Amber L. Simpson

Curriculum Vitae

School of Computing
Department of Biomedical and Molecular Sciences
Queen's University
Kingston, ON, Canada
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simpsonlab.org

EDUCATION

Ph.D. School of Computing, Queen's University, Kingston, Canada, 2010

M.Sc. School of Computing, Queen's University, Kingston, Canada, 2002

B.Sc. Department of Computing and Information Systems and Department of Mathematics, Trent University, Peterborough, ON, Canada, 2000

CURRENT POSITIONS

2020-2025 Director, Centre for Health Innovation, Queen's University/Kingston Health Sciences Centre, Kingston, ON

2020-present Associate Professor (cross appointment), Department of Medicine, Queen's University, Kingston, ON

2020-present Senior Investigator, Canadian Cancer Trials Group, Kingston, ON

2019–present Affiliate Member, Vector Institute for AI, Toronto, ON

2019-present Tier 2 Canada Research Chair in Biomedical Computing and Informatics

2019-present Associate Professor, School of Computing & Department of Biomedical and Molecular Sciences, Queen's University, Kingston, ON

PROFESSIONAL EXPERIENCE

2014–2019 Adjoint Assistant Professor Biomedical Engineering, Vanderbilt University, Nashville, TN

2017-2019 Assistant Professor of Computational Biology, Cornell University Weill Medical College, New York, NY, USA

2015-2019 Assistant Attending Computational Biologist, Memorial Sloan Kettering Cancer Center, New York, NY

2015–2019 Member, David M. Rubenstein Center for Pancreatic Research, Memorial Sloan Kettering Cancer Center, New York, NY

2012–2015 Visiting Investigator, Memorial Sloan Kettering Cancer Center, New York, NY

2012–2015 Research Assistant Professor Biomedical Engineering, Vanderbilt University, Nashville, TN

2009–2012 Research Associate, Vanderbilt University, Nashville, TN

RESEARCH SUPPORT

In Review

Canadian Institutes of Health Research (CIHR) Program Project Grant
Reimagine Response Evaluation Criteria In Solid Tumors with Medical Image Segmentation Foundation Models
NPA: Benjamin Haibe-Kains (UHN) and Bo Wang (Vector)
PA: Amber Simpson
Amount: $1,189,270 ($200,000 to Dr. Simpson)
Dates: 10/01/2025 – 03/31/2029

Canadian Institutes of Health Research (CIHR) Program Project Grant
Role of innate immune reprogramming in the response to BCG immunotherapy of bladder cancer
NPA: Charles Graham
Co-applicant: Amber Simpson
Amount: $50,000 to Dr. Simpson
Dates: 10/01/2025 – 03/31/2029

Canadian Institutes of Health Research (CIHR) Program Project Grant
DREAM study: Deep Learning Using Radiology Images for Early Assessment of Malignant liver lesions
NPA: Angela Cheung
Co-applicant: Amber Simpson
Amount: $100,000 to Dr. Simpson
Dates: 10/01/2025 – 03/31/2029

Canadian Institutes of Health Research (CIHR) Program Project Grant
Biomarkers of immunotherapy response in pleural mesothelioma
NPA: Amber Simpson
Amount: $ 2,170,000
Dates: 10/01/2025 – 03/31/2029

Connected Minds Team Grant
Bridging the Technosocial Divide: Community Led Digital Transformation in Healthcare
PI: Karen Yeates
Co-PI: Amber Simpson
Amount: $ 1,500,000
Dates: 04/01/2025 – 03/31/2028

Canadian Institutes of Health Research (CIHR) Clinical Trials Fund - Projects
A phase II randomized basket study of lunresertib plus camonsertib compared to standard care in gastrointestinal cancers with CCNE1 or FBXW7 aberrations (GILaC)
PI: Lesley Seymour
Co-investigator: Amber Simpson
Amount: $4,036,454 ($60,000 to Dr. Simpson)
Dates: 10/01/2025 – 03/31/2029

Awarded

Terry Fox Research Institute – Marathon of Hope
Kingston Site – Marathon of Hope Cancer Centres Network
Amount: $6,400,000
Dates: 04/01/2025 – 03/31/2026
PI: Amber Simpson

Marathon of Hope Cancer Centres Network - Technology Development Award
A collaborative approach to characterizing tumour immune microenvironments with multiplex IF
Amount: $303,378
Dates: 08/01/2024-07/31/2025
PI: Amber Simpson

Terry Fox Research Institute
New Frontiers Program Grant in Epithelial and Immune Plasticity in Bladder Cancer
Amount: $2,400,000
Amount to Dr. Simpson: $647,750
Dates: 04/01/2024 – 03/31/2028
Team Lead: Madhuri Koti
Imaging Core Lead: Amber Simpson

Canada Biomedical Research Fund
BioHubNet: Transformative talent development in the Canadian Bio-manufacturing hubs
Amount: $20,000,000 ($1,000,000 to Dr. Simpson/Centre for Health Innovation)
Dates: 04/01/2024 – 03/31/2028
Director: Molly Shoichet (University of Toronto)
Team Member: Amber Simpson

Canada First Research Excellence Fund
Connected Minds: Neural and Machine Systems for a Healthy, Just Society
Amount: $105,000,000 to York University; 30,000,000 to Queen's; $50,000 annually to CHI
Dates: 04/01/2023 – 03/31/2028
Queen's Director: Gunnar Blohm
Co-PI: Amber Simpson

National Institutes of Health SPORE Project
Total Neoadjuvant Therapy for Borderline Resectable and Locally Advanced Pancreatic Adenocarcinoma: Phase II Trial and Imaging and Blood-based Biomarkers
Amount: $321,019 USD ($200,000 USD to Dr. Simpson)
Dates: 07/01/2022-06/30/2027

PI: Alice Wei
Co-investigator: Amber Simpson

Early Researcher Award – Government of Ontario
Machine learning analysis of 400,000 CT scans to map cancer progression
Amount: $150,000
Dates: 04/01/2022 – 03/31/2027
PI: Amber Simpson

Natural Sciences Research Council of Canada CREATE
Training program in Medical Informatics: Preparing workforce for health data of tomorrow
Amount: $1,650,000 CDN
Dates: 04/01/2021-03/30/2027
PI: Parvin Mousavi
Co-PI: Amber Simpson

Natural Sciences Research Council of Canada Discovery Grant
Integrated Computational Modeling of Multi-scale Biomedical Data
Amount: $157,500 CDN
Dates: 4/01/2020 – 3/31/2026
PI: Amber Simpson

Canada Research Chair Tier 2 in Biomedical Computing & Informatics (CIHR)
Amount: $625,000 CDN
Dates: 10/01/2019 – 09/30/2029
PI: Amber Simpson

National Cancer Institute R01
Improving Outcome in Patients with Advanced Intrahepatic Cholangiocarcinoma: A Randomized Phase II Study of Gemcitabine and Oxaliplatin With or Without Regional Floxuridine
Amount: $2,557,360 USD (direct costs)
Dates: 04/01/2019 – 03/31/2024
PI: William Jarnagin
Co-investigator: Amber Simpson

National Cancer Institute R01
Development and Validation of Prognostic Radiomic Markers of Response and Recurrence for Patients with Colorectal Liver Metastases
Amount: $2,004,030 USD (direct costs)
Dates: 09/01/2019–08/30/2025
PI: Amber Simpson

Completed
CIHR Project Grant
Development of a validated method to identify patients with chronic pain in electronic medical records and administrative health data to advance clinical research and patient care
Amount: $890,000 CDN ($50,000 to Dr. Simpson)
Dates: 04/01/2021 – 03/31/2025
PI: Michael Green
Co-applicant: Amber Simpson

Ontario Health Data Platform First Mover's Fund – Ministry of Health
Using the rich, connected data of the OHDP platform toward evidence-based healthcare and data-informed public health measures for a post-COVID recovery
Amount: $800,944
Dates: 04/01/2023 – 03/31/2024
PI: Amber Simpson

NIH Administrative Supplements for Advancing the Ethical Development and Use of AI/ML in Biomedical and Behavioral Sciences
Development and Validation of Prognostic Radiomic Markers of Response and Recurrence for Patients with Colorectal Liver Metastases – Ethical Implications
Amount: $199,000 USD (direct costs)
Dates: 09/01/2022–08/28/2024
PI: Amber Simpson

Health Sciences Internal Grant Competition for funding from the Women's Giving Circle
Characterizing the B cell repertoire of Hunner lesions in Interstitial Cystitis
Amount: $33,500
Dates: 07/01/2023 – 06/30/2024
PI: Chris Doiron
Co-PI: Amber Simpson

National Cancer Institute R01
Preventing an Incurable Disease: The Prevention of Progression to Pancreatic Cancer Trial (The 3P-C Trial): First-in-human Chemoprevention Trial for Pancreatic Cancer
Amount: $2,759,884 USD (direct costs)
Dates: 09/01/2019–08/30/2024
PI: Peter Allen
Co-investigator: Amber Simpson

National Institutes of Health R01. (Declined to participate because of move to Canada)
Deformation Corrected Laparoscopic Liver Surgery
Amount: $987,455 USD (direct costs)
Dates: 09/01/2019 – 08/30/2024
PI: Michael Miga
Co-investigator: Amber Simpson

CIHR Operating Grant: Addressing the Wider Health Impacts of COVID-19
Impacts of COVID-19 on Preventive Primary Care for Young Children: Consequences and Innovations
Amount: $200,000 ($100,000 to Dr. Simpson)
Dates: 04/01/2022 – 03/31/2024
PI: Imaan Bayoumi
Co-applicant: Amber Simpson

OICR Clinical Translation Pathway
Quantitative Grading to Transform Bladder Cancer Risk Prediction and Care
Amount: $200,000 ($50,000 to Dr. Simpson)
Dates: 04/01/2023 – 03/31/2024
PI: David Berman

Co-PI: Amber Simpson

Vice Principal Research Postdoctoral Fellow Award (Internal)
Indigenous Digital Rights and Decolonization in Artificial Intelligence Postdoctoral Fellowship
Amount: $100,000
Dates: 08/01/2022 – 7/31/2024
PI: Amber Simpson
PDF: Robyn Rowe

Native BioData Consortium
Indigenous Digital Rights and Decolonization in Artificial Intelligence
Amount: $100,000 (matching funds for postdoc Robyn Rowe)
Dates: 08/01/2022 – 7/31/2024
PI: Amber Simpson

Canadian Foundation for Innovation JELF / Research Initiation Grant
Computational phenotypes of cancer
Amount: $530,000 CDN
Dates: 07/01/2019 – 6/30/2023
PI: Amber Simpson

Improving flexibility and performance of the Acute Care Enhanced Surveillance System for public health surveillance
Amount: $100,000 ($100,000 to Dr. Simpson)
Dates: 08/01/2022 – 07/31/2023
PI: Megan Carter
Co-PI: Amber Simpson

Ontario Molecular Pathology Research Network Research Grant
Next Generation Grading to Improve Research and Practice for Early Bladder Cancer
Amount: $85,957
Dates: 02/15/2021-03/31/2022
PI: David Berman
Co-PI: Amber Simpson

New Frontiers for Research Fund
Finding Identity in the Cancer Digital Twin
Amount: $250,000 CDN
Dates: 3/31/2020 – 2/28/2022
PI: Amber Simpson

The Dean Paras Foundation Research Grant (External)
Defining the Malignant Potential of Pancreatic Neuroendocrine Tumors with CT Radiomics
Amount: $64,000 USD
Dates: 01/01/2018–6/30/2019
PI: Amber Simpson

Cycle for Survival Team Notorious HPB (Internal)
Characterization of Gallbladder Cancer
Amount: $120,000 USD
Dates: 08/01/2017–07/31/2019

PI: Amber Simpson

David M. Rubenstein Center for Pancreatic Cancer Research Pilot Project (Internal)
Interrogation of exosome-mediated intercellular signaling in patients with pancreatic adenocarcinoma
Amount: $300,000 USD
Dates: 04/01/2017–03/31/2019
PI: Amber Simpson

Center for Metastases Research Fellowship (Internal)
Development of Novel Imaging and Laboratory Biomarkers to Monitor the Liver Pre-metastatic Niche and Guide Treatment
Amount: $150,000 USD
Dates: 09/01/2016–08/31/2018
PI: Constantinos Zambirinis
Mentor: Amber Simpson

Cycle for Survival Equinox Innovation Initiative (Internal)
Radio-Gen-Pathomic Characterization of Cholangiocarcinoma: Toward a Unified Theory of Aggressive Malignancy from the Hepatopancreatobiliary Disease Management Team
Amount: $400,000 USD
Dates: 09/01/2016–08/31/2018
PI: Amber Simpson

Pancreatic Cancer Action Network-AACR Career Development Award (External)
CT Texture Analysis: A Radiomics Approach to Predicting Malignancy in IPMN
Amount: $200,000 USD
Dates: 07/01/2016–06/30/2018
PI: Amber Simpson

NVIDIA Grant Support Program (External)
Deep learning for medical image analysis
Amount: Hardware donation ($4,000 USD value)
Dates: 01/01/2016–12/31/2018
PI: Amber Simpson

Society of Abdominal Radiology (External)
Stability of Radiomic Features for Abdominal Tumors on Contrast Enhanced CT with Variable Acquisition Parameters
Amount: $15,000 USD
Dates: 04/01/2016–03/31/2017
PI: Richard Kinh Gian Do
Co-PI: Amber Simpson

Society of Memorial Sloan Kettering (Internal)
Harnessing CT Radiomics to Predict Volumetric and Pathologic Response in Patients Treated for Colorectal Cancer Liver Metastases
Amount: $70,048 USD
Dates: 03/31/2016–02/28/2017
PI: Richard Kinh Gian Do
Co-PI: Amber Simpson

David M. Rubenstein Center for Pancreatic Cancer Research Pilot Project (Internal)
Imaging Markers for Predicting Malignancy of Intraductal Papillary Mucinous Neoplasms
Amount: $83,333 USD
Dates: 01/01/2016–12/31/2016
PI: Amber Simpson

3DF (Device Design and Development Fund) Award (Internal)
Stereoscopic imaging for image-guided liver surgery
Amount: $25,000 USD
Dates: 07/01/2015–06/31/2016
PI: Amber Simpson

Cycle for Survival
Imaging phenotypes of resectable pancreatic ductal adenocarcinoma: correlation with survival and pathology
Amount: $400,000 USD
Dates: 09/01/2014-08/31/2016
Co-PI: Amber Simpson

CAREER PUBLICATION TOTALS

Podcasts	2
Datasets	1
Articles in Submission in Peer Reviewed Journals	12
Articles in Peer Reviewed Journals	96
Articles in Non-Peer Reviewed Venues	2
Articles in Peer Reviewed Conferences	55
White Papers	3
Book Chapters	2
Abstracts	45

SCHOLARLY OUTPUTS

Podcasts

2023 J. Loewen-Colon, L. James, S. Mosurinjohn, **A. L. Simpson**. Digital Twin Podcast, CFRC 101.9 FM, https://podcast.cfrc.ca/feed/podcast/the-digital-cancer-twin-podcast/

2024 J. Loewen-Colon, V. Fergusson, Robyn K. Rowe, C. Stinson, **A. L. Simpson**. Ethics of AI Podcast, CFRC 101.9 FM, https://podcast.cfrc.ca/podcasts/the-responsible-use-of-ai-podcast/

Datasets

2023 **A. L. Simpson**, J. Peoples, J. M. Creasy, G. Fichtinger, N. Gangai, A. Lasso, K. N. Keshava Murthy, J. Shia, M. I. D'Angelica, R. K. G. Do. Preoperative CT and Recurrence for Patients Undergoing Resection of Colorectal Liver Metastases (Colorectal Liver Metastases) (Version 1) [Data set]. The Cancer Imaging Archive. https://doi.org/10.7937/QXK2-QG03

Articles in Peer Reviewed Journals

Submitted M. Hamghalam, J. J. Peoples, N. Gangai, K. Kobayashi, G. Park, E. Kwak, C. Bunker, M. Gonen, Y. Chun, H. C. Kang, R. K. G. Do, **A. L. Simpson**. Confidence-Aware Segmentation of Colorectal Liver Metastases in CT Using Metadata for Enhanced Reliability. Submitted to *Radiology AI*. Contribution: study design, analysis, funding, manuscript preparation.

Submitted E. Christodoulou, A. Reinke, R. Houhou, P. Kalinowski, S. Erkan, C. H. Sudre, N. Burgos, S. Boutaj, S. Loizillon, M. Solal, N. Rieke, V. Cheplygina, M. Antonelli, L. D. Mayer, M. D. Tizabi, M. J. Cardoso, **A. L. Simpson**, P. F. Jäger, A. Kopp-Schneider, G. Varoquaux, O. Colliot, L. Maier-Hein. False Promises in Medical Imaging AI? Assessing Validity of Outperformance Claims. Submitted to *Nature Machine Intelligence*.

Submitted A. Dimitriev, **A. L. Simpson**, J. Flemming, D. J. Mulder. SARS-CoV-2 Infection Impacts Liver-Related Blood Tests Following Infection: A Health Administrative Data Study, Submitted to *Journal of Hepatology*.

Submitted A. Dimitriev, L-M. Postovit, **A. L. Simpson**, and G. Ka-Shu Wong, One knockout is all you need. In Review Nature Genetics. Contribution: study design, analysis, funding, manuscript preparation.

Submitted A. Kearney, **A. L. Simpson**, W. Abu Zeid, Prediction of Hospitalization and ICU Admission for Ontario COVID-19 Patients with Cardiac Comorbidities, Submitted to the *American Journal of Cardiology*. Contribution: study design, analysis, funding, manuscript preparation.

Submitted T. L. Williams, L. V. Saadat, M. Zhou, A. Midya, J. Chakraborty, R. Bandaru, G. Gao, W. Yoo, R. K. G. Do, **Amber L. Simpson**, Deep Convolutional Neural Network for the Classification of Pancreatic Masses. Contribution: study design, data collection, analysis, manuscript preparation.

Submitted R. Mojtahedi, M. Hamghalam, W. R. Jarnagin, R. K. G. Do, and **A. L. Simpson.** Self-Supervised Transformer-Based Pipeline for Liver Tumor Segmentation and Type Classification, Submitted to *JCO Clinical Cancer Informatics*. Contribution: study design, funding, analysis.

Submitted J. Gagnière, A. Midya, J. Chakraborty, R. Yamashita, R. K. G. Do, J. Drebin, T. P. Kingham, V. P. Balachandran, M. I. D'Angelica, W. R. Jarnagin, P. J. Allen, A. Wei, **A. L. Simpson**, Quantitative imaging features of preoperative computed tomography predict postoperative pancreatic fistula after pancreatectomy, Submitted to *Annals of Surgical Oncology*. Contribution: led design and implementation of algorithms, identified suitable methodology; manuscript preparation.

Submitted A. P. Choubey, J. Magnin, J. Gagnière, A. Midya, J. Steinharter, R. K. G. Do, K. C. Soares, M. Gonen, J. A. Drebin, T. P. Kingham, V. P. Balachandran, M. I. D'Angelica, P. J. Allen, A. C. Wei, **A. L. Simpson**, J. Chakraborty, W. R. Jarnagin. Postoperative Pancreatic Fistula After Pancreatoduodenectomy: Can Radiomics Improve Clinical Risk Scores? Submitted to *Annals of Surgical Oncology*.

Contribution: led design and implementation of algorithms, identified suitable methodology; manuscript preparation.

In revision — Tiziana Cotechini,* N. Kim,* C. T. Hindmarch, D. M. Berman, J. C. Nickel, D. R. Siemens, C. Graham, **A. L. Simpson**, R. C. Doiron, Immune profiling of Hunner Lesions in Interstitial Cystitis/Bladder Pain Syndrome using Imaging Mass Cytometry: A pilot study (*joint first authors), *Journal of Urology*.

In revision — S. Gholami, **A. L Simpson**, M. Gonen, L. W Clements, M. I. D'Angelica, P. Dumpuri, D. A. Geller, M. Heller, A. W. Hemming, M. I. Miga, J. D. Stefansic, I. Zendejas, W. R. Jarnagin, Chemotherapy inhibits early regeneration after hepatectomy: a multi-institutional analysis from a prospective trial, *Plos One.* Contribution: data collection; data analysis; manuscript preparation.

In revision — V. Ferguson, A. Sauve, C. Stinson, and **A. L. Simpson**. Racial Disparities in Colorectal Cancer and the Use of Artificial Intelligence for Cancer Prediction and Management. In revision at *BMC Cancer*. Contribution: conception, manuscript preparation, funding.

Accepted — D. Lee, M. Hamghalam, L. Wang, H-M. Lin, E. Colak, M. Mamdani, **A. L. Simpson**, J. Lee, The Use of a Convolutional Neural Network to Automate Radiologic Scoring of Computed Tomography of Paranasal Sinuses, *BioMedical Engineering OnLine*. Contribution: led design and implementation of algorithms, identified suitable methodology; manuscript preparation, funding.

Accepted — Y. Shi, C. Niu, **A. L. Simpson**, B. De Man, R. Do, G. Wang, CT-based Anomaly Detection of Liver Tumors Using Generative Diffusion Prior, *IEEE Transactions on Radiation and Plasma Medical Sciences*. Contribution: study design, funding, manuscript preparation.

Accepted — Towards Fair Decentralized Benchmarking of Healthcare AI Algorithms: The Federated Tumor Segmentation (FeTS) Challenge, *Nature Communications*. Contribution: data collection and annotation, funding, manuscript review.

Accepted — D. Lee, M. Hamghalam, L. Wang, H-M. Lin, E. Colak, M. Mamdani, **A. L. Simpson**, J. Lee, The Use of a Convolutional Neural Network to Automate Radiologic Scoring of Computed Tomography of Paranasal Sinuses, *International Forum of Allergy & Rhinology* (Short Paper). Contribution: led design and implementation of algorithms, identified suitable methodology; manuscript preparation, funding.

2025 — B. J. Laight, D. Harper, N. Dmytryk, S. Zhang, A. Garven, C. Shi, R. Nauman, J. Kment, F. Alotaibi, I. Shapavalov, Y. Gao, J. Mewburn, C. Vlasschaert, D. LeBrun, K. Tyryshkin, David Berman, Amber Simpson, Charles Graham, Andrew W. Craig, S. Basta, M. Koti, P. A. Greer. Fes-deficient macrophages enhance CD8+ T cell priming and tumour control through increased pro-inflammatory cytokine production and localization. *Cancer Research*. Contribution: data analysis, manuscript preparation, funding.

2025 — The Terry Fox Research Institute Marathon of Hope Cancer Centers Network**,** The Terry Fox Research Institute Marathon of Hope Cancer Centres Network: a

Canadian precision oncology initiative. *Cancer Cell*. Contribution: patient recruitment, specimen, collection, sequencing, data analysis.

2025 M. Ashofteh Barabadi, X. Zhu, W. Y. Chan, **A. L. Simpson**, R. K. G. Do. Targeted Generative Data Augmentation for Automatic Metastases Detection from Free-text Radiology Reports, *Frontiers in AI*.

2025 C. Geady, H. Patel, J. Peoples, **A. L. Simpson**, B. Haibe-Kains, Radiomic-Based Approaches in the Multi-metastatic Setting: A Quantitative Review, *BMC Cancer*.

2025 J. J. Peoples, M. Hamghalam, I. James, M. Wasim, N. Gangai, H.S.C. Kang, X. J. Rong, Y. S. Chun, R. K. G. Do, and **A. L. Simpson.** Finding Reproducible and Prognostic Radiomic Features in Variable Slice Thickness Contrast Enhanced CT of Colorectal Liver Metastases, *Machine Learning for Biomedical Imaging*. Contribution: led design and implementation of algorithms, identified suitable methodology; manuscript preparation, funding.

2024 C. Wiedeman, P. Lorraine, G. Wang, R. Do, **A. L. Simpson**, J. Peoples, and B. De Man. Simulated Deep CT Characterization of Liver Metastases with High-resolution FBP Reconstruction, *Visual Computing*: 7(13), 2024. Contribution: data collection; funding; manuscript preparation.

2024 L. Bojmar, et al. Multi-parametric atlas of the pre-metastatic liver for prediction of metastatic outcome in early-stage pancreatic cancer. *Nature Medicine*: 30:2170-2180, 2024. Contribution: data analysis, funding.

2024 J. H. Sussman, N. Kim, D. Traum, T. Katsuda, S. B. Kemp, B. Kahn, D. Delman, G. Beatty, K. Kaestner, **A. L. Simpson**, B. Z. Stanger, Multiplexed imaging mass cytometry analysis characterizes the vascular niche in pancreatic cancer. *Cancer Research: 84(14):2364-2376*. Contribution: data analysis, funding, manuscript preparation.

2024 E. C. Nakajima, A. L. Simpson, J. Bogaerts, E.G.E de Vries, R. Do, E. Garalda, G. Goldmacher , P.E. Kinahan, P. Lambin, B. LeStage, Q. Li, F. Lin, S. Litière, R. Perez-Lopez, N. Petrick, L. Schwartz, L. Seymour, L. Shankar, S. A. Laurie. Tumor size isn't everything: advancing radiomics as a precision medicine biomarker in oncology drug development and clinical care. *JCO Precision Oncology*.

2024 J. Chakraborty, A. Midya, B. Kurland, M. Welch, M. Gonen, C. Moskowitz, and **A. L. Simpson**. Use of response permutation to measure an imaging dataset's susceptibility to overfitting by selected standard analysis pipelines, *Academic Radiology: 31(9):3590-3596*. Contribution: research question; manuscript preparation.

2024 J.M. Scott, J. Lee, M.G. Michalski, K. Batch, **A.L. Simpson**, J. Peoples, C.P. Lee, J.N. Harrison, A. F. Yu, J. P. Sasso, C. Dang, C.S. Moskowitz, L.W. Jones, N.D. Eves. Mechanisms of Exercise Intolerance Across the Breast Cancer Continuum: A Pooled Analysis of Individual Patient Data. *Med Sci Sports Exerc: 56(4), 2024*. Contribution: data analysis; manuscript preparation.

2024 M. Hamghalam, R. Moreland, D. Gomez, **A. L. Simpson**, H-M. Lin, A.B. Jandaghi, M. Tafur, P. Vlachou, M. Wu, M. Brassil, P. Crivellaro, S. Mathur, S. Hosseinpour, E. Colak, Machine Learning Detection and Characterization of Splenic Injuries on Abdominal Computed Tomography, *Canadian Association of Radiologists Journal*. Contribution: conception, manuscript preparation, funding.

2024 **A. L. Simpson,** J. Peoples, J. Creasy, G. Fichtinger, N. Gangai, A. Lasso, K. N. Keshava Murthy, J. Shia, M. I. D'Angelica, R. K. G. Do, Preoperative CT and survival data for patients undergoing resection of colorectal liver metastases. *Nature Scientific Data,* 11(172). Contribution: data curation, funding, manuscript preparation.

2024 M. Hamghalam and **A. L. Simpson**, Medical image synthesis via conditional GANs: Application to segmenting brain tumours, *Computers in Biology and Medicine*: 170:107982. Contribution: study design, data interpretation, manuscript preparation.

2023 L. Elbatarny, R. K. G. Do, N. Gangai, F. Ahmed, S. Chhabra, **A. L. Simpson**, Applying natural language processing for single-report prediction of metastatic disease response using the OR-RADS lexicon, *Cancers,* 15(20). Contribution: study design, data interpretation, funding, manuscript preparation.

2023 H-M. Lin , E. Colak, T. Richards, F. C. Kitamura, L. M. Prevedello, J. Talbott, R. L. Ball, E. Gumeler, K. W. Yeom, M. Hamghalam, **A. L. Simpson**, J. Strika, D. Bulja, S. Angkurawaranon, A. Pérez-Lara, M. I. Gómez-Alonso, J. Ortiz Jiménez, J. Peoples, M. Law, H. Dogan, E. Altinmakas, A. Youssef, Y. Mahfouz, J. Kalpathy-Cramer, A. E. Flanders, for the RSNA-ASSR-ASNR Annotators and the Dataset Curation Contributors The RSNA Cervical Spine Fracture CT Dataset, Radiology AI: 5(5), 2023. Contribution: study design, data collection, manuscript preparation.

2023 A. Midya, J. Chakraborty, R. Srouji, R. R. Narayan, T. Boerner, J. Zheng, L. M. Pak, J. M. Creasy, L. A. Escobar, K. A. Harrington, M. Gonen, M. I. D'Angelica, T. P. Kingham, R. K. G. Do, W. R. Jarnagin, and **A. L. Simpson**, Computerized diagnosis of liver tumors from CT scans using deep neural network approach, IEEE *Journal of Biomedical and Health Informatics*. Contribution: study design, analysis, funding, manuscript preparation.

2023 S. Kim, M. Kazmierski, K. Qu, J. Peoples, M. Nakano, V. Ramanathan, J. Marsilla, M. Welch, **A. L. Simpson**, Benjamin Haibe-Kains, Med-ImageTools: An open-source Python package for robust data processing pipelines and curating medical imaging data, *F1000Research*, 12:118.

2023 A. Robins, A. Dimitriev, C. MacKay, A. Hamilton, H. Wang, A. Kearney, D. P. Borschneck, and **A. L. Simpson**, The impact of COVID-19 on opioid prescribing patterns and opioid-related overdose: a retrospective cohort study. Canadian Journal of Pain. Contribution: study design, analysis, funding, manuscript preparation.

2022 S. P. Phillips, S. Spithoff, **A. L. Simpson**, Artificial intelligence and predictive algorithms in medicine: Promise and problems, *Canadian Family Physician*, 68(8):570-572. Contribution: manuscript preparation.

2022 R. Hu, I. Chen, J. Peoples, J-P. Salameh, M. Gönen, P. B. Romesser, **A. L. Simpson**, and M. Reyngold, Prediction of Local Control for Colorectal Liver Metastases using a Radiomic Artificial Intelligence Model. *Clinical and Translational Radiation Oncology*, 13;24:36-42. Contribution: study design, analysis, funding, manuscript preparation.

2022 Pati et al., Federated Learning Enabling Big Data for Cancer Detection. *Nature Communications*. 13: 7346 (2022). Contribution: data collection; data analysis; manuscript preparation.

2022 P. Causa Andrieu, J. S. Golia Pernicka, K. Lupton, K. Batch, F, Zulkernine, **A. L. Simpson**, M. Taya, L. Gazit, M. H. Nguyen, K. Nicholas, N. Gangai, V. Sevilimedu, S. Dickinson, V. Paroder, D. B. Bates, R. Yaeger, R. K. G. Do, Natural language processing of CT reports to label metastatic phenotypes with prognostic significance in patients with colorectal cancer, *JCO Clinical Cancer Informatics*. Contribution: data analysis; manuscript preparation.

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2023 J. Loewen, **A. L. Simpson**. AI and Psychedelic Health Sciences: Creating a Data-Augmented Trip Report Generator, Practical Big Data Workshop, Ann Arbor, MI, USA, May 18-20.

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2023 K. Lindale, A. Slotman, M. Xu, D. Winkowski, C. Hardy, L. Chen, R. Baird, C. L. Jackson, R. J. Gooding, **A. L. Simpson**, D. M. Berman, Digital grading for noninvasive papillary urothelial carcinoma: Establishing quantitative relationships between histologic features and prognosis. Bladder Cancer Canada.

2022 A. Kearney, **A. L. Simpson**, W. Abu Zeid, Prediction of Hospitalization and ICU Admission for Ontario COVID-19 Patients with Cardiac Comorbidities, American College of Cardiology, Annual Meeting, April 2-4, Washington, DC, USA.

2021 S.J.C. Crête, N.B Campbell, R. Hu, J. Peoples, M. Yan, T. Olding, K. Tyryshkin, **A.L. Simpson**, F. Ynoe de Moraes, Time-dependent machine learning survival prediction model of brain metastases with MRI radiomics, Radiotherapy and Oncology: 161: S565-S566.

2021 P. Causa Andrieu, K. Lupton, V. Savilimedu, N. Huy, M. Maya, K. Batch, F. Zulkernine, L. Gazit, N. Gangain, **A.L. Simpson**, J. Golia Pernicka, R. K. Do. Overall survival of colorectal cancer patients stratified by metastatic disease patterns identified on CT report using natural language processing, ESGAR, 2021.

2020 S. Sun, K. Lupton, K. Batch, N. Gangai, J. Cho, L. Gazit, H. Nguyen, F. Zulkernine, **A.L. Simpson**, R. K. Do. Prediction of splenomegaly >100,000 structured oncologic radiology reports using natural language processing, ESGAR, 2020.

2020 P. Causa Andrieu, K. Lupton, K. Batch, N. Gangai, L. Gazit, H. Nguyen, F. Zulkernine, **A. L. Simpson**, R. K. Do. Natural language processing for labeling of metastatic disease from gastrointestinal tract and pancreatic cancer in structured radiology reports: preliminary results. Society of Abdominal Radiology 2020 Annual Scientific Meeting and Educational Course, March 1 - 6, 2020.

2020 Fraser Raney, Richard K. G. Do, and **Amber L. Simpson**, Toward Generalizable Semantic Medical Image Segmentation, Imaging Network Ontario Annual Meeting 2020.

2020 Mary Anne Panoyan, Caitlin A. McIntyre, Jayasree Chakraborty, Maura Koszalka, Jared Bassman, Yuting Chou, Mithat Gonen, Tricia Cottrell, Richard K. G. Do, Alice Wei, Vinod P. Balachandran, Qingling Duan, and **Amber L. Simpson**, Investigating the role of immune environments and quantitative imaging

phenotypes in pancreatic cancer, Imaging Network Ontario Annual Meeting 2020.

2020 Malaika Ngugama, Rami Srouji, Caitlin McIntyre, Qingling Duan, Jaclyn F. Hechtman, Rona Yaeger, Jennifer S. Golia Pernicka, and **Amber L. Simpson**, Radiomic and genomic heterogeneity as predictors of acquired resistance to targeted therapy in metastatic CRC, Imaging Network Ontario Annual Meeting 2020.

2020 K. Lupton, K. Batch, S. Sun, N. Gangai, J. Cho, L. Gazit, H. Nguyen, F. Zulkernine**,** R. K. Do, **A. L. Simpson**. Using natural language processing to predict and map splenomegaly from >100,000 structured radiology reports, Imaging Network Ontario Annual Meeting 2020.

2019 C. A. McIntyre, J. Chakraborty, M. Koszalka, J. Bassman, Y. Chou, M. Gonen, P. J. Allen, T. P. Kingham, M. I. D'Angelica, J. A. Drebin, W. R. Jarnagin, R. K. G. Do, V. P. Balachandran, **A. L. Simpson**, The use of CT radiomics to predict immune infiltrate in pancreatic ductal adenocarcinoma, In: *AACR Annual Meeting*, Atlanta, GA, March 29 - April 3.

2019 S. Dickinson, C. A. McIntyre, J. Flynn, M. Capanu, M. Gonen, J. Schilsky, K. Seier, P. J. Allen, E. M O'Reilly, W. R. Jarnagin, **Simpson A. L.**, Do RK, Predictors of Overall Survival in Resected Pancreatic Adenocarcinoma: Imaging Features and Genetic Driver Mutations, *Society for Abdominal Radiology Annual Scientific Meeting and Educational Course,* March 17 - 22, Orlando, FL.

2018 C. P. Zambirinis, A. Midya, J. Chou, J. Zheng, C. McIntyre, J. Chakraborty, R. K. Do, V. P. Balachandran, J. A. Drebin, T. P. Kingham, M. I. D'Angelica, P. J. Allen, M. Gonen, **A. L. Simpson**, W. R. Jarnagin, Pancreatic cancer recurrence patterns and evaluation of a novel radiomics-based method for liver metastasis risk assessment, In: *AACR Special Conference on Pancreatic Cancer: Advances in Science and Clinical Care,* Boston, MA, September 21-24.

2018 C. P. Zambirinis, J.F. Chou, M. Gönen, **A. L. Simpson**, V. P. Balachandran, T. P. Kingham, M. I. D'Angelica, J. A. Drebin, P. J. Allen, W. R. Jarnagin, Patterns of recurrence and peri-operative predictors of liver metastasis after pancreatic cancer resection, *Americas Hepato-Pancreato-Biliary Association Annual Meeting*, Miami, FL, March 7-11.

2018 R. Yamashita, T. Perrin, J. Chakraborty, J. Chou, N. Horvat, A. Midya, M. Gonen, W. R. Jarnagin, A. L. Simpson, R. K. G. Do, Factors Affecting Reproducibility of Radiomic Features in Pancreatic Parenchyma and Pancreatic Ductal Adenocarcinoma on Contrast-enhanced CT Imaging, *Radiological Society of North America (RSNA) Annual Meeting*, Chicago, IL, November 25 - 30.

2018 R. K. G. Do, T. Perrin, A. Midya, R. Yamashita, J. Chakraborty, W. R. Jarnagin, M. Gonen, and **A. L. Simpson**, SAR 2016 Wylie J. Dodds Research Grant Report: Reproducibility of radiomic features in the liver on contrast enhanced CT, *Society for Abdominal Radiology Annual Scientific Meeting and Educational Course*, March 4 - 9, Scottsdale, AZ.

2018 J. S. Golia Pernicka, L. Nardo, J. Chakraborty, J. M. Creasy, R. Yamashita, G. Nash, **A. L. Simpson**, M. Gollub, Radiomics of peritoneal metastases from appendiceal carcinoma predict pathologic grade, *Society for Abdominal Radiology Annual Scientific Meeting and Educational Course*, March 4 - 9, Scottsdale, AZ.

2018 S. A. Lawrence, J. Chakraborty, M. A. Al Efishat, M. A. Attiyeh, G. Askan, Y. Chou, A. Pulvirenti, C. A. McIntyre, M. Gonen, O. Basturk, V.P. Balachandran, T.P. Kingham, M.I. D'Angelica, W.R. Jarnagin, J.A. Drebin, R. K. Do, **A. L. Simpson**, P. J. Allen, Use of quantitative image analysis and cyst fluid inflammatory markers to predict risk in intraductal papillary mucinous neoplasms, *Society of Surgical Oncology Annual Cancer Symposium*, Chicago, IL, March 21-24.

2018 A. Pulvirenti, J. Chakraborty, R. Yamashita, S. A. Lawrence, C. A McIntyre, A. Midya, M. A. Koszalka, M. Gonen, D. S. Klimstra, D. L. Reidy, P. J. Allen, R. K. G. Do, **A. L. Simpson**, Quantitative CT analysis for the preoperative prediction of pathologic grade in pancreatic neuroendocrine tumors, *Society of Surgical Oncology Annual Cancer Symposium,* Chicago, IL, March 21-24.

2017 E. A. Aherne, L. M. Pak, D. A. Goldman, M. Gonen, W. R. Jarnagin, **A. L. Simpson**, R. K. Do, Intrahepatic cholangiocarcinoma: Can imaging phenotypes predict survival and tumor genetics? *Radiological Society of North America (RSNA) Annual Meeting*, Chicago, IL, November 26 - December 1.

2017 M. A. Attiyeh, J. Chakraborty, L. Langdon-Embry, V. P. Balachandran, M. I. D'Angelica, R. P. DeMatteo, M Gonen, T. P. Kingham, S. Lawrence, S. Mainarich, W. R. Jarnagin, P. J. Allen, R. K. Do, **A. L. Simpson**, Through the looking-mass: Preoperative survival prediction in pancreatic ductal adenocarcinoma (PDAC) by quantitative CT analysis, *Society of Surgical Oncology Annual Cancer Symposium*, Seattle, WA, March 15-18.

2017 L. M. Pak, D. A. Goldman, M. Gonen, P. J. Allen, V. P. Balachandran, M. I. D'Angelica, R. P. DeMatteo, T. P. Kingham, **A. L. Simpson**, J. F. Hechtman, E. Vakiani, C. S. Sigel, M. A. Lowery, W. R. Jarnagin, Mutational profiling of resected intrahepatic cholangiocarcinoma, *ASCO Annual Meeting*, Chicago, IL, June 2-6.

2017 L. M. Pak, J. Chakraborty, M. Gonen, P. J. Allen, V. P. Balachandran, W. C. Chapman, M. I. D'Angelica, R. P. DeMatteo, R. K. G. Do, T. P. Kingham, B. Groot Koerkamp, S. Y. Lee, M. Massani, E. P. van der Stok, W. R. Jarnagin, **A. L. Simpson**, Quantitative imaging features of preoperative computed tomography (CT) images predict post-hepatectomy liver insufficiency: A multi-institutional expansion cohort, *American College of Surgeons*, San Diego, CA, Oct 22-26.

2017 M. A. Attiyeh, J. Chakraborty, L. Gazit, L. Langdon-Embry, S. A. Lawrence, M. I. D'Angelica, R. P. DeMatteo, T. P. Kingham, V. P. Balachandran, W. R. Jarnagin, P. J. Allen, R. K. Do, **A. L. Simpson**, Predicting grade of dysplasia in intraductal papillary mucinous neoplasms (IPMN) by quantitative image analysis, *Americas Hepato-Pancreato-Biliary Association Annual Meeting*, Miami, FL, March 29-April 2.

2017 J. Zheng, J. Chakraborty, P. J. Allen, V. Balachandran, W. C. Chapman, M. I. D'Angelica, S. Gerst, M. Gonen, T. P. Kingham, L. M. Pak, N. Vachharajani, W. R. Jarnagin, R. P. DeMatteo, R. K. Do, **A. L. Simpson**, Preoperative prediction of microvascular invasion in hepatoceullar carcinoma using quantitative image analysis, *Americas Hepato-Pancreato-Biliary Association Annual Meeting*, Miami, FL, March 29-April 2.

2010 E. M. Vasarheyli, **A. L. Simpson**, B. Ma, R. E. Ellis, D. P. Borschneck, and A. J. Stewart, A comparison study of 2D and 3D surgical navigation methods, *Computer Assisted Orthopaedic Surgery* (CAOS) 2010, Versailles, France, June 16-10.

2010 **A. L. Simpson,** B. Ma, E. M. Vasarheyli, R. E. Ellis, D. P. Borschneck, and A. J. Stewart, A surgical performance comparison of uncertainty visualization methods with application to pedicle screw insertion, *Computer Assisted Orthopaedic Surgery* (CAOS), Versailles, France, June 16-10.

2008 **A. L. Simpson**, B. Ma, B. Slagel, D. P. Borschneck, and R. E. Ellis, Computer-assisted distraction osteogenesis using the Taylor frame: Initial clinical experiences, *Computer-Assisted Orthopaedic Surgery*-UK, appeared in Journal of Bone and Joint Surgery - British Volume, Vol 90-B, Issue SUPP_III:558.

2007 **A. L. Simpson**, A unified approach to computing and visualizing uncertainty in the operating room, *Grace Hopper Celebration of Women in Computing* (GHC 2007) PhD Symposium, October.

2007 **A. L. Simpson**, B. Ma, E. C. S. Chen, R. E. Ellis, and A. J. Stewart, Registration uncertainty visualization, In *Canadian Student Conference on Biomedical Computing*, London, Ontario, Canada, March 16 -18.

2007 **A. L. Simpson**, B. Ma, E. C. S. Chen, R. E. Ellis, and A. J. Stewart, A registration uncertainty visualization method*, Computer-Assisted Orthopaedic Surgery* (CAOS) 2007, Heidelberg, Germany, June 20-23.

2006 **A. L. Simpson**, B. Ma, D. P. Borschneck, and R. E. Ellis, A new technique for deformity correction, In *Canadian Student Conference on Biomedical Computing*, Kingston, Ontario, Canada, March 17-19.

2006 **A. L. Simpson**, J. Inoue, D. P. Borschneck, and R. E. Ellis, Preliminary study of computer-assisted rotational osteotomy, In *Canadian Student Conference on Biomedical Computing*, Kingston, Ontario, Canada, March 17-19.

2006 **A. L. Simpson,** B. Ma, D. P. Borschneck, and R. E. Ellis, Initial clinical results of computer-assisted distraction osteogenesis by Ilizarov's method, *Computer-Assisted Orthopaedic Surgery (CAOS)*, Montreal, Canada, June 21-24.

2006 B. Slagel, R. E. Ellis, B. Ma, **A. L. Simpson**, P. St. John, and D. P. Borschneck, Limb alignment correction using traditional and computer-assisted Taylor spatial frame, *Computer-Assisted Orthopaedic Surgery* (CAOS) 2007, Heidelberg, Germany, June 20-23.

2003 **A. L. Simpson**, P. Abolmaesumi, R. E. Ellis, D. R. Pichora, and D. Sahajpal, Intraoperative imaging with B-mode ultrasound for scaphoid fractures, *Computer-Assisted Orthopaedic Surgery (CAOS)*, Marbella, Spain.

AWARDS

2020	Mihran & Mary Basmajian Award for Excellence in Health Research
2018	First Prize Oral Presentation, International Cancer Imaging Society 18th Annual Meeting, Menton, France
2018	Outstanding Paper Award, AE-CAI Workshop, Medical Image Computing and Computer Aided Intervention
2017	Awarded competitive admission, Association of American Medical Colleges, Early Career Women Faculty Professional Development Seminar, Stevenson, WA
2016	Career Development Award, American Association of Cancer Research
2015	Awarded competitive admission to the Association of American Medical Colleges Grant Writers Workshop, Atlanta, GA
2012	Best Poster, SPIE Medical Imaging
2010	Natural Science & Engineering Research Council of Canada R&D Fellowship (declined)
2010	Runner-Up Best Paper Computer Assisted Orthopedic Surgery
2007	Grace Hopper Scholarship
2005–2006	Ontario Graduate Scholarship
2004	Association of Computing Machinery Programming Contest World Finals (Bronze Medal) – Coach
2002–2005	R. Samuel McLaughlin Fellowship, Queen's University
2000–2004	Queen's Graduate Award
2001, 2002, 2004	Ian A. Macleod Award (contribution to intellectual spirit at Queen's University)
2002	Association of Computing Machinery Programming Contest World Finals (27th Place) – Coach

SELECTED INVITED TALKS

2025	Addressing Bias in AI-Driven Medical Imaging: Pitfalls and Best Practices, Beebe Symposium, National Academies of Science, Engineering, and Medicine, Washinton, DC
2024	Transforming Human Health with AI, Quebec Urology Association Annual Meeting
2024	Surgical Data Science in the Treatment of Colorectal Liver Metastases, Cancer Center Informatics Society (Ci4CC), Charleston, SC
2024	Solving Fundamental Cancer Problems with AI, American Association of Cancer Research Annual Meeting, San Diego, CA

2024	High Quality Data to Drive Future Thinking in AI, National Cancer Institute Workshop on Computational Pathology
2023	Solving Fundamental Cancer Problems with AI, UT Dallas
2022	AI for Generating Real World Evidence in Cancer, Frederick National Lab Symposium on AI, Hood College
2022	AI for Generating Real World Evidence in Cancer, SuperComputing
2021	AI & ML in Diagnostics, Chan-Zuckerberg Initiative
2021	Solving Fundamental Cancer Problems with AI, Stanford Grand Rounds
2021	Solving Fundamental Cancer Problems with AI, Case Western Grand Rounds
2021	Introduction to the Ontario Health Data Platform, Machine Learning in Medical Imaging Working Group
2021	Genomic Collaboratory, Ontario Institute of Cancer Research
2021	Exploiting imaging biomarkers in cancer trials, Canadian Cancer Trials Group Investigational New Drug Meeting
2021	Reproducibility in Quantitative Imaging, Toronto Data Science Workshop, University of Toronto
2021	Overview of Radiomics Accomplishments, American Society of Clinical Oncology
2020	Surgical Data Science in Colorectal Liver Metastases**,** Vanderbilt Institute for Surgery and Engineering
2020	Solving Fundamental Cancer Problems with AI, Women in Data Science Annual Meeting, Ottawa, Ontario
2020	From COVID to Cancer: Answering Fundamental Biomedical Questions with AI, Toronto Data Science Workshop, University of Toronto
2020	From Soup to Nuts: The Medical Segmentation Decathlon, MICCAI LABELS Workshop
2020	Development of Robust Imaging Biomarkers for Colorectal Liver Metastases, Canadian Cancer Trials Group Investigational New Drug Meeting
2020	Development of Robust Imaging Biomarkers for GI Malignancies, OICR Annual Meeting
2020	(Everything I know about the) Ontario Health Data Platform, Health Services and Policy Research Institute, Queen's University
2020	Solving Fundamental Biomedical Problems with AI, Vector Institute for AI
2020	The Potential of AI in Health Care, Joint KHSC/Queen's Workshop on AI
2019	Separating the hype from the hope in artificial intelligence for oncologic imaging, Cancer Grand Rounds, Cedars Sinai, Los Angeles, CA.
2019	Separating the Hype from the Hope in Medical Imaging AI, Imaging Network Ontario, Keynote, London, ON.
2019	Computational Phenotypes of Pancreatobiliary Cancers, Johns Hopkins University
2018	Computational Phenotypes of Cancer, Queen's University.
2018	Next Generation Imaging: A Machine-learning Approach to Predicting Malignancy in IPMN, American Pancreatic Association Annual Meeting, Miami, FL.
2018	Medical Segmentation Decathlon, MICCAI Decathlon Workshop, Granada, Spain.
2018	Next Generation Imaging, Albert Einstein College of Medicine, New York, NY.
2018	Advances in Interventional Radiology: Innovations and Outcomes, International Conference on Computer Assisted Radiology and Surgery, Berlin, Germany.

2018	Imaging Markers for Early Detection, Recurrence, and Survival of Pancreatic Cancer, Pancreas Center Grand Rounds, The Mayo Clinic, Rochester, MN.
2017	Development of CT Imaging Markers for Patients with Colorectal Liver Metastases, MICCAI Program Committee Meeting, Quebec City, QC.
2017	Next Generation Imaging: Radiomics for Hepatopancreatobiliary Cancers, Radiology Grand Rounds, Columbia University, New York, NY.
2017	Next Generation Imaging for Oncology, Cycle for Survival, West Coast Battle Summit, Los Angeles, CA.
2017	Radiomics for early detection, recurrence, and survival of pancreatic cancer, Pathology Grand Rounds, Stony Brook University.
2017	CT Texture Analysis: A Radiomics Approach to Predicting Malignancy in Intraductal Papillary Mucinous Neoplasms, Pancreatic Cancer Action Network Meeting.
2017	Development, Validation, Optimization, and Standardization of CT Imaging Markers for Patients with Colorectal Liver Metastases, Food and Drug Administration.
2017	Imaging markers for early detection, recurrence, and survival of pancreatic cancer, David M. Rubenstein Center for Pancreatic Research.
2017	Cycle for Survival New York Ride, New York, NY.
2017	Next Generation Imaging, IBM Research, Alameda, CA.
2016	Development and Translation of Image Guided Liver Surgery, University of Bern, Switzerland.
2016	Medical Computing: How a Computer Scientist Cures Cancer, Ontario Celebration of Women In Computing, University of Guelph.
2015	Radiomics of Hepatopancreatobiliary Cancers, Americas Hepato-Pancreato-Biliary Association Annual Meeting, Miami, FL.
2015	Next Generation Imaging, Imaging Science Seminar Series, Rochester Institute of Technology.
2015	Next Generation Imaging, Surgery Grand Rounds, Memorial Sloan Kettering.
2013	Development and Clinical Translation of Deformation Compensation Strategies for Image-guided Liver Surgery, The George Washington University.
2012	Engineering Better Solutions for Surgery, McMaster University.
2012	Intraoperative Digitization & Image-to-Physical Registration, Vanderbilt Initiative in Surgery and Engineering, Vanderbilt University.
2012	Image-guided Liver Surgery, Vanderbilt Summer Academy, Vanderbilt University.
2012	Organ Deformation Correction for Image-guided Surgery, York University.
2011	A Day in the Life, Ontario Celebration of Women In Computing, University of Toronto.
2009	Computation and Visualization of Uncertainty in Surgical Navigation, Vanderbilt University.
2008	Quantifying and Visualizing Uncertainty in the Operating Room, Centre for Intelligent Machines, McGill University.
2008	Computer Assisted Orthopaedic Surgery, Hotel Dieu Hospital.

2007–2008 Preparing and Surviving an Oral Defense, Queen's University.

2006 Computer Assisted Orthopaedic Surgery, National Youth Technology Leadership Conference.

2006 Computer Assisted Orthopaedic Surgery, Shad Valley Programme.

2004 Computer Assisted Orthopaedic Surgery, Women in the School of Computing.

2003 Breaking the Geek Tradition: Computing in the 21st Century, National Youth Technology Leadership Conference.

MEDIA

2011 The State-of-the-art of Computers in Surgery (interview), The Lancet, 378:9800, pg-1369, 2011.

2008 Medical Computing (interview), Queen's iTunes U.

TEACHING EXPERIENCE

2018 Lecturer, Engineering Summer Program, Memorial Sloan Kettering, New York, NY.

2017 Lecturer, Colo-rectal cancer and liver metastases: up to date, Divisione Clinicizzata di Chirurgia Centro Regionale di riferimento per la Chirurgia Epato-bilio-pancreatica, Treviso, Italy.

2016–2017 Lecturer, Intraoperative Imaging Technologies for Cancer Detection and Treatment course (Continuing Medical Education course), Memorial Sloan Kettering, New York, NY.

2006–2008 Instructor, Teaching Assistant Training Seminars, School of Computing, Queen's University, Kingston, ON, Canada

2004–2008 Instructor, Lego Robotics, Enrichment Studies Unit, Queens University, Kingston, ON, Canada.

2001–2003 Course Coordinator, Elements of Computer Science with Java, School of Computing, Queen's University, Kingston, ON, Canada.

2001 Instructor, Systems Programming, Trent University, Peterborough, ON, Canada.

2000–2008 Coach, Queen's ACM Programming Team (World Finalists in 2003 and 2004), Queen's University, Kingston, ON, Canada.

UNIVERSITY SERVICE

2025-present AI Curriculum Redevelopment Committee
2022-2024 Research Cluster Implementation Team, Faculty of Health Sciences
2020-2021 Dean's Action Committee on Research, Faculty of Health Sciences
2020-present Strategic Advisory Board, Centre for Advanced Computing
2021-2022 Cluster Hire Committee, Department of Biomedical and Molecular Sciences

2021	Hiring Committee, Tier 2 Canada Research Chair in Immunology and Inflammation
2020-2021	Hiring Committee, Vice Principal of Research

PROFESSIONAL SERVICE

2022	CIFAR Data Science Retreat
2022	Grant Reviewer, AMS Small Grant in Compassion and Artificial Intelligence, SPOR program
2021	Grant Panel Member, Special Emphasis Panel on Computational Pathology, National Institutes of Health
2021	Vector Institute Scholarship Review Committee
2021-present	Organizer, Computational Approaches for Cancer Workshop
2021	Conference Co-Chair, Medical Image Computing and Computer Aided Interventions, Strasbourg, France
2021	External Grant Reviewer, New Frontiers Exploration Program, SSHRC
2020-present	Grant Reviewer, Terry Fox Research Institute
2020	Grant Reviewer, Pancreatic Cancer Action Network
2020-present	Grant Reviewer, Cancer Research Society
2020-2026	Chartered Panel Member, Imaging Guided Interventions and Surgery study section, National Institutes of Health
2019-present	OMPRN grant reviewer
2019-2020	Chair, Imaging Network Ontario Conference, Toronto, ON, 2020
2019	Co-chair, Kingston Health Sciences/Queen's University Innovation Workshop on Digital Health, Machine Learning and AI
2019	Grant Reviewer, Imaging Guided Interventions and Surgery study section, National Institutes of Health
2019	Grant Reviewer, Cancer Progression & Therapeutics, Canadian Institutes of Health Research
2019	Grant Reviewer on the Medical Physics and Imaging, Canadian Institutes of Health Research
2019	Chair and Organizer, Invited Session, American Association of Cancer Research, Atlanta, GA
2017–present	NSERC Discovery Grant External Reviewer
2017–2020	Program Committee/Area Chair, Medical Image Computing and Computer Aided Interventions
2017–2019	Program Committee, American Association of Cancer Research
2017–2019	Chair, Executive Committee and Founder, Technology and Engineering Group, Memorial Sloan Kettering, New York, NY
2017–2019	Organizing Committee, Frontiers of Predictive Oncology and Computing, Santa Clara, CA
2017–2018	Guest Editor, Special Issue on Image Guidance, *Journal of Medical Imaging*
2016–2019	Organizer, Computational Precision Medicine Workshop and Grand Challenges, Medical Image Computing and Computer Aided Interventions Conference

2015–present Program Committee, The International Society for Optical Engineering (SPIE) Medical Imaging - Image Guidance Conference

2015–2019 Area Chair, International Conference on Information Processing in Computer–Assisted Interventions

2015–present Program Committee, Computer Assisted Radiology and Surgery Conference

2014–2019 Editor, *International Society for Computer Aided Surgery* Blog

2014–2019 Editor, *International Society for Computer Aided Surgery* Newsletter

Reviewer, Medical Image Analysis, IEEE Transactions on Biomedical Engineering, IEEE Transactions on Medical Imaging, Medical Engineering & Physics, International Journal of Medical Robotics and Computer-Assisted Surgery, Medical Physics, Abdominal Imaging, European Radiology, Journal of Surgical Oncology, BMC Cancer, Clinical Cancer Research, American Journal of Roentgenology, Journal of Medical Imaging, Radiology AI

OUTREACH

2016–2018 Speaker and Volunteer Pancreatic Cancer Action Network, PurpleLight Ceremony (pancreatic cancer non–profit)

2016–2019 Team Captain Notorious HPB, Cycle for Survival Team, Memorial Sloan Kettering (team raises funds for our cancer research)

2009–2015 Founder/Editor, CASBlog.com

2004–2009 Founding Organizing Committee, Women in the School of Computing, Queen's University

2003–2008 Chair, Graduate Seminar Series, Queen's University

PROFESSIONAL MEMBERSHIPS

2017–2019 The American Society of Clinical Oncology
2015–present American Association of Cancer Research
2014–present International Society for Computer Aided Surgery
2014–2019 Americas Hepato–Pancreato–Biliary Association
2010–present International Society for Optical Engineering (SPIE)
2006–2010 Society for Computer Assisted Orthopedic Surgery
2005–present Medical Image Computing & Computer Assisted Interventions Society
2001–2005 Association of Computing Machinery

SUPERVISION

Visiting Professors

Name	Dates Supervised	Current Position
Burton Ma	2015–2016	Associate Professor, York University

Postdoctoral Fellows

Name	Dates Supervised	Current Position
Robyn Rowe	2022-2024	Co-Director, Indigenous Health, CIHR

Jordan Loewen-Colon	2021-2024	Adjunct Professor of AI Ethics and Policy
LLana James	2021-2023	Canada-US Coalition to End Race Correction
Mohammad Hamghalam	2020-present	
Jacob Peoples	2020-present	
Ashiqur Rahman	2020-2020	Software Developer, TMX Group
Yaoting Zhang	2020-2020	Postdoctoral Fellow, Queen's University
Travis Williams	2019-2022	Senior Scientist, Rutgers University
Abhishek Midya	2016–2019	Postdoc, Emory University
Jayasree Chakraborty	2015–2019	Faculty, Memorial Sloan Kettering
Hairong Chen	2015–2016	Medical Physics Resident, University of Miami

Research Fellows

**Research fellows are clinicians in training (usually residents) that dedicate 2 years in my lab for full-time research.*

Name	Dates Supervised	Current Position
Florian Buisman	2019	Surgery Resident, Erasmus Medical Center
Thomas Boerner	2017–2019	Research Fellow, Memorial Sloan Kettering
Caitlin McIntyre	2017–2019	Attending Surgeon, UT Health San Antonio MD Anderson Cancer Center
Rami Srouji	2017–2019	General Surgery Resident, Washington University
Raja Nayaran	2017–2019	Attending Surgeon, Loma Linda University
Alessandra Pulvirenti	2017–2019	Attending Surgeon, University of Padua
Rikiya Yamashita	2017–2019	Machine Learning Manager, ArteraAI
Johan Gagniere	2017–2018	Attending Surgeon, Clermont-Ferrand, France
Nataly Horvat	2016–2018	Attending Radiologist, Mayo Clinic
Sharon Lawrence	2016–2018	Attending Surgeon, Hackensack Meridian Health
Constantinos Zambirinis	2016–2018	Attending Surgeon, Linkoping University
Thomas Perrin	2016–2017	Attending Surgeon, Centre Hospitalier Robert Morlevat
Marc Attiyeh	2015–2017	Attending Surgeon, Cedars Sinai
John Creasy	2015–2017	Attending Surgeon, Duke University
Linda Pak	2015–2017	Attending Surgeon, MD Anderson
Jian Zheng	2015–2017	Attending Surgeon, Weill Cornell
Eric van der Stok	2015–2016	MD-PhD Student, Erasmus Medical Center
Jim Wiggers	2015–2016	Attending Surgeon, Flevoziekenhuis
Alex Doussot	2013–2015	Attending Surgeon, CHU Besancon
Julie Leal	2013–2015	Attending Surgeon, University of Toronto
Universe Leung	2013–2015	Attending Surgeon, Harbour Surgery Centre
Eran Sadot	2013–2015	Attending Surgeon, Rabin Medical Center, Tel Aviv University
Ricky Jrearz	2013–2015	Attending Surgeon, Headwaters Specialist Clinic
Veronica Liang	2013–2015	Head of Thoracic Surgery, Rochester General

Clinical Fellows

Name	Dates Supervised	Current Position
Shannan Dickinson	2018-2019	Attending Radiologist, Memorial Sloan Kettering
Emily Aherne	2016–2017	Attending Radiologist, Mater Misericordiae Hospital, Dublin, Ireland
Lorenzo Nardo	2016–2017	Attending Radiologist, University of California Davis
Jonathan Hernandez	2014–2017	Attending Surgeon and Lab Lead, National Cancer Institute

Residents

Name	Dates Supervised	Current Position
Katie Dean	2015–2017	Neuroradiology Fellow, Weill Cornell Medicine
Patrick Seastedt	2014–2016	Surgery Resident, Weill Cornell Medicine

Graduate Students

Name	Dates Supervised	Current Position
Jaxen Smith	2023-present	
Rina Kahn	2023-present	
Dashti Ali	2023-present	
Josh Virani-Wall	2023-2025	
Mahmoud Idlbi	2023-2025	
Mane Piloposyan	2023-2025	
Kaitlyn Kobayashi	2022-present	
Shaina Smith	2022-2024	PhD Student, Queen's University
Alan Dimitriev	2021-2023	PhD Student, Queen's University
Annabelle Sauve	2021-2023	Software Developer, PaymentEvolution
Ramtin Mojtahedi	2021-present	
Jianwei Yue	2021-present	
Katie Lindale	2021-2023	Biostatistician, Health Canada
Gera Ballart Cespedes	2021-2022	Consultant, Thomas Thor
Abigail Kearney	2020-2021	JD Candidate, University of Ottawa
Minhaj Ansari	2020-2022	Machine Learning Engineer, UCSF
Alex Robins	2020-present	
Andrew Garven	2020-present	
Katy Scott	2020-2022	
Katherine Beaulieu	2020-2021	Law Student, McGill
Sal Chouib	2020-2022	
Nathalia Kim	2020-2022	AI/ML Digital Quality & Compliance Lead, Roche
Karen Batch	2019-2022	Director of AI, Distributive
Justine Bernshine	2019-2021	
Anh Tran	2019-2022	
Hsi (Christine) Wei	2019-2020	Data Scientist, Digital River
Malaika Ngugama	2019-2020	Clinical Project Coordinator, Everest Clinical Research
Mary Anne Panoyan	2019-2020	PhD Student, University of Toronto
Fraser Raney	2019-2021	Software Developer, Lamontagne Geophysics Ltd.
Juliana Schlisky	2018-2019	Medical Student, Boston University
Hassan Muhammad	2016-2021	Principal AI Scientist, PATHOMIQ

Research Staff/Research Assistants

Name	Dates Supervised	Current Position
Andre Pore	2022-present	
Rina Khan	2023-2024	PhD Student, Queen's University
Vanessa Ferguson	2022-2023	PhD Student, York University
Alan Dimitriev	2023-2024	PhD Stuent, Queen's University
Joan Willison	2020-2023	Retired
Leone Ploeg	2020-present	
Nathalia Kim	2022-2024	AI/ML Digital Quality & Compliance Lead, Roche
Alex Hamilton	2021-2023	Data Scientist, KFLA Public Health
Fiona Howells	2020-present	
Heather Grant	2020-present	
Yuting Chou	2016–2018	Research Project Coordinator, Memorial Sloan Kettering
Jeremy Constable	2016–2019	Research Project Coordinator, Memorial Sloan Kettering
Nan Pang	2016–2019	Research Study Assistant, Memorial Sloan Kettering
Camilla Gomes	2015–2017	Medical Student, Boston University
Liana Langdon–Embry	2015–2017	Medical Student, Stony Brook University
Maria Singh	2015–2017	Research Project Coordinator, Memorial Sloan Kettering
Anjuli McNeil	2014–2019	Research Project Coordinator, Memorial Sloan Kettering
Lauryn Adams	2013–2015	Resident, Cornell Medical College

Medical Students

Name	Dates Supervised	Current Position
Jean Paul Salameh	2021-2022	

Ricky Hu	2020-2023	Resident, UBC
Kara Prussing	2015	Psychiatry Resident, New York University

Undergraduate Students

Name	Dates Supervised	Current Position
Aakanksha Khandwaha	2023-2023	Undergraduate Student, Mount Allison University
Alan Dimitriev	2020-2022	PhD Student, Queen's University
Alex Darcovich	2021	Undergrad Student at Queen's
Andrew Simonds	2020-2021	Software Development Engineer, Amazon
Arie Moffat	2020-2021	Canadian Sailing Athlete
Ayaz Vural	2022-2023	Technical Product Manager, Interius Farms
Benjamin Ravenscroft	2023-2024	PhD Student, Wharton, University of Pennsylvania
Ben Wylynko	2021-2022	Software Developer, Papertech
Breanna Joiner	2015	Undergraduate, City University of New York
Cameron McKay	2021-2022	Business Intelligence Analyst, Bell
Carmine Wang See	2018	Software Engineer, YouTube
Claire Bunker	2022-present	Undergraduate Student, Queen's University
Cooper Lloyd	2022-2023	Founder, Bad Twin Capital
Dahyun Jin	2022-2023	
Danielle Cutler	2020-2023	Medical Student, McGill University
Edward Chen	2022-2023	Biotech Module Developer, University of Toronto
Erin Kwak	2023-present	
Frederick Fok	2021-2022	Test Automation Developer, Connected Solutions Experts
Gavin Liu	2021-2022	
Genevieve Hayes	2020-2021	PhD Student at Oxford University
Grace Park	2023-present	
Hairuo Li	2022-2023	
Hannah Weider	2022-2023	UX Designer, DUGO Systems
Hanyi Li	2020-2021	Business Intelligence Analyst, Bell
Hayden Wang	2020-2021	Data Engineer at Meta
Chikarmane	2022-2023	Software Developer, Microsoft
Jake Ahearne	2021-2022	Cloud Support Engineer, Dataiku
Jared Bassmann	2018-2019	Undergraduate, St. John's College
Jean-Robert Curtis	2021-2022	
Jialin Gong	2022-2023	
John Zhou	2024-present	
Joseph Lunney	2021-2022	
Kaelan Lupton	2019-2020	Software Developer at RBC Bank
Keyan Miao	2021-2022	
Lara Hesse	2021-2022	Data Scientist / Analyst at Privy Council Office
Liana Evans	2020-2021	Chief of Customer Success, Mesh AI
Lola Assad	2022-present	
Lydia Elbatarny	2022-present	Master of Architecture student
Maddy Hanzlik-Meech	2020-2021	Software Engineer, Abbott
Maura Koszalka	2016-2018	Clinical Research Coordinator, MSKCC
Max Zhou	2018-2019	Undergraduate, Cornell University
Michael Flood	2018	Undergraduate, Boston College
Mike Koszalka	2017	Underwriter, New York Community Bank
Ngoc Nguyen	2022-2023	
Nick Cheney	2021-2022	Associate Data Scientist, Capital One
Nicolas Campbell	2020-2021	
Nicolay Alabi	2021-2022	MD/PhD Student at UBC
Priyank Gopalbhai Thakkar	2022-2023	
Rebecca Henry	2022-2023	
Reema Wadhvana	2021-2022	Associate Developer, IBM
Rohini Datta	2021-2022	Graduate Student, SickKids
Ryan Chu	2021-2022	Healthcare & Life Sciences Consulting, Deloitte
Ryota Parsons	2022-2023	
Sal Choueib	2019-2020	Graduate Student at Queen's University

Shiana Mainarich	2016	Undergraduate, City College of New York
Simon Crete	2020-2021	Graduate Student at Concordia University
Taryn Keenan	2023-present	
Victoria Kingham	2016	JD Candidate, Georgetown University Law Center
Yulun Wu	2021-2022	
Yuntian Shan	2020-2021	
Zifeng Chen	2020-2021	

High School Students

Name	**Dates Supervised**	**Current Position**
Madison Mussari	2020-2022	Software Engineering Student, University of Waterloo
Akshaj Darbar	2019-2020	Undergraduate Student, Queen's University
Zachary Jarnagin	2017	NLP Data Analyst Co-op, Genentech
Shaan Lalvani	2017–2018	Undergraduate, Brown University