

JOHN LIN

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EDUCATION

University of Toronto, MScAC, Artificial Intelligence in Healthcare Sep. 2024 to Dec. 2025
Concordia University, B.Comp.Sc. Sep. 2020 to May 2023

Bachelor of Computer Science; Computer Science General Program

McGill University, M.Sc. Thesis Sep. 2016 to May 2019

Master of Science; Experimental Medicine, Inflammation and Cystic Fibrosis
Research Institute of the McGill University Health Centre

Supervisor: Dr. Simon Rousseau, PhD

My thesis is on Interleukin-6 (IL-6) signalling in Pulmonary Exacerbations (PE) in Cystic Fibrosis (CF). In CF patients who have had PE, IL-6 levels are elevated, which correlate with elevated inflammation. I sought to understand the downstream effects of IL-6 on the CF bronchial epithelium at the cellular level, to elucidate the mechanisms of inflammation caused by IL-6.

- McGill University, Faculty of Medicine, Department of Experimental Medicine Entrance Scholarship
- McGill University, Faculty of Medicine, Department of Experimental Medicine Tuition Supplement
- McGill University, Graduate Excellence Award
- McGill Cystic Fibrosis Research Day (May 2017, Montreal) – Poster
- 2018 Annual McGill Biomedical Graduates Conference (April 2018, Montreal) – Poster
- 2018 Cystic Fibrosis Research Day (May 2018, Quebec City) – Poster
- 29th Annual Respiratory Research Day (May 2018, Montreal) – Oral Presentation

McGill University, B.Sc. Sep. 2012 to Jun. 2016

Bachelor of Science; Biological, Biomedical and Life Sciences, Physiology

EXPERIENCE

lifes.ai Apr. 2022 to present

Founding Software Engineer

- Developing a no-code automated statistical analysis and machine learning tool to streamline data analysis for the life sciences.

SSENSE May 2022 to Jan. 2023

Software Developer Intern

- Worked on the shared-services team, and helped develop internal tools used within the company to streamline the transfer of data between different microservices

Research Institute of the McGill University Health Centre Jan. 2019 to Nov. 2021

Lab Technician, Chronic Viral Illness Service and Infectious Diseases and Immunity in Global Health

Supervisor: Dr. Jean-Pierre Routy, MD, FRCPC

- People living with HIV (PLWH) have other comorbidities such as impaired gastrointestinal immunity. I work on elucidating the mechanisms of this dysfunctional gastrointestinal immunity in an effort to alleviate the increased inflammation seen in PLWH.

McGill Athletics and Recreation Jun. 2016 to Apr. 2018

Lifeguard, Swim Instructor

- As a swim instructor, I helped teach children ages 5-15 swimming skills, ranging from novice to advanced, for McGill Sports Camp. As a lifeguard, I ensure the safety of patrons to the McGill Memorial Pool.

McGill Science Undergraduate Society (SUS)

Vice President of Academic Affairs

May 2015 to May 2016

- I worked with departmental student councils to organize technical workshops and career events, sat in on departmental meetings with the Dean and Associate Dean of Science, and planned the faculty-wide Graduate and Professional Schools Fair and the research-oriented Academia Week.

Academia Week Coordinator

Sep. 2014 to Feb. 2015

- Helped prepare and run Academia Week, a week-long event running from January 26 – 30, 2015, in which guest researchers from a wide range of specialties are invited to McGill to speak to undergraduate students about their work to help expand horizons for career opportunities for science students.

Finance Committee

Sep. 2014 to Apr. 2015

- As a member of the SUS Finance Portfolio, I helped to audit undergraduate student councils such as the McGill Anatomy and Cell Biology Student Society (MACSS), McGill Students' Physics Society (MSPS), Microbiology and Immunology Students' Association (MISA) and Medicine-Dentistry Students' Association (MDSA).

Inviva – McKesson Canada

Jun. to Aug. 2015

Summer Student

- Some of my responsibilities were to consolidate patient files, quality check infusion documentation and data entry at Inviva, which specializes in symptomatic treatment of chronic inflammatory diseases such as inflammatory bowel disease, rheumatoid arthritis and psoriasis.

Toronto Parks and Recreation

Mar. 2012 to Jun. 2015

Lifeguard, Swim and Lifesaving Instructor, and Wading Pool Attendant

- Along with ensuring the safety and well-being of patrons using our swimming facilities, I taught learners of all ages, from beginner to advanced swimmers, proper stroke techniques and lifesaving skills.

McGill University Health Centre (MUHC)

Sep. 2014 to Apr. 2015

Volunteer – Montreal General Hospital – Patient Welcome

- Provided a welcoming experience to patients at Montreal General Hospital through social interaction, and fostered continued intellectual stimulation through activities such as crafts, games, etc.

University Health Network

May to Aug. 2014

Summer Student, Diabetes Research

Supervisor: Dr. Tony Lam, PhD

- Helped prepare materials for experiments and performed triglyceride and protein assays in an effort to provide the research team with quantifiable data

PUBLICATIONS

Peer-reviewed journal articles

Isnard S, Royston L, Scott SC, Mabanga T, Lin J, Fombuena B, Bu S, Berini CA, Goldberg MS, Finkelman M, Brouillette MJ, Fellows LK, Mayo NE, Routy JP. [Translocation of bacterial LPS is associated with self-reported cognitive abilities in men living with HIV receiving antiretroviral therapy](#). AIDS Res Ther. 2023 May 18;20(1):30. doi: 10.1186/s12981-023-00525-z. PubMed PMID: 37202809; PubMed Central PMCID: PMC10193796.

Royston L, Isnard S, Perrin N, Sinyavskaya L, Berini C, Lin J, Trottier B, Baril JG, Chartrand-Lefebvre C, Tremblay C, Durand M, Routy JP. [Growth differentiation factor-15 as a biomarker of atherosclerotic coronary plaque: Value in people living with and without HIV](#). Front Cardiovasc Med. 2022;9:964650. doi: 10.3389/fcvm.2022.964650. eCollection 2022. PubMed PMID: 36093162; PubMed Central PMCID: PMC9458883.

Isnard S, Royston L, Lin J, Fombuena B, Bu S, Kant S, Mabanga T, Berini C, El-Far M, Durand M, Tremblay CL, Bernard NF, Kroemer G, Routy JP. [Distinct Plasma Concentrations of Acyl-CoA-Binding Protein \(ACBP\) in HIV Progressors and Elite Controllers](#). Viruses. 2022 Feb 23;14(3). doi: 10.3390/v14030453. PubMed PMID: 35336860; PubMed Central PMCID: PMC8949460.

- Ahmed, D. S., Isnard, S., Berini, C., **Lin, J.**, Routy, J.-P., & Royston, L. (2022). Coping With Stress: The Mitokine GDF-15 as a Biomarker of COVID-19 Severity. *Frontiers in Immunology*, *13*, 820350. <https://doi.org/10.3389/fimmu.2022.820350>
- Ellis, R. J., Iudicello, J. E., Heaton, R. K., Isnard, S., **Lin, J.**, Routy, J.-P., Gianella, S., Hoenigl, M., & Knight, R. (2021). Markers of Gut Barrier Function and Microbial Translocation Associate with Lower Gut Microbial Diversity in People with HIV. *Viruses*, *13*(10), 1891. <https://doi.org/10.3390/v13101891>
- Isnard, S., Fombuena, B., Ouyang, J., Royston, L., **Lin, J.**, Bu, S., Sheehan, N., Lakatos, P. L., Bessissow, T., Chomont, N., Klein, M., Lebouché, B., Costiniuk, C. T., Routy, B., Marette, A., & Routy, J.-P. (2022). Camu Camu effects on microbial translocation and systemic immune activation in ART-treated people living with HIV: Protocol of the single-arm non-randomised Camu Camu prebiotic pilot study (CIHR/CTN PT032). *BMJ Open*, *12*(1), e053081. <https://doi.org/10.1136/bmjopen-2021-053081>
- Isnard, S., Royston, L., **Lin, J.**, Fombuena, B., Bu, S., Kant, S., Mabanga, T., Berini, C., El-Far, M., Durand, M., Tremblay, C. L., Bernard, N. F., Kroemer, G., & Routy, J.-P. (2022). Distinct Plasma Concentrations of Acyl-CoA-Binding Protein (ACBP) in HIV Progressors and Elite Controllers. *Viruses*, *14*(3), 453. <https://doi.org/10.3390/v14030453>
- Ramendra, R., Mancini, M., Ayala, J.-M., Tung, L. T., Isnard, S., **Lin, J.**, Routy, J.-P., Nijnik, A., & Langlais, D. (2021). Glutathione Metabolism Is a Regulator of the Acute Inflammatory Response of Monocytes to (1→3)- β -D-Glucan. *Frontiers in Immunology*, *12*, 694152. <https://doi.org/10.3389/fimmu.2021.694152>
- Routy, J.-P., Dupuy, F. P., **Lin, J.**, & Isnard, S. (2022). More than a Gender Issue: Testis as a Distinctive HIV Reservoir and Its Implication for Viral Eradication. In G. Poli, E. Vicenzi, & F. Romerio (Eds.), *HIV Reservoirs: Methods and Protocols* (pp. 173–186). Springer US. https://doi.org/10.1007/978-1-0716-1871-4_13
- Wiseman, D., **Lin, J.**, Routy, J.-P., & Samoukovic, G. (2021). Haemophagocytic lymphohistiocytosis in an adult with postacute COVID-19 syndrome. *BMJ Case Reports*, *14*(9), e245031. <https://doi.org/10.1136/bcr-2021-245031>
- Bedier, H., **Lin, J.**, Frenette, C., & Routy, J.-P. (2021). Cerebral aspergillosis and facial acneiform lesions following initiation of ibrutinib in a patient with chronic lymphocytic leukemia. *IDCases*, *26*, e01263. <https://doi.org/10.1016/j.idcr.2021.e01263>
- Isnard, S. *, Fombuena, B. *, Sadouni, M., **Lin, J.**, Richard, C., Routy, B., Ouyang, J., Ramendra, R., Peng, X., Zhang, Y., Finkelman, M., Tremblay-Sher, D., Tremblay, C., Chartrand-Lefebvre, C., Durand, M., & Routy, J.-P. (2021). Circulating β -d-Glucan as a Marker of Subclinical Coronary Plaque in Antiretroviral Therapy-Treated People With Human Immunodeficiency Virus. *Open Forum Infectious Diseases*, *8*(6), ofab109. <https://doi.org/10.1093/ofid/ofab109>
- Royston, L., Isnard, S., **Lin, J.**, & Routy, J.-P. (2021). Cytomegalovirus as an Uninvited Guest in the Response to Vaccines in People Living with HIV. *Viruses*, *13*(7), 1266. <https://doi.org/10.3390/v13071266>
- Isnard, S., **Lin, J.**, Bu, S., Fombuena, B., Royston, L., & Routy, J.-P. (2021). Gut Leakage of Fungal-Related Products: Turning Up the Heat for HIV Infection. *Frontiers in Immunology*, *12*, 656414. <https://doi.org/10.3389/fimmu.2021.656414>
- Peng, X., Isnard, S., **Lin, J.**, Fombuena, B., Bessissow, T., Chomont, N., & Routy, J.-P. (2021). Differences in HIV burden in the inflamed and non-inflamed colon from a person living with HIV and ulcerative colitis. *Journal of Virus Eradication*, 100033. <https://doi.org/10.1016/j.jve.2021.100033>
- Bedier, H., **Lin, J.**, Julien, L.-A., & Routy, J.-P. (2021). Concurrent development of HIV-negative Kaposi's sarcoma and mycosis fungoides in an elderly Inuit from Canada. *BMJ Case Reports*, *14*(1), e238644. <https://doi.org/10.1136/bcr-2020-238644>
- Kwok, M., **Lin, J.**, & Routy, J.-P. (2021). Concurrent BK polyomavirus, adenovirus and cytomegalovirus infections in a patient treated for chronic lymphocytic leukaemia. *BMJ Case Reports*, *14*(1), e235981. <https://doi.org/10.1136/bcr-2020-235981>
- Ahmed, D. S., Isnard, S., **Lin, J.**, Routy, B., & Routy, J.-P. (2021). GDF15/GFRAL Pathway as a Metabolic Signature for Cachexia in Patients with Cancer. *Journal of Cancer*, *12*(4), 1125–1132. <https://doi.org/10.7150/jca.50376>

- Peng, X., Ouyang, J., Isnard, S., **Lin, J.**, Fombuena, B., Zhu, B., & Routy, J.-P. (2020). Sharing CD4+ T Cell Loss: When COVID-19 and HIV Collide on Immune System. *Frontiers in Immunology*, 11, 3307. <https://doi.org/10.3389/fimmu.2020.596631>
- Ouyang, J.*, Isnard, S.*, **Lin, J.**, Fombuena, B., Peng, X., Chen, Y., & Routy, J.-P. (2020). GDF-15 as a Weight Watcher for Diabetic and Non-Diabetic People Treated With Metformin. *Frontiers in Endocrinology*, 11, 581839. <https://doi.org/10.3389/fendo.2020.581839>
- Ouyang, J.*, Isnard, S.*, **Lin, J.***, Fombuena, B., Peng, X., Routy, J.-P., & Chen, Y. (2020). Convalescent Plasma: The Relay Baton in the Race for Coronavirus Disease 2019 Treatment. *Frontiers in Immunology*, 11, 570063. <https://doi.org/10.3389/fimmu.2020.570063>
- Hoenigl, M.*, **Lin, J.***, Finkelman, M., Zhang, Y., Karris, M. Y., Letendre, S., Ellis, R. J., Burke, L., Richard, B., Gaufin, T., Isnard, S., Routy, J.-P., & Gianella, S. (2020). Glucan rich nutrition does not increase gut translocation of Beta glucan. *Mycoses*, n/a(n/a). <https://doi.org/10.1111/myc.13161>
- Isnard, S., **Lin, J.**, Fombuena, B., Ouyang, J., Varin, T. V., Richard, C., Marette, A., Ramendra, R., Planas, D., Raymond-Marchand, L., Messaoudene, M., Van der Ley, C. P., Kema, I., Sohail Ahmed, D., Zhang, Y., Finkelman, M., Routy, B., Angel, J., Ancuta, P., & Routy, J.-P. (2020). Repurposing metformin in non-diabetic people living with HIV: Influence on weight and gut microbiota. *Open Forum Infectious Diseases*, ofaa338. <https://doi.org/10.1093/ofid/ofaa338>
- Isnard, S.*, Ramendra, R.*, **Lin, J.**, Kant, S., Fombuena, B., Ouyang, J., Peng, X., El Far, M., Tremblay, C., Bernard, N. F., & Routy, J.-P. (2020). Anti-CMV IgG is linked to CD4 T-cell count decay in HIV elite controllers. *Clinical Infectious Diseases*, ciae1129. <https://doi.org/10.1093/cid/ciae1129>
- Ouyang, J.*, Isnard, S.*, **Lin, J.**, Fombuena, B., Peng, X., Nair Parvathy, S., Chen, Y., Silverman, M. S., & Routy, J.-P. (2020). Treating From the Inside Out: Relevance of Fecal Microbiota Transplantation to Counteract Gut Damage in GVHD and HIV Infection. *Frontiers in Medicine*, 7, 421. <https://doi.org/10.3389/fmed.2020.00421>
- Ouyang, J.*, Isnard, S.*, **Lin, J.**, Fombuena, B., Chatterjee, D., Wiche Salinas, T. R., Planas, D., Cattin, A., Fert, A., Moreira Gabriel, E., Raymond Marchand, L., Zhang, Y., Finkelman, M., Chen, Y., Kaufmann, D. E., Cermakian, N., Ancuta, P., & Routy, J.-P. (2020). Daily variations of gut microbial translocation markers in ART-treated HIV-infected people. *AIDS Research and Therapy*, 17(1), 15. <https://doi.org/10.1186/s12981-020-00273-4>
- Ouyang, J.*, **Lin, J.***, Isnard, S., Fombuena, B., Peng, X., Marette, A., Routy, B., Messaoudene, M., Chen, Y., & Routy, J.-P. (2020). The Bacterium Akkermansia muciniphila: A Sentinel for Gut Permeability and Its Relevance to HIV-Related Inflammation. *Frontiers in Immunology*, 11, 645. <https://doi.org/10.3389/fimmu.2020.00645>
- Lin, J.***, Ouyang, J.*, Peng, X.-R., Isnard, S., Fombuena, B., Routy, J.-P., & Chen, Y.-K. (2020). Potential therapeutic options for coronavirus disease 2019: Using knowledge of past outbreaks to guide future treatment. *Chinese Medical Journal*, 1. <https://doi.org/10.1097/CM9.0000000000000816>
- Ouyang, J., Isnard, S., **Lin, J.**, Fombuena, B., Marette, A., Routy, B., Chen, Y., & Routy, J.-P. (2020). Metformin effect on gut microbiota: Insights for HIV-related inflammation. *AIDS Research and Therapy*, 17(1), 10. <https://doi.org/10.1186/s12981-020-00267-2>
- Zhang, Y., Chen, S., **Lin, J.**, Wang, Y., Gui, X.-E., Ke, H., ... Cao, Q. (2019). The option of treatment and outcomes for patients with AIDS-related diffuse large B-cell lymphoma from a resource-limited setting in China. *Leukemia & Lymphoma*, 1–4. <https://doi.org/10.1080/10428194.2019.1697877>
- Ramendra, R., Isnard, S., **Lin, J.**, Fombuena, B., Ouyang, J., Mehraj, V., Zhang, Y., Finkelman, M., Costiniuk, C., Lebouché, B., Chartrand-Lefebvre, C., Durand, M., Tremblay, C., Ancuta, P., Boivin, G., & Routy, J.-P. (2019). CMV seropositivity is associated with increased microbial translocation in people living with HIV and uninfected controls. *Clinical Infectious Diseases*. <https://doi.org/10.1093/cid/ciz1001>
- Isnard, S., Ramendra, R., Dupuy, F. P., **Lin, J.**, Fombuena, B., Kokinov, N., Kema, I., Jenabian, M. A., Lebouche, B., Costiniuk, C. T., Ancuta, P., Bernard, N. F., Silverman, M. S., Lakatos, P. L., Durand, M., Tremblay, C., & Routy, J. P. (2019). Plasma levels of C-type lectin REG3alpha and gut damage in people with HIV. *J Infect Dis*. <https://doi.org/10.1093/infdis/jiz423>

Oral presentations

Lin, J., Isnard, S., Ramendra, R., Dupuy, F. P., Fombuena, B., Ouyang, J., Lebouché, B., Costiniuk, C. T., Thomas, R., Szabo, J., Baril, J.-G., Trottier, B., Coté, P., LeBlanc, R., Durand, M., Tremblay, C., & Routy, J.-P. (2020, May 1). *Plasma CXCL13 Correlates with Reservoir Size in Long-term ART-treated People Living With HIV* [Oral Presentation]. Canadian Association for HIV Research, Quebec City, QC, CA. <https://www.cahr-acrv.ca/conference/>

*These authors contributed equally to this work

SOFTWARE ENGINEERING SKILLS AND TOOLING

- Python
- C/C++
- Java
- HTML/CSS/JavaScript/PHP
- TypeScript
- Jupyter
- SvelteKit/Svelte
- Git
- Apache Hadoop
- Apache Spark
- Jenkins
- Atlassian Jira, Confluence
- Linear
- CI/CD
- Machine learning
- Data science/data analytics/data engineering/big data

SCIENTIFIC SKILLS

- Cell culture
- Ficoll blood isolation
- Protein electrophoresis and immunoblotting
 - Far-red and near-infrared fluorescence scanning
- RNA and DNA gel electrophoresis
- Quantitative polymerase chain reaction (qPCR)
- Flow Cytometry
 - BD FACSCanto™ II
 - BD LSRFortessa™
 - BD LSRFortessa™ X-20
- Confocal Microscopy

TECHNICAL SKILLS

- Microsoft Office
 - Word
 - Excel
 - Powerpoint
 - Publisher
 - Outlook
- GraphPad Prism 5
- R and RStudio
 - Relevant course: EXMD 634 Quantitative Research Methods
- ImageJ and FIJI

LANGUAGES

- English – Native proficiency
- French – Working proficiency in reading, writing, and speaking
- Mandarin – Working proficiency in speaking

CERTIFICATIONS

- National Lifeguard Service, Lifesaving Society (Exp. 2018)
- Standard First Aid and CPR-C, Lifesaving Society (Exp. 2018)
- Swim Instructor, Lifesaving Society (Exp. 2018)
- Lifesaving Instructor, Lifesaving Society (Exp. 2018)
- Emergency First-Aid Instructor, Lifesaving Society (Exp. 2018)
- Workplace Hazardous Materials Information System, McGill Environmental Health and Safety
- Hazardous Waste Management – Laboratory, McGill Environmental Health and Safety
- Introduction to Biosafety, McGill Environmental Health and Safety
- Good Clinical Practice (GCP) – Canada, CITI Program, RI-MUHC (Exp. 2021-02)
- Health Canada Division 5 – Drugs For Clinical Trials Involving Human Subjects, CITI Program, RI-MUHC (Exp. 2021-02)
- Transportation of Dangerous Goods TDG/IATA – Canada, CITI Program, RI-MUHC (Exp. 2021-02)

EXTRACURRICULARS

Montreal Chinese Baptist Church

Worship Team – Pianist

Jan. 2015 to present

- I am passionate about serving in the church music ministry, and this provides me with the opportunity to serve and see the immediate impact I have on the congregation.

English Ministry Committee – Secretary, Worship Portfolio

Jan. 2018 to Dec. 2019

- I am challenging myself in undertaking this leadership role in the church, by working directly with church deacons and other church leaders in organizing events, and overseeing various ministries serving the English congregation.

Short Term Missionary – Chilibre, Panama

Jan. to Jun. 2017

- I, along with a team of three others, went to Panama to teach English to pre-teens, teens and young adults of the minority Chinese in a week-long overnight-stay camp. I learned how to communicate cross-culturally over a language barrier, prepare lesson plans, and made lasting overseas connections.

McGill MedGames 2015

Jan. 2015

Volunteer

McGill Family Medicine Symposium

Sep. 2014

Volunteer

McGill Olympic Club

Sep. 2013 to Apr. 2014

Short Middle-Distance Running (800-1500m)

Royal Canadian College of Organists

Sep. 2011 to Aug. 2012

2011 Barwell Scholarship

Royal Conservatory of Music

Aug. 2008 to Aug. 2012

Piano

- First Class Honours, Grade 9 Piano
- First Class Honours with Distinction, Advanced Rudiments
- First Class Honours, Grade 8 Piano

Toronto East General Hospital

Feb. to Jun. 2012

Patient Welcome and Disease Prevention

- Volunteered to greet new patients
- Emphasized the importance of hand-washing to maintain personal hygiene

Malvern Collegiate Institute Swim Team

Dec. 2011 to Jan. 2012

Lifeguard

- Enforced the safety of competitive swimmers during practices and meets

Toronto Public Library

Apr. 2010 to May 2011

Volunteer, St. James Town Branch, Leading to Reading Program

- Improved the reading skills of school-age children from at-risk neighbourhoods