

# Suraj Bansal

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## EDUCATION

McMaster University, Hamilton ON

Expected: May 2025

Bachelor of Health Sciences (Honours) Candidate (GPA: 3.98/4.00)

Relevant Coursework: Anatomy and Physiology, Cellular Biology, Biochemistry, Immunology, Epidemiology and Biostatistics

Honors: Dean's List (2021-22) | Awards: Faculty of Health Sciences Achievement Award

## RESEARCH PROJECTS

### Accepted Manuscripts

Zeng, A.G.X., Bansal, S., Jin, L., Mitchell, A., Chen, W.C., Abbas, H.A., Chan-Seng-Yuel, M., Voisin, V., van Galen, P., Tierens, A., Cheok, M., Preudhomme, C., Dombret, H., Daver, N., Futreal, P.A., Minden, M.D., Kennedy, J.A., Wang, J.C.Y., Dick, J.E. A cellular hierarchy framework for understanding heterogeneity and predicting drug response in Acute Myeloid Leukemia. (In Press). *Nature Medicine*. May 2022. DOI:10.1038/s41591-022-01819-x

Bansal, S., Ahn, M. The efficacy of nanoparticle-based CT imaging techniques in identifying pro-inflammatory macrophages in atherosclerosis. (In Press). *The Meducator*. April 2022. DOI:10.35493/medu.41.14

### Manuscripts in Preparation

Bansal, S., Zeng, A.G.X., Mitchell, A., Lim, I.N.X., Nagree, M.S., Xie, S., Dick, J.E. A cloud-based computational target characterization pipeline to advance precision medicine in Acute Myeloid Leukemia (In Preparation).

Medeiros, J.J.F., Zeng, A.G.X., Chan-Seng-Yue, M., Woo, T., McLeod, J.L., Bansal, S., Arruda, A., Tsui, H., Goraya B., Claudio, J.O., Ho, J.M., Kennedy, J.A., Maze, D., Sibai, H., Minden, M.D., Wang, J.C.Y., Dick, J.E., Gupta, V. Stem cell-derived gene expression scores predict survival and leukemic transformation in myelofibrosis (In Preparation).

Lennox, R., Bodkin, C., O'Shea, T., Chan, K., Connelly, K., Kouyoumdjian, F., Lamarche, Bansal, S., L., Lee, A., Liu R., Mancini, O., Pitkis, A., Sergeant A., McIlveen, M. Nowhere to Go: A qualitative analysis and retrospective cohort study of the health of people who experience emergency homeless shelter service restrictions (In Preparation).

### Abstracts Under Review

Egan, G., Hurren, R., Thomas, G.E., Sarathy, C., Zeng, A.G.X., Bansal, S., Khan, D.H., Yan, Y., Feng, Y., St-Germain, J., Raught, B., Dick, J.E., Schimmer, A.D. The exportin, XPO2, is a novel therapeutic target in pediatric and AYA AML. *Cancer Research*.

Lim, I.N.X., Boulanger, M., Bansal, S., Gupta, K., Nagree, M.S., Dick, J.E., Xie, S.X. Differential sensitivity of leukemia stem cells to sphingolipid modulation and in combination with venetoclax. *Molecular Pharmacology*.

### Oral Presentations

Bansal, S., Zeng, A.G.X., Mitchell, A., Lim, I.N.X., Nagree, M.S., Xie, S., Dick, J.E. A cloud-based computational target characterization pipeline to advance precision medicine in Acute Myeloid Leukemia. *T-CAIREM AI in Medicine Summer Research Conference*.

### Poster Presentations

Bansal, S., Zeng, A.G.X., Mitchell, A., Lim, I.N.X., Nagree, M.S., Xie, S., Dick, J.E. A cloud-based computational target characterization framework to advance precision medicine in Acute Myeloid Leukemia. *University of Toronto Department of Molecular Genetics Undergraduate Summer Research Conference*

Bansal, S., Zeng, A.G.X., Mitchell, A., Dick, J.E. An intuitive cloud-based bioinformatics pipeline for transcriptomic meta analysis in blood development and leukemia. *University of Toronto Department of Medical Biophysics Undergraduate Research Day*

## RESEARCH EXPERIENCE

The Dick Lab, Princess Margaret Cancer Centre, Student Researcher | Toronto, ON

Sep. 2020 - Present

- Performs transcriptomic meta-analyses (unsupervised cell clustering, gene expression deconvolution, survival analysis etc.) to interrogate disease heterogeneity in Acute Myeloid Leukemia and predict clinical responses to treatment

Publications: 1 accepted manuscript to *Nature Medicine*, 3 manuscripts in preparation, 2 abstracts under review, 1 abstract in preparation, 2 poster presentations (local), 1 oral presentation (local)

Awards: T-CAIREM AI in Medicine Summer Studentship (2022), UofT Molecular Genetics Undergraduate Summer Research Program (2021, 2022), University Health Network ORT Summer Research Program (2021, 2022)

Hamilton Social Medicine Response Team (HAMsMART), Research Student | Hamilton, ON

Sep. 2022 - Present

- Performing data collection, patient enrollment, chart reviews, and descriptive statistical analysis on 1) an observational cohort study on safer supply prescriptions for people with treatment-refractory opioid use disorder, 2) a mixed methods study investigating health outcomes of people experiencing emergency homeless shelter service restrictions and 3) a statistical analysis of causes of mortality of people experiencing homelessness in Hamilton
- Volunteers and shadows at a physician-led safer supply clinic to distribute harm reduction supplies, and pharmaceutical grade opioid alternatives to homeless people at risk of mortality from the contaminated illicit opioid supply

St. Michael's Hospital, Division of Gastroenterology, Research Volunteer | Toronto, ON

Jun. 2019 - Aug. 2019

- Assisted with endoscopic training for University of Toronto residents as EndoVR simulation expert and standardized patient
- Performed data collection for their medical education research studying the effects of gamification on student learning

## PERSONAL PROJECTS

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Ryde AI, *Project Lead and Co-Founder* | Toronto, ON

Apr. 2020 - Nov. 2020

- Developed a cloud-powered software to automate driving assist features like adaptive cruise control, automated lane centering, forward collision warning, lane departure warnings, and driver monitoring
- Contributed to a mobile application to interface the cloud-based software with on-board diagnostics using Bluetooth

Awards: *Spark Teen Accelerator Challenge Finalist, Zappos (Amazon) Venture Challenge Finalist,*

Sidewalk Labs (Alphabet), *Project Consultant* | Toronto, ON

Nov. 2019 - Feb. 2020

- Created an innovation plan and end-to-end mobile application to reduce household expenditures for Toronto's eastern waterfront residents through a sharing economy digital infrastructure that monetizes personal assets
- Selected from 50 recommendations to present our proposal to C-level executives at Sidewalk Labs headquarters

## LEADERSHIP AND VOLUNTEERING EXPERIENCE

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The Meducator, *Managing Editor* | Hamilton, ON

Sep. 2021 - Present

- Facilitating bi-annual publication cycles for McMaster's open-access, peer-reviewed Undergraduate Health Sciences Journal
- Coordinated 20 editors in reviewing submissions, writing 10+ staff-written pieces, facilitating a double-blinded peer-review process, registering DOI's, and leading all publication efforts (1500+ issues; 65,000 online visitors yearly)
- Launched Canada's first collaborative journal between undergraduate science journals at McMaster, McGill, and UofT
- Co-developing a national database for undergraduate academia and local conference for student-led research at McMaster

McMaster University President's Advisory Committee (PACBIC), *R3 Member* | Hamilton, ON

Sep. 2022 - Present

- Contributing to the Race, Racialization and Racism Working Group (R3) to identify and address issues affecting BIPOC communities within the University, and the broader McMaster community to advise the development of anti-racism policy
- Helping coordinate Let's Talk About Race drop-in sessions, highlighting shared experiences of racialized staff, faculty, and students on themed discussions (e.g. cultural appropriation, islamophobia, anti-black racism).

York Region District School Board Student Senate, *Prime Minister* | York Region, ON

Sep. 2018 - Jun. 2021

- Managed a \$30,000 portfolio and led 10 executives in launching a bi-annual mental health conference and monthly meetings attended by 500+ students from 33 YRDSB secondary schools (increased attendance by 1,500% across 3 years)
- Built FACEsofYRDSB, an anonymous online platform to showcase racial discrimination stories from BIPOC students
- Launched weekly mental health symposiums on the impacts of COVID-19 on adolescent mental health and wellbeing
- Introduced the inaugural Indigenous Student Trustee and consulted the YRDSB 2020 Anti-Black Racism Strategy

TEDxYouth Toronto, *Student Co-Chair* | Toronto, ON

May. 2018 - Nov. 2019

- Managed a \$15,000 sponsorship portfolio (RBC, Western Ivey, NBA Canada) and sourced world-renowned TEDx speakers
- Implemented coordinated marketing strategies, procuring 1,000+ conference applications (increased from 500)
- Led 12 Youth Ambassadors in launching the inaugural TEDxYouth Summer Conference (100 attendees)

## SELECT HONOURS AND AWARDS

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Recipient (1 of 20), T-CAIREM AI in Medicine Summer Research Studentship	2022
Recipient (1 of 1), Portraits of Giving Young Adult Honoree	2022
Recipient (1 of 1), Ontario Public Schools' Association Jack A. MacDonald Award of Merit (\$500.00)	2021
Recipient (1 of 1), Ontario Student Voice Award: Entrepreneurship Category (\$1,000.00)	2021
Recipient (1 of 1), Richmond Hill Volunteer Youth Achievement Award	2021
Recipient, 5-Year Ontario Volunteer Service Award	2021
Recipient, Youth Ontario Volunteer Service Award	2021
Recipient (1 of 50), RBC Scholarship Program (\$2,500.00)	2021
Recipient (1 of 5), Benson Kearley IFG Students Making an Impact Scholarship (\$2,000.00)	2021
Recipient (1 of 5), Meridian's Commitment to Communities Student Award (\$500.00)	2021
Recipient, McMaster University President's Award (\$1,000.00)	2021
Recipient, Richmond Hill Community Recognition Certificate	2021
First Place, Sidewalk Labs (Google) Consulting Competition	2020
First Place, SHAD Design Entrepreneurship Challenge, University of British Columbia	2019

## SKILLS

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Languages and Libraries: Python, R, Javascript, SQL, Keras, Tensorflow, ScanPy, Seurat, Pandas, NumPy, Scikit-learn