indiana Utility Regulatory Commission and the Regulatory Flexibility Committee of the Indiana General Assembly, September 2009.

Holland, F., Agarwal, V., Gotham, D., and Preckel P., "Electricity Sales Projections for the State of Mississippi," research report, State Utility Forecasting Group, Purdue University, West Lafayette, Indiana, October 2008.

Nderitu, D., Agrawal, M., Gotham, D., Holland, F., and Preckel, P., "2008 Indiana Renewable Energy Resources Study," prepared for the Indiana Utility Regulatory Commission and the Regulatory Flexibility Committee of the Indiana General Assembly, September 2008.

Gotham, D., Holland, F., Nderitu, D., Preckel, P., Raymond, L., Shively, G., and Yu, Z., "The Projected Impacts of Carbon Dioxide Emissions Reduction Legislation on Electricity Prices in Indiana," February 2008.

Gotham, D., Holland, F., Nderitu, D., Preckel, P., and Yu, Z., "Indiana Electricity Projections: The 2007 Forecast," prepared for the Indiana Utility Regulatory Commission, December 2007.

Gotham, D., Holland, F., Madore, W., Nderitu, D., Preckel, P., and Yu, Z., "2007 Indiana Renewable Energy Resources Study," prepared for the Indiana Utility Regulatory Commission and the Regulatory Flexibility Committee of the Indiana General Assembly, September 2007.

State Utility Forecasting Group, "Energy Trends Report," prepared for the Indiana Utility Regulatory Commission, July 2007.

State Utility Forecasting Group, "Clean Coal Technologies," prepared for the Indiana Utility Regulatory Commission, June 2007.

Gotham, D., Nderitu, D., Facetti, G., Holland, F., Rardin, R., and Yu, Z., "2006 Indiana Renewable Energy Resources Study," prepared for the Indiana Utility Regulatory Commission and the Regulatory Flexibility Committee of the Indiana Legislature, September 2006.

State Utility Forecasting Group, "The Projected Impacts of Mercury Emissions Reductions on Electricity Prices in Indiana," prepared for the Indiana Utility Regulatory Commission and the Indiana Department of Environmental Management, September 2006.

State Utility Forecasting Group, "The Projected Impacts of the Clean Air Interstate Rule on Electricity Prices in Indiana," prepared for the Indiana Utility Regulatory Commission and the Indiana Department of Environmental Management, March 2006.

Rardin, R. L., Gotham, D. J., Holland, F. D., Yu, Z., Nderitu, D. G., and Thomas, A. D., "Indiana Electricity Projections: The 2005 Forecast," prepared for the Indiana Utility Regulatory Commission, December 2005.

Rardin, R. L., Gotham, D. J., Holland, F. D., Yu, Z., Nderitu, D. G., and Thomas, A. D., "Indiana Electricity Projections: The 2005 Forecast Summary," prepared for the Indiana Utility Regulatory Commission, December 2005.

State Utility Forecasting Group, "2005 Indiana Renewable Energy Resources Study," prepared for the Indiana Utility Regulatory Commission and the Regulatory Flexibility Committee of the Indiana Legislature, September 2005.

State Utility Forecasting Group, "Natural Gas Purchase Incentive Regulation and Benchmarking," prepared for the Indiana Utility Regulatory Commission, July 2005.

Stamber, K. L., Boyd, G. A., Flaim, S. J., Folga, S. M., Gotham, D. J., McLamore, M. R., Novak, M. H., Roop, J. M., Rossmann, C. G., Shamsuddin, S. A., and Zeichner, L. M., "Economics in Criticality and Restoration of Energy Infrastructures," Sandia National Laboratory Report SAND 2005-1926, March 2005.

State Utility Forecasting Group, "2004 Indiana Renewable Energy Resources Study," prepared for the Indiana Utility Regulatory Commission and the Regulatory Flexibility Committee of the Indiana Legislature, September 2004.

Bowen, B. H., Holland, F. D., Sparrow, F. T., Rardin, R. L., Gotham, D. J., Yu, Z., Black, A. F., "Expanding the Utilization of Indiana Coals," prepared for the Center for Coal Technology Research, August 2004; revised August 2008.

State Utility Forecasting Group, "Comparison of Distributed Generation Interconnection Rules in California, Delaware, Michigan, New York, Ohio, Texas and Wisconsin," prepared for the Indiana Utility Regulatory Commission, July 2004.

Sparrow, F. T., Gotham, D. J., Nderitu, D. G., and Siriariyaporn, V., "The Economic Impact of Integrating Multiple Distributed Generators into Modern Distribution Systems," Final report prepared for the National Renewable Energy Laboratory and Nisource Energy Technologies, December 2003.

Sparrow, F. T., Gotham, D. J., Holland, F. D., Yu, Z., Nderitu, D. G., Bridwell, P. M., and Green, R. J., "Indiana Electricity Projections: The 2003 Forecast," prepared for the Indiana Utility Regulatory Commission, September 2003.

Sparrow, F. T., Gotham, D. J., Holland, F. D., Yu, Z., Nderitu, D. G., Bridwell, P. M., and Green, R. J., "Indiana Electricity Projections: The 2003 Forecast Summary," prepared for the Indiana Utility Regulatory Commission, September 2003.

Rardin, R., Naidoo, R., Gotham, D., Holland, F., Yu, Z., Nderitu, D. G., and Bridwell, P. M., "2003 Indiana Renewable Energy Resources Study," prepared for the Indiana Utility Regulatory Commission and the Regulatory Flexibility Committee of the Indiana Legislature, September 2003.

State Utility Forecasting Group, "Indiana Natural Gas Modeling System: A Technical Report," prepared for the Indiana Utility Regulatory Commission, June 2003.

State Utility Forecasting Group, "Indiana Electricity Projections: The 2002 Forecast Update," prepared for the Indiana Utility Regulatory Commission, July 2002.

Gotham, D. J., Sparrow, F. T., Siriariyaporn, V., and Nderitu, D. G., Status Report for Year 2 of the Project "Enhancing the Operation of Highly Varying Loads to Increase Electric Reliability, Quality, and Economics," prepared for the U.S. Department of Energy and Northern Indiana Public Service Company, January 2002.

State Utility Forecasting Group, "Sufficiency of Indiana Generating Capacity in NOx Retrofit Outage Periods," prepared for the Indiana Utility Regulatory Commission, November 2001.

Sparrow, F. T., Holland, F. D., Gotham, D. J., Yu, Z., and Bridwell, P. M., "Indiana Electricity Projections: The 2001 Forecast," prepared for the Indiana Utility Regulatory Commission, November 2001.

Sparrow, F. T., Holland, F. D., Gotham, D. J., Yu, Z., and Bridwell, P. M., "Indiana Electricity Projections: The 2001 Forecast Summary," prepared for the Indiana Utility Regulatory Commission, November 2001.

Sparrow, F. T., Gotham, D. J., Holland, F. D., Yu, Z., Nderitu, D. G., and Bridwell, P. M., "Factors Affecting Indiana Electricity Prices in Competitive Markets," prepared for the Indiana Utility Regulatory Commission, November 2001.

Gotham, D. J., Sparrow, F. T., and Siriariyaporn, V., Status Report for Year 1 of the Project "Enhancing the Operation of Highly Varying Loads to Increase Electric Reliability, Quality, and Economics," prepared for the U.S. Department of Energy and Northern Indiana Public Service Company, January 2001.

State Utility Forecasting Group, "The Projected Impacts of NOx Emissions Reductions on Electricity Prices in Indiana," prepared for the Indiana Utility Regulatory Commission and the Indiana Department of Environmental Management, June 2000.

Sparrow, F. T., Holland, F. D., Gotham, D. J., Yu, Z., and Bridwell, P. M., "Indiana Electricity Projections: The 1999 Forecast," prepared for the Indiana Utility Regulatory Commission, October 1999.

Sparrow, F. T., Holland, F. D., Gotham, D. J., Yu, Z., and Bridwell, P. M., "Indiana Electricity Projections: The 1999 Forecast Summary," prepared for the Indiana Utility Regulatory Commission, October 1999.

Sparrow, F. T., Holland, F. D., Gotham, D. J., Yu, Z., and Sanders, P. M., "The Projected Impact of Restructuring on Indiana Electricity Prices: An Interim Report," prepared for the Indiana Utility Regulatory Commission, May 1998.

Robinson, P. B., Sparrow, F. T., and Gotham, D. J., "Wheeling Charges and Loose Power Pools: North American Experience and its Relevance for the

Southern Africa Power Pool,” prepared for the Sixth Joint Plenary Session of the Southern Africa Power Pool Meetings, May 13, 1997, Harare, Zimbabwe.

Sparrow, F. T., Gunel, I., Holland, F. D., Gotham, D. J., Yu, Z., Sanders, P. M., Stamber, K. L., and McKinzie, L. D., “The 1996 Indiana Electricity Projections,” prepared for the Indiana Utility Regulatory Commission,” October 1996.

Sparrow, F. T., Gunel, I., Holland, F. D., Gotham, D. J., Yu, Z., Sanders, P. M., Stamber, K. L., and McKinzie, L. D., “The 1996 Indiana Electricity Projections: An Executive Summary,” prepared for the Indiana Utility Regulatory Commission, October 1996.

Sparrow, F. T., Cearley, R. W., Holland, F. D., McKinzie, L. D., Gotham, D. J., Lee, J. S., and Frye, E., “The 1994 Indiana Electricity Projections,” prepared for the Indiana Utility Regulatory Commission, May 1995.

Sparrow, F. T., Cearley, R. W., Holland, F. D., McKinzie, L. D., Gotham, D. J., Lee, J. S., and Frye, E., “The 1994 Indiana Electricity Projections: Executive Summary,” prepared for the Indiana Utility Regulatory Commission, May 1995.

Alyasin, S., Chung, L., Gotham, D., Hu, D., Kwon, B., Lee, J., Mok, A., Risal, A., and Sasaki, R., “Selected Topics on Demand-Side Management,” TR-EE 94-14. Published by the School of Electrical Engineering, Purdue University, West Lafayette, IN, May 1994.

Sparrow, F. T., Cearley, R. W., Holland, F. D., McKinzie, L. D., Gotham, D. J., and Lee, J. S., “Indiana Electricity Demand: The 1993 Forecast,” prepared for the Indiana Utility Regulatory Commission, June 1993.

Sparrow, F. T., Cearley, R. W., Holland, F. D., McKinzie, L. D., Gotham, D. J., and Lee, J. S., “Indiana Electricity Demand: Technical Appendix,” prepared for the Indiana Utility Regulatory Commission, June 1993.

Sparrow, F. T., Cearley, R. W., Holland, F. D., McKinzie, L. D., Gotham, D. J., and Lee, J. S., “Indiana Electricity Demand: An Executive Summary,” prepared for the Indiana Utility Regulatory Commission, June 1993.

Benedict, E., Collins, T., Gotham, D., Hoffman, S., Karapides, D., Pekarek, S., Ramabhadran, R., “Losses in Electric Power Systems,” TR-EE 92-54. Published by the School of Electrical Engineering, Purdue University, West Lafayette, IN, December 1992.

## **REGULATORY AND CONFERENCE PRESENTATIONS**

---

“Constructing Complex Scenario Analysis by Integrating Probabilistic Analysis,” IRP Contemporary Issues Technical Conference, panel discussion, Indianapolis, IN, April 2017.

“Natural Gas Price Trends,” IRP Contemporary Issues Technical Conference, Indianapolis, IN, April 2017.

“Risk vs. Uncertainty,” IRP Contemporary Issues Technical Conference, Indianapolis, IN, April 2017.

“Constructing Complex Planning Analysis,” IRP Contemporary Issues Technical Conference, panel discussion, Indianapolis, IN, March 2016.

"Indiana Electricity Projections: The 2015 Forecast," Indiana Utility Regulatory Commission, Indianapolis, IN, December 2015.

"Load Forecasting Considerations," IRP Contemporary Issues Technical Conference, Indianapolis, IN, October 2014.

"Indiana Electricity Projections: The 2013 Forecast," Indiana Utility Regulatory Commission, Indianapolis, IN, December 2013.

"The Evolution of Indiana's Supply and Demand for Energy," Indiana Conference on Energy Management, Indianapolis, IN, August 2013.

"Indiana Electricity Projections and Renewable Energy," 2012 Energy & Water Education Conference, Indianapolis, IN, May 2012.

"Indiana Energy Status: A View from 30,000 Feet," Indiana Conference on Energy Management, Indianapolis, IN, June 2010.

"Regional Electricity Forecasting," Michigan Forum on Economic Regulatory Policy, East Lansing, MI, January 2010.

"Indiana Electricity Projections: The 2009 Forecast," Indiana Utility Regulatory Commission, Indianapolis, IN, December 2009.

"Powering the Future: A Forecast of Indiana's Electricity Consumption, Prices and Resource Requirements," Program on Law and State Government Fellowship Symposium, IUPUI Law School, Indianapolis, IN, October 2009.

"History and Functions of the State Utility Forecasting Group," Institute of Public Utilities, 6<sup>th</sup> Commission Executive Management Forum, East Lansing, MI, October 2008.

"Indiana Energy Status," Indiana Conference on Energy Management, Indianapolis, IN, June 2008.

"Impacts of CO2 Restrictions on Indiana Electricity Prices," Indiana Utility Regulatory Commission/Indiana Office of the Consumer Counselor, Indianapolis, IN, April 2008.

"Indiana Electricity Projections: The 2007 Forecast," Indiana Utility Regulatory Commission, Indianapolis, IN, December 2007.

"Indiana Energy Status: A View from 30,000 Feet," Indiana Conference on Energy Management, Indianapolis, IN, July 2007.

"Indiana Energy Status: A View from 30,000 Feet," Indiana Conference on Energy Management, Indianapolis, IN, October 2006.

"Indiana Electricity Projections: The 2005 Forecast," Indiana Utility Regulatory Commission, Indianapolis, IN, January 2006.

"Electricity and Natural Gas Linkages: A Forecasting Perspective," 36th Annual Regulatory Policy Conference, Institute of Public Utilities, Charleston, SC, December 2004.

"Indiana Electricity Projections: The 2003 Forecast," Indiana Utility Regulatory Commission, Indianapolis, IN, September 2003.

"Indiana Natural Gas Modeling System: A Technical Report," the Indiana Utility Regulatory Commission Gas Price Forum, Indianapolis, IN, July 2003.

“Retirements, Repowering and New Construction: The Expected Impact on Coal and Natural Gas Demand,” Indiana Coal Mining Institute Annual Conference, Evansville, IN, May 2002.

“Deregulation of the Electric Utilities: California Comparisons,” Indiana Society of Mining and Reclamation 2001 Technology Transfer Seminar, Jasper, IN, December 2001.

“Indiana’s Current and Future Energy Reserves,” Indiana Energy Summit, Logansport, IN, June 2001.

“The Midwest Electricity Supply Situation,” Wabash Valley Power Authority C & I Symposium, Kendallville, IN, May 2001.

“Midwest Market Power Monitoring,” National Regulatory Research Institute Market Power Conference, Columbus, OH, April 2001.

“SUGF 2000 Studies on Electricity Restructuring,” Indiana Utility Regulatory Commission, Indianapolis, IN, February 2001.

“State Utility Forecasting Group Forecasting Models and Data Requirements,” Indiana Utility Regulatory Commission Reliability Proceeding (Session 5), Indianapolis, IN, October 2000.

“Summer 1999 Forecast,” Indiana Industrial Energy Consumers 1999 Energy Workshop, Indianapolis, IN, May 1999.

“FACTS Device Models for Power Flow Studies,” 27<sup>th</sup> Annual North American Power Symposium, Bozeman, MT, October 1995.

“The Response of Systems under AGC Using Load Forecasting Information,” 26<sup>th</sup> Annual North American Power Symposium, Manhattan, KS, September 1994.

#### **OTHER PRESENTATIONS AND SEMINARS (SINCE 1998)**

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“State Trends, Opportunities, and SUGF Modeling Methodology,” Lugar Center for Renewable Energy Annual Retreat, Indianapolis, IN, January 2017.

“Independent Load Forecast Update,” MISO Planning Advisory Committee Meeting (via teleconference), Metairie, LA, October 2016.

“Independent Load Forecast Workshop,” MISO ILF Stakeholder Workshop #3, Carmel, IN, September 2016.

“Independent Load Forecast Workshop,” MISO ILF Stakeholder Workshop #3, Eagan, MN, July 2016.

“2016 Independent Load Forecast Workshop #2,” MISO ILF Stakeholder Workshop #2, Carmel, IN, April 2016.

“2016 Independent Load Forecast Workshop #1,” MISO ILF Stakeholder Workshop #1, via teleconference, January 2016.

“Independent Load Forecast Update,” MISO Planning Advisory Committee Meeting, Metairie, LA, November 2015.

“What Can the “Water People” Learn from the Electricity Forecasters?” Indiana Water Forum, West Lafayette, IN, November 2015.

“Independent Load Forecast,” MISO Planning Advisory Committee Meeting (via teleconference), Little Rock, AR, October 2015.

“Independent Load Forecast Workshop,” MISO ILF Stakeholder Workshop #4, Carmel, IN, September 2015.

“Indiana’s Electricity Sector,” Indiana Farm Bureau Energy Policy Advisory Group, Indianapolis, IN, July 2015.

“MISO Independent Load Forecast Stakeholder Workshop,” MISO ILF Stakeholder Workshop #3, Eagan, MN, July 2015.

“Effects of Climate Change on the Midwest Electricity Sector, Purdue Climate Change Research Center Lit Club, West Lafayette, In, May 2015.

“Multiple Weather Station Analysis,” MISO ILF Stakeholder Workshop #2, Carmel, IN, April 2015.

“State Econometric Models,” MISO ILF Stakeholder Workshop #2, Carmel, IN, April 2015.

“2015 Independent Load Forecast – Workshop #1,” MISO ILF Stakeholder Workshop #1, Carmel, IN, January 2015.

“Indiana Forecast & Resource Needs,” Indiana Electric Cooperatives Annual Meeting, Indianapolis, IN, December 2014.

“Independent Load Forecast Report,” MISO Planning Advisory Committee Meeting, Carmel, IN, November 2014.

“Indiana Utility Demand & Rates Forecast,” Solar Energy Applications for Agriculture Workshop, Rochester, IN, October 2014.

“Data Mining CO2 Analysis,” with S. Hadley and R. Luciani, Eastern Interconnection States’ Planning Council Meeting, Washington, DC, October 2014.

“Independent Load Forecast Workshop,” MISO ILF Stakeholder Workshop #3, Carmel, IN, September 2014.

“Independent Load Forecast Workshop,” MISO ILF Stakeholder Workshop #2, Carmel, IN, July 2014.

“Econometric Forecasting Overview,” MISO ILF Stakeholder Workshop #1, Carmel, IN, April 2014.

“State Forecasting Models,” MISO ILF Stakeholder Workshop #1, Carmel, IN, April 2014.

“The State Utility Forecasting Group Independent Load Forecasts,” MISO Planning Advisory Committee, Carmel, IN, February 2014; and MISO Supply Adequacy Working Group, Carmel, IN, April 2014.

“Eastern Interconnection Transmission Study: Medium-Priority Topics,” with S. W. Hadley, to the Eastern Interconnection States’ Planning Council Meeting, Naples, FL, March 2014.

“The State Utility Forecasting Group Independent Load Forecasts,” MISO Planning Advisory Committee Meeting, Carmel, IN, February 2014.



“Utility Scale Energy Storage Systems,” University at Buffalo Department of Electrical Engineering and IEEE Buffalo Section, Buffalo, NY, November 2013.

“Indiana Electricity Price Projections,” Indiana Chapter of the International Association of Electrical Inspectors, Lafayette, IN, February 2013.

“Indiana Electricity Projections and Environmental Regulations Study,” Hoosier Energy Board of Directors, French Lick, IN, August 2012.

“SUG Forecasting Model,” Integrated Modeling Workshop, Indianapolis, IN, November 2011.

“Indiana Electricity Projections: The 2011 Forecast,” Indiana Industrial Energy Consumers, Inc., Indianapolis, IN, November 2011; Center for Coal Technology Research Advisory Panel Meeting, South Bend, IN, August 2011.

“Indiana Electricity Industry: Future Needs and Issues,” Indiana University Public Policy Institute Energy and Environment Committee, Indianapolis, IN, December 2010.

“The Economic Downturn - Lessons on the Correlation between Economic Growth and Energy Demand,” Indiana Bar Association Utility Law Spring Seminar, Indianapolis, IN, April 2010.

“Indiana Electricity Projections: The 2009 Forecast,” Center for Coal Technology Research Quarterly Meeting, Indianapolis, IN, March 2010.

“Natural Gas Prices: Past Trends and Future Projections,” Vectren Energy Delivery Trade Ally Meeting, Lafayette, IN, September 2009.

“Impacts of CO<sub>2</sub> Restrictions on Indiana Electricity Prices,” Richmond Power & Light and the Economic Development Corporation of Wayne County, Richmond, IN, May 2009.

“Economics of Clean Coal,” Kazakhstan Visiting Team to Purdue Energy Center, West Lafayette, IN, May 2009.

“Load Forecasting,” Midwest Independent Transmission System Operator Advisory Board, Carmel, IN, March 2009.

“The Transmission Grid: Understanding How It Works to Understand Who Should Pay,” Organization of MISO States Cost Allocation and Regional Planning Workshop, St. Paul, MN, January 2009.

“Renewable Resources,” Purdue Women’s Club, West Lafayette, IN, November 2008.

“Indiana Energy Status and SUG Electricity Projections,” Indiana Chamber of Commerce Energy Roundtable, Indianapolis, IN, August 2008.

“Impacts of CO<sub>2</sub> Restrictions on Indiana Electricity Prices,” Duke Energy/Hoosier Energy/Indiana Municipal Power Agency/Wabash Valley Power Association, Plainfield, IN, April 2008; Indiana Industrial Energy Consumers, Inc., web conference, April 2008.

“Electricity Price Impacts from CO<sub>2</sub> Restrictions,” Indiana Center for Coal Technology Research, Indianapolis, IN, March 2008.

“Energy Forecasting Methods,” Indiana Utility Regulatory Commission/Indiana Office of the Utility Consumer Counselor, Indianapolis, IN, November 2007.

“Indiana Electricity Projections: The 2007 Forecast,” Citizens Action Coalition, Indianapolis, IN, November 2007; Indiana Utility Regulatory Commission staff, Indianapolis, IN, November 2007; Office of the Utility Consumer Counselor, Indianapolis, IN, November 2007; NiSource, Merrillville, IN, November 2007; Indiana Office of Energy and Defense Development, Indianapolis, IN, November 2007; Hoosier Energy, Bloomington, IN, November 2007; Indianapolis Power & Light, Indianapolis, IN, November 2007; Wabash Valley Power Association, Indianapolis, IN, November 2007; Duke Energy, Plainfield, IN, November 2007.

“Current and Future Status of Indiana's Electricity and Natural Gas Industries,” Indiana Chamber of Commerce Energy Committee, Indianapolis, IN, August 2007.

“Climate Change Legislation in the 110th Congress: April 23 Energy Forum hosted by Congressman Buyer,” Social, Economic, and Political Aspects of Energy group of the Energy Center at Discovery Park, Purdue University, West Lafayette, IN, April 2007.

“Future of Electricity: Regional/National,” Wabash Valley Power Association Annual Meeting, West Lafayette, IN, April 2007.

“History and Functions of the State Utility Forecasting Group,” Albanian regulatory delegation, Carmel, IN, October 2006.

“Overview of Indiana’s Electricity and Natural Gas Industries,” Indiana Chamber of Commerce Energy Committee, Indianapolis, IN, August 2006.

“Indiana Renewable Resources,” Hoosier Energy Board of Directors, Vevay, IN, August 2006.

“Indiana Electricity Projections: The 2005 Forecast,” Wabash Valley Power Association, Indianapolis, IN, December 2005; Indianapolis Power & Light, Indianapolis, IN, November 2005; NiSource, Merrillville, IN, November 2005; Citizens Action Coalition, Indianapolis, IN, November 2005; Office of the Utility Consumer Counselor, Indianapolis, IN, November 2005; American Electric Power, West Lafayette, IN, November 2005; Vectren, Evansville, IN, November 2005; and Cinergy, Plainfield, IN, October 2005.

“Status of Indiana's Electricity and Natural Gas Industries,” Indiana Chamber of Commerce Energy Committee, Indianapolis, IN, October 2005.

“Indiana Electric Utility Infrastructure,” Indiana Society of Professional Engineers, Indianapolis, IN, May 2005.

“Indiana Electricity Needs,” League of Women Voters of Greater Lafayette, Lafayette, IN, January 2004.

“Indiana Electricity Projections: The 2003 Forecast,” Indiana Coal Council, Indianapolis, IN, December 2003; Hoosier Energy, West Lafayette, IN, August 2003; Northern Indiana Public Service Company, Merrillville, IN, July 2003; Citizens Action Coalition, Indianapolis, IN, July 2003; American Electric Power, West Lafayette, IN, July 2003; Wabash Valley Power Association, Indianapolis,

IN, July 2003; Cinergy, Plainfield, IN, July 2003; Indiana Department of Commerce Energy & Recycling Division, Indianapolis, IN, July 2003; Indianapolis Power & Light, Indianapolis, IN, July 2003; and Indiana Industrial Energy Consumers, Inc., Indianapolis, IN, July 2003.

“Status of Indiana’s Electricity and Natural Gas Systems,” Indiana Chamber of Commerce Energy Committee, Indianapolis, IN, June 2003.

“The History and Functions of the State Utility Forecasting Group (SUFU),” presented to the Associate Dean for Research, Schools of Engineering, Purdue University, West Lafayette, IN, December 2002.

“State Utility Forecasting Group Modeling and Current Efforts,” presented to delegates of the Economic Community of West African States, West Lafayette, IN, August 2002.

“Research Update: Economic Optimization,” Northern Indiana Public Service Company, Merrillville, IN, March 2002.

“Research Update: Control Allocation,” Northern Indiana Public Service Company, Merrillville, IN, August 2001.

“Factors Affecting Indiana Electricity Prices in (not so?) Competitive Wholesale Markets,” Indiana Industrial Energy Consumers, Inc., Indianapolis, IN, July 2001.

“Can it Happen Here? The California Electricity Crisis and the Situation in the Midwest,” Lafayette Lions Club, West Lafayette, IN, May 2001.

“Can it Happen Here? The California Electricity Crisis and the Situation in the Midwest,” Tecumseh Kiwanis Club, West Lafayette, IN, April 2001.

“Performing the Independent Market Monitor Function for the Midwest Independent Transmission System Operator, Inc.,” Midwest Independent Transmission System Operator, Inc., Indianapolis, IN, February 2001.

“Costs Associated with the Regulation Ancillary Service,” Northern Indiana Public Service Company, Merrillville, IN, February 2001.

“Competitive Electricity Market Prices and Imperfections,” Indiana Industrial Energy Consumers, Inc. annual planning retreat, Fishers, IN, December 2000.

“Midwest Market Monitoring,” Public Utility Commission of Ohio, Columbus, OH, November 2000.

“Policy Implications of Market Power Modeling,” SUFG Market Power Workshop, West Lafayette, IN, January 2000.

“Demand-Side Market Power Modeling,” SUFG Market Power Workshop, West Lafayette, IN, January 2000.

“Indiana Electricity Projections: The 1999 Forecast,” Citizens Action Coalition, Indianapolis, IN, September 1999; Southern Indiana Gas & Electric Company, Evansville, IN, July 1999; American Electric Power Company, Fort Wayne, IN, July 1999; Wabash Valley Power Authority, Indianapolis, IN, July 1999; Indiana Municipal Power Agency, Carmel, IN, July 1999; Northern Indiana Public Service Company, Merrillville, IN, June 1999; Cinergy Corporation, Plainfield,

IN, June 1999; Indianapolis Power & Light Company, Indianapolis, IN, June 1999; and Indiana Utility Regulatory Commission, Indianapolis, IN, April 1999.

"The 1999 State Forecast," Indiana AFL-CIO Executive Board Meeting, Indianapolis, IN, March 1999.

"The Projected Impact of Restructuring on Indiana Power Needs and Prices," Commonwealth Edison Company, Lombard, IL, December 1998.

"Update on Decomposing ACE for Apportioning Regulation and Load Following Costs," Center for the Advanced Control of Energy and Power Systems Industry Advisory Board meeting, Phoenix, AZ, November 1998.

"The Projected Impact of Restructuring on Indiana Power Needs and Prices," Citizens Action Coalition, Indianapolis, IN, November 1998.

"Generation Adequacy and Reliability Measures," Southern African Power Pool training workshop, Capetown, South Africa, July 1998.

"Update on Alleviating Transmission Congestion Using FACTS Devices," ACEPS Industry Advisory Board meeting, Golden, CO, May 1998.

"Alleviating Transmission Congestion Using FACTS Devices," Carnegie Mellon University, Pittsburgh, PA, May 1998.

"Alleviating Transmission Congestion Using FACTS Devices," University of Illinois Urbana-Champaign power systems seminar, Urbana, IL, April 1998.

"Electric Utility Restructuring and its Impact on University Research and Teaching," University of Missouri Rolla, Rolla, MO, March 1998.

"Electric Utility Restructuring and its Impact on University Research and Teaching," University of Minnesota, Minneapolis, MN, March 1998.

"The Projected Impact of Electric Utility Restructuring on Indiana Prices," Midwest Builders Convention, Indianapolis, IN, February 1998.

"Alleviating Transmission Congestion Using FACTS Devices," University of Missouri Rolla power systems seminar, Rolla, MO, February 1998.

"The Projected Impact of Restructuring on Indiana Electricity Prices," Kentucky Public Service Commission, Frankfort, KY, January 1998.

# JANICE COMPTON

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## EMPLOYMENT/AFFILIATIONS

<i>Associate Professor</i> , University of Manitoba	2013-Current
<i>Assistant Professor</i> , University of Manitoba	2006-2013
<i>Visiting Assistant Professor</i> , University of Western Ontario	Spring 2009
<i>Lecturer</i> , University of Manitoba	2005-2006
<i>Fellow</i> , Center for New Institutional Social Sciences, Washington University	2002-2005
<i>Summer Lecturer</i> , Washington University	2002, 2004
<i>Economist</i> , Government of Canada, Ministry of Finance Economic Studies and Policy Analysis Division	1999-2000
<i>Research Analyst</i> , Statistics Canada Labour Force Survey Division Business and Labour Market Analysis Division	1997-1999

## EDUCATION

PhD (Economics) Washington University, St. Louis MO.	2005
Graduate Certificate, New Institutional Social Sciences, Washington University.	2005
M.A. (Economics) Washington University, St. Louis MO.	2001
M.A. (Economics) Dalhousie University, Halifax Canada.	1997
B.A. Honours (Economics) Concordia University, Montreal Canada.	1994

## REFEREED PUBLICATIONS

- The Labor Supply of Military Wives in the United States.” (with Breann Whitby). *Review of Economics of the Household*. November 2016, 1-27.
- Effects of the 2001 Extension of Paid Parental Leave Provisions on Birth Seasonality in Canada.” (with Lindsay Tedds). *Canadian Public Policy*. Vol. 42, No. 1 (February 2016) pp. 65-82.
- Proximity and Coresidence of Adult Children and their Parents: Description and Correlates (with Robert A. Pollak). *Annals of Economics and Statistics*, No. 117-118 (June 2015), pp. 91-114.  
IZA Discussion Paper No. 7431, June 2013.  
Michigan Retirement Research Center Working Paper WP 2009-215.
- Family Proximity and the Labour Force Status of Women in Canada  
*Review of the Economics of the Household*, Vol. 13, No. 2 (June 2015), 323-358. CLSRN Working Paper No. 87, November 2011
- Family Proximity, Childcare and Women’s Labor Force Attachment (with Robert A. Pollak)  
*Journal of Urban Economics*, Vol. 79, No. 1 (January 2014), pp. 72-90. NBER Working Paper No. 17678, December 2011.
- Why are Power Couples Increasingly Located in Large Metropolitan Areas. (with Robert A. Pollak).  
*Journal of Labor Economics*, Vol. 25, No. 3 (July, 2007) 475-512  
NBER Working Paper Series #10918 (November, 2004).

Determinants of Retirement – Does Money Really Matter? Ministry of Finance Canada  
Working Paper #2001-02. (2002) <http://publications.gc.ca/site/eng/102045/publication.html>

Rising Self-Employment in the Midst of High Unemployment: An Empirical Analysis of Recent Developments in Canada. With Zhengxi Lin and Garnet Picot. *Canadian Business Economics* Vol. 7(4), December, 1999.

Entry and Exit Dynamics of Self-Employment in Canada. With Zhengxi Lin and Garnet Picot. *Small Business Economics*. Vol. 15(2), September 2000

### **BOOK CHAPTER**

Compton, Janice (2014) “Intergenerational Households and Proximity” in Family Economics: How Households Impact Markets and Economic Growth Vol. 1, Esther Redmount, ed. , ABC-CLIO. pp. 93-128.  
ISBN:9781440800566

### **CURRENT RESEARCH**

Joint and Survivor Life Expectancy (with Bob Pollak)

Effects of the Tipped Minimum Wage on Occupation Characteristics.

### **OTHER RESEARCH**

The Impact of Single Parent Households on Local Education Financing. (2010)

Why do Smokers Divorce? Time Preference, Assortative Mating and Marital Stability. (2011)

### **RESEARCH IN MEDIA**

Maclean’s: “The Unintended Consequences of Boosting Parental Leave.” April 2016.  
<http://www.macleans.ca/economy/economicanalysis/the-unintended-consequences-of-boosting-parental-leave/>

NYTimes’ The Upshot: “The Typical American lives only 18 miles from Mom.” December 2015.  
<https://www.nytimes.com/interactive/2015/12/24/upshot/24up-family.html?smid=fb-nytimes&smtyp=cur&r=1>

LSE (London School of Economics) Blog: “Living close to mothers or mothers –in-law gives married women with young children greater freedom to work” February 2014  
<http://blogs.lse.ac.uk/usappblog/2014/02/14/mothers-married-women-childcare-labor/>

## CONFERENCE/WORKSHOP PRESENTATIONS

NBER Workshop: Women Working Longer (Cambridge 2015, 2016)  
Michigan Retirement Research Centre Workshop (Ann Arbor 2009, 2010, 2016)  
Canadian Economics Association Meetings (Ottawa 1998, Vancouver 2000, Ottawa 2003, Montreal 2006, Halifax 2007, Toronto 2009, Quebec City, 2010, Toronto 2015, Ottawa 2016)  
University of Guelph, Workshop on Gender Wage Gap (Guelph 2015)  
ASSA Meetings (San Diego 2013)  
Atlantic Canada Economics Association Meetings (Halifax 2012)  
NBER Labor Studies Workshop (Cambridge 2011)  
CLSRN Conference (Vancouver 2011)  
Southern Economics Association Meetings (Atlanta 2010)  
John Deutsche Conference: Economic Relations Between Children and Parents (Kingston 2010)  
SOLE: Society of Labor Economics Meetings (Boston 2009)  
European Society for Population Economics (Seville 2009)  
PAA: Population Association of America Meetings (Boston 2004, New Orleans 2008)  
NBER Cohort Studies Workshop (Los Angeles 2008)  
Econometric Society Meetings (Philadelphia 2005)  
Midwest Economics Association Meetings (St. Louis 2003, Chicago 2004)

## INVITED SEMINARS

UQAM (2014), University of Calgary (2011); North Dakota State University (2010); Washington University in St. Louis (2010), University of Winnipeg (2009), University of Western Ontario (2009), University of Manitoba (2008), University of Alberta (2006), University of Waterloo (2005), Monash University (2005), Washington College (2005), Mathematica (2005).

## COURSES TAUGHT

Principles of Microeconomics, Principles of Macroeconomics, Labour Economics I & II, Honours Microeconomic Theory, Public Finance, Economic History (Graduate)

## AWARDS

Students' Teacher Recognition Award 2016

## SERVICE

### *Profession*

Canadian Women's Economic Network: *Executive* (2016-2017), *Website/Communications* (2008-2011), *Vice President* (2006-2008), *Secretary* (2000-2003)

### *Referee/Reviewer*

Journal of Population Economics, Population Research and Policy Review, Regional Science and Urban Economics, Demography, Feminist Economics, Journal of the European Economics Association, Journal of Urban Economics, Review of Economics of the Household, SSHRC Grant Review, Social Science Review, Journal of Industrial Relations, National Science Foundation (NSF) Grant Review, Review of Aging, Journal of Marriage and Family, Journal of Political Economy, Applied Economics, Journal of Human Resources, Journal of Public Economics, Southern Economic Journal, Journal of Economics, SSHRC RDC, Canadian Public Policy.

*Students*

Dana Bazarkulova, Economics PhD Dissertation Committee  
Hongchen Yue, Economics PhD Dissertation Committee  
Adian McFarland, Economics PhD Dissertation Committee  
Jennifer Shultz, Psychology MA Dissertation Committee

*University*

Asper Tenure and Promotion Committee (2016)  
Economics Undergraduate Committee  
Economics Headship Hiring Committee (2015)  
Economics Department Steering Committee (2008-2010, 2013, Chair 2014-2015)  
Dean's Committee on the Economics Department Climate (2013)  
Economics General Studies Committee (Chair, 2010-2013)  
CPAC Committee (2007-2010)  
Applied Micro Field Committee (2007-2015)  
Arts Nominating Committee (2009-2011)  
Hiring Committee, Sociology Department (Fall 2008)  
Canadian Public Policy Hiring Committee, Economics Department (2006-2007)  
PhD Comprehensive Field Examinations, Labour (2007)  
Honours Committee (2006-2007)

*Community*

Board of Directors, St. Charles Catholic School. (2014-2016)



## WAYNE SIMPSON

### CURRICULUM VITAE March, 2017

**Contact:** Dept of Economics, University of Manitoba, Winnipeg MB R3T 5V5 Canada  
**Tel:** (204)474-6174/474-9207 **Fax:** (204)474-7681 **E-mail:** simpson@ms.umanitoba.ca

**Background: Education:** Ph.D. Economics, London School of Economics, 1977  
 M.Sc. Economics, London School of Economics, 1974  
 Certificate in Economics (High Honours) University of Saskatchewan, 1971  
 Certificate in Mathematics (Honours) University of Saskatchewan, 1970  
 B.A. (Great Distinction) University of Saskatchewan, 1969

**Employment:** Head (1997-2008), Professor (1991-), Associate Professor (1984-1991), Assistant Professor (1979-84), Department of Economics, University of Manitoba.  
 Economist, Centre for the Study of Inflation and Productivity, Economic Council of Canada, Feb-Aug, 1979  
 Economist, Labour Canada, 1977-79  
 Sessional Lecturer in Labour Economics and Industrial Relations, Department of Economics, Carleton University, 1977-79  
 Teaching Assistant in Mathematics and Statistics for Economists, Department of Economics, London School of Economics, 1976-77  
 Operations Analyst, Bank of Canada, 1971-73

**Academic Affiliations:** Research Fellow, School of Public Policy, University of Calgary, 2013-16; Research Fellow, Education Policy Research Institute, University of Ottawa, 2012-; Research Associate, Center for Comparative Immigration Studies, University of California San Diego, 2009-; Visiting Scholar, CCIS, UCSD, March, 2009; Visiting Professor, University of Wollongong, Australia, January-April, 2005 and February, 2016; Fellow and Faculty Associate, Lincoln Institute of Land Policy (Cambridge, Mass.), 1991-92; St.John's College Visiting Fellow, 1985-86

**Academic Honours:** Mike McCracken Award for Economic Statistics, Canadian Economics Association, 2014 (with Derek Hum and Evelyn Forget); John Vanderkamp Prize (best article in *Canadian Public Policy* with Derek Hum), 1999; University of Manitoba Centre on Aging Research Fellowship, 1999-2000; University of Manitoba Certificate of Teaching Excellence, 1996; University of Manitoba Merit Award (Research), 1992; University of Manitoba Merit Award (Research and Service), 1991; S.S.H.R.C. Leave Fellowship, 1985-86; Canada Council Doctoral Fellowship, 1974-77; George Robertson Memorial Scholarship, 1973-76; C.M.H.C. Fellowship, 1973-74; University of Saskatchewan Honours Scholarship, 1969-71; University of Saskatchewan Entrance Scholarship, 1966-70.

#### Research - Publications:

#### Books/Monographs:

*Maintaining a Competitive Workforce: Employer-Based Training in the Canadian Economy* (Monograph

Series on Education no.6). Montreal: Institute for Research on Public Policy, 1996 (with D. Hum)

*Urban Structure and the Labour Market: Analysis of Worker Mobility, Commuting and Underemployment in Cities*, Oxford University Press, 1992

*Income Maintenance, Work Effort and the Canadian Mincome Experiment*, Ottawa: Economic Council of Canada, 1991 (with D. Hum)

### Articles in Books:

“The Provincial Sales Tax and the 2016 Manitoba Election: A Pivotal Issue with Lessons for Future Governments” in *Understanding the Manitoba Election 2016: Campaigns, Participation, Issues, Place*, Karine Levasseur, Andrea Rounce, Barry Ferguson and Royce Koop (eds.), University of Manitoba Press

“Social Assistance in Manitoba,” in Daniel Beland and Pierre-Marc Daigneault (eds.) *Welfare Reform in Canada: Provincial Social Assistance in Comparative Perspective*, University of Toronto Press, 2015, 193-208

“Manitoba in the Middle: A Mutual Fund Balanced for Steady Income,” in Paul Thomas and Curtis Brown (eds.) *Manitoba Politics and Government: Issues, Institutions, Traditions*, University of Manitoba Press, 2010, 293-305 (with D. Hum)

“The Retirement Prospects of Immigrants” in Abbott, Michael, Charles Beach, Robin Boadway and James MacKinnon (eds.) *Retirement Policy Issues in Canada*, McGill-Queen’s University Press, 2009, 429-450 (with D. Hum)

“Revisiting Equity and Labour: Immigration, Gender, Minority Status and Income Differentials in Canada,” in Sean Hier and B. Singh Bolaria (eds.) *Race and Racism in 21<sup>st</sup> Century Canada: Continuity, Complexity and Change* Broadview Press, 2007, 89-109 (with D. Hum)

“The Impact of Health on Labour Supply in Panel Data” in *Global Business and Economics Anthology Volume I*, December, 2006, 185-196 (with D. Hum and E. Fissuh Ghebretsadik)

“The Cost of Eliminating Poverty in Canada: Basic Income with an Income Test Twist,” in Lewis, M., S. Pressman, & K. Widerquist (eds) *The Ethics and Economics of Basic Incomes* London: Ashgate Press, September, 2005 (with D. Hum)

“What are Canadians Doing After School? An Analysis of Postschool Training Activity” in J. Gaskell and K. Rubenson (eds.) *Educational Outcomes for the Canadian Workplace: New Frameworks for Policy and Research*, University of Toronto Press, 2004, 89-117 (with D. Hum)

“Reinterpreting the performance of immigrant wages from panel data” in Badi Baltagi (ed.) *Panel Data: Theory and Applications*, Heidelberg and New York: Physica-Verlag, 2004, 129-148 (with D. Hum)

“Discussion of ‘Downward Nominal Wage Rigidity: A Critical Assessment and Some New Evidence for Canada’ by Jean Farés and Thomas Lemieux,” in *Price Stability and the Long-run*

*Target for Monetary Policy*, Ottawa: Bank of Canada, 2001, 40-48

"Training and Unemployment" in Ken Battle and Andrew Sharpe (eds.) *Employment Policy Options*, Ottawa: Caledon Institute of Social Policy, 1999, 71-106 (with D. Hum)

"Reducing Inflation in an Era of Low Inflationary Expectations" in Wolfgang Filc (ed.) *Macroeconomic Causes of Unemployment: Diagnosis and Policy Recommendations*, Berlin: Duncker & Humblot, 1999, 271-88 (with D. Hum and N. Cameron)

"The View from the Less-Affluent West" in John McCallum (ed.) *From East and West: Regional Views on Reconfederation*, Ottawa: C.D. Howe Institute, 1991 (with N. Cameron and D. Hum)

"Can Government-Sponsored Training Reduce Unemployment in Canada?" in *Transitions to Work*, Institute for Social and Economic Research, 1985, 281-90

"La Formation Industrielle au Canada et au Québec: Une Analyse Economique" in Claude Montmarquette and Rachel Houle (eds.) *Les Ressources Humaines et la Croissance Economique*, Les Cahiers de l'ACFAS no. 23, Les Presses de l'Université du Québec, 1983, 181-20

"An Evaluation of Existing Canadian Data Bases to Support Research into Women and Work" in *Women and Work*, Winnipeg: Institute for Social and Economic Research, 1983

#### **Articles in Refereed Journals:**

"Payday Lending and Micro Credit: Two Faces of the Same Problem?" *Journal of International Development* (forthcoming with Khan Islam)

"Toward a National Universal Guaranteed Basic Income," *Canadian Public Policy* 43(2), 2017 (forthcoming with Harvey Stevens)

"The Manitoba Basic Annual Income Experiment: Lessons Learned 40 Years Later," *Canadian Public Policy* 43(1), 2017, 85-104 (with Greg Mason and Ryan Godwin)

"Dynamics of the Location of Financial Institutions: Who is Serving the Inner City?" *Economic Development Quarterly* 30 (November 2016), 358-370; first published online August 31, 2016 doi:10.1177/0891242416665908 (with J. Buckland)

"Balanced Budget Legislation for Manitoba: Principles and Prospects," *Manitoba Law Journal: Underneath the Golden Boy* 37, no.2, 2015, 229-258

"Canadian Economics in Decline: Implications for Canada's Economics Journals," *Canadian Public Policy* XXXVIII no.4, 2012, 445-470 (with J. C. H. Emery)

"Effective tool or effectively hollow? Balanced budget legislation in Western Canada," *Canadian Public Policy* XXXVIII no.3, 2012, 291-313 (with J. Wesley)

"Information Technology and the Changing Workplace in Canada: Firm Level Evidence," *Industrial and Corporate Change* 20 no.6, 2011, 1601-1636 (with S. Moshiri)

- “Explaining Declining Social Assistance Participation Rates: A Longitudinal Analysis of Manitoba Administrative and Population Data,” *Canadian Public Policy* XXXVII no.2, 2011, 163-181 (with H. Stevens and S. Frankel)
- “The Declining Retirement Prospects of Immigrant Men” *Canadian Public Policy* XXXVI no.3, 2010, 287-306 (with D. Hum)
- “Examining Evidence of Financial & Credit Exclusion in Canada from 1999-2005,” *Journal of Socio-Economics* vol. 38, 2009, 966-976 (with J. Buckland), available online at: <http://dx.doi.org/10.1016/j.socec.2009.06.004>
- “Taking Account of Context: How Important are Household Characteristics in Explaining Adult Health Seeking Behaviour: The Case of Vietnam,” *Health Policy and Planning* vol.23, 2008, 397-407 (with A. Sepehri, S. Moshiri, and S. Sarma)
- “How important are individual, household and commune characteristics in explaining utilization of maternal health services in Vietnam?” *Social Science and Medicine*, vol. 67, 2008, 1009-1017 (with A. Sepehri, S. Moshiri and S. Sarma)
- “A Panel Multinomial Logit Analysis of Elderly Living Arrangements: Evidence from Aging in Manitoba Longitudinal Data,” *Social Science and Medicine*, vol. 65, 2007, 2539-2552 (with S. Sarma)
- “The Influence of Health Insurance on Hospital Admission and the Length of Stay - the Case of Vietnam,” *Social Science and Medicine*, vol. 63, 2006, 1757-1770 (with A. Sepehri and S. Sarma)
- “The Legacy of Immigration: Labour Market Performance and Education in the Second Generation,” *Applied Economics*, vol.39, no. 15, 2007, 1-25 (with D. Hum)
- “Does Non-profit Health Insurance Reduce Financial Burden? Evidence from the Vietnam Living Standards Survey Panel,” *Health Economics*, vol. 15, no. 6, 2006, 603-616 (with A. Sepehri and S. Sarma)
- “A Microeconomic Analysis of Canadian Health Care Utilization,” *Health Economics*, vol. 15, no. 3, 2006, 219-239 (with S. Sarma).
- “Economic Integration of Immigrants to Canada: A Short Survey,” *Canadian Journal of Urban Research*, vol. 13, no. 1, 2004, 46-61 (with D. Hum)
- “Reinterpreting the Performance of Immigrant Wages from Panel Data,” *Empirical Economics*, vol. 29, no. 1, 2004, 129-147 (with D. Hum)
- “Job-Related Training Activity by Immigrants to Canada,” *Canadian Public Policy* vol. 29, no.4, 2003, 469-489 (with D. Hum)
- “Labour Market Training of New Canadians and Limitations to the Intersectionality Framework,” *Canadian Ethnic Studies*, vol. 35, no. 3, 2003, 56-69 (with D. Hum)
- “Selectivity and Immigration in Canada: A Research Note,” *Journal of International Migration*

*and Integration*, vol. 3, no. 1, 2002, 107-127 (with D. Hum)

"Public Training Programs in Canada: A Meta-evaluation," *Canadian Journal of Program Evaluation*, vol. 17, no. 1, 2002, 119-138 (with D. Hum)

"Disability Onset Among Aging Canadians: Evidence from Panel Data," *Canadian Journal on Aging*, vol. 21, no. 1, 2002, 117-136 (with D. Hum)

"Closing the Wage Gap: Economic Assimilation of Canadian Immigrants Reconsidered," *Journal of International Migration and Integration*, vol. 1, no. 4, Fall, 2000, 427-441 (with D. Hum)

"Intermittent Work Activity and Earnings," *Applied Economics*, vol. 32, 2000, 1777-1786

"The Production Responses of the Competitive Firm to Three Conventional Distributional Shifts: Towards an Integrated Perspective," *Metroeconomica*, vol. 51, no.2, May, 2000 (with R. Sproule)

"Wage Opportunities for Visible Minorities in Canada," *Canadian Public Policy*, vol. 25, no.3, 1999, 379-394 (with D. Hum)

"Is Hypoinflation Good Policy?" *Canadian Public Policy*, vol. 24, no.3, 1998, 291-308 (with N. Cameron and D. Hum)

"Canadians with Disabilities and the Labour Market" *Canadian Public Policy*, vol. 22, no.3, 1996, 285-299 (with D. Hum)

"Stylized facts and Stylized Illusions: Inflation and Productivity Revisited," *Canadian Journal of Economics*, vol.29, no.1, 1996, 152-162 (with N. Cameron and D. Hum)

"Reducing Spending and Increasing Equity: How Far Can Refundable Tax Credits Take Us?," *Canadian Public Administration*, vol.38, no.4 (Winter), 1995, 598-612 (with D. Hum)

"Can the Sufficient Conditions Used to Sign the Global Effect of Risk Be Used to Sign the Marginal Effect?" *Bulletin of Economic Research*, vol. 47, no.4, 1995, 305-319 (with R. Sproule and D. Hum)

"Labour Supply Estimation and Public Policy," *Journal of Economic Surveys*, vol. 8, no.1, 1994, 57-81 (with D. Hum)

"Whatever Happened to the Guaranteed Income Project in Canada?" *Canadian Public Administration* 36, vol. 36, no.3, 1993, 442-450 (with D. Hum)

"Economic Response to a Guaranteed Annual Income: Experience from Canada and the United States," *Journal of Labor Economics*, vol. 11, no.1, part 2, 1993, S263-S296; also issued as discussion paper no.25, Centre for Labour and Social Policy, University of Trier, 1991 (with D. Hum)

"The Economics of Commuting and the Urban Labour Market: A Survey," *Journal of Economic Surveys* 6:1, vol. 6, no. 1, 1992, 45-62 (with A. van der Veen)

"Starting Even? Job Mobility and the Wage Gap Between Young Single Males and Females," *Applied Economics*, vol. 22, June, 1990, 723-737

"Workplace Location, Residential Location, and Urban Commuting," *Urban Studies*, vol. 24, April, 1987, 119-28

"Analysis of Part-time Pay in Canada," *Canadian Journal of Economics*, vol. 19, November, 1986, 798-807

"Unions, Industrial Concentration, and Wages: A Re-examination," *Applied Economics*, vol. 18, March, 1986, 305-17

"The Impact of Unions on the Structure of Canadian Wages: An Empirical Analysis with Microdata," *Canadian Journal of Economics*, vol. 18, February, 1985, 164-81

"An Econometric Analysis of Industrial Training in Canada," *Journal of Human Resources*, vol. 19, Fall, 1984, 435-51

"On the Appropriate Spatial Unit for Labour Market Analysis and Policy Design," *Urban Studies*, vol. 20, November, 1983, 487-9

"The Economics of Mileage Restrictions for Railway Workers in Western Canada," *Relations Industrielles*, vol. 38, no. 1, 1983, 95-103 (with F. Peters)

"The Off-farm Work Behaviour of Farm Operators," *The American Journal of Agricultural Economics*, vol. 65, November, 1983, 801-5 (with M. Kapitan)

"Job Search and the Effect of Urban Structure on Unemployment and Married Female Participation Rates," *Applied Economics*, vol. 14, April, 1982, 153-65

"A Simultaneous Model of Workplace and Residential Location Incorporating Job Search," *Journal of Urban Economics*, vol. 8, 1980, 330-49

#### **Other Articles:**

"The Decline of Canadian Economics," *Policy Options*, September-October, 2013, 4-5 (with H. Emery and S. Tapp)

"Adult Immigrants: How Well Are They Trained?" *Education Quarterly Review*, vol.9, no.3, 2003, 17-22 (with D. Hum)

"Do Immigrants Catch Up Economically?" *Policy Options*, vol.22, no.30, March, 2002, 47-50 (with D. Hum)

"Adult Training in Canada: Snapshots from the Nineties," *Education Quarterly Review*, vol.8, no.2, 2002, 26-32 (with D. Hum)

"A Guaranteed Annual Income? Mincome to the Millennium," *Policy Options*, January/February, 2001, 78-82 (with D. Hum)

"Not All Visible Minorities Face Labour Market Discrimination" *Policy Options*, vol. 21, December, 2000, 45-48 (with D. Hum)

"*Aspects of Labour Market Behaviour: Essays in Honour of John Vanderkamp* (Louis N. Christofides, E. Kenneth Grant and Robert Swidinsky, eds.)" *Canadian Public Policy*, vol. 22, no.4, 1996, 379-380

"Can Training Reduce Unemployment?" *Policy Options*, vol. 17, no.6, July/August, 1996, 59-64 (with D. Hum)

"Employment Equity and People with Disabilities: The Need for Separate Treatment," *Policy Options*, vol. 14, 1993, 30-32 (with D. Hum)

"No Hope for Citizens Income in Canada?," *BIRG: Basic Income Research Group Bulletin* No. 16, July, 1993, 26-27 (with D. Hum)

"Demogrant Transfers in Canada and the Basic Income Standard," *BIRG: Basic Income Research Group*, Bulletin No. 15, July, 1992, 9-11 (with D. Hum)

"Whither Unemployment? A Review of Yoram Weiss and Gideon Fishelson (eds.), *Advances in the Theory and Measurement of Unemployment* (New York: St. Martin's Press, 1990) and Ralf Hussmanns, Farhad Mehran and Vijay Verma *Surveys of Economically Active Population, Employment, Unemployment and Underemployment: An ILO Manual on Concepts and Methods* (Geneva: International Labour Office, 1990)," *The Review of Income and Wealth*, vol. 38, no. 3, September, 1992, 355-359.

"Variations to Work Incentive Plans: A Simulation of the Manitoba Case," *Western Economic Review*, vol. 3, March, 1984, 26-48 (with D. Hum)

"The Interpretation and Application of Tobit Regression," *Western Economic Review*, vol. 3, July, 1984, 84-9

"Work Incentives and Welfare: Evidence from the Mincome Baseline for Adult Males," *Western Economic Review*, vol. 2, December, 1983, 17-25 (with J. Ehnes)

### **Research Reports and Technical Papers:**

"The Disability Tax Credit: Why It Fails and How to Fix It" University Calgary School of Public Policy Research Paper, vol. 9, issue 24, June 2016 (with H. Stevens) at <http://policyschool.ucalgary.ca/sites/default/files/research/disability-tax-credits-simpson-stevens.pdf> and at the Social Science Research Network (SSRN) at [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2844453](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2844453)

"The Impact of Converting Federal Non-Refundable Tax Credits Into Refundable Credits" University Calgary School of Public Policy Research Paper, vol. 8, issue 30, August 2015 (with H. Stevens) on the Social Science Research Network (SSRN) at [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2658748](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2658748)

"Immigrant Retirement Prospects: From Bad to Worse?" Center for Comparative

Immigration Studies Working Paper No. 183, University of California San Diego, March, 2009 (with D. Hum) at: <http://ccis.ucsd.edu/2010/01/immigrant-retirement-prospects-from-bad-to-worse-working-paper-183/>

"The Legacy of Immigration: Labour Market Performance of the Second Generation," Prairie Centre of Excellence for Research on Immigration and Integration Working Paper Series, University of Alberta, June, 2005 (with D. Hum)

*Participation in Adult Training by Canadians in the 1990s: A Multivariate Analysis Using AETS Data*, Series R-01-9-SE. Ottawa: Applied Research Branch, Human Resources Development Canada, 2002 (with D. Hum)

"Analyzing the Economic Assimilation of Canadian Immigrants Using Panel Data," Working Paper 75F0002MIE - 01009, Income Statistics Division, Statistics Canada, October, 2001 (with D. Hum)

*Microeconomic Theory and Its Applications I 018.245*, Distance Education Program, Continuing Education Division, University of Manitoba, 1999

*Microeconomic Theory and Its Applications II 018.246*, Distance Education Program, Continuing Education Division, University of Manitoba, 1999

"Wage Opportunities for Visible Minorities in Canada," SLID Working Paper no. 98-17, Statistics Canada, Ottawa, November, 1998 (with D. Hum)

"Econometric Analysis of Canadian Self-Employment Using SLID," SLID Working Paper no. 98-16, Statistics Canada, Ottawa, November, 1998 (with R. Sproule)

"Labour Market Intermittency and Earnings in Canada," SLID Working Paper no. 97-12, Statistics Canada, Ottawa, 1997

*Microeconomic Theory and Its Applications II 018.246*, Distance Education Program, Continuing Education Division, University of Manitoba, 1996

"Sources of Income for Persons with Disabilities in Canada," Employment Equity Data Program, Statistics Canada, Ottawa, 1994 (with D. Hum)

"Life Cycle Incidence and Employment of Persons with Disabilities in Canada," Employment Equity Data Program, Statistics Canada, Ottawa, 1994 (with D. Hum)

"The Economic Well-Being and Labour Market Activity of Persons with Disabilities in Canada," Employment Equity Data Program, Statistics Canada, Ottawa, May, 1993 (with D. Hum)

"Which Employers Train? Sectoral Evidence on Employer-Based Training in Canada," a study prepared for Labour Market and Policy Analysis, Strategic Policy and Planning, Employment and Immigration Canada, Ottawa, March, 1993 (with D. Hum)

"Life Cycle Incidence and Employment of Persons with Disabilities in Canada," a study prepared for the Employment Equity Data Program, Statistics Canada, Ottawa, April, 1993



(with D. Hum)

"Sources of Income of Persons with Disabilities in Canada," a study prepared for the Employment Equity Data Program, Statistics Canada, Ottawa, April, 1993 (with D. Hum)

"Employer-Based Training in Canada: Is There Enough?" A study prepared for Labour Market and Policy Analysis, Strategic Policy and Planning, Employment and Immigration Canada, Ottawa, June, 1992 (with D. Hum)

"Design Proposal for an Experimental Wage Subsidy Program," a study prepared for the Innovations Program, Employment and Immigration Canada, Ottawa, February, 1991 (with D. Hum and D. Sabourin)

"Employer-Based Training in Canada: A Survey of the Information and Issues," prepared for Strategic Policy and Planning, Employment and Immigration Canada, December, 1988

"An Exploration of the Microfoundations of Internal Migration in Manitoba," prepared for the Review of Demography and the Implications for Economic and Social Policy, September, 1988 (with G. Mason)

"Implications of Demographic Changes for the Labour Market: Labour Supply, Unemployment, and Earnings," prepared for the Federal Government Task Force on the Review of Demography and Implications for Economic and Social Policy, Health and Welfare Canada, October, 1986

"An Economic Analysis of Industrial Training in Canada," Discussion Paper No. 224, Economic Council of Canada, 1983.

"The Manitoba Work Incentives Plan: An Assessment of Administrative Issues and Possible Design Variations," commissioned by the Manitoba Task Force on Social Assistance, June, 1983 (with D. Hum)

"The Relationship Between Wages and Family Income in Canada," Labour Canada Discussion Paper, January, 1981

"Wage Structure and Stagflation in the 1970s," Discussion Paper No. 161, Economic Council of Canada, February, 1980

#### **Unpublished Conference/Seminar Papers:**

"Towards a National Universal Guaranteed Basic Income," paper presented to the North American Basic Income Group conference, Winnipeg, May 14, 2016 (with H. Stevens)

"Social Assistance in Manitoba," paper presented to the conference on Welfare Reform in Canada: Provincial Social Assistance in Comparative Perspective sponsored by the Johnson-Shoyama Graduate School of Public Policy, Regina, October 24-25, 2013

"Banking Relocation and the Inner City," paper presented to the Canadian Economics Association annual meeting, Montreal, May, 2013; also appearing as "The Dynamics of Financial Institution Location in Toronto: Who Is Serving the Inner City?" SSRN working

paper available online at: [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2371931](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2371931)

“The Decline of Canadian Economics: Implications for Canada’s Economics Journals,” Canadian Public Policy lecture (invited), Canadian Economics Association, Calgary, June, 2012

“The Effectiveness of Balanced Budget Legislation: Lessons from Western Canada,” invited seminar at the Johnson Shoyama Graduate School of Public Policy, University of Saskatchewan and at the Manitoba Association of Business Economists, April, 2012

“Promise Meets Reality: Balanced Budget Legislation in Western Canada, 1991-2010” paper presented at the annual meeting of the Canadian Political Science Association, Wilfrid Laurier University, May 16, 2011 (with J. Wesley)

“The Retirement Prospects of New Immigrants – From Bad to Worse?” paper presented to the Manitoba Association of Business Economists, Dec. 4, 2008 (with D. Hum)

“The Impact of Health on Labour Supply Over the Life Cycle,” paper presented to joint sessions of the Canadian Labour Market and Skills Researcher Network (CLSRN) and the Canadian Economics Association, Vancouver, June 5, 2008, and to the Oxford Business and Economics Conference 2008, Oxford, June 23, 2008, submitted to the *Journal of Human Resources* (with D. Hum and E. Fissuh)

“Finding the Best NCB Program Mix,” paper prepared for the Federal/Provincial/Territorial National Child Benefit Evaluation Workshop Expert Panels, Toronto, June 13-15, 2006

“Modelling Immigrant Prospects Using Microdata: Modern Issues and Applications,” paper presented at EcoMod2005 International Conference on Policy Modeling, Istanbul, June 29-July 1, 2005 (with D. Hum)

“Determinants of Elderly Living Arrangements: Evidence from Aging in Manitoba Longitudinal Data, 1971-96,” paper presented at the Canadian Health Economists Study Group Meetings, Toronto, May 25-26, 2005 (with S. Sarma)

“Assessing the Prospects of Immigrants to Canada: Evidence from Microdata on Immigrant Integration,” paper presented at the University of Melbourne Institute of Applied Economic and Social Research, January, 2005 and at the Departments of Economics of the Universities of Wollongong and Western Sydney (Campbelltown), March, 2005

“Immigrant Integration in the Labour Market,” invited seminar, Centre for International Governance and Innovation, University of Waterloo/Wilfrid Laurier University, Oct 15, 2004

“Does Non-profit Health Insurance Reduce Financial Burden? Evidence from the Vietnam Living Standards Survey Panel,” paper presented to the Canadian Economics Association meetings, Toronto, June 4-6, 2004 (with A. Sephri and S. Sarma)

“Assessing Immigrant Economic Performance using Panel Data,” paper presented to the Workshop on Recent Immigrant Labour Market Performance: An International Perspective,

8<sup>th</sup> International Metropolis Conference, Vienna, Austria, September 15-19, 2003 (with D. Hum)

“An Analysis of the Quality of Life in Canada and Germany,” UM/Trier Conference, Trier, Germany, May 12-13, 2003 (with D. Hum)

“Analysis of the Performance of Immigrant Wages Using Panel Data,” paper presented to the 10<sup>th</sup> International Conference on Panel Data, German Institute for Economic Research, Berlin, Germany, July 5-6, 2002 (with D. Hum)

“Training Activity by Adult Immigrants in Canada,” paper presented to the Canadian Employment Research Forum Conference on Immigration, Canadian Economics Association meeting, Calgary, May 30-31, 2002 (with D. Hum)

“Selectivity and Immigration in Canada,” paper presented to the PCERII Conference on “Building on Strength: Supporting Policy and Practice Through Immigration and Integration Research,” Winnipeg, November 8-10, 2001 (with D. Hum)

“Wages and Labour Supply of Immigrants and Visible Minorities,” paper presented at the CERF/IRPP conference on “Creating Canada’s Advantage in an Information Age,” Ottawa, May 4-6, 2000 (with D. Hum)

“Transition and Skills Development Through Education, Training and Work Experiences: A Follow-up Study of Seven Oaks School Division,” paper presented to the 3<sup>rd</sup> annual meeting of the Western Research Network on Education and Training, University of British Columbia, February 26, and to the Annual Meeting of the American Educational Research Association, Montreal, April 19-23, 1999 (with L. Taylor, K. McClure, B. Graham and B. Levin)

“The Personal and the Economic: the Effects of Gender, Family and Culture on Education and Employment,” presented to the plenary session of the 2<sup>nd</sup> annual meeting of the Western Research Network on Education and Training, University of British Columbia, January 24, 1998

“A Microeconomic Analysis of Canadian Self-Employment,” seminar presented at the Department of Economics, the University of Manitoba, October, 1998 (with R. Sproule)

“Reducing Unemployment in an Era of Low Inflationary Expectations,” paper presented at the Symposium of the Institut für Empirische Wirtschaftsforschung, Berlin, March 19-20, 1998 (with D. Hum and N. Cameron)

“The Production Responses of the Competitive Firm to Three Conventional Distributional Shifts: Towards an Integrated Perspective,” seminar presented to the Universities of Stockholm, Orebro, and Jonkoping, Sweden, April-May, 1998 (with R. Sproule)

“Evaluating Farm Income Distribution and Stabilization Programs,” seminar at Agriculture Canada, Ottawa, March, 1995 (with D. Hum and D. Kraft)

“Revisiting the GAI: Fair and Affordable Income Security for all Canadians,” paper prepared for the Conference on Economic Policy at Laurentian University and the Economic Seminar

at the University of Manitoba, March, 1995 (with D. Hum)

"Analysis of On-the-Job Training Incidence from Household Microdata," paper presented to the Bank of Canada Research Department, July 26, 1994

"Profile of Persons with Disabilities in Canada," paper presented to the Canadian Paraplegic Association, Winnipeg, May, 1994

"A Guaranteed Annual Income: Some Design Issues for Persons with Disabilities," paper presented to the Canadian Paraplegic Association, Winnipeg, May, 1994

"Dimensions and Causes of Unemployment," 1994 Paulinian Conference, St. Paul's College, University of Manitoba, February 18, 1994

"The Statistical Methodology of Mincome," presented to the Statistical Association of Manitoba, November, 1991

"Residential and Workplace Location and Wage Gradients," presented to the 31st European Congress of the Regional Science Association, Lisbon, Portugal, August, 1991 (with A. van der Veen)

"Estimating Labour Supply Functions: The Relative Contribution of Econometric Refinements and Data Improvements," presented to the Economic Council of Canada, Ottawa, September, 1989 (with D. Hum)

"Urban Mobility and Workplace Choice: Theory and Applications," presented to the 29th European Congress of the Regional Science Association, Cambridge, U.K., August, 1989

"Where There's a Way is There a Will? Public Policy and Income Inequality in Canada," presented to the Conference on Trends in Social Inequality, University of Western Ontario, October, 1986 (with D. Hum)

"Estimation of Family Labour Supply from Canadian Microdata," presented to the annual meeting of the Canadian Economics Association, May, 1986 (with D. Hum)

"Farm Wealth and Income Data Requirements: An Economic Perspective," presented to the Statistics Canada Workshop on the Theory and Practice of Agricultural Wealth Accounts, Ottawa, February, 1985

"Longitudinal Labour Supply Studies Using Mincome Data," presented to the special session on Mincome at the Learned Societies Meetings, June, 1984

"Risk, Job Search, and Wage Variation," presented to the annual meeting of the Canadian Economics Association, June, 1980

### **Unpublished Papers:**

"Promise Meets Reality: Balanced Budget Legislation in Western Canada, 1990-2010, submitted to *Parliamentary Affairs*, July, 2011 (with J. Wesley)

"Disability Benefits and Disability Conversion: Evidence from a Canadian Provincial Welfare Program," submitted to the *Journal of Human Resources*, January, 2011 (with H. Stevens and S. Frankel)

"The Sensitivity of Life Cycle Labor Supply Parameter Estimates to Sample Selection," University of Manitoba, August, 2009 (with E. Fissuh)

"The Sensitivity of Health Effects on Wages to Individual Heterogeneity and Sample Selection Correction: Panel Data Evidence from Canada," University of Manitoba, January, 2009, submitted to the *Journal of Health Economics* (with E. Fissuh)

"The Healthy Immigrant Effect and the Canadian Exception," University of Manitoba, November, 2008 (with D. Hum)

"An Analysis of the Demand for Health Capital in Canada," mimeo, University of Manitoba, December, 2003 (with S. Sarma)

"The human capital model of the demand for health: empirical findings from NPHS data," mimeo, University of Manitoba, October, 2002 (with S. Sarma)

"Competitive Production and Risk-Response Equilibria," mimeo, U of Manitoba, 1997 (with R. Sproule)

"The Structure of Opportunity in Canadian Labour Markets: Colour, Hue and Birthplace," seminar at the University of Manitoba, 1997 (with D. Hum)

"Freeze but Don't Cut: Wage Setting in an Environment of Low Inflation," mimeo, University of Manitoba, April, 1997 (with N. Cameron and D. Hum)

"Which Sectors Train? An Analysis of Employer-Based Training in Canada," mimeo, University of Manitoba, September, 1996 (with D. Hum)

"Specification of On-the-Job Training Incidence," mimeo, University of Manitoba, August, 1994 (with R. Sproule and D. Hum)

"Portfolios with One Safe and One Risky Asset: The Marginal Effect in the Large and in the Small," mimeo, University of Manitoba, 1994 (with R. Sproule)

"A Limit Theorem Regarding the Equivalence of the Sign of the Marginal and Global Effects of Risk in a Two-Asset Portfolio," mimeo, February, 1994 (with R. Sproule)

"A Sign-Correspondence Theorem for the Marginal and Global Effects of Risk: The Case of Two-Argument Utility Functions," mimeo, University of Manitoba, June, 1993 (with R. Sproule)

"Signing the Marginal Effect of Risk by Restricting the Functional Form of the Outcome Variable," mimeo, University of Manitoba, 1993 (with R. Sproule)

"A Restriction-Free Approach to Signing the Marginal Effect of Output-Price Risk for the Cooperative Firm," mimeo, University of Manitoba, May, 1993 (with R. Sproule)

- "The Relationship Between the Marginal and the Global Effects of Risk, and its Implication," mimeo, University of Manitoba, May, 1993 (with R. Sproule)
- "Risk Always Reduces Output: Signing the Marginal Effect of Output-Price Risk for the Competitive Firm," paper presented to the University of Manitoba Department of Economics, Feb. 26, 1993 (with R. Sproule and D. Hum )
- "Social and Employment Policy: A North American Perspective," paper presented to the Macro Economic Research Group and the Department of Economics, University of the Witwatersrand, Johannesburg, South Africa, February, 1993
- "Signing the Marginal Effect of Multiplicative Risk from First Principles: The Case of Two-Argument Utility Functions," mimeo, University of Manitoba, November, 1992 (with R. Sproule)
- "Labour Supply Analysis of an Income Maintenance Experiment: Results from Mincome," January, 1992 (with D. Hum)
- "Employer-Based Training Policy in Canada," May, 1990 (with D. Stambrook)
- "Family Labour Supply Behaviour of Low-income Families in the Manitoba Basic Annual Income Experiment," December, 1987 (with D. Hum, A. Basilevsky, and D. Sabourin)
- "Seasonal Variation in Interest Rates Revisited," November, 1986 (with R. Sproule)
- "Equilibrium and Labour Market Theory," June, 1986
- "The Antipoverty Impact of Income-Tested Transfers and Wage Subsidies," April, 1986 (with D. Hum)
- "Wealth Accumulation, Off-farm Income, and the Well-Being of Canadian Farmers: A Test of the Life Cycle Perspective," March, 1986 (with D. Freshwater)
- "Sectoral Employment Shifts and Unemployment in Canada," June, 1985 (with K. Prystawski)
- "Why Larger Establishments Have Higher Labour Productivity and Wage Rates: A Theory," February, 1984
- "What is Union Density Doing in Wage and Union Status Equations?" August, 1984
- "A Test for the A-J Effect in the Operations of Bell Canada, 1952-76," 1983 (with R. Sproule and R. Clement)
- "Estimates of the Impact of Productivity Increases on Corporate Profits in the Telecommunications Industry: The Case of Bell Canada, 1952-76," 1983 (with R. Sproule and R. Clement)
- "Tax Evasion and Labour Supply under Risk Neutrality," 1983 (with R. Sproule)

"Technological Efficiency of Full- and Part-time Farmers: Saskatchewan, 1978," 1982 (with D. Freshwater)

"Factors Impeding the New Technological Wave: An Economic Perspective," 1982

"An Analysis of the Structure of Canadian Wages, 1974 and 1979," 1981

"A Hedonic Approach to the Analysis of Wage Structure: Toward a Reconciliation of Orthodox and Unorthodox Theories," University of Manitoba Working Paper 197907, October, 1979

"The Effects of Establishment Size on Wage Rates: Some Further Evidence," University of Manitoba Working Paper 197906, September, 1979

"Evolutionary Theory and Limited Knowledge in a Dynamic Model of the Firm in Urban Space," November, 1978

"A Framework for the Evaluation of the Economic Effects of Minimum Wages," Economic Analysis Branch, Labour Canada, February, 1978

"Manpower Policy: An Economist's Perspective," Economic Analysis Branch, Labour Canada, February, 1978

"Limited Knowledge, Urban Structure and Labour Markets," PhD dissertation, London School of Economics, December, 1977

### **Research Grants:**

(2011-2012) Canadian Public Policy/Analyse de Politiques, "Canadian Academics and Canadian Economics: Is the Publishing Landscape Changing?" \$5,000

(2008-2010) Prairie Metropolis Centre Research Grant, "The Retirement Prospects of Immigrants: Will it Require a New Social Contract?" \$12,000 (with D. Hum)

(2005-2008) CIHR Grant, "Town With No Poverty: Assessing the Long-term Consequences of a Canadian Guaranteed Income Experiment," \$60,447 (with E. Forget (PI), N. Roos, and D. Hum)

(2005-2006) Prairie Centre of Excellence for Research on Immigration and Integration Research Grant, "Immigrant Health Status and Work Activity," \$14,100 (with D. Hum)

(2004-2005) Prairie Centre of Excellence for Research on Immigration and Integration Research Grant, "Economic assimilation of Canadian immigrants: cross-sectional vs panel data estimates," \$14,540 (with D. Hum)

(2003-2005) SSHRC/Canadian Centre for Policy Alternatives (Manitoba) Research Grant, "The Economic Theory of Community Economic Development and the New Economy," \$20,000 (with J. Loxley and I. Hudson)

(2003-2004) Prairie Centre of Excellence for Research on Immigration and Integration Research Grant, "Short-term, Medium-term and Long-term Performance of Immigrants," \$63,412 (with P. Li, R. Wanner, S. Halli, L. Wilkinson, and D. Hum)

(2002-2003) SSHRCC New Economy Research Grant, "Education, Training and Job Outcomes in the New Economy," \$15,000 (with I. Hudson)

(1996-2001) SSHRCC Strategic Research Network Grant in Education and Training Outcomes, \$225,000 for five years (with B. Levin at U of Manitoba as well as collaborators at UBC, U of Victoria and U of Alberta)

(2001-2002) Prairie Centre of Excellence for Research on Immigration and Integration Research Grant, "Immigrant Training," \$15,000 (with D. Hum)

(2000-2001) Prairie Centre of Excellence for Research on Immigration and Integration Research Grant, "Immigrants and Selectivity," \$9,000 (with D. Hum)

(1999-2000) Prairie Centre of Excellence for Research on Immigration and Integration Research Grant, "Earnings and Employment of Visible Minority Immigrants," \$11,794 (with D. Hum)

(1999-2000) Centre on Aging Research Grant, "Disability, Aging and Work," \$1,000 (with D. Hum)

(1989) UM/SSHRC International Conference Travel Grant to attend the 29th European Congress of the Regional Science Association, Cambridge, U.K., August 29-September 1, \$997.

(1988-90) SSHRC Research Grant, "Analysis of Short Run Growth in Earnings and Hours in Canada," \$10,200.

(1987-9) Review of Demography and its Implications for Economic and Social Policy Research Grant, "The Demographic Structure of Prairie Canada: a Micro Analysis," \$40,000 (with Greg Mason).

(1985-8) SSHRC Research Grant, "Analysis of Labour Supply Behaviour in the Manitoba Basic Annual Income Experiment," \$86,905.68 (with A. Basilevsky and D. Hum)

(1984-5) UM/SSHRC Research Grant, "Analysis of Job Search, Workplace Location and Urban Labour Market Dynamics with Particular Application to Canada," \$1700.

(1984-5) Labour Canada-Universities Research Grant, "The Relationship Between Wages and Family Income: Further Evidence and Policy Application," \$3500 (with Derek Hum).

(1983-4) SSHRC Research Grant, "Economic Analysis of the Structure of Canadian Wages," \$10,238.

(1982-3) Agriculture Canada Grant with David Freshwater, "The Distribution of Income and Wealth in Canadian Agriculture," \$10,800.



(1982-3) UM/SSHRC Research Grant, "Economic Data Retrieval and Analysis System," \$520.

(1981-2) Agriculture Canada Grant, "Relative Efficiency of Full- and Part-time Farmers," \$7500 (with David Freshwater)

(1980-1) Labour Canada-University Research Grant, "The Determinants of Canadian Occupational Wage Structure, 1974-79," \$4000.

## **Administrative Responsibilities**

### **Dept. of Economics, U. of Manitoba**

Steering Committee, chair, 2009-11, 2012-13  
 Head, 1997-2008  
 Acting Head, 1987-8, 1991-2  
 Associate Head, 1984-5, 1988-91, 1992-6, 2013-15, 2016-  
 Graduate Studies Committee, 1980; chair, 1986-7, 1989-91, 1993  
 Appointments and Renewals Committee, 1986-7  
 Research Committee, 1986-7  
 Computer Committee, 1981-4 and 1988-9  
 General Studies Committee, 1980-3; chair, 1981-2  
 Labour Studies Committee, 1981-2  
 Library Committee, chair, 1979-80

### **Faculty of Arts, U. of Manitoba -**

Faculty of Arts Executive Committee, 2012-14  
 Faculty of Arts Tenure and Promotion Committees (6), 2012-13  
 Hiring Committee for Econometrics, Department of Economics, 2012  
 University Senate Representative, Faculty of Arts 2009-12  
 Faculty of Arts Executive Committee, 2012-15  
 Strategic Enrolment Management Committee, 2011  
 Nominating Committee, 2007-09  
 Centre on Aging Scholarship Adjudication Committee, 2003-4  
 Professor of the Year Award Committee, 2002  
 Head Search Committee, Department of Sociology, 2002  
 Head Search Committee, Department of Linguistics, 2001  
 Head Search Committee, Department of Native Studies, 1999-2000  
 Inquiry into the Climate in the Dept. of Political Studies, 1995  
 Policy Committee, 1994-5  
 Appeals Committee, 1994-5  
 Headship Search Committee for Sociology, 1992  
 Nominating Committee, 1991-3  
 Ad Hoc Committee on Undergraduate Enrollment, 1991-2  
 Headship Selection Committee for Economics, 1984 and 1987  
 Executive Board, Institute for Social and Economic Research, 1984-6  
 Research Committee, 1983-4  
 Computer Users' Committee, 1982-4

## Other University of Manitoba

Tenure Committee, Asper School of Business, 2009  
 Interim Management Team, University of Manitoba Research Data Centre, 2003-4  
 Presidential Committee to Appoint Dean of Arts, 1998-9  
 Presidential Committee for Appointment of Dean of Management, 1998-9  
 Head Search Committee, Department of Family Studies, Faculty of Human Ecology, 1998-9  
 University Staff Benefits Committee 2000-2002  
 UMFA Staff Benefits Committee, 2000-  
 UM/UMFA Joint Scholarship Program Committee, 1998-99  
 UM/UMFA Joint Salary Structure Committee, 1999-  
 UM/UMFA Promotion Appeal Committee, chair, 1995  
 U of Manitoba Research Grants Committee, 1994-6  
 Agricultural Economics Program Committee, 1994  
 UMFA/UM Systemic Differences Committee, 1992-  
 University Collective Bargaining Team with CUEW, 1990  
 UMFA Collective Agreements Committee, 1984-5, 1989-90, 1993-94, 1998-; chair, 1986-7  
 UMFA Salaries Committee chair, 1980-6  
 UMFA Bargaining Advisory Committee, 1983  
 UMFA Board of Representatives, 1980-3  
 UMFA Executive, 1981-2  
 UMFA Collective Bargaining Team, 1981

## Other Professional Activities

Affiliated Researcher, Education Policy Research Initiative, University of Ottawa  
 Executive Council, Canadian Economics Association, 2013-  
 Purvis Prize Committee for contribution to Canadian economic policy, Canadian  
 Economics Association, 2009-10  
 Editorial Advisory Board, *Canadian Public Policy*, 2008-  
 Executive Committee of the Board of Governors, Prairie Metropolis Centre, 2008-2011  
 Board of Governors, Prairie Metropolis Centre, 2007-2011  
 Ontario Council of Graduate Studies Appraiser for Ottawa/Carleton PhD, Wilfrid Laurier  
 MABE, and Lakehead University MA, 2009-10  
 Premiers Economic Advisory Committee Competitiveness Task Group, April, 2005-  
 Visiting Professor, University of Wollongong, Australia, January-April, 2005  
 External Reviewer, Department of Economics, Lakehead University, 2003  
 External Reviewer, Department of Economics, University of Winnipeg, 2001  
 Fellow and Faculty Associate, Lincoln Institute of Land Policy (Cambridge, Mass.),  
 December, 1991-  
 Editorial Board, *Canadian Journal of Economics*, 1986-9  
 Referee for: *Review of Economics and Statistics*, *Journal of Human Resources*, *Applied Economics*,  
*Canadian Journal of Economics*, *Canadian Public Policy*, *Regional Science and Urban Economics*, *Urban  
 Studies*, *Journal of Regional Science*, *American Journal of Agricultural Economics*, *Journal of International  
 Migration and Integration*, *Education Economics*, *Economics of Education Review*, *Relations  
 Industrielles/Industrial Relations*, *Canadian Ethnic Studies*, *Environment and Planning A*, *Papers in  
 Regional Science*, McGill-Queen's University Press, Economic Council of Canada, Queen's-  
 University of Ottawa Economic Projects, Addison-Wesley Publishers, SSHRCC, Alberta  
 Heritage Foundation for Medical Research

SSHRC Doctoral Fellowships Committee, 1986-8; chair, 1988  
SSHRC Research Grants Committee on the Integration of Persons with Disabilities, 1995  
Economic Consultant to the Private Practice Physiotherapists of Manitoba, 1987-8  
Social Planning Council of Winnipeg Ad Hoc Committee on Employment, 1985-6  
Editorial Board, *Western Economic Review*, 1982-3  
Consulting Editor, *Worklife Magazine*, 1979-80