Kinjal Desai, PhD

Senior Research Associate – People Manager | The Hospital for Sick Children, Toronto, ON, Canada
✉kinjal.desai@sickkids.ca | ☎ +1-416-568-6331 | https://orcid.org/0009-0002-5825-089X

Select Publications

Desai, K., Wanggou, S., Luis, E., Whetstone, H., Yu, C., Vanner, R. J., Selvadurai, H. J., Lee, L., Vijay, J., Jaramillo, J. E., Fan, J., Guilhamon, P., Kushida, M., Li, X., Stein, G., Kesari, S., Simons, B. D., Huang, X., & Dirks, P. B. (**2025**). OLIG2 mediates a rare targetable stem cell fate transition in sonic hedgehog medulloblastoma. Nature Communications, 16(1), 1092. https://doi.org/10.1038/s41467-024-54858-y

Selvadurai, H. J.*, Luis, E.*, ***Desai, K.***, Lan, X., Vladoiu, M. C., Whitley, O., Galvin, C., Vanner, R. J., Lee, L., Whetstone, H., Kushida, M., Nowakowski, T., Diamandis, P., Hawkins, C., Bader, G., Kriegstein, A., Taylor, M. D., & Dirks, P. B. (**2020**). Medulloblastoma Arises from the Persistence of a Rare and Transient Sox2 Granule Neuron Precursor. Cell Reports, 31(2), 107511. https://doi.org/10.1016/j.celrep.2020.03.075

Park, N. I., Guilhamon, P., ***Desai, K.***, McAdam, R. F., Langille, E., O'Connor, M., Lan, X., Whetstone, H., Coutinho, F. J., Vanner, R. J., Ling, E., Prinos, P., Lee, L., Selvadurai, H., Atwal, G., Kushida, M., Clarke, I. D., Voisin, V., Cusimano, M. D., … Dirks, P. B. (**2017**). ASCL1 Reorganizes Chromatin to Direct Neuronal Fate and Suppress Tumorigenicity of Glioblastoma Stem Cells. Cell Stem Cell, 21(3), 411. https://doi.org/10.1016/j.stem.2017.08.008

Bailey, S. D.*, ***Desai, K.****, Kron, K. J., Mazrooei, P., Sinnott-Armstrong, N. A., Treloar, A. E., Dowar, M., Thu, K. L., Cescon, D. W., Silvester, J., Yang, S. Y. C., Wu, X., Pezo, R. C., Haibe-Kains, B., Mak, T. W., Bedard, P. L., Pugh, T. J., Sallari, R. C., & Lupien, M. (**2016**). Noncoding somatic and inherited single-nucleotide variants converge to promote ESR1 expression in breast cancer. Nature Genetics, 48(10), 1260–1266. https://doi.org/10.1038/ng.3650

Darabos, C.*, ***Desai, K.****, Cowper-Sal·lari, R., Giacobini, M., Graham, B. E., Lupien, M., & Moore, J. H. (**2013**). Inferring Human Phenotype Networks from Genome-Wide Genetic Associations. Evolutionary Computation, Machine Learning and Data Mining in Bioinformatics, 23–34. https://doi.org/10.1007/978-3-642-37189-9_3

Oral Presentations

- OLIG2 mediates a rare targetable stem cell fate transition in sonic hedgehog medulloblastoma. The Hospital for Sick Children departments of Genetics and Genome Biology (GGB) and Developmental, Stem Cell, and Cancer Biology (DSCB) Scientific Retreat, *Blue Mountain, ON, Canada* (**2025**) – invited speaker.
- OLIG2 mediates a rare targetable stem cell fate transition in sonic hedgehog medulloblastoma. Pacific Pediatric Neuro-Oncology Consortium and the Children's Brain Tumor Network, *virtual presentation to an audience of ~40 clinicians, scientists and patient advocates* (**2025**) – invited speaker with Dr. Dirks.

- Cancer in the Era of Personalized Medicine. S. Walter Stewart Toronto Public Library, *Toronto, ON, Canada* (**2025**) – invited speaker.

- OLIG2 mediates a rare targetable stem cell fate transition in sonic hedgehog medulloblastoma. SickKids Brain Tumour Research Centre Scientific Symposium – Celebrating 25 Years of Breakthrough Science, *Toronto, ON, Canada* (**2024**) – invited speaker.

- OLIG2 mediates a rare targetable stem cell fate transition in sonic hedgehog medulloblastoma. Childhood Brain Tumour Centre of Excellence International Summer School, *Cambridge, England* (**2024**).

- New Advances in Cancer Research. Canadian Cancer Society education session, Toronto Public Library, Don Mills branch, *Toronto, ON, Canada* (**2023**).

- OLIG2 mediates a rare targetable stem cell fate transition in sonic hedgehog medulloblastoma. Canadian Epigenetics, Environment and Health Research Consortium (CEEHRC) 8th Annual Conference on Epigenetics, *Estérel, Quebec, Canada* (**2022**) – invited speaker.

- OLIG2 mediates a rare targetable stem cell fate transition in sonic hedgehog medulloblastoma. Canadian Epigenetics, Environment and Health Research Consortium (CEEHRC) 8th Annual Conference on Epigenetics, *Estérel, Quebec, Canada* (**2022**) – invited speaker.

- OLIG2 mediates a rare targetable stem cell fate transition in sonic hedgehog medulloblastoma. SickKids Developmental and Stem Cell Biology Seminar, *Toronto, ON, Canada* (**2022**).

- Targeting stem cell activation to suppress medulloblastoma tumorigenesis. SickKids Postdoctoral Association Seminar, *Toronto, ON, Canada* (**2021**).

- The History and Progress of Cancer Research. Public science lecture hosted virtually by Goethe-Zentrum Hyderabad, *India* (**2020**) – invited speaker.

- Integrative Genomics Identify *Olig2* as a Regulator in SHH Medulloblastoma. SickKids Brain Tumour Research Centre Retreat, *Killarney, ON, Canada* (**2019**) – invited speaker.

- Integrative Genomics Identify *Olig2* as a Regulator in SHH Medulloblastoma. SickKids Brain Tumour Research Centre Retreat, *Killarney, ON, Canada* (**2019**) – invited speaker.

- Integrative Genomics Identifies Regulatory Factors in SHH Medulloblastoma. Princess Margaret Postdoctoral Seminar Series, *Toronto, ON, Canada* (**2018**).

- Integrative genomics identify regulatory factors in SHH subgroup medulloblastoma. SickKids Developmental and Stem Cell Biology Seminar, *Toronto, ON, Canada* (**2016**).

- Characterizing the impact of single nucleotide variation in breast cancer. Dartmouth College, *Hanover, NH, USA* (**2016**) – thesis presentation.

Select Poster Presentations

Year	Project Title	Conference and Location	Award
2025	OLIG2 mediates a rare targetable stem cell fate transition in SHH medulloblastoma	21st Biennial Canadian Neuro-Oncology Meeting, Vancouver, BC, Canada	—
2023	OLIG2 mediates a rare targetable stem cell fate transition in SHH medulloblastoma	SickKids Department of Stem Cell and Cancer Biology Retreat, Niagara-on-the-Lake, ON, Canada	Best Poster Presentation
2021	Targeting the transition between quiescent and activated stem cells in medulloblastoma	CEEHRC 7th Annual Conference on Epigenetics (virtual)	—
2019	Integrative genomics identify OLIG2 as a regulator in SHH medulloblastoma	CEEHRC Network, Banff, AB, Canada	Best Poster Presentation
2015	Functional correlation using DNase-seq identifies targets of breast cancer risk loci	EACR Epigenetic Mechanisms in Cancer, Berlin, Germany	—
2013	Delineating the regulatory function of the 6q25.1 breast cancer risk-locus	James Lepock Memorial Symposium, University of Toronto, Toronto, ON, Canada	Outstanding Poster Presentation
2012	Building a Human Phenotype Network on Shared Genetic Variants	American Society of Human Genetics, San Francisco, CA, USA	Best Paper
2010	Molecular mechanisms of mood disorder using *D. discoideum* as a neuropharmacological model	National Seminar on Fungal Biotechnology, Mithibai College, Mumbai, India	Best Poster Presentation

Teaching and Mentorship Experience

Mentorship of Trainees

The Hospital for Sick Children and University of Toronto | 2011 – present

- **PhD co-supervisor**: Juan Pablo Escorcia (2024–present, co-supervised with Dr. Peter Dirks)
- **MHSc research practicum supervisor**: Aastha Patel (2024–2025); Connie Fierro (2025–2026)
- **Research mentorship**: providing conceptual feedback and advice, helping with experimental design, monitoring progress, and sharing feedback on their results; 3 PhD students, 3 PhD rotation students, 2 MSc students, 6 summer students.
- **Undergraduate engagement & outreach**: Hosted site visits and informational interviews for 5 students from U of T Mississauga's Anatomy and Physiology program.

Course Coordinator and Lead Instructor

Advanced Human Genetics (MMG 3001Y), Department of Molecular Genetics, University of Toronto | 2023 – 2026

- Lead instructor and coordinator for a two-semester core graduate course in the Master of Health Sciences (MHSc) in Medical Genomics program, enrolling approximately 22–25 students annually.

- This includes hands-on teaching, mentorship, and course coordination, and conveying complex material in an accessible way over a sustained period of time (1 or 2 terms).

Co-Organizer and Instructor

Low Input Epigenomics Workshop, Wellcome Genome Campus, UK | 2024 & 2025

- Co-organizer and lead instructor (CUT&RUN and CUT&Tag module) of this competitive, international 8-day workshop for senior PhD students, postdocs, and early-career investigators.
- Delivered comprehensive and hands-on theoretical and laboratory training on epigenomic profiling in rare cell populations and low-input samples.

Additional Teaching Experience

2019 – 2023 **Instructor** | University of Toronto School of Continuing Studies, *Toronto, Canada*
2020 – 2025 **Guest Lecturer**| Advanced Human Genetics (MMG 3001Y) | Department of Molecular Genetics, University of Toronto, *Toronto, Canada*

2019 **Guest Lecturer** | Royal Conservatory of Music, *Toronto, Canada*
2020 **Guest Expert** | Online Healthcare Forum, *Toronto, Canada*
2011 **Teaching Assistant** | Dartmouth College*, Hanover, USA*

Academic Service and Professional Experience

June 2025 **Session Chair** | Scientific Retreat, Departments of Genetics and Genome Biology & Developmental, Stem Cell, and Cancer Biology, The Hospital for Sick Children, *Blue Mountain, Ontario, Canada*

June 2025 **Judge, Oral Presentations & Posters**| Garron Family Cancer Centre Research Day, The Hospital for Sick Children, *Toronto, Canada*

2023 – 2025 **Panelist (Scientific Reviewer and Scientific Officer), Grant and Fellowship Applications** | Canadian Cancer Society, *Toronto, Canada*

October 2024 **Invited Speaker** | University of Toronto – Molecular Genetics & Microbiology Student Union (MGYSU), *Toronto, Canada*

August 2024 **Judge, Student Poster Presentations** | Summer Research Symposium (SSuRe), SickKids, *Toronto, Canada*

July 2024 **Invited Participant** | CRUK Children's Brain Tumour Excellence Summer School, *University of Cambridge, UK*

July 2024 **Invited Panelist** | The Hospital for Sick Children Research Integrity Symposium, *Toronto, Canada*

Community Service

2024 – present **Advisory Board Member** | Stay at Home Nursing Care, *Toronto, Canada*
2023 – present **Scientist Partner** | Skype a Scientist, *Philadelphia, USA*
2023 – present **Community Outreach Representative** | Canadian Cancer Society, *Toronto, Canada*
2016 – 2023 **Community Outreach Lead** | Toronto Research Information Outreach Team (R.I.O.T.) and the Canadian Cancer Society, *Toronto, Canada*
2019 – 2022 **Child Life Volunteer** | The Hospital for Sick, *Toronto, Canada*

Press Coverage and Mentions

My research has received widespread attention in both the scientific community and popular media, including coverage in national news outlets, international science platforms, and university features:

- Researchers at SickKids Make Discovery That Can Stop Childhood Brain Tumour Growth (TV news segment video clip) – CityNews
- Research Discovery Halts Childhood Brain Tumour Before It Forms – SickKids News
- Targeting Brain Tumour Stem Cells (podcast episode) – BTRC Conversations: The Fight Against Brain Tumours
- New Research Identifies Key Mechanism to Stop Childhood Brain Tumour Growth – ScienceDaily
- Dr. Kinjal Desai: Medical Genomics Faculty Spotlight – University of Toronto Molecular Genetics News
- MoGen Scientists Share Discovery Halting Childhood Brain Tumour Before It Starts – University of Toronto Molecular Genetics News
- New therapy for childhood brain cancer halts tumor formation – Earth.com
- Breakthrough Research Prevents Formation of Childhood Brain Tumors – EurekAlert!
- New Discovery Offers Hope for Stopping Childhood Brain Tumors Before They Start – News-Medical.net
- Breakthrough Halts Childhood Brain Tumor Before It Starts – Mirage News
- Breakthrough Research Prevents Formation of Childhood Brain Tumors – Bioengineer.org
- Curtana Pharmaceuticals Announces Breakthrough in Pediatric Brain Cancer Treatment with Dual Studies Published in Nature Communications – PRLog
- Health World Cancer Day: A Therapy Against the Most Common Pediatric Malignant Brain Tumor (translated from Italian) – Focus.it
- Targeting Cell Fate Transitions in Medulloblastoma: Precision and Context Matter – Springer Nature Research Communities
- Researchers from Hospital for Sick Children Report Details of New Studies and Findings in the Area of Medulloblastoma (OLIG2 mediates a rare targetable stem cell fate transition in sonic hedgehog medulloblastoma) – Stem Cell Week, NewsRX LLC