Curriculum Vitae

Pingzhao Hu, Ph.D.

A. Date Curriculum Vitae is Prepared: June 6, 2019

B. Biographical Information

Office	Department of Biochemistry and Medical Genetics
	College of Medicine, University of Manitoba
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1. EMPLOYMENT

Current Appointments

2014 Feb – present
Assistant Professor in Bioinformatics/Statistical Genetics
Department of Biochemistry & Medical Genetics
George & Fay Yee Centre for Healthcare Innovation
Faculty of Health Sciences, University of Manitoba, Winnipeg
Canada

2018 Nov – present
Adjunct Scientist
Research Institute in Oncology and Hematology
CancerCare Manitoba, Canada

2017 Jul – present
Adjunct Professor
Department of Computer Science
Faculty of Science, University of Manitoba, Winnipeg, Canada

2015 Nov – present
Adjunct Professor
Department of Electrical and Computer Engineering
Faculty of Engineering, University of Manitoba, Winnipeg, Canada

2014 Apr – present
Scientist
Children's Hospital Research Institute of Manitoba, Canada

2013 Nov – present
Assistant Professor (Status)
Division of Biostatistics, Dalla Lana School of Public Health
University of Toronto, Toronto, Canada

2016 Aug – present	Associate Investigator
	The Centre for Applied Genomics (TCAG), Toronto, Canada
	The Hospital for Sick Children, Toronto, Canada

Previous Appointments

2006 Jan – 2014 Feb	Manager
	Statistical Analysis Facility of The Centre for Applied Genomics
	The Hospital for Sick Children Research Institute, Toronto, Canada
	Supervisors: Drs. Celia Greenwood, Joseph Beyene,
	Andrew Paterson, Lisa Strug and Stephen Scherer

2004 Jan – 2005 Dec	Research Biostatistician
	Program in Genetics and Genomic Biology
	The Hospital for Sick Children Research Institute, Toronto, Canada
	Supervisors: Drs. Celia Greenwood and Joseph Beyene

2003 Jan – 2003 Dec	Research Biostatistician
	The Lunenfeld-Tanenbaum Research Institute
	Mount Sinai Hospital, Toronto, Canada
	Supervisor: Dr. Shelley Bull

1997 Sep – 1998 Aug	Research Assistant
	The National Key Laboratory of LREIS
	Chinese Academy of Sciences, Beijing, China

1990 Jul – 1994 Aug	Geological Apprentice
	The first geological team of Jiangxi Nonferrous Metal Geological Exploration Bureau, Nanchang, China

2. EDUCATION

Degrees

2005 Sep – 2012 Apr	PhD, Computer Science
	Department of Computer Science and Engineering
	York University, Toronto, ON, Canada
	Supervisors: Dr. Hui Jiang, Dr. Andrew Emili (University of Toronto)
	Dissertation: Machine Learning Approaches for Network-based Prediction of Disease Outcomes and Protein Functions

2001 Sep – 2002 Dec	Masters, Computer Science
	Faculty of Computer Science
	Dalhousie University, Halifax, NS, Canada

1999 Sep – 2001 Aug	Masters, Quantitative Geography
	Department of Geography

University of Saskatchewan, Saskatoon, SK, Canada
Completed eight core undergraduate courses in computer science

1994 Sep – 1997 Aug   Masters, Mathematical Geology (Geostatistics)
College of Resource and Environmental Engineering,
University of Science and Technology Beijing, Beijing, China

Note: I was directly admitted into a training diploma program (see below) after three-year of junior high school (grade 8), therefore, bypassing senior high school and university undergraduate program.

Postgraduate, Research and Specialty Training

1998 Sep – 1999 Jul   Postgraduate Diploma, Geostatistics
Centre de Geostatistique, Ecole des Mines de Paris, Paris, France

1986 Sep – 1990 Jun   Diploma, Geology
Changsha Nonferrous Metal College, Changsha, Hunan, China
Admitted into the program after junior high school (grade 8)

Qualifications, Certifications and Licenses

2008 Jul   Certificate, Informatics on High Throughput Sequencing Data
Canadian Bioinformatics Workshop (CBW), Toronto, ON, Canada

2004 Aug   Certificate, Statistics Methods for Bioinformatics
American Statistics Association, USA

3. HONOURS AND CAREER AWARDS

2018 May   **The Interstellar Initiative Award**

New York Academy of Sciences and Japan Agency for Medical Research and Development. The award recognizes "the world's most promising Early Career Investigators in the fields of cancer, neuroscience and artificial intelligence".

2017 May   **Poster of Distinction at Digestive Disease Week (DDW)**

American Gastroenterological Association (AGA), Digestive Disease Week, Chicago, USA

2015 Sep   **CIHR-IG New Principal Investigator Travel Award**

Canadian Institutes of Health Research – Institute of Genetics (CIHR-IG), Montreal, Canada
Total Amount: $1,500

2015 Jul	**New Principal Investigator Award, Careers in Cancer Research Development Program (CCRDP)**
	CIHR Institute of Cancer Research (CIHR-ICR) and Canadian Cancer Society Research Institute (CCSRI), Montreal, Canada
	Total Amount: $1,500
2015 Mar	**Visiting Scientific Researcher Travel Award**
	Thematic Program on Statistical Inference, Learning and Models for Big Data, The Fields Institute, University of Toronto
	Total Amount: $1,500
2014 Oct	**Junior Investigator Grant Panel Travel Award**
	Canadian Cancer Society Research Institute (CCSRI), Toronto, Canada
	Total Amount: $1,000
2006 Jul	**The BioC 2006 Developer-Contributor Award**
	Bioconductor Foundation of North American
	Fred Hutchinson Cancer Research Center, Seattle, USA
	Total Amount: $500 USD
2006 Jan	**Scholarship for Statistical Genetics**
	Advanced Study Institute of the Croucher Foundation
	The University of Hong Kong, Hong Kong, China
	Total Amount: $5,000 HKD
1998 Sep	**French Government Scholarship**,
	Centre d'Etudes Superieures des Matieres Premieres, France,
	Centre de Geostatistique, Ecole des Mines de Paris, Paris, France
	Total Amount: $55,000 FF (French Franc)

4. PROFESSIONAL AFFILIATIONS AND ACTIVITIES

Professional Society

2018 Aug – Present	Chair of Case Studies in Data Analysis Committee, Statistical Society of Canada
2017 Jul – 2020 Jun	Member of Case Studies Committee, Statistical Society of Canada
2016 Aug – 2017 Jul	Member of American Society of Human Genetics
2016 Aug – present	Member of Statistical Society of Canada
2015 Oct – 2016 Sep	Member of International Society of Psychiatric Genetics
2006 Jan – present	Member of International Society of Computational Biology

Editor Activities

2018 Dec – present	Co-Editor, Special Issue of Bioinformatics and Computational Biology 2019 *Cells* journal
2015 Sep – present	Review Editor, Statistical Genetics and Methodology *Frontiers in Genetics* journal

Conferences

2019 Dec	Co-organizer of the invited session "Statistical advancements in emerging challenges in health data science", The 11th ICSA (International Chinese Statistical Association) International Conference, Hangzhou, China
2019 May	Chair and Organizer of 2019 Case Studies in Data Analysis Poster Competition held at 2019 Annual Meeting of the Statistical Society of Canada, Calgary, Canada
2018 Aug	Chair of the contributed session "Statistical Learning of epigenomics Data" in 2018 Joint Statistical Meeting (JSM) (Annual Meeting of American Statistical Association), Vancouver, Canada
2018 June	Organizer of the invited session "Statistical Association Analysis of Imaging and Genomic Data: Opportunities and Challenges", 2018 Annual Meeting of the Statistical Society of Canada, Montreal
2017 June	Organizer and Chair of the invited session "Statistical Methods for Omics Data", 2017 Annual Meeting of the Statistical Society of Canada, Winnipeg, Canada
2017 June	Organizer of Case Study #2: Can gene expression data identify patients with inflammatory bowel disease?", 2017 Case Studies in Data Analysis Poster Competition held at 2017 Annual Meeting of the Statistical Society of Canada, Winnipeg, Canada

Peer Review Activities

GRANT REVIEWS

External Grant Reviewer

International

2019 May-Jun	Operating Grant, Deutsche Forschungsgemeinschaft (German Research Foundation), German.
2018 Jul	Wellcome Trust / DBT Fellowship (1 Proposal). Note: This is a partnership between the Wellcome Trust (UK) and the Department of Biotechnology (Government of India).

National and Local

2018 Aug-Sep	Grand Challenges Canada Transition to Scale program, Round 8 and Canadian Institute of Health Research (CIHR) (2 Proposals)

2018 Aug	Collaborative Research and Development Grant, Natural Sciences and Engineering Research Council (NSERC) (1 Proposal)
2018 Apr	Scholar Program, The Michael Smith Foundation for Health Research (MSFHR) (Grant Reviewer, 1 Proposal)
2018 Apr	Grand Challenges Canada Transition to Scale program, Round 6 and Canadian Institute of Health Research (CIHR) (3 Proposals)
2018 Apr	Mitacs Elevate (1 Proposal)
2018 Mar	2018-2019 CancerCare Manitoba Foundation Scientific Advisory Committee (3 Proposals)
2018 Jan	Individual Discovery Grant, Natural Sciences and Engineering Research Council (NSERC) (1 Proposals)
2017 Nov - Dec	Individual Discovery Grant, Natural Sciences and Engineering Research Council (NSERC) (2 Proposals)
2017 Oct -	Canadian Institute of Health Research (CIHR) – 2017 Catalyst Grant: Personalized Health Catalyst Grants (12 Proposals)
2017 Sep	Canadian Institute of Health Research (CIHR) – Planning and Dissemination - III 2017 Summer Grants Competition (2 Proposals)
2017 Apr	Canadian Institute of Health Research (CIHR) – Planning and Dissemination - III 2017 Winter Grants Competition (2 Proposals)
2017 Apr	Research Manitoba's 2017 Masters Studentship Review Committee (7 Proposals)
2017 Feb	Canadian Institute of Health Research (CIHR) - Project Grant Program 2016 Fall Competition (9 Proposals)
2016 May	Grand Challenges Canada and Canadian Institute of Health Research (CIHR) (1 Proposal)
2016 Apr	Research Manitoba's 2016 Masters Studentship Review Committee (8 Proposals)
2016 Mar	Ontario Graduate Scholarship 2016-17 Masters Studentship (10 Proposals)
2016 Mar	Collaborative Research and Development Grant, Natural Sciences and Engineering Research Council (NSERC) (1 Proposal)
2016 Mar	2016-2017 CancerCare Manitoba Foundation Scientific Advisory

Committee (4 Proposals)

2015 Apr   Research Manitoba's 2015 Masters Studentship Review Committee
                         (8 Proposals)

2013 Mar   McLaughlin Centre 2013 Accelerator Grant Competition
                         University of Toronto

2011 Mar   McLaughlin Centre 2011 Accelerator Grant Competition
                         University of Toronto

Internal Formal Grant Reviewer

2018 May   CFI-IF Notices of Intent (1 Proposal)

2017 Sep   NSERC Discovery Grants Competition (1 Proposal)

2012 Aug   Genome Canada – CIHR 2012 Large-Scale Applied Research
                         Project Competition in Genomics and Personalized Health

2011 Sep   Canada Institute of Health Research Operating Grant

2009 Sep   Canada Institute of Health Research Operating Grant

2009 Aug   Ontario Research Fund – Global Leadership Round in Genomics &
                         Life Sciences (ORF – GL[2])

MANUSCRIPT REVIEWS

2019 June   EBioMedicine
2019 June   Genomics, Proteomics & Bioinformatics
2019 May   The World Journal of Biological Psychiatry
2018 Oct   Breast Cancer Research and Treatment
2018 May   British Journal of Cancer
2018 Mar   BMC Bioinformatics
2018 Feb   Clinical Epigenetics
2018 Jan   Scientific Reports
2017 Sep   Frontiers in Genetics, section Statistical Genetics and Methodology
2016 Nov   Clinical Epigenetics
2016 Aug   BMC Medical Genomics
2016 Aug   BMG Genomics
2016 Jun   Frontiers in Genetics, section Statistical Genetics and Methodology
2016 Jun   BMC Bioinformatics
2016 Apr   BMC Genomics
2015 Dec   Plos One

2015 Dec	BMC Bioinformatics
2015 Nov	Scientific Reports
2015 Oct	BMC Bioinformatics
2015 Jun	Peer J
2015 May	Genetic Epidemiology
2014 Nov	Plos One
2014 Nov	Cancer Informatics
2014 Oct	The Protein Journal

Before February 2014

Plos One
The Scientific World Journal
Autism Research
BMC System Biology
Neurocomputing
G3: Genes, Genome, Genetics
Journal of Neurodevelopmental Disorders
Developmental & Comparative Immunology
BMC Bioinformatics
Molecular Genetics and Genomics
Bioinformatics
Cancer Informatics
Physiological Genomics

C. Research Funding

1. CURRENTLY HOLDING

2018 Aug – 2023 Jul

Title: Role of taste signaling and host-microbial interactions on caries risk in young children

Funding agency: Canada Institutes of Health Research (CIHR), Project Grant Spring 2018

Principal Investigator: CHELIKANI, Prashen; SCHROTH, Robert

Co-Investigators: **HU, Pingzhao**; DUAN, Kangmin

Amount: $885,870 CAD

2017 May – 2023 Apr

Title: Visual and automated disease analytics (VADA)

Funding agency: Natural Science and Engineering Research Council of Canada (NSERC), Collaborative Research and Training Experience (CREATE) Program

Principal Investigators: IRANI, Pourang

Co-Investigators: LIX, Lisa; KUSHNIRUK, Andre; BORYCKI, Elizabeth; ARINO, Julien; **HU, Pingzhao**; THOMO, Alex; TZANETAKIS, George; van DOMESELAAR, Gary; KOBAYASHI, Karen, LEBOE-MCGOWAN, Jason;

Amount: $ 2,100,000 (1,650,000 CAD from NSERC + $450,000 from University of Manitoba)

2015 Apr – 2020 Mar	<u>Title</u>: Developing novel machine learning algorithms for network Biology
	<u>Funding agency</u>: Natural Science and Engineering Research Council of Canada (NSERC), Individual Discovery Grants (With Early Career Supplement)
	<u>Principal Investigator</u>: **HU, Pingzhao**
	<u>Amount</u>: $90,000 CAD
2019 Apr – 2024 Mar	<u>Title</u>: Exploring and exploiting reduced USP22 expression in colorectal cancer
	<u>Funding agency</u>: Canada Institutes of Health Research (CIHR), Project Grant Fall 2018
	<u>Principal Investigator</u>: MCMANUS, Kirk
	<u>Co-Investigators</u>: KRIST, Baker; HARMINDER, Singh
	<u>Collaborators</u>: **HU, Pingzhao (I have been budgeted a MSc student to analyze the scCNV data in the grant)**
	<u>Amount</u>: $807.075 CAD
2019 Apr – 2022 Mar	<u>Title</u>: Finding novel antibiotics against Burkholderia cepacia complex by genome-wide fitness and machine learning
	<u>Funding agency</u>: Cystic Fibrosis Canada, Basic and Clinical Research Grants
	<u>Principal Investigator</u>: CARDONA, Silvia
	<u>Co- Principal Investigators</u>: **HU, Pingzhao**; DAVIS, Rebecca
	<u>Amount</u>: $300,000 CAD
2018 Nov – 2020 Oct	<u>Title</u>: Antibiotic discovery for Burkholderia cepacia complex
	<u>Funding agency</u>: Cystic Fibrosis Foundation (CFF), USA Pilot and Feasibility Awards – Spring Cycle
	<u>Principal Investigator</u>: CARDONA, Silvia
	<u>Co-Investigators</u>: **HU, Pingzhao**; DAVIS, Rebecca
	<u>Amount</u>: $100,000 USD
2017 May – 2020 Apr	<u>Title</u>: Developing novel machine learning algorithms for network Biology
	<u>Funding agency</u>: Graduate Enhancement of Tri-council Stipends (GETs) Program, University of Manitoba
	<u>Principal Investigator</u>: **HU, Pingzhao**
	<u>Amount</u>: $26,250 CAD
2017 Oct – 2019 Sep	<u>Title</u>: Genome-wide diet-gene interaction analysis for risk of psychiatric comorbidity in inflammatory bowel disease
	<u>Funding agency</u>: The Western Canadian Universities, Collaborative Project Seed Funding
	<u>Principal Investigators</u>: **HU, Pingzhao**
	<u>Co-Investigators</u>: BERNSTEIN, Charles; LI, Longhai, KONG, Linglong, FRENKEL, Svetlana

Amount: $20,000 CAD

2018 Jun – 2019 Jul Title: Identification of genomic signatures associated with MRI-based deep radiomic phenotypes of breast cancer tumors
Funding agency: Dr. Paul H.T. Thorlakson Foundation
Principal Investigator: **HU, Pingzhao**.
Amount: $27,528 CAD

2017 May – 2020 Apr Title: Exploring association between host genetics and microbiome in pediatric Crohn's disease.
Funding agency: Children's Hospital Research Institute of Manitoba, Operating Grant.
Principal Investigator: **HU, Pingzhao**.
Co-Investigator: EI-Matary, Wael; BERNSTEIN, Charles
Amount: $40,000 CAD.

2015 Sep – 2019 Aug Title: Improving breast cancer survival and drug response prediction based on mutated gene network
Funding agency: Canadian Breast Cancer Foundation – Prairies/NWT Region, Research Grant
Principal Investigator: **HU, Pingzhao**
Amount: $217,050 CAD

2. PREVIOUSLY HOLDING

2018 June – 2019 Mar Title: Machine learning-guided development of multiscale imaging probes for colorectal cancer
Funding agency: New York Academy of Sciences and Japan Agency for Medical Research and Development, Research Grant
Principal Investigators: MURAKAMI, Kazuhiro; JUNKER, Anna; **HU, Pingzhao**
Amount: $21,000 USD

2017 Feb – 2019 Feb Title: Prediction of novelty and mode of action of natural antibacterial compounds by machine learning
Funding agency: University of Manitoba, University Collaborative Research Program (UCRP)
Principal Investigator: SILVIA, Cardona
Co-Investigators: **HU, Pingzhao**; DAVIS, Rebecca
Amount: $24,200 CAD

2017 Apr – 2018 Mar Title: Manitoba statistical and health sciences (MB-SAHS) collaborative centre
Funding agency: Canadian Statistical Sciences Institute
Principal Investigator: LIX, Lisa
Co-Investigators: **HU, Pingzhao**; ACAR, Elif; TORABI, Mahmoud; JOZANI, Mohammad
Amount: $10,000 CAD

2017 Feb – 2018 Feb	<u>Title</u>: Genomics-based computational drug repositioning for inflammatory bowel disease
	<u>Funding agency</u>: University of Manitoba, University Research Grants Program (URGP)
	<u>Principal Investigator</u>: **HU, Pingzhao**
	<u>Amount</u>: $7,500 CAD
2016 Sep – 2017 Dec	<u>Title</u>: Identification of copy number variation biomarkers in patients with inflammatory bowel disease
	<u>Funding agency</u>: Mitacs, Accelerate Program
	<u>Principal Investigator</u>: **HU, Pingzhao**
	<u>Co-principal Investigator</u>: BERNSTEIN, Charles
	<u>Amount</u>: $60,000 CAD
2015 Sep – 2017 Aug	<u>Title</u>: Identification of risk genes that modulate the severity of inflammatory bowel disease through copy number variation analysis.
	<u>Funding agency</u>: Health Sciences Centre Foundation (HSCF), General Operating Grants
	<u>Principal Investigator</u>: **HU, Pingzhao**
	<u>Co-principal Investigator</u>: Dr. BERNSTEIN, Charles
	<u>Co-Investigator</u>: Dr. SPRIGGS, Beth
	<u>Amount</u>: $70,000 CAD
2016 Sep – 2017 Aug	<u>Title</u>: Epigenetic mechanisms and association with septo-optic dyslplasia: a pilot project
	<u>Funding agency</u>: Children's Hospital Research Institute of Manitoba, DEVOTION – Catalyst Grant
	<u>Principal Investigator</u>: RODD, Celia
	<u>Co-principal Investigator</u>: WICKLOW, Brandy
	<u>Co-Investigators</u>: MHANNI; Aziz; **HU, Pingzhao**
	<u>Amount</u>: $20,000 CAD
2014 Aug – 2017 July	<u>Title</u>: Bioinformatics Approaches for Integrative Analysis of Omics Data for Translational and Personalized Medicine
	<u>Funding agency</u>: Manitoba Research Health Council (MHRC), Establishment Grant
	<u>Principal Investigator</u>: **HU, Pingzhao**
	<u>Amount</u>: $99,699 CAD
2016 Jun – 2017 Mar	<u>Title</u>: Identifying disease genes and modeling their regulatory mechanism corresponding to inflammatory bowel disease
	<u>Funding agency</u>: Nara Institute of Science and Technology (Japan), Global Collaboration Project FY2016.
	<u>Principal Investigator (</u>Japan): Md. Altaf-Ul-Amin
	<u>Co-Investigator (</u>Japan): SATO, Tetsuo.
	Co-<u>Principal Investigator (Canada)</u>: **HU, Pingzhao**
	<u>Amount</u>: $ 1,110,000 Yen (14,000 CAD)

2014 Feb – 2017 Jun	<u>Funding agency</u>: University of Manitoba Office of the Vice-President (Research and International) and the Faculty of Medicine, Research Start-up Fund <u>Principal Investigator</u>: **HU, Pingzhao** <u>Amount</u>: $150,000 CAD
2016 Apr – 2016 Aug	<u>Title</u>: Partek: A genomic data analytics software <u>Funding agency</u>: Department of Biochemistry and Medical Genetics, University of Manitoba <u>Principal Investigator</u>: **HU, Pingzhao** <u>Co-Investigators</u>: BEAVIS, Ronald; PEMBERTON, Trevor <u>Amount</u>: $20,000 CAD
2014 Jul – 2016 Jun	<u>Title</u>: Deciphering DNA methylome in metastatic prostate cancer. <u>Funding agency</u>: Prostate Cancer Canada, Movember Discovery Grants <u>Principal Investigator</u>: BAPAT, Bharati <u>Co-Investigators</u>: JOSHUA, Anthony; FLESHNER, Neil; **HU, Pingzhao**; BADER, Gary <u>Amount</u>: $185,900 CAD
2015 May – 2016 Apr	<u>Title</u>: Epigenetic profiling in severe sepsis – (EPSIS). <u>Funding agency</u>: McLaughlin Centre, University of Toronto, Accelerator grant in genomic medicine <u>Principal Investigator</u>: DOS SANTOS, Claudia <u>Co-Investigators</u>: TSANG, Jennifer; BINNIE, Alexandra; LIAW, Patricia; **HU, Pingzhao**; CASTELO-BRANCO, Pedro <u>Amount</u>: $50,000 CAD
2015 Apr – 2016 Mar	<u>Title</u>: Patient-specific pathway activations inferred from genomic data predict breast cancer survival <u>Funding agency</u>: Manitoba Medical Service Foundation (MMSF), Operating Grants <u>Principal Investigator</u>: **HU, Pingzhao** <u>Amount</u>: $18,000 CAD
2011 Jun – 2016 May	<u>Title</u>: Neurocognitive-Phenome, Genome, Epigenome and Nutriome in Childhood Leukemia Survivors: N-PhenoGENICS <u>Funding agency</u>: Canada Institute of Health Research (CIHR), Team Grant: Childhood Cancer – Late Effects of Treatment <u>Principal Investigator</u>: ITO, Shinya <u>Co-principal Investigators</u>: GUGER, Sharon; HITZLER, Johann H; O'CONNOR, Deborah L; SCHACHAR, Russell J; SPIEGLER, Brenda; WEKSBERG, Rosanna <u>Co-Investigators</u>: CARLETON, Bruce C <u>Collaborator</u>: **HU, Pingzhao**

Amount: $1,633,381 CAD

2015 Mar – 2016 Feb	Title: Immunogenetic markers of extreme clinical phenotypes of post-transplant lymphoproliferative disorder: a pilot project
	Funding agency: Enduring Hearts Inc., USA, Operating Grants
	Principal Investigator: ALLEN, Upton
	Co-Investigators: DIPCHAND, Anne; GRUNEBAUM, Eyal; BEYENE, Joseph; PREIKSAITIS, Jutta; LEVINGS Megan; **HU, Pingzhao**; NG, Vicky
	Amount: $35,000 USD ($43,729 CAD)
2015 Feb – 2016 Feb	Title: Machine learning techniques for identifying pathway biomarkers
	Funding agency: Faculty of Science of University of Manitoba, Interdisciplinary/New Directions Research Collaboration Initiation Grants
	Principal Investigator: Wang, Yang
	Co-Principal Investigator: **HU, Pingzhao**
	Amount: $8,000 CAD
2015 Jan – 2015 Dec	Title: A gene-pair based enrichment testing approach for identifying pathway biomarkers in cancer studies
	Funding agency: University of Manitoba, University Research Grants Program (URGP)
	Principal Investigator: **HU, Pingzhao**
	Amount: $7,500 CAD
2014 May – 2015 May	Title: Early detection of lung cancer using next generation sequencing technology
	Funding agency: McLaughlin Centre, University of Toronto, Accelerator grant in genomic medicine
	Principal Investigator: LIU, Geoffrey
	Co-principal Investigators: XU, Wei
	Co-Investigators: HUNG, Rayjean; **HU, Pingzhao**
	Amount: $50,000 CAD

D. Publications

SRA=Senior Responsible Author
PA=Principal Author
CPA=Co-Principal Author
C=Co-author/Collaborator

1. PEER-REVIEWED PUBLICATIONS (<u>TRAINEES</u>, CO-FIRST AUTHOR*, CO-CORRESPONDING AUTHOR**)

Journal Articles

1. **<u>S Frenkel</u>,** CN Bernstein, **<u>YW Jin</u>**, M Sargent, **<u>W Jiang</u>**, **<u>Q Kuang</u>**, J Wei, B Thiruvahindrapuram, SW Scherer, **P Hu** (2019). A genome-wide copy number variant data set for inflammatory bowel disease in a Caucasian population. *Data in Brief. In Press.* [SRA]

2. **<u>S Frenkel</u>,** CN Bernstein, M Sargent, **<u>Q Kuang</u>**, **<u>W Jiang</u>**, J Wei, B Thiruvahindrapuram, B Spriggs, SW Scherer, **P Hu** (2019). Genome-wide analysis identifies rare copy number variations associated with inflammatory bowel disease. *Plos One.* In Press. [SRA]

3. **<u>S Frenkel</u>**, CN Bernstein, M Sargent, **<u>W Jiang</u>**, **<u>Q Kuang</u>**, W Xu, **P Hu** (2019). Copy number variation-based gene set analysis reveals cytokine signaling pathways associated with psychiatric comorbidity in patients with inflammatory bowel disease. *Genomics*, S0888-7543(19)30081-3. doi: 10.1016/j.ygeno.2019.05.001. [SRA]

4. **<u>R Shikder</u>**, P Thulasiraman, P Irani, **P Hu** (2019). A openAM-based tool for finding longest common subsequence in bioinformatics. *BMC Research Notes,* 12:220. [SRA]

5. **<u>Q Liu</u>**, **P Hu** (2019). Association analysis of deep genomic features extracted by denoising autoencoders with breast cancer clinical outcomes. *Cancers*, 11:494; doi:10.3390/cancers11040494. [SRA]

6. **<u>S Huang</u>**, W Xu, **P Hu****, T Lakowski** (2019). Integrative analysis reveals subtype-specific regulatory determinants in triple negative breast cancer. *Cancers.* 11: 507; doi:10.3390/cancers11040507. **Co-corresponding authors. [SRA]

7. S Jahan, TH Beacon, S He, C Gonzalez, W Xu, GP Delcuve, **<u>S Jia</u>**, **P Hu**，JR Davie. (2019).Chromatin organization of transcribed genes in chicken polychromatic erythrocytes. *Gene*, 699:80-87. [C]

8. **<u>J You</u>,** R McLeod, **P Hu** (2019). Predicting drug-target interaction network using deep learning model. *Computational Biology and Chemistry*, 80:90-101. [SRA]

9. **<u>L Grenier</u>**, **P Hu** (2019). Computational drug repurposing for inflammatory bowel disease using genetic information. *Computational and Structural Biotechnology Journal,* 17: 127-135. [SRA]

10. **<u>J Zhang</u>**, X Ye, C Wu, H Fu**, W Xu**, **P Hu**** (2019). Modelling gene-environment interaction for the risk of non-Hodgkin lymphoma. *Frontiers in Oncology*. 8:657. [SRA]

11. P Basak, S Chatterjee, V Bhat, A Su, H Jin,V Lee-Wing, **<u>Q Liu</u>**, **P Hu**, LC Murphy, A Raouf (2018). H19 acts as an estrogen receptor modulator that is required for endocrine therapy resistance in ER+ breast cancer cells. *Journal of Cellular Physiology and Biochemistry*, 51:1518-1532. [C]

12. **<u>L Zhang*</u>, <u>N Feizi*</u>, <u>C Chi</u>, P Hu** (2018). Association analysis of somatic copy number alteration burden with breast cancer survival**. *Frontiers in Genetics.* 9:421*.* [SRA]

13. R Eguchi, MB Karim, **P Hu**, T Sato, N Ono, S Kanaya, MA Amin (2018). An integrative network-based approach to identify novel disease genes and pathways: A case study in the context of inflammatory bowel disease. *BMC Bioinformatics*. 19:264. [C]

14. **<u>Y Chen</u>**, C Monteiro, A Matos, **<u>J You</u>**, A Fraga, C Pereira, V Catalán, A Rodríguez, J Gómez-

Ambrosi, G Frühbeck, R Ribeiro**, **P Hu**** (2018). Epigenome-wide DNA methylation profiling of periprostatic adipose tissue in prostate cancer patients with excess adiposity – a pilot study. Clinical Epigenetics, 10:54. [SRA]

15. **C Chi**, LC Murphy, **P Hu** (2018). Recurrent copy number alterations in young women with breast cancer. *Oncotarget*, 9:11541-11558. [SRA]

16. PC Havugimana*, **P Hu***, A Emili (2017). Protein complexes: big data, machine learning and integrative proteomics: lessons learned over a decade of systematic analysis of protein interaction networks. *Expert Review of Proteomics*, 14:845-855. [CPA]

17. **MM Islam***, **Y Tian***, **Y Chen**, Y Wang, **P Hu**. A deep learning regression model for phenotype prediction based on GAW20 genome-wide DNA methylation data. Genetic Analysis Workshop (GAW) 20. San Diego, CA, USA, March 2017. *BMC Proceedings*, 12(Suppl 9):21. [SRA]

18. C Yang, L Kari, GL Sturdevant, L Song, M Patton, CE Couch, JM Ilgenfritz, TR Southern, WM Whitmire, M Briones, C Bonner, C Grant, **P Hu**, G McClarty, and HD Caldwell. (2017). Chlamydia trachomatis ChxR is a transcriptional regulator of virulence factors that function in in vivo host pathogen interactions. Pathogens and Disease. 75(3): ftx035. [C]

19. X Ye, **K Zhao**, C Wu, **P Hu**, H Fu (2017). Associations between genetic variants in immunoregulatory genes and risk of non-hodgkin lymphoma in a Chinese population. *Oncotarget*, 8:10450-10457. [C]

20. H Amatullah, Y Shan, BL Beauchamp, PL Gali, S Gupta, T Maron-Gutierrez, ER Speck, AE Fox-Robichaud, JL Tsang, SH Mei, TW Mak, PR Rocco, JW Semple, H Zhang, **P Hu**, JC Marshall, DJ Stewart, ME Harper, PC Liaw, WC Liles, CC dos Santos (2017). DJ-1/PARK7 impairs bacterial clearance in sepsis. *American Journal of Respiratory and Critical Care Medicine*, 195:889-905. [C]

21. MJ Patton, S McCorrister, C Grant, G Westmacott, R Fariss, **P Hu**, **K Zhao**, M Blake, B Whitmire,C Yang, HD Caldwell, G McClarty (2016). The Chlamydial Protease-like Activity Factor (CPAF) and T3S Proteins Cooperate in the Inhibition of p65 Nuclear Translocation. *mBio,* 7:e01427-16. [C]

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2. <u>**Q Liu**</u>, A Junker, K Murakami, **P Hu** (2019). Automated cancer cell counting by ensembling deep features.

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9. <u>**CJ Walsh**</u>, C Escoduro, MS Herridge, S Mathur, GD Bader, **P Hu**, J Batt and CC dos Santos Submitted on behalf of the Canadian Critical Care Translational Biology Group (2018). MicroRNA-mRNA interactions underlying abnormal muscle repair in survivors of critical illness with sustained weakness.

10. A Binnie, JLY Tsang, **P Hu**, P Castelo-Branco, CC. dos Santos (2018). DNA Methylation and Sepsis.

11. N Younes*, L Zhou*, H Amatullah, SHJ Mei, DJ Stewart, WCW Liles, **P Hu**, CC dos Santos.(2019). Mesenchymal Stromal/Stem Cells Modulate Response to Experimental Sepsis-Induced Lung Injury via Regulation of miR-27a-5p in Recipients.

12. PL Gali, H Amatullah, Y Shan, SHJ. Mei, K Szaszi, P Femandez-Segoviano, JA Lorente, A Esteban, W Conrad Liles, P Marsden, **P Hu**, DJ Stewart, CC dos Santos. MicroRNA 193b-5p plays a critical role in the regulation of sepsis-induced vascular leak and acute lung injury.

Manuscript under Preparation

13. <u>**K Zhao**</u>, CMT Greenwood, **P Hu** (2019). A gene-pair based statistical method for testing gene set enrichment in microarray studies.

14. <u>**N Feizi**</u>, **P Hu** (2019). Computational prediction of the pathogenic status of cancer-specific

somatic variants.

15. **Q Liu**, **P Hu** (2019). Deep learning for decoding molecular phenotypes with radiogenomics in breast cancer.

16. **YW Jin, P Hu** (2019). Deconvolution of bulk transcriptome to characterize age-group differences in tumor immune landscape associated with clinical outcome in breast cancer.

17. **S Jia**, **P Hu** (2019). Computational prediction of immune cell types and identification of their gene signatures using single-cell RNA sequencing data.

18. **MM Islam**, Y Wang **P Hu** (2019). Drug repurposing for breast cancer from drug-target interactions using graph-based clustering approaches.

19. **Z Fei**, **L Jacobs**, W Xu, CN Bernstein, P Hu (2019). Modelling diet-gene interaction for the risk of psychiatric comorbidities among patients with inflammatory bowel disease.

Abstracts and Posters

1. **YW Jin**, L Murphy, **P Hu** (2019). Deconvolution of bulk transcriptomes to characterize age-group differences in tumor immune landscape associated with clinical outcome in breast cancer. Canada-Korea Conference on Science and Technology, June 16-19, Banff, Alberta, Canada.

2. AM Ektesabi, K Mori, J Tsoporis, C Walsh, SHJ Mei, DJ Stewart, WC Liles, **P Hu**, T Parker, CC dos Santos (2019). Regulation of Mir-187b in Endotoxemic Primary Cardiomyocytes and Septic Murine Hearts treated with Mesenchymal Stromal/Stem Cells. Critical Care Canada Forum. Toronto, ON, Canada, November 2019.

3. D Oryniak, V Cruz de Jesus, K Mann, A Alamri, M Sturym, B Mittermuller, D Oryniak, **P Hu**, K Duan, R Schroth, P Chelikani (2019). Differences in Plaque Microbiota Between Sex with Early Childhood Caries International Association for Dental Research Annual Meeting, June 19-22, 2019, Vancouver, Canada.

4. V Cruz de Jesus, K Mann, A Alamri, M Sturym, B Mittermuller, D Oryniak, **P Hu**, K Duan, R Schroth, P Chelikani (2019). Taste genetics and oral microbiota role on early childhood caries. International Association for Dental Research Annual Meeting, June 19-22, 2019, Vancouver, Canada.

5. **Nikta Feizi**, **P Hu**. Computational prediction of the pathogenic status of cancer-specific somatic variants. 8th Canadian Human and Statistical Genetics Meeting, Fairmont le Château Montebello, Québec, Canada, June 16-19, 2019.

6. **Qian Liu**, **P Hu**. A deep learning approach for mapping genomic and quantitative MRI-based radiomic phenotypes of invasive breast carcinoma. Manitoba Poster Competition, Winnipeg, Canada, June 12, 2019.

7. **Shujun Huang**, **P Hu,** TM Lakowski. Predicting drug response of breast cancer using multiple-layer cell line-drug network model . 2019 Annual Conference of Canadian Society for Pharmaceutical Sciences, Vancouver, Canada, May 21-24, 2019.

8. **Qian Liu**, **P Hu**. Deep learning for magnetic resonance imaging-genomic mapping of invasive breast carcinoma. CancerCare Manitoba Research Day, Winnipeg, Canada, May 7, 2019.

9. **MM Islam**, Y Wang **P Hu**. Drug repurposing for breast cancer from drug-target interactions using graph-based clustering approaches. CancerCare Manitoba Research Day, Winnipeg, Canada, May 7, 2019.

10. **R Shikder**, P Irani, **P Hu**. Multi-view representation learning and visualization of multiomics data. Visual and Automated Disease Analytics (VADA) Summer School. July 9-13, 2018. Winnipeg, Canada.

11. **J Zhang**, X Ye, C Wu, H Fu, W Xu, **P Hu**. Modelling gene-environment interaction for the 1 risk of non-Hodgkin lymphoma in a Chinese population. SORA-TABA Workshop & DLSPH Biostatistics Research Day. June 15, 2018. Toronto, Canada.

12. AM Ektesabi, K Mori, C Walsh, SHJ Mei, DJ Stewart, WC Liles, **P Hu**, CC dos Santos. Detection of Immunoregulatory microRNAs in Cardiac Tissue of Septic Mice treated with Mesenchymal Stromal/Stem Cells. American Heart Association Annual Meeting, Chicago, USA, November 10-12, 2018.

13. **J You**, **MM Islam**, **L Grenier**, **Q Kuang**, RD McLeod, **P Hu**. Machine learning-based drug-target interaction prediction for drug repurposing. CancerCare Manitoba Research Day, Winnipeg, Canada, May 29, 2018.

14. **Qian Liu**, **P Hu**. Application of artificial intelligence algorithms to mine biologically relevant genomic features to breast cancer. CancerCare Manitoba Research Day, Winnipeg, Canada, May 29, 2018.

15. **Nikta Feizi**, **P Hu**. Computational prediction of the pathogenic status of cancer-specific somatic variants. CancerCare Manitoba Research Day, Winnipeg, Canada, May 29, 2018.

16. N Filewod, C Walsh, S Mei, D Stewart, WC Liles, **P Hu**, C Dos Santos. A microRNA signature in Mesechymal-Stromal-Cell-treated Septic Murine Kidneys. European society of intensive medicine (ESICM) Annual Congress. Paris, France, 20-24 October, 2018.

17. **P Hu, MM Islam**, K Jeffers, A Hogan, R Davis, S Cardona. Deep neural network model for predicting gene activity using three-dimensional structures of chemical compounds. Joint Statistical Meeting (American Statistical Association Annual Meeting), Vancouver, BC, Canada, July 28 – August 2, 2018.

18. **L Zhang*, N Feizi*, C Chi, P Hu**. Somatic copy number alteration burden predicts survival prognosis in breast cancer. Complex Data in Health Research Workshop, Manitoba, Canada, February 1, 2018.

19. **J You**, **MM Islam**, **L Grenier**, **Q Kuang**, RD McLeod, **P Hu**. Machine learning-based drug-target interaction prediction for drug repurposing. Complex Data in Health Research Workshop, Manitoba, Canada, February 1, 2018.

20. **S Frenke**,W Jiang,Y Tian, M Sargent, Q Kuang, JR Walker, J Wei, B Thiruvahindrapuram, E Spriggs, SW Scherer, W Xu, CN Bernstein, **P Hu**. Genome-wide scan to identify genetic risk loci for depression and anxiety in patients with inflammatory bowel disease. Complex Data in Health Research Workshop, Manitoba, Canada, February 1, 2018.

21. **CJ Walsh**, C Escoduro, MS Herridge, S Mathur, GD Bader, **P Hu**, J Batt and CC dos Santos Submitted on behalf of the Canadian Critical Care Translational Biology Group.microRNA-mRNA interactions underlying abnormal muscle repair in survivors of critical illness with sustained weakness. The American Thoracic Society International Conference 2018. San Diego, CA, USA, May 2018.

22. A Binnie, **CJ Walsh**, **P Hu**, D Dwivedi, A Fox-Robichaud,P Liaw, JLY Tsang, Y Shan, J Batt, G Carrasqueirro, P Castelo-Branco, CC dos Santos. Epigenetics of sepsis: early sepsis is characterized by alterations in the DNA methylation patterns of many sepsis-associated genes. Critical Care Canada Forum. Toronto, ON, Canada, October 2017.

23. **S Frenke**,**W Jiang**,**Y Tian**, M Sargent, Q Kuang, JR Walker, J Wei, B Thiruvahindrapuram, E Spriggs, SW Scherer, W Xu, CN Bernstein, **P Hu**. Genome-wide scan to identify genetic risk loci for depression and anxiety in patients with inflammatory bowel disease. The Western Canadian Universities Big Data Health Conference (WCUC). Banff Centre, Alberta, Canada, September 28-29, 2017.

24. **J You**, **MM Islam**, **C Chi**, **Y Tian**, J Siddiqua. Molecular Classification of Inflammatory Bowel Disease Using GWAS-based Risk Gene Expression Profiles. The 45th Annual Meeting of the Statistical Society of Canada (SSC). Winnipeg, Manitoba, Canada, June 2017. (I am the supervisor of the team for Student Case Study Poster Competition held in SSC).

25. CA Robinson, A Orr, D Gaston, J Yorke, M Nightingale, **P Hu**, C Macgillivray, L Geldenhuys, S Dyack, T Hewlett, M West, K Bedard. Putative association of a germline mutation in HYOU1 with nephrosclerosis and end-stage renal disease. The 41th Annual Scientific Conference of the Canadian College of Medical Geneticists. Montreal, QC, Canada, May 2017.

26. **MM Islam**, **R Ajwad**, **C Chi**, M Domaratzki, Y Wang, **P Hu**. Somatic copy number alteration-based prediction of molecular subtypes of breast cancer using deep learning model. 30TH Canadian Conference on Artificial Intelligence. Edmonton, Alberta, Canada, May 16-19, 2017.

27. **S Frenkel**, M Sargent, Q Kuang, J Wei, B Thiruvahindrapuram, B Spriggs, SW Scherer, CN Bernstein, **P Hu**. Genome-wide analysis identifies rare copy number variations associated with inflammatory bowel disease. Digest Disease Week (DDW). Chicago, IL, USA, May 6-9, 2017. Gastroenterology, 152:Supp.1 S984, 2017.

    The abstract won the "Poster of Distinction" award at American Gastroenterological Association's (AGA) Digestive Disease Week (May 6-9), Chicago. This poster was rated in the top 10% of all AGA abstracts selected for poster presentation at DDW.

28. **W Jiang**, W Xu, CN Bernstein, **P Hu** (2017). Identifying Genetic Risk Factors Associated with Psychiatric Status in Patients with Inflammatory Bowel Disease. Annual DLSPH Biostatistics Research Day at the University of Toronto. Toronto, Ontario, Canada, May 5, 2017.

29. **Y Cheng**, C Monteiro, A Matos, A Fraga, V Catalán, A Rodríguez, J Gómez-Ambrosi, G Frühbeck, R Ribeiro*, **P Hu*** (2017). Epigenome-wide DNA Methylation Profiling of Periprostatic Adipose Tissue Reveals Important Roles of Obesity in Men with Prostate Cancer. 6th Annual Canadian Human and Statistical Genetics Meeting. Quebec City, Quebec, Canada, April 22-25, 2017.

30. **C Chi**, **N Hizon**, **P Hu** (2017). Pan-cancer analysis of somatic mutations in young and old cancer patients. 6th Annual Canadian Human and Statistical Genetics Meeting. Quebec City, Quebec, Canada, April 22-25, 2017.

31. **Y Tian**, **MM Islam**, Y Wang, **P Hu** (2017). A deep learning regression model for phenotype prediction based on GAW20 genome-wide DNA methylation data. Genetic Analysis Workshop (GAW) 20. San Diego, CA, USA, March 2017.

32. **C Chi**, **R Ajwad**, Q Kuang, LC Murphy, **P Hu**. Recurrent somatic copy number variation analysis identifies risk genes that modulate the survival of young women with breast cancer. The American Society of Human Genetics (ASHG) Annual Meeting. Vancouver, BC, Canada, October 2016.

The abstract won 2016 ASHG/Charles J. Epstein Trainee Award for Excellence in Human Genetics Research – Semifinalist. The Semifinalist award is for outstanding trainee research in 2016. American Society of Human Genetics (ASHG) granted 60 awards to 490 applicants based on abstracts scored by the Scientific Program Committee of 2016 Annual Meeting of ASHG.

33. H Liu, ME Tourlakis, R Gandhi, **P Hu**, AD Paterson, J Rommens. SDS ribosome and impaired protein synthesis in Shwachman-Diamond syndrome. The American Society of Human Genetics (ASHG) Annual Meeting. Vancouver, BC, Canada, October 2016.

34. **Huyen Le**, Yang Wang, **P Hu** (2016). Gene set –based deep neural network learning for disease classification. GLBIO/CCBC Great Lakes Bioinformatics and Canadian Computational Biology Conference. Toronto, ON, Canada, May 16-19, 2016

35. **C Chi**, Q Kuang, L Murphy, **P Hu** (2016). A graph-based algorithm for identifying recurrent copy number variations with application to young women's breast cancer. 18th Annual CancerCare Manitoba Research Day. Winnipeg, MB, Canada, May 9, 2016.

36. G Hicks, A Chudley, J Davie, MD Bigio, B Elias, A Fainsod, **P Hu**, T Pemberton, M Rastegar. Fetal alcohol spectrum disorder: genetic and epigenetic tools for risk assessment. The Alberta Epigenetics Network Annual Summit. Banff, AB, Canada, March 21-23, 2016.

37. **C Chi**, Q Kuang, L Murphy, **P Hu** (2016). A graph-based algorithm for identifying recurrent copy number variations with application to young women's breast cancer. 5th Annual Canadian Human and Statistical Genetics Meeting. Halifax, NS, Canada, April 16-19, 2016.

38. **K Zhao**, CMT Greenwood, **P Hu** (2016). A gene-pair based statistical method for testing gene set enrichment in microarray studies. 5th Annual Canadian Human and Statistical Genetics Meeting. Halifax, NS, Canada, April 16-19, 2016.

39. K Vagianos, KA Sexton, MT Bernstein, **P Hu**, **K Zhao**, CN Bernstein, LE Targownik (2016). Dietary lactose consumption is associated with both increased symptoms and intestinal inflammation in IBD. Digestive Disease Week (DDW). San Diego, CA, USA, May 21-24, 2016. Gastroenterology, 150:Supp.1 S41-42, 2016.

40. **CJ Walsh**, J Batt, MS Herridge, GD Bader, **P Hu**, CCD Santos (2016).Integrated analysis of microRNA and mRNA expression in survivors of critical illness with sustained muscle weakness reveals microRNA targets involved in regeneration and repair associated with quadriceps strength. American Thoracic Society Annual Conference. San Francisco, USA. May 13-18, 2016.

41. **C Chi**, **K Zhao**, RH Johnson, CK Anders, SE Egan, **P Hu** (2015). Identification of gene- and pathway-based breast cancer signatures. Canadian Cancer Research Conference. Montreal, Canada, November 7-10, 2015.

42. **C Chi**, **K Zhao**, RH Johnson, CK Anders, SE Egan, **P Hu** (2015). Identification of gene- and pathway-based breast cancer signatures. CIHR-IG New Investigator Meeting 14. Montreal, Canada, Oct.30- Nov. 01, 2015.

43. **K Zhao**, C Wu, H Fu, **P Hu,** X Ye (2015). Identify genetic and non-genetic factors associated with non-Hodgkin lymphoma in a sample from Shanghai, China. The 11th Annual Canadian Chronic Lymphocytic Leukemia (CLL) Meeting, Winnipeg, MB, Canada, October 1-2, 2015.

44. **K Zhao**, C Wu, H Fu, **P Hu,** X Ye (2015). Genetic variations in immunoregulation genes associated with non-hodgkin lymphoma in a Chinese population. Child Health Research Day, Winnipeg, MB, Canada, September 30, 2015.

45. PL Gali, H Amatullah, DY Zhou, Y Shan, Y Amoozadeh, K Szaszi, **P Hu**, C Dos Santos. (2015) MiRNA193b-5p Inhibition Attenuates LPS-induced Acute Lung Injury Through Decreased Occludin Degradation. The FASEB Journal 29 (1 Supplement), 863.16

46. L Zhou, H Amatullah, P Gali, D Zhou, Y Shan, **P Hu**, C Dos Santos. (2015) Role of miR-27a Mediated Regulation of VAV3 in Sepsis-induced ARDS. The FASEB Journal 29 (1 Supplement), 863.3.

47. N Kanwar, **P Hu**, P Bedard, M Clemons, D McCready, SJ Done. Identification of genomic signatures in circulating tumor cells from breast cancer. United States & Canada Academy of Pathology (USCAP) American Association for Cancer Research Annual Meeting. Boston, MA, USA, March 21 - 27, 2015.

48. **X Zhang**, R Beavis, **P Hu**. From differential gene analysis to gene set enrichment analysis and visualization – A bioinformatics pipeline. 10th Annual Child Heath Research Day, Winnipeg, Canada, October 2014.

49. **P Hu**, Z Wang, XQ Liu. A Graph based algorithm to identify recurrent runs of homozygosity variants in a Mexican American sample. Genetic Analysis Workshop 19. Vienna, Austria, August 2014.

50. XQ Liu, **P Hu**, AD Paterson. Combined IBD mapping and sequencing analyses for filtering variants associated with blood pressure levels using an unrelated Mexican American sample. Genetic Analysis Workshop 19. Vienna, Austria, August 2014.

51. H Liu, **P Hu**, AD Paterson, J Rommens. Loss of the ribosome-associated factor Sbds in murine models of Shwachman-Diamond syndrome leads to aberrant polysome profiles. The American Society of Human Genetics (ASHG) Annual Meeting. San Diego, CA, USA, October 2014.

52. KWK Lee, R Richmond, L French, J Shin, **P Hu**, E Reischl, M Waldenberger, S Zeilinger, T Gaunt, W McArdle, S Ring, G Woodward, L Bouchard, D Gaudet, G Davey-Smith, C Relton, T Paus, Z Pausova. Prenatal exposure to maternal cigarette smoking is associated with lasting modulations of DNA methylation in the exposed offspring. The American Society of Human Genetics (ASHG) Annual Meeting. San Diego, CA, USA, October 2014.

53. **P Simon**, M de La Vega, **P Hu**, S McCorrister, P Chong, G Westmacott, K Coombs, D Kobasa. Proteomic responses to H1N1, H5N1 and H7N9 influenza virus infections in A549 cells. 16th International Conference of Virology. Montreal, Quebec, Canada, July 2014.

54. L French, D Caramaschi, E Dickie, G Leonard, M Perron, GB Pike, L Richer, S Veillette, **P Hu**, E Reischl, M Waldenberger, S Zeilinger, T Gaunt, W McArdle, S Ring, G Woodward, JC Evans, G Davey-Smith, C Relton, Z Pausova, T Paus. Methylation Status of Growth-factor Genes Predicts Handedness Associated Cortical Asymmetry. The 20th Annual Meeting of the Organization for Human Brain Mapping. Hamburg, Germany, June 2014.

55. **P Simon**, M de La Vega, **P Hu**, S McCorrister, P Chong, G Westmacott, K Coombs, D Kobasa. Proteomic responses to H1N1, H5N1 and H7N9 influenza virus infections in A549 cells. Prairie Infectious Immunology Network, Hecla, Manitoba, May 2014.

56. U Allen, **P Hu**, S Pereira, J Robinson, T Paton, J Beyene, N Khodai-Booran, A Dipchand, D Hebert, V Ng, T Nalpathamkalam, S Read. Exploring genetic diversity of Epstein-Barr Virus in the setting of transplantation relative to non-transplant settings: proof – of – principle. the Association of Medical Microbiology and Infectious Disease (AMMI) Canada and the Canadian Association for Clinical Microbiology and Infectious Diseases (CACMID) Annual Conference. Victoria, BC, Canada, April 2014.

57. DY Zhou, H Amatullah, Y Shan, P Gali, **P Hu**, C Dos Santos. Informed target discovery for gene and stem cell therapy in acute lung injury. Am J Respir Crit Care Med 187:A1334. Presented at American Thoracic Society International Conference. Philadelphia, Pennsylvania, USA, May 2013.

58. U Allen, **P Hu**, S Pereira, A Dipchand, V Ng, D Hebert, M Solomon, J Beyene, T Paton, N Khodai-Booran, T Nalpathamkalam, S Read. Pilot Study of Genetic Diversity of Epstein-Barr Viral Genes Among Pediatric Solid Organ Transplant Recipients. American Transplant Congress. Seattle, WA, USA, May 18-22, 2013.

59. K Lee, **P Hu**, E Reischl, M Waldenberger, D Gaudet, L Bouchard, T Paus, Z Pausova. 450K epigenome-wide scan reveals differential methylation of DNA in adolescents exposed prenatally to maternal cigarette smoking. 2nd Annual Canadian Human and Statistical Genetics Meeting. Quebec, Canada, April 21 – 24, 2013.

60. N Kanwar, **P Hu**, P Bedard, M Clemons, D McCready, SJ Done. Identifying genomic signatures within circulating breast cancer cells. American Association for Cancer Research Annual Meeting. Washington, DC, USA, April 6-10, 2013.

61. X Song, **P Hu**, R Torra, DC Cattran, AD Paterson, YP Pei. Homozygosity mapping for steroid-sensitive nephrotic syndrome. The Annual Meeting of American Society of Nephrology. San Diego, California, USA, November 2012.

62. DY Zhou, Y Shan, H Amatullah, **P Hu**, C Dos Santos. Informed target discovery for gene and stem cell therapy in acute lung injury. Journal of Critical Care 28, e13. Presented at Critical Care Canada Forum. Toronto, ON, Canada, October 2012.

63. **P Hu**, **X Wang**, J Haitsma, S Furmli, H Masoom, M Liu, A Slutsky, J Beyene, CMT Greenwood, C Dos Santos. Microarray meta-analysis identifies acute lung injury biomarkers in donor lungs that predict development of primary graft failure in recipients. Journal of Critical Care 28, e14. Presented at SCAI 11th International Conference on Complexity in Acute Illness (ICCAI 2012). Ottawa, ON, Canada, September 2012.

64. C Dos Santos, S Murthy, **P Hu**, Y Shan, J Haitsma, S Mei, D Stewart, C Liles. Network analysis of transcriptional responses induced by mesenchymal stem cell treatment of experimental sepsis. Journal of Critical Care 28, e14. Presented at SCAI 11th International Conference on Complexity in Acute Illness (ICCAI 2012). Ottawa, ON, Canada, September 2012.

65. **P Hu**, MMG Seno, AD Paterson, SW Scherer. A pathway-based meta-analysis approach for integrating autism gene expression profiles. NeuroDevNet's 3rd Annual Brain Development Conference. Toronto, Ontario, Canada, September 2012.

66. U Allen, **P Hu**, S Pereira, J Beyene, D Ho, N Khodai-Booran, T Nalpathamkalam, S Read. Exploring genetic diversity of Epstein-Barr Virus (EBV) using whole genome next generation sequencing. International Congress on Oncogenic Herpesviruses and Associated Diseases. Philadelphia, Pennsylvania, USA, August 1-4, 2012.

67. D Picard, S Millar, C Hawkins, H Rogers, SK Kim, YS Ra, T Chan, J Fangusaro, H Toledano, H Nakamura,T Van Meter, J Hayden, J Chan, L Lafay-Cousin, **P Hu**, S Goldman, CC Lau, S Pomeroy, HK Ng, J Pang, C Jones, A Gajjar, S Clifford, S Pfister, C Eberhart, E Bouffet, R Grundy, A Huang. Markers of cell lineage correlate with survival and metastatic potential in CNS-PNET. 15th International Symposium on Pediatric Neuro-Oncology. Toronto, ON, Canada, June 24-27, 2012.

68. CC dos Santos, S Murthy, **P Hu**, Y Shan, JJ Haitsma1, SHJ Mei, DJ Stewart, WC Liles. Network analysis of transcriptional response induced by systemic administration of bone marrow derived mesenchymal cells in polymicrobial sepsis. American Journal of Respiratory and Critical Care Medicine 185: A2211. Presented at American Thoracic Society Annual Meeting. San Francisco, CA, USA.   May 2012.

69. E Papp, R Johnson, D Merico, **P Hu**, I Grandal, C Guidos, J Danska. A novel ligand-independent Flt3 allele drives RANKL expression in a murine model of B-precursor acute lymphoblastic leukemia with CNS dissemination. Cancer Research 72, 8 Suppl.:A1397. Presented at American Association for Cancer Research Annual Meeting. Chicago, IL, USA. March 31- April 4, 2012.

70. N Kanwar, **P Hu**, M Clemons, D McCready, SJ Done. Identification of frequently gained genomic regions in breast circulating tumor cells. Cancer Research 72, 8 Suppl.:A3410. Presented at American Association for Cancer Research Annual Meeting. Chicago, IL, USA. March 31- April 4, 2012.

71. R Johnson, **P Hu**, C Fan, C Anders. Gene expression as a predictor of "young adult type" breast cancer: a retrospective analysis. LIVESTRONG Young Adult Alliance Annual Meeting. Austin, TX, USA. November 2011.

72. Z Wei, W Wang, **P Hu**, GJ Lyon, H Hakonarson. SNVer: a statistical tool for variant calling in analysis of pooling or individual next-generation sequencing data. The American Society of Human Genetics (ASHG) Annual Meeting. Montreal, Canada, October 2011.

73. **P Hu**, C Sandhu, Z Wei, E Cheran, J Foong, L Lau, Z Wang, S Pereira, Z Hu, RF Wintle, AD Paterson, SW Scherer. Next generation Resequencing of pooled DNA samples identified variants of SHANK3 in autism spectrum disorder. Annual Canadian Genetic Epidemiology & Statistical Genetics Meeting. King City, Canada, May 2011.

74. Ye Yang, **P Hu**, Z Wang, SW Scherer. Combining sparse principal component analysis and LASSO to identify autism spectrum disorder associated risk pathways via rare copy number variants. Annual Canadian Genetic Epidemiology & Statistical Genetics Meeting. King City, Canada, May 2011.

75. X Song, **P Hu**, N He, AD Paterson, Y Pei. Homozygosity mapping of recessive disease genes for steroid-sensitive nephrotic syndrome. The Annual Meeting of American Society of Nephrology. Denver, USA, November 2010.

76. MA Tayeb, RM Iwasiow, **P Hu**, RF Wintle, SW Scherer. Evaluation of the performance of genomic DNA from saliva collected with Oragene-DNA for the purpose of SNP discovery on various Illumina Technologies. The American Society of Human Genetics (ASHG) Annual Meeting. Washington, USA, November 2010.

77. RM Iwasiow, MA Tayeb, **P Hu**, RF Wintle, SW Scherer. Evaluation of the performance of gDNA from saliva collected with Oragene-DNA for the purpose of CNV analysis on the Agilent Human Genome CGH Array 244A. The American Society of Human Genetics (ASHG) Annual Meeting. Washington, USA, November 2010.

78. JE Below, J Morrison, E Gamazon, A Konkash-Baev, A Valladares, J Barta, K Ross, M Edwards, N Wacher, J Garcia-Mena, **P Hu**, TD Dyer, J Kumate, M Cruz, R Duggirala, MA Carless, A Pluzhnikov J Escobedo, PM Mckeigue, JE Curran,DM Hallman, MD Shriver, G Bell, J Blangero, E Parra, C Hanis, N Cox. First Meta-Analysis of Type 2 diabetes in Mexicans and Mexican-Americans. Diabetes, 59 (Suppl. 1A):57-LB. Presented at American Diabetes Association's 70th Annual Meeting. Orlando, Florida, June 2010.

79. EJ Parra, A Valladares, JL Barta, K Ross, M Edwards, N Wacher, J Garcia-Mena, **P Hu**, MD Shriver, J Kumate, PM McKeigue, J Escobedo, M Cruz. Genome-wide association study of type 2 diabetes and related quantitative traits in a sample population from Mexico. The 5th annual Canadian Genetic Epidemiology & Statistical Genetics Meeting. King City, Ontario, Canada, April 2010.

80. RM Iwasiow, C James, **P Hu**, RF Wintle, SW Scherer. Evaluation of performance of gDNA from saliva collected with Oragene-DNA for the purpose of SNP and CNV analysis on the Affymetrix Genome-wide Human SNP Array 6.0. The American Society of Human Genetics (ASHG) Annual Meeting. Hawaii, USA, October 2009.

81. B Kabakchiev, D Turner, J Hyams, D Mack, N Leleiko, W Crandall, J Markowitz, A Otley, W Xu, **P Hu**, A Griffiths, MS Silverberg   (2010). Gene expression profiles associated with lack of response to intravenous corticosteroid in children with severe ulcerative colitis. The American Society of Human Genetics (ASHG) Annual Meeting. Hawaii, USA, October 2009.

82. MMG Seno, CR Marshall, **P Hu**, J McDonald, T Paton, G Gasallo, SW Scherer. The effect of large de novo chromosomal deletions on gene expression. The American Society of Human Genetics (ASHG) Annual Meeting. Hawaii, USA, October 2009.

83. JJ Diaz-Mejia, **P Hu**, SC Janga, M Babu, G Butland, W Yang, O Pogoutse, X Guo, S Phanse, P Wong, S Chandran, C Christopoulos, A Nazarians-Armavil, N Karimi Nasseri, G Musso, M Ali, N Nazemof, V Eroukova, A Golshani, A Paccanaro, JF Greenblatt, G Moreno-Hagelsieb, A Emili. Functional Atlas of Escherichia coli Encompassing Previously Uncharacterized Proteins. HUPO VIII World Congress. Toronto, Canada, September 2009.

84. M Babu, G Butland, JJ Diaz-Mejia, **P Hu**, S Pu, G Moreno-Hagelsieb, SC Janga, S Wodak, A Emili, J Greenblatt. Protein complexes and functional pathways in Yeast and Bacteria. HUPO VIII World Congress. Toronto, Canada, September 2009.

85. PC Havugimana, **P Hu**, V Fong, A Emili. Global detection of human protein complexes by high resolution proteome fractionation and exhaustive tandem mass spectrometry profiling. HUPO VIII World Congress. Toronto, Canada, September 2009.

86. CS Dos Santos, **P Hu**, X Chen, AS Slutsky, C Greenwood, J Beyene. Cross-species, cross-platform, meta-analysis of acute lung injury (ALI) and ventilator induced lung injury (VILI) microarrays. American Journal of Respiratory and Critical Care Medicine 179, A3838. Presented at American Thoracic Society Annual Meeting. San Diego, USA, May 2009.

87. B Kabakchiev, D Turner, JS Hyams, DR Mack, NS LeLeiko, W Crandall, J Markowitz, AR Otley, W Xu, **P Hu**, AM Griffiths, MS Silverberg. Gene expression profiles associated with lack of response to intravenous corticosteroids in children with severe ulcerative colitis. Gastroenterology 136 (Suppl.), A-172. Presented at Digestive Disease Week (DDW). Chicago, USA, May 2009.

88. U Allen, M Barton-Forbes, J Beyene, **P Hu**, N Khodai-Booran, D Héber, A Diphchand, V Ng, M Soloman, D Grant. Host gene expression in Epstein-Barr Virus (EBV) infection after pediatric organ transplantation. Pediatric Transplantation 13, S1 7 – 43. Presented at 5th Congress of the International Pediatric Transplant Association. Istanbul, Turkey, April 2009.

89. J Li, W Xuan, **P Hu**, RK Kharbanda, AN Redington. Remote ischemic preconditioning modifies cardiac microRNA expression in Vivo: first observations in a mouse model. Journal of the American College of Cardiology 53 (Suppl.), A310. Presented at The American College of Cardiology 58th Annual Scientific Conference. Orlando, USA, March 2009.

90. M Babu, G Butland, JJ Diaz-Mejia, **P Hu**, S Pu, G Moreno-Hagelsieb, SC Janga, S Wodak, A Emili, J Greenblatt. Protein complexes and functional pathways in S. cerevisiae and E. coli. The Ninth International Symposium on Mass Spectrometry in the Health & Life Sciences: Molecular & Cellular Proteomics. San Francisco, CA, USA, 2009.

91. D Pinto, J Zhang, B Thiruvahindrapduram, Z Wang, L Feuk, **P Hu**, CMT Greenwood, SW Scherer. A robust copy number variation discovery algorithm for multiple array platforms. The American Society of Human Genetics (ASHG) Annual Meeting. Philadelphia, USA, November 2008.

92. MMG Seno, D Pinto, CR Marshall, T Paton, J Skaug, **P Hu**, G Casallo, K Lee, B Thiruvahindrapduram, SW Scherer. Dysregulation of microRNAs and genes in autism spectrum disorder. 2008 Neuroscience Meeting. Washington, DC., USA, November 2008.

93. **P Hu**, I Matei, E Parkhomenko, C Guidos, J Danska, J Beyene. Evaluation of CNV calling algorithms in identifying T-ALL related cancer genes. Genetic Epidemiology 32, 696. Presented at International Genetic Epidemiology Society 17th Annual Meeting. St. Louis, Missouri, USA, September 2008.

94. E Parkhomenko, D Tritchler, **P Hu**, C Guidos, J Danska, J Beyene. Studying genomic impact of copy number variation on gene expression profiles using sparse canonical correlation analysis. Genetic Epidemiology 32, 710. Presented at International Genetic Epidemiology Society 17th Annual Meeting. St. Louis, Missouri, USA, September 2008.

95. **X Wang**, **P Hu**, M Cameron, M Anraku, M Cypel, Y Imai, J Penninger, AAS Slutsky, D Kelvin, S Keshavjee, J Beyene, CMT Greenwood, C dos Santos. Cross-species, cross-platform meta-analysis of acute lung injury microarrays and validation of injury expression profiles in human models of lung transplantation. 16th Annual International Conference Intelligent Systems for Molecular Biology (ISMB'08). Toronto, Canada, July 2008.

96. I Sung, T Kim, T Kim, B Lee, L Peddle, P Rahman, C Greenwood, **P Hu**, R Inman. IL-23R Polymorphisms in patients with ankylosing spondylitis in Korea. Annals of the Rheumatic Diseases 67 (Suppl. II), 509. Presented at Annual European Congress of Rheumatology. Paris, June 2008.

97. **P Hu**, J Beyene, CMT Greenwood. Discovering regulatory modules from eQTL data. Annual Canadian Genetic Epidemiology & Statistical Genetics Meeting. Toronto, Canada, April 2007.

98. Muhammad A Rafiq**, C Marshall**, **P Hu,** M Ansar, A Mowjoodi, L Fuke, SW Scherer. A novel locus for autosomal recessive mental retardation maps to 2p25.3-25.2 in a consanguineous Pakistani family. HUGO's 12th Human Genome Meeting (HGM). Montreal, Canada, May 2007.

99. **P Hu**, CMT Greenwood, J Beyene. Pathway-based models for predicting prostate cancer by integrative analysis of gene expression data. BioC2006-Where Software and Biology Connect. Seattle, WA, USA, August 2006.

100. N Khodai-Booran, J Beyene, M Barton-Forbes, **P Hu**, D Hébert, A Dipchand, V Ng, D Grant, A Fecteau, M Soloman, B Ngan, S Read, S Weitzman, U Allen. Preliminary assessment of gene expression profiling using DNA microarray technology in patients at risk of epstein-barr virus (EBV) Lymphoproliferation after Transplantation. American Journal of Transplantation 6(Suppl. 2), 869. Presented at World Transplant Congress. Boston, MA, USA, July 2006.

101. **P Hu**, J Beyene, CMT Greenwood. Genetic analysis of gene expression variation in human cell lines. Statistical Genetics: From Haplotype Maps to Disease Susceptibility Genes. The University of Hong Kong, Hong Kong, February 2006.

102. J Beyene, **P Hu**, CMT Greenwood. Data Integration Method for High-throughput Data. Joint Statistical Meetings (JSM). Minneapolis, USA, August 2005.

103. **P Hu**, CMT Greenwood, J Beyene. Identifying prognostic gene expression signatures by meta-analysis of microarray data sets for improved prediction of prostate cancer. Donnelly CCBR/MaRS Joint Opening Scientific Symposium on Computational & Chemical Biology. Toronto, September 2005.

E. Presentations and Special Lectures

1. INTERNATIONAL

2019 Feb	**Oral Presenter**. Novel diagnostic and therapeutic approaches for breast cancer and colorectal cancer. New York Academy of Sciences, New York, USA, jointly presented with MURAKAMI, Kazuhiro; JUNKER, Anna.
2019 Jan	**Oral Presenter**. Predicting drug - target interaction network using deep learning models. The 17th Asia Pacific Bioinformatics Conference (APBC2019), Wuhan, China.
2018 Oct	**Oral Presenter**. Machine learning-based radiogenomic analysis of invasive breast carcinoma. Computational System Biology Group, Nara Institute of

Science and Technology, Ikoma, Nara, Japan.

2018 Oct   **Oral Presenter**. Predicting drug - target interaction network using deep learning models for drug repurposing through genetic information. Division of Information Science. Nara Institute of Science and Technology, Ikoma, Nara, Japan.

2018 Jul   **Oral Presenter**. Deep neural network model for predicting gene activity using three-dimensional structures of chemical compounds. Joint Statistical Meeting (American Statistical Association), Vancouver, Canada.

2018 June   **Oral Presenter**. Machine learning-guided development of multiscale Imaging probes for colorectal cancer. New York Academy of Sciences, New York, USA, jointly presented with MURAKAMI, Kazuhiro; JUNKER, Anna.

2017 Mar   **Oral Presenter**. Recurrent somatic copy number alteration analysis identifies risk genes that modulate the survival of young women with breast cancer. Computational System Biology Group, Nara Institute of Science and Technology, Ikoma, Nara, Japan.

2014 Aug   **Oral Presenter**. A Graph based algorithm to identify recurrent runs of homozygosity variants in a Mexican American sample. Genetic Analysis Workshop 19. Vienna, Austria.

2013 Dec   **Oral Presenter**. Machine learning approaches for network-based prediction of protein functions and disease outcomes. College of Information Science and Technology, Beijing Normal University. Beijing, China.

2013 Dec   **Oral Presenter**. Meta-analysis of microarray studies. Oncology division of Qilu Hospital, Shangdong University. Jinan, Shangdong, China.

2012 Oct   **Oral Presenter**. Dynamic pathway analysis of genes associated with blood pressure using whole genome sequence data. Genetic Analysis Workshop (GAW18). Stevenson, WA, USA. Co-authors: AD Paterson.

2012 May   **Oral Presenter**. Machine learning approaches for network-based prediction of protein functions and disease outcomes. Department of Computer Science, University of New Orleans, LA, USA.

2011 May   **Oral Presenter**. Gene network models-based linear discriminant analysis of microarray expression data. 7th International Symposium on Bioinformatics Research and Applications (ISBRA'11). Changsha, Hunan, China. Co-authors: S Bull, H Jiang.

2011 Apr   **Oral Presenter**. Integrative analysis of biomedical data: algorithms and applications. Department of Pathology, University of Alabama at

Birmingham, AL, USA.

2010 Oct	**Oral Presenter**. Pathway-based join effect analysis of rare genetic variants using GAW17 exom sequence data. Genetic Analysis Workshop (GAW17). Boston, Massachusetts, USA. Co-authors: W Xu, L Chen, AD Paterson.
2010 Jan	**Oral Presenter**. Predicting protein functions by relaxation labelling protein interaction network. Asia Pacific Bioinformatics Conference (APBC2010). Bangalore, India. Co-authors: H Jiang, A Emili.
2009 Nov	**Oral Presenter**. A topology-sharing based method for protein function prediction via analysis of protein functional association networks. IEEE International Conference on Bioinformatics and Biomedicine (BIBM' 09) Workshops. Washington DC, USA. Co-authors: H Jiang, A Emili.
2009 Oct	**Oral Presenter**. Scoring of ChIP-seq experiments by modeling large-scale correlated tests. The International Conference for the Critical Assessment of Massive Data Analysis (CAMDA09). Chicago, USA. Co-authors: Z Wei, Z Wang, AD Paterson, J Beyene, SW Scherer.
2006 Jun	**Oral Presenter**. Serum Diagnosis of Chronic Fatigue Syndrome Using Array-based Proteomics. The Sixth International Conference for the Critical Assessment of Microarray Data Analysis (CAMDA 2006). Durham, USA. Co-authors: W Le, S Lim, B Xing, CMT Greenwood, J Beyene.
2006 Sep	**Oral Presenter**. Integrating Affymetrix microarray data sets using probe-level test statistic for predicting prostate cancer. 2006 IEEE Symposium on Computational Intelligence in Bioinformatics and Computational Biology (CIBCB'06). Toronto, ON, Canada. Co-authors: CMT Greenwood, J Beyene.
2004 Nov	**Oral Presenter**. Chromosomal clustering of periodically expressed genes in plasmodium falciparum. The Fifth International Conference for the Critical Assessment of Microarray Data Analysis (CAMDA). Durham, USA. Co-authors: CMT Greenwood, J Beyene.

2. NATIONAL

2019 May	**Oral Presenter.** New machine learning approaches for drug-target interaction network prediction and drug repurposing. The 47th Annual Meeting of the Statistical Society of Canada, Calgary, Canada.
2019 May	**Oral Presenter.** Deep learning for decoding molecular phenotypes with radiogenomics in breast cancer. Manitoba Centre for Proteomics and Systems Biology Seminar series, Manitoba, Canada.
2019 Feb	**Oral Presenter.** Deep learning for magnetic resonance imaging-genomic mapping of invasive breast carcinoma. Division of Biostatistics, University of Toronto, Toronto, Ontario, Canada.

2019 Jan   **Oral Presenter**. Integrative bioinformatics analysis for identifying breast cancer susceptibility genes and repurposing drugs for breast cancer using genetic information. Department of Biochemistry and Medical Genetics, University of Manitoba, Manitoba, Canada.

2018 Dec   **Oral Presenter.** Computational model for target identifications and drug discovery, College of Pharmacy, University of Manitoba, Manitoba, Canada.

2018 Oct   **Oral Presenter.** Deep learning for breast cancer radiogenomic analysis and drug repurposing. Breast Cancer Research Group, Research Institute in Oncology and Hematology, Manitoba, Canada.

2018 Oct   **Oral Presenter.** Artificial Intelligence in HealthCare, Event of "Meet the Expert", Game Changer – Manitoba's Idea Competition, Manitoba, Canada.

2018 Jun   **Oral Presenter.** Deep learning for MR imaging-genomic mapping of invasive breast carcinoma. The 46th Annual Meeting of the Statistical Society of Canada, Montreal, Canada.

2017 Sep   **Oral Presenter.** Genome-wide diet-gene interaction analysis for risk of psychiatric comorbidity in inflammatory bowel disease. Western Canadian Universities Big Data Health Conference: The Future of Precision Health and Big Data, Banff, Alberta, Canada.

2017 Jun   **Oral Presenter.** A deep learning-based integrative analysis framework for molecular classification of breast cancer. The 45th Annual Meeting of the Statistical Society of Canada, Winnipeg, Manitoba, Canada.

2017 Apr   **Oral Presenter**. Integrative bioinformatics analysis for identifying cancer susceptibility genes and classifying molecular subtypes of breast cancer. Department of Physiology and Pathophysiology, University of Manitoba, Winnipeg, Manitoba, Canada.

2017 Apr   **Oral Presenter**. Recurrent somatic copy number alteration analysis identifies risk genes that modulate the survival of young women with breast cancer. Division of Biostatistics, University of Toronto, Toronto, Ontario, Canada.

2015 Nov   **Oral Presenter.** Genetic dissection of pandemic influenza-associated severe respiratory illness and bioinformatics of host-pathogen interactions in influenza A infections. Department of Medical Microbiology, University of Manitoba, Winnipeg, Manitoba, Canada.

2015 Oct   **Oral Presenter**. Gene Set Analysis of Omics Data. Division of Biostatistics, Dalla Lana School of Public Health, University of Toronto. Toronto, Ontario, Canada.

2015 Sep	**Oral Presenter**. Bioinformatics for infectious disease. Joint meeting between The Centre for HealthCare Innovation and Guandong (China) Centre for Disease Control and Prevention. Winnipeg, Manitoba, Canada.
2015 Apr	**Oral Presenter**. Epigenome-wide scan identifies prenatal smoke exposure–associated differential DNA methylation during adolescence. Research Rounds of The Children's Hospital Research Institute of Manitoba. Winnipeg, Manitoba, Canada.
2015 Mar	**Oral Presenter**. Analysis of DNA methylation data: a tutorial. Division of Biostatistics, Dalla Lana School of Public Health, University of Toronto. Toronto, Ontario, Canada.
2014 Nov	**Oral Presenter**. Computational biology in translational research. Research Grand Round of The Centre for HealthCare Innovation. Winnipeg, Manitoba, Canada. Jointly presented the talk with Dr. Ron Beavis.
2014 Nov	**Oral Presenter**. Machine learning approaches for predicting protein functions and disease outcomes using omics data. Department of Statistics, University of Manitoba. Winnipeg, Manitoba, Canada.
2014 Jan	**Oral Presenter**. Integrative analysis of omics data: a bioinformatics perspective. Division of Biostatistics, Dalla Lana School of Public Health, University of Toronto. Toronto, Ontario, Canada.
2013 Sep	**Oral Presenter**. Integrative analysis of omics data: a bioinformatics perspective. Faculty of Medicine, University of Manitoba, Manitoba, Winnipeg, Canada.
2013 Sep	**Graduate Lecturer**. Differential gene expression analysis. Faculty of Medicine, University of Manitoba, Manitoba, Winnipeg, Canada.
2013 Jun	**Oral Presenter**. Integrative analysis of omics data: a bioinformatics perspective. College of Medicine, University of Saskatchewan, Saskatchewan, Saskatoon, Canada.
2013 Jun	**Undergraduate Lecturer**. The BLAST algorithm: how it works and how to use it effectively. College of Medicine, University of Saskatchewan, Saskatchewan, Saskatoon, Canada.
2011 Oct	**Oral Presenter**. A comparative analysis of statistical approaches for biomarker discovery using microbiome data. Methods to Study the Human Microbiome: Workshop II, Toronto, Canada.
2008 Nov	**Oral Presenter**. Genome-wide copy number analysis: A tutorial. Statistical Methods for Genomics Group at University of Toronto. Toronto, Canada.
2008 Feb	**Oral Presenter**. Block-Diagonal Linear Discriminant Analysis for Disease Classification Using Gene Expression Profiling. Statistical Methods for

Genomics Group at University of Toronto. Toronto, Canada. Co-authors: S Bull.

2007 Mar   **Oral Presenter**. Critical review of published microarray studies for cancer outcome. Biostatistics Methodology Unit (BMU) of The Hospital for Sick Children. Toronto, ON, Canada.

2007 Jan   **Oral Presenter**. Copy number variation in the human genome. Statistical Methods for Genomics Group at University of Toronto. Toronto, Canada.

2005 Dec   **Oral Presenter**. Quantification of the quality of Affymetrix microarray data and its application to identifying significantly expressed genes. Affymetrix User Group Meeting. Toronto, Canada. Co-authors: CMT Greenwood, J Beyene.

2005 Mar   **Oral Presenter**. Statistical analysis of the plasmodium falciparum periodically-expressed gene expression data. University of Toronto Microarray Interest Group (MIG). Toronto, Canada. Co-authors: CMT Greenwood, J Beyene.

2004 Oct   **Oral Presenter**. Quality-adjusted modeling of inter-study variation in gene expression profiles. The Third Canadian Working Conference on Computation Biology (CCCB), IBM Center for Advanced Studies, Toronto, Canada. Co-authors: CMT Greenwood, J Beyene.

F. Training of Highly Qualified Personnel (HQP)

1. POSTDOCTORAL FELLOWS AND VISITING PROFESSORS

2016 Sep – 2018 Aug   **Supervisor**. Dr. Svetlana Frenkel. Postdoctoral Fellow (Department of Biochemistry and Medical Genetics, University of Manitoba). Co-supervisor: Dr. Charles Bernstein, Department of Internal Medicine, University Manitoba.

2016 Sep – 2017 Aug   **Supervisor**. Dr. Yan Cheng. Visiting Professor (Department of Biochemistry and Medical Genetics, University of Manitoba). Current Position: Associate Professor, Northwest University for Nationalities, China.

2. MASTER AND PHD STUDENTS

2019 Sep – Now   **Supervisor.** Qian Liu. PhD Candidate in Individual Interdisciplinary Studies Program (Department of Biochemistry and Medical Genetics and Department of Computer Science, University of Manitoba).

2019 Sep – Now   **Supervisor**. Chengyou Liu. MSc Candidate (Department of Electrical and Computer Engineering, University of Manitoba). Co-supervisor: Dr. Bob McLeod, Department of Electrical and Computer Engineering, University Manitoba.

2019 Sep – Now   **Supervisor.** Mohammed Wasif Khan. MSc Candidate (Department of Biochemistry and Medical Genetics, University of Manitoba).

2018 Oct – Now   **Supervisor**. Fei Zuo. MSc Candidate (Division of Biostatistics, Dalla Lana School of Public Health, University of Toronto). Co-supervisor: Dr. Wei Xu, Dalla Lana School of Public Health, University of Toronto.

2018 Sep – Now   **Supervisor.** Yong Won Jin. MSc Candidate (Department of Biochemistry and Medical Genetics, University of Manitoba).

2018 Sep – Now   **Supervisor**. Md. Mohaiminul Islam. PhD Candidate (Department of Computer Science, University of Manitoba). Co-supervisor: Dr. Yang Wang, Department of Computer Science, University Manitoba.

2018 May – Now   **Supervisor.** Shuo Jia. MSc Candidate (Department of Biochemistry and Medical Genetics, University of Manitoba).

2017 Oct – Now   **Supervisor**. Jiahui Zhang. MSc Candidate (Division of Biostatistics, Dalla Lana School of Public Health, University of Toronto). Co-supervisor: Dr. Wei Xu, Dalla Lana School of Public Health, University of Toronto.

2017 Sep – Now   **Supervisor.** Nikta Feizi. MSc Candidate (Department of Biochemistry and Medical Genetics, University of Manitoba).

2017 Sep – Now   **Supervisor**. Rayhan Shikder. MSc Candidate (Department of Computer Science, University of Manitoba). Co-supervisor: Dr. Pourang Irani, Department of Computer Science, University Manitoba.

2017 May – Now   **Supervisor.** Qian Liu. MSc Candidate (Department of Biochemistry and Medical Genetics, University of Manitoba).

2016 Sep – Now   **Supervisor**. Ye Tian. MSc Candidate (Department of Electrical and Computer Engineering, University of Manitoba). Co-supervisor: Dr. Bob McLeod, Department of Electrical and Computer Engineering, University Manitoba.

2018 Sep – Now   **Bioinformatics Advisor.** Shujun Huang. PhD Candidate. (College of Pharmacy, University of Manitoba). Supervisor: Dr. Wayne Xu (01/2016 - 08/2018), Ted Lakowski (09/2018-), University of Manitoba.

2014 Feb – Now   **Bioinformatics Advisor.** Chris Walsh. PhD Candidate. (Faculty of Medicine, University of Toronto). Supervisor: Dr. Claudia Santos, Faculty of Medicine, University of Toronto.

2016 Sep – 2018 Sep   **Supervisor**. Jiaying You. MSc Candidate (Department of Electrical and Computer Engineering, University of Manitoba). Co-supervisor: Dr. Bob

McLeod, Department of Electrical and Computer Engineering, University Manitoba. Current Position: Data Scientist, InVivo AI Inc., Montreal, Canada.

2016 Aug – 2017 Dec **Supervisor**. Md. Mohaiminul Islam. MSc Candidate (Department of Computer Science, University of Manitoba). Co-supervisor: Dr. Yang Wang, Department of Computer Science, University Manitoba. Current Position: PhD Candidate in Computer Science, University of Manitoba.

2016 Sep – 2017 Jul **Supervisor**. Wenxin Jiang. MSc Candidate (Division of Biostatistics, Dalla Lana School of Public Health, University of Toronto). Co-supervisor: Dr. Wei Xu, Dalla Lana School of Public Health, University of Toronto. Current Position: Analyst in Canada Institute for Health Information.

2015 Sep – 2017 Sep **Supervisor**. Rasif Ajwad. MSc Candidate (Department of Computer Science, University of Manitoba). Co-supervisor: Dr. Michael Domaratzki, Department of Computer Science, University Manitoba. Current Position: Software Engineer in Winnipeg City Hall (City of Winnipeg).

2015 May – 2017 Jun **Supervisor.** Chen Chi. MSc Candidate (Department of Biochemistry and Medical Genetics, University of Manitoba). Current Position: Analyst in Department of Agriculture, Manitoba.

2014 Sep – 2016 Aug **Supervisor.** Kaiqiong Zhao. MSc Candidate (Department of Biochemistry and Medical Genetics, University of Manitoba). Current Position: PhD Candidate in Biostatistics in McGill University.

2015 Oct – 2016 Jan **Supervisor.** Bingqing Shen. MSc Candidate (Biostatistics Division, University of Toronto). Current Position: Information Management Analyst in Institute for Clinical Evaluative Sciences, Toronto.

2014 Feb – 2015 Sep **Bioinformatics Advisor.** Philippe Simon. PhD Candidate. (Department of Medical Microbiology, University of Manitoba). Supervisor: Dr. Darwyn Kobasa. Current Position: Medical student in University Laval.

2014 May – 2014 Aug **Co-supervisor.** Cynthia Kpekpen. Summer Student and MSc Candidate (Department of Statistics, University of Manitoba). Supervisor: Dr. Lisa Lix, University of Manitoba.

2006 May – 2006 Aug **Co-supervisor.** Hui Lan. Summer Student and PhD Candidate (Department of Computer Science, University of Toronto), Supervisor: Dr. Celia Greenwood, The Hospital for Sick Children.

3. UNDERGRADUATE STUDENTS

2019 Jun – 2019 Aug **Supervisor.** Christiana Cholakis in Mathematics and Biology (St. Olaf College, USA).

2019 Jun – 2019 Sep	**Supervisor.** Zexuan Sun in Mathematics and Statistics (Wuhan University, China). Mitacs Globalink Research Internship Student.
2019 Jun – 2019 Aug	**Supervisor.** Peiran Jiang in Life Science (Huazhong University of Science and Technology, China). Mitacs Globalink Research Internship Student.
2018 Jun – 2019 Aug	**Supervisor.** Lourens Jacobs in Medicine (BSc Medicine, University of Manitoba).
2018 Jun – 2018 Sep	**Supervisor.** Xinyu Hou in Automation (Beijing Institute of Technology, China). Mitacs Globalink Research Internship Student.
2017 Sep – 2018 Aug	**Supervisor.** Liam Grenier in Science (University of Manitoba).
2016 Sep – 2017 Aug	**Supervisor.** Nikho Hizon in Genetics (University of Manitoba). Honour project student (2016-2017) and summer student (2017). Current Position: MSc Candidate in Bioinformatics in University of Manitoba.
2016 Jun – 2016 Sep	**Supervisor.** Linfan Zhang in Statistics (Zhejiang University, China). Mitacs Globalink Research Internship Student. Current Position: MSc Candidate in Statistics in University of California, Los Angeles, USA.
2015 May – 2016 Apr	**Supervisor.** Jessica Bondoc in Statistics and Computer Science (University of Manitoba). Co-supervisor: Dr. Kevin Coombs, University of Manitoba. Summer student (2015) and part-time research assistant (2015-2016).
2015 May – 2015 Aug	**Supervisor.** Huyen Le in Mathematics (University of Manitoba). Co-supervisor: Dr. Yang Wang, Department of Computer Science, University of Manitoba. Summer student. Current Position: Research Assistant at Field Institute for Research in Mathematical Sciences, University of Toronto.
2015 Jun – 2015 Aug	**Supervisor.** Xiaohui Ding in Mathematics and Statistics (Huazhong University of Science and Technology, China). Mitacs Globalink Research Internship Student. Current Position: MSc Candidate in Data mining in Nanjing University, China.
2015 May – 2015 Aug	**Supervisor.** Masami Ando Kuri in Genome Science (Universidad Nacional Autónoma de México UNAM). Mitacs Globalink Research Internship Student. Current Position: PhD Candidate, Department of Biology, Emory University, USA
2010 May – 2012 May	**Supervisor.** Xiang Xing in Computer Science (University of Toronto).
2008 May – 2008 Aug	**Co-supervisor.** Xinchen Wang in Medical Genetics (University of Toronto). Supervisor: Dr. Claudia Santos, St. Michael's Hospital. Current Position: Ph.D. Candidate in Bioinformatics in Massachusetts Institute of Technology (MIT).

2005 Jun – 2005 Dec   **Co-supervisor.** Jun Yan in Statistics (University of Toronto). Supervisor: Dr. Joseph Beyene, The Hospital for Sick Children.

4. RESEARCH ASSOCIATES

2014 Dec – Now   **Supervisor.** Qin Kuang. MD, Data Coordinator. University of Manitoba.

2014 Jul – 2015 May   **Supervisor.** Justin Zhang. B.Sc., Bioinformatician. Co-supervisor: Dr. Ron Beavis, University of Manitoba.

5. ADVISORY MEMBERS

2019 Apr – Now   **Committee Member.** Linwei Ye. PhD Candidate. (University of Manitoba). Supervisors: Dr. Yang Wang, Department of Computer Science, University of Manitoba.

2018 Sep – Now   **Committee Member.** ShuJun Huang. PhD Candidate. (University of Manitoba). Supervisors: Dr. Ted Lakowski, College of Pharmacy, University of Manitoba.

2019 Jan – Now   **Committee Member.** Taryn Athey, MSc Genetic Counselling Candidate. (University of Manitoba). Supervisor: Dr. Patrick Frosk, Department of Biochemistry and Medical Genetics, University of Manitoba.

2017 Sep – Now   **Committee Member.** Nikho Hizon, MSc Candidate. (University of Manitoba). Supervisors: Dr. Hao Ding, Department of Biochemistry and Medical Genetics, University of Manitoba.

2019 Jan – 2020 Jun   **Committee Member.** Seyed Shahabeddin Nabavi. MSc Candidate. (University of Manitoba). Supervisors: Dr. Yang Wang, Department of Computer Science, University of Manitoba.

2017 Mar – 2019 May   **Committee Member.** Lucas Falarz. MSc Candidate. (University of Manitoba). Supervisors: Dr. Guanqun (Gavin) Chen, Department of Biological Sciences, University of Manitoba.

2016 Sep – 2017 Jun   **Committee Member.** Eu Wern Teh. MSc Candidate. (University of Manitoba). Supervisors: Dr. Yang Wang, Department of Computer Science, University of Manitoba.

2016 Mar – 2018 Jun   **Committee Member.** Neil Vincent Reyes. MSc Candidate. (University of Manitoba). Supervisors: Dr. Hezhao Ji and Dr. T. Blake Ball, Department of Medical Microbiology and Infectious Diseases, University of Manitoba.

| 2015 Dec – 2016 Jul | **Committee Member.** Md. Atiqur Rahman. MSc Candidate. (University of Manitoba). Supervisors: Dr. Yang Wang, Department of Computer Science, University of Manitoba. |

6. HIGHLY QUALIFIED PERSONNEL (HQP)'S HONORS AND AWARDS

2019 May	**International Graduate Student Entrance Scholarship (IGSES)** University of Manitoba Mohammed Wasif Khan, MSc student in Department of Biochemistry and Medical Genetics Total Amount: $5,400 CAD
2019 May	**VADA NSEARC CREATE Award** University of Manitoba Qian Liu, PhD student in Departments of Biochemistry and Medical Genetics and Computer Science Total Amount: $38,000 CAD
2019 May	**Faculty of Graduate Studies (FGS) Travel Award** University of Manitoba Qian Liu, MSc student in Department of Biochemistry and Medical Genetics Total Amount: $1000 CAD
2019 March	**Best Oral Presentation Award** **2019 IEEE 7th International Conference on Bioinformatics and Computational Biology** University of Manitoba Qian Liu, MSc student in Department of Biochemistry and Medical Genetics
2019 March	**University of Manitoba Graduate Fellowship (UMGF) – PhD Level** University of Manitoba Md. Mohaiminul Islam, PhD student in Department of Computer Science Total Amount: $54,000 CAD (for 3 years)
2019 Jan	**Globalink Research Internship Award** Mitacs, Canada Zexuan Sun. Undergraduate Student in Mathematics and Statistics in Wuhan University, China Total Amount: $6,000 CAD
2019 Jan	**Globalink Research Internship Award** Mitacs, Canada Peiran Jiang. Undergraduate Student in Life Science in Huazhong University of Science and Technology, China

Total Amount: $6,000 CAD

2018 Sep	**International Graduate Student Entrance Scholarship (IGSES)**
	University of Manitoba
	Md. Mohaiminul Islam, PhD student in Department of Computer Science
	Total Amount: $5,400 CAD

2018 Sep **International Graduate Student Entrance Scholarship (IGSES)**
University of Manitoba
Md. Mohaiminul Islam, PhD student in Department of Computer Science
Total Amount: $5,400 CAD

2018 May **VADA NSEARC CREATE Award**
University of Manitoba
Md. Mohaiminul Islam, PhD student in Department of Computer Science
Total Amount: $38,000 CAD

2018 May **Computer Science Entrance Award**
University of Manitoba
Md. Mohaiminul Islam, PhD student in Department of Computer Science
Total Amount: $36,000 CAD

2018/2019 May – Aug **BSc Med Summer Studentship**
College of Medicine, University of Manitoba
Lourens Jacobs, University of Manitoba
Total Amount: $15,000 CAD

2018 May **2018 Undergraduate Summer Studentship Award**
The Children's Hospital Foundation of Manitoba
Liam Grenier. University of Manitoba
Total Amount: $6,000 CAD

2018 Feb **Globalink Research Internship Award**
Mitacs, Canada
Xinyu Hou. Undergraduate Student in Automation in Beijing Institute of Technology, China
Total Amount: $6,000 CAD

2018 May **International Graduate Student Entrance Scholarship (IGSES)**
University of Manitoba
Shuo Jia, MSc student in Department of Biochemistry and Medical Genetics
Total Amount: $5,400 CAD

2017 Sep **International Graduate Student Entrance Scholarship (IGSES)**
University of Manitoba
Nikta Feizi, MSc student in Department of Biochemistry and Medical Genetics

Total Amount: $5,400 CAD

2017 Sep | **VADA NSEARC CREATE Award**
University of Manitoba
Rayhan Shikder, MSc student in Department of Computer Science
Total Amount: $16,000 CAD

2017 Sep | **International Graduate Student Entrance Scholarship (IGSES)**
University of Manitoba
Rayhan Shikder, MSc student in Department of Computer Science
Total Amount: $5,400 CAD

2017 July | **2016-2017 BGEN Seminar Winner (3rd place)**
University of Manitoba
Chen Chi, MSc student in Department of Biochemistry and Medical Genetics

2017 May | **Faculty of Graduate Studies (FGS) Travel Award**
University of Manitoba
Md. Mohaiminul Islam, MSc student in Department of Computer Science
Total Amount: $750 CAD

2017 May | **Faculty of Science and Department of Computer Science Travel Award**
University of Manitoba
Md. Mohaiminul Islam, MSc student in Department of Computer Science
Total Amount: $700 CAD

2017 May | **Poster of Distinction at Digestive Disease Week (DDW)**
American Gastroenterological Association (AGA)'s Digestive Disease Week
Svetlana Frenkel, Postdoctoral fellow in Department of Biochemistry and Medical Genetics
This poster was rated in the top 10% of all AGA abstracts selected for poster presentation at DDW.

2017 May | **International Graduate Student Entrance Scholarship (IGSES)**
University of Manitoba
Qian Liu, MSc student in Department of Biochemistry and Medical Genetics
Total Amount: $5,400 CAD

2017 Jan | **GAW20 Travel Award**
Genetic Analysis Workshop

Ye Tian, MSc student in Department of Electrical and Medical Genetics
Total Amount: $900 USD

2016 Oct	**CIHR Travel Award** University of Manitoba Chen Chi, MSc student in Department of Biochemistry and Medical Genetics Total Amount: $1,000 CAD
2016 Sep	**2015-2016 BGEN Seminar Winner** University of Manitoba Chen Chi, MSc student in Department of Biochemistry and Medical Genetics
2016 Sep	**Phyllis J. McAlpine Graduate Fellowship** University of Manitoba Chen Chi, MSc student in Department of Biochemistry and Medical Genetics Total Amount: $1,000 CAD
2016 Sep	**Manitoba Graduate Scholarship** University of Manitoba Md. Mohaiminul Islam, MSc student in Department of Computer Science Total Amount: $15,000 CAD
2016 Sep	**International Graduate Student Entrance Scholarship (IGSES)** University of Manitoba Jiaying You, MSc student in Department of Electrical and Computer Engineering Total Amount: $5,400 CAD
2016 Jul	**2016 Charles J. Epstein Trainee Award for Excellence in Human Genetics Research – Semifinalist** American Society of Human Genetics Chen Chi, MSc student in Department of Biochemistry and Medical Genetics **The Semifinalist award is for outstanding trainee research in 2016. American Society of Human Genetics (ASHG) granted 60 awards to 490 applicants based on abstracts scored by the Scientific Program Committee of 2016 Annual Meeting of ASHG.**
2016 Jul	**The 66th Annual Meeting of the American Society of Human Genetics Travel Award** American Society of Human Genetics Chen Chi, MSc student in Department of Biochemistry and Medical Genetics

Total Amount: $750 USA

2016 May   **Mindel and Tom Olenick Research Studentship in Medicine**
                University of Manitoba
                Chen Chi, MSc student in Department of Biochemistry and Medical Genetics
                Total Amount: $6,256 CAD

2016 May   **Faculty of Graduate Studies (FGS) Travel Award**
                University of Manitoba
                Chen Chi, MSc student in Department of Biochemistry and Medical Genetics
                Total Amount: $750 CAD

2016 Jan   **Edge of Science and Medicine**
                University of Manitoba
                Kaiqiong Zhao, MSc student in Department of Biochemistry and Medical Genetics
                Kaiqiong was selected as one of the four student speakers at Edge of Science and Medicine Seminar Series at Faculty of Health Sciences

2015 Dec   **Globalink Research Internship Award**
                Mitacs, Canada
                Linfan Zhang. Undergraduate Student in Statistics, Zheiiang University, China
                Total Amount: $6,000 CAD

2015 Sep   **International Graduate Student Entrance Scholarship (IGSES)**
                University of Manitoba
                Rasif Ajwad, MSc student in Department of Computer Science
                Total Amount: $5,400 CAD

2015 Mar   **Computational Biology Undergraduate Summer Student Health Research Award**
                Canadian Institutes of Health Research (CIHR), Canada
                Jessica Bondoc. Undergraduate Student in Statistics and Computer Science, University of Manitoba
                Total Amount: $5,000 CAD

2014 Dec   **Globalink Research Internship Award**
                Mitacs, Canada
                Xiaohui Ding. Undergraduate Student in Mathematics and Statistics, Huazhong University of Science and Technology, China
                Total Amount: $6,000 CAD

2014 Dec   **Globalink Research Internship Award**

Mitacs, Canada

Masami Ando Kuri. Undergraduate Student in Genome Science, Universidad Nacional Autónoma de México UNAM

Total Amount: $6,000 CAD

2014 Sep	**International Graduate Student Entrance Scholarship (IGSES)**

University of Manitoba

Kaiqiong Zhao, MSc student in Department of Biochemistry and Medical Genetics

Total Amount: $5,400 CAD

G. Teaching

1. NEW COURSE DEVELOPMENT

2019 June – Now	Development of "Introduction to Health Data Science" undergraduate course
2017 Feb – 2017 June	IMED 7280 (Credit: 3.0), Medical Computational Biology (Role: redesigned the course syllabus)
2015 Feb – 2015 Dec	IMED 7280 (Credit: 3.0), Medical Computational Biology (Role: Participated in developing the course for approval by university)

2. UNDERGRADUATE TEACHING

2016 Sep – 2017 May	BGEN 4010 (Credit: 6.0), Project Course in Human Genetics (1 Student - Nikho Hizon), Single instructor.

3. GRADUATE TEACHING

2019 Jan – May	BGEN 7130 (Credit: 3.0), Genetic Epidemiology of Human Populations. (3 students). This is a required course for MSc genetic counseling. I am teaching 2 sessions (weeks) with 6 hours.
2019 Jan – May	IMED 7280 (Credit: 3.0), Medical Computational Biology. Single course coordinator. (11 students)
2018 Jan – May	IMED 7280 (Credit: 3.0), Medical Computational Biology. One of the two course coordinators. (13 students)
2017 Sep – 2018 May	CHSC 7400 (Credit: 3.0), Advanced Topics in Community Health I: Seminar in Foundations of Disease Analytics. One of the 10 course instructors. This is the required course for Visual and Automatic Disease Analytics (VADA) NSERC CREATE program. (7 students)
2017 Jan – May	BGEN 7070 (Credit: 3.0), Special Topics in Human Genetics (2

Students). Single instructor.

2016 Jan – May   BGEN 7070 (Credit: 3.0), Special Topics in Human Genetics (1 Student). Single instructor.

2015 Jan – May   BGEN 7070 (Credit: 3.0), Special Topics in Human Genetics (1 Student). Single instructor.

4. WORKSHOP AND WEBINAR

2018 Nov 2   Research Computing Workshop
Centre for Healthcare Innovation, Winnipeg, Canada
Speaker: Grigory Shamov, WestGrid
Organizers: **Pingzhao Hu**

2017 Oct 27   Gene Set Analysis and Visualization
Centre for Healthcare Innovation, Winnipeg, Canada
Speaker: **Pingzhao Hu**, Svetlana Frenkel (Postdoc Fellow in my lab)
Organizers: **Pingzhao Hu**

2017 Jan 27   RNA-Seq using ParTek software (Webinar – 12 participants)
Department of Biochemistry and Medical Genetics, University of Manitoba
Speaker: Technical Leader from ParTek Inc., USA
Organizer: **Pingzhao Hu**

2016 Nov 30   Chip-Seq using ParTek software (Webinar – 13 participants)
Department of Biochemistry and Medical Genetics, University of Manitoba
Speaker: Technical Leader from ParTek Inc., USA
Organizer: **Pingzhao Hu**

2016 Oct 05   Differential analysis using ParTek software (Webinar – 11 participants)
Department of Biochemistry and Medical Genetics, University of Manitoba
Speaker: Technical Leader from ParTek Inc., USA
Organizer: **Pingzhao Hu**

2016 May 25   Pharmacogenomic analysis on cancer studies: methodology and applications
George & Fay Yee Centre for Healthcare Innovation, Winnipeg, Canada
Speaker: Dr. Wei Xu, Princess Margaret Cancer Centre / University of Toronto
Organizer: **Pingzhao Hu**

2015 May 26/27   Gene Set Analysis of Omics Data

Centre for Healthcare Innovation, Winnipeg, Canada
Speaker: **Pingzhao Hu**
Organizers: **Pingzhao Hu**, Justin Zhang, Ron Beavis

5. GUEST LECTURE

2019 Apr   **COMP4360: Machine Learning (Course Lecturer: Dr. Yang Wang)**.
New machine learning approaches for drug – target interaction network
prediction and drug repurposing, University of Manitoba, Canada.

2018 Mar   **COMP4360: Machine Learning (Course Lecturer: Dr. Yang Wang)**.
Practical applications of machine learning approaches to genome science,
University of Manitoba. Winnipeg, Manitoba, Canada.

2017 Apr   **COMP4360: Machine Learning (Course Lecturer: Dr. Yang Wang)**.
Machine learning approaches for predicting protein functions and disease
outcomes. Department of Computer Science, University of Manitoba.
Winnipeg, Manitoba, Canada.

2015 Mar   **COMP4360: Machine Learning (Course Lecturer: Dr. Yang Wang)**.
Machine learning approaches for predicting disease outcomes and protein
functions using omics data. Department of Computer Science, University of
Manitoba. Winnipeg, Manitoba, Canada.

2014 May   **CHL 7001: Statistical Models on Complex Human Genetic Diseases
(Course Lecturer: Dr. Wei Xu)**. Epigenome-wide analysis identifies DNA
methylation markers in adolescents exposed prenatally to maternal
cigarette smoking. Division of Biostatistics, Dalla Lana School of Public
Health, University of Toronto. Toronto, Ontario, Canada.

6. SUMMER SCHOOL

2016 Jun   **Data Analysis and Visualization Using R**. Lecture 3: Feature selection
and model evaluation in high throughput studies. George & Fay Yee
Centre for Healthcare Innovation, Winnipeg, Manitoba, Canada (13
Participants).

7. JOURNAL CLUBS

2018 Sep - Now   Co-organizers of Bioinformatics and Biostatistics Monthly Journal Club,
Faculty of Health Sciences. University of Manitoba

2014 Oct - Now   Organizer of Webinars of CIHR STAGE Monthly International Speaker
Seminar Series in the University of Manitoba Site (5-15 Participants per
time)

H. University Committees and Organizations

2019 Jun   Poster Judge of CIHR National Poster Competition at the Health

	Research Forum
2019 May	Poster Judge of 2019 CancerCare Manitoba Research Day, Winnipeg.
2019 Apr	Participate in BGEN 7040 Presentations (Genetic Counseling course)
2019 Mar-Jul	Member of Search and Selection Committee for the CRC Tier 2 Canada Research Chair in Bioinformatics. The Department of Biochemistry and Medical Genetic, Winnipeg.
2018 May-Aug	Facilitator of meetings and presentations of the summer students in Data Science Platform of CHI and CHRIM.
2018 July	Mentor of one of the five student teams in summer school of the VADA Program in the University of Manitoba
2018 Jun	Poster Judge of 2018 Statistical Society of Canada Case Studies Competition
2018 Jun	Poster Judge of CIHR National Poster Competition at the Health Research Forum
2018 Mar	Host an invited speaker (Dr. Altaf Amin) from Nara Institute of Science and Technology, Japan at Department of Biochemistry and Medical Genetics Department, University of Manitoba
2018 Jan - Now	Member of Selection Committee for Graduate Students in VADA Program in the University of Manitoba
2018 Jan	Member of Search and Selection Committee for the tenure track assistant professor faculty position in epigenetics and child health in the Department of Biochemistry and Medical Genetics
2017 Oct	Host an invited speaker (Dr. Andrew Advani) from St. Michael's Hospital and University of Toronto at Biochemistry and Medical Genetics Department, University of Manitoba
2017 Oct	Poster Judge of University Undergraduate Poster Competition
2017 Sep – 2018 Dec	Member of Internship/Lab Exchange Committee of VADA Program
2017 Sep – 2019 Aug	Member of Appointments, Promotions and Tenure Committee, Department of Biochemistry and Medical Genetics, University of Manitoba
2017 Aug – Sep	Search Committee for Research Administrative Coordinator, Data Science Platform of Centre for Healthcare Innovation.
2017 Jul – Now	Member of Professional Development and Travel Selection Committee, Data Science Platform of Centre for Healthcare Innovation.
2017 Jul – Now	Member of the College of Reviewers, CIHR
2017 Jun	Poster Judge of 2017 Statistical Society of Canada Case Studies Competition
2017 Jun	Poster Judge of CIHR National Poster Competition at the Health Research Forum
2017 May – 2018 May	Member of Bioinformatics Needs and Assessment Team in the University of Manitoba
2017 Mar	Host an invited speaker (Dr. Altaf Amin) from Nara Institute of Science and Technology, Japan at Department of Biochemistry and Medical Genetics Department, University of Manitoba
2017 Mar	Chair of CHI Data Science Platform summer student admission committee

2016 Sep – 2017 Aug	Member of Teaching Committee, Department of Biochemistry and Medical Genetics, University of Manitoba
2016 Oct	Poster Judge of University Undergraduate Poster Competition
2016 Jun	Poster Judge of CIHR National Poster Competition at the Health Research Forum
2015 Oct	Poster Judge of University Undergraduate Poster Competition
2015 Sep	Member of Terry Fox Research Institute Prairie Node, Canada
2015 Aug	Chair and Organizer of Summer Student Research Symposium, George & Fay Yee Centre for Healthcare Innovation (CHI), Manitoba
2015 Jun	Chair of Mr. Amarnath Pisipati's PhD oral defence in the Department of Medical Microbiology
2014 Dec - Now	Member of Biomedical Youth Program (BYP), University of Manitoba
2014 Dec - Now	Member of Manitoba Epigenetics Network, University of Manitoba
2014 Oct	Poster Judge of University Undergraduate Poster Competition
2014 May	Chair of Ms. Meika Elizabeth Ivy Richmond's PhD oral defence in the Department of Medical Microbiology
2014 May	Poster Judge of Cancer Care Manitoba Research Day.