
EDUCATION

June 2025 – July 2027	McGill University, Medical Oncology Fellowship McGill University Health Centre, Cedars Cancer Centre, Jewish General Hospital
2022 – 2025	University of Toronto, Internal Medicine Residency – FRCPC Toronto General Hospital, Mount Sinai Hospital, Toronto Western Hospital <i>Fellow of the Royal College of Physicians and Surgeons of Canada (FRCPC) Exam passed 2025</i>
2015 – 2022	University of Toronto, Faculty of Medicine – MD Program comprised 2 years of an MD followed by a full PhD, and a return to complete the final 2 years of the MD. <i>Golden Stethoscope Award.</i>
Sep 2017 – Jan 2021	Stanford University, School of Engineering – PhD Supervisors: Prof. Shan X. Wang, Prof. Aaron M. Newman. <i>NSERC Graduate Student Fellow.</i> Thesis: <i>Circulating Cellular Prognostic Biomarkers for Cancer.</i>
2017 – 2019	Stanford University, School of Engineering – MS Studied biomaterials, machine learning, biomarkers, and liquid biopsy.
2011 – 2015	University of Toronto – Honours BSc Physics & Chemistry Double Major. Trinity College.

RESEARCH POSITIONS

Aug 2023 – present	University of Toronto – Research During Residency With Dr. Adrian Sacher at Princess Margaret Hospital at the University of Toronto applying scRNA, T cell, and B cell receptor sequencing to investigate the immune environment in patients with non-small cell lung cancer. <i>Presented at ESMO 2024, awarded ESMO merit travel grant.</i>
Sept. 2017 – Jan 2021	Stanford University – PhD Student Researcher Applied bioinformatics, RNA sequencing, and machine learning to study melanoma immunotherapy and circulating tumor cells. First co-first author on a paper published in <i>Nature Medicine</i> . wanggroup.stanford.edu , anlab.stanford.edu
Summer 2017	Centre for Computational Medicine at The Hospital for Sick Children, Toronto With Prof. Michael Brudno on Machine Learning & crowdsourcing in computational genetics. Co-authored a paper in <i>Genetics in Medicine</i> . Gave a talk at the Association of Professors of Human and Medical Genetics conference in Santa Fe, NM. www.cs.toronto.edu/~brudno/public phenotate.org
Summer 2016	Stanford University – Research Assistant/PhD rotation With Prof. Hongjie Dai developing medical imaging dyes that fluoresce in near-infrared. Co-authored a paper in <i>Nature Communications</i> . dailab.stanford.edu
Academic year 2014 Jan. – June 2015	University of Toronto – Research Assistant Prof. Nazir Kherani Group at U of Toronto Dept. Materials Science. Project involved simulating and fabricating novel plasmonic nanostructures for bio-sensing applications. Gave a talk at the Conference on Laser and Electro-Optics (CLEO).
Summer 2014, Summer 2013	California Institute of Technology (Caltech) – Summer Undergraduate Research Fellow Summer Undergraduate Research Fellowship (SURF) of US\$6000 with Prof. Julia R. Greer Group in Materials Science jrgreer.caltech.edu . Worked on nanolattice silicon anodes for lithium-ion batteries and nanomechanics.

PEER-REVIEWED PUBLICATIONS

- 2022 **T cell characteristics associated with toxicity to immune checkpoint blockade in patients with melanoma.** [Alexander X. Lozano*](#), Aadel A. Chaudhuri[#], Aishwarya Nene*, Antonella Bacchiocchi, Matthew D. Vesely, Abul Usmani, Brandon E. Turner, Chloé B. Steen, Bogdan A. Luca, Ti Badri, Gunsagar S. Gulati, Milad R. Vahid, Farnaz Khameneh, Peter K. Harris, Kavita Dhodapkar, Mario Sznol, Ruth Halaban, Aaron M. Newman[#]. *Nature Medicine* 13 Jan 2022.
- 2021 **Clinical longitudinal evaluation of COVID-19 patients and prediction of organ specific recovery using artificial intelligence.** Winston T. Wang, Charlotte L. Zhang, Kang Wei, Ye Sang, Jun Shen, Guangyu Wang[#], [Alexander X. Lozano*](#). *Precision Clinical Medicine* 4.1 (2021): 62-69.
- 2021 **Giant Magnetoresistive Nanosensor Analysis of ctDNA EGFR Mutations for Rapid Diagnosis and Therapy Response Monitoring.** Jared C. Nesvet, Katie Antilla, Danielle Pancirer, [Alexander X. Lozano](#), Jordan S. Preiss, Weijie Ma, Aihua Fu, Sanjiv S. Gambhir, Alice C. Fan, Joel W. Neal, Tianhong Li, Heather A. Wakelee, Shan X. Wang. *Clinical Chemistry* 67.3 (2021): 534-542.
- 2020 **A mountable toilet system for personalized health monitoring via the analysis of excreta.** Seung-min Park*, Daeyoun D. Won*, Brian J. Lee*, Diego Escobedo, Andre Esteva, Amin Aalipour, T. Jessie Ge, Jung Ha Kim, Susie Suh, Elliot H. Choi, [Alexander X. Lozano](#), Chengyang Yao, Sunil Bodapati, Friso B. Achterberg, Jeeseu Kim, Hwan Park, Youngjae Choi, Woo Jin Kim, Jung Ho Yu, Alexander M. Bhatt, Jong Kyun Lee, Ryan Spitler, Shan X. Wang, Sanjiv S. Gambhir. *Nature Biomedical Engineering* 4.6 (2020): 624-635.
- 2020 **Viral Delivery of CAR Targets to Solid Tumors Enables Effective Cell Therapy.** Amin Aalipour, Fabrice Le Boeuf, Matthew Tang, Surya Murty, Federico Simonetta, [Alexander X. Lozano](#), Travis M. Shaffer, John C. Bell, Sanjiv S. Gambhir. *Molecular Therapy - Oncolytics* 17 (2020): 232-240.
- 2020 **Phenotate: A Web-Based Tool for Crowdsourcing Phenotype Annotations.** Willie H. Chang, Pouria Mashouri, [Alexander X. Lozano](#), Brittney Johnstone, Mia Husić, Annie Olry, Sylvie Maiella, Peter N. Robinson, Ana Rath, Michael Brudno. *Genetics in Medicine* 22.8 (2020): 1391-1400.
- 2017 **A high quantum yield molecule-protein complex fluorophore for near-infrared II imaging.** Alexander L. Antaris, Hao Chen, Shuo Diao, Zhuoran Ma, Zhe Zhang, Shoujun Zhu, Joy Wang, [Alexander X. Lozano](#), Quli Fan, Leila Chew, Mark Zhu, Kai Cheng, Xuechuan Hong, Hongjie Dai, Zhen Cheng. *Nature Communications* 8.1 (2017): 1-11.

TALKS & PRESENTATIONS

Non-Academic Talks

- 2025 **Live from San Antonio Breast Cancer Symposium (SABCS) 2025 Clinical Impact on Your Practice.** Jamil Asselah, Paolo Tarantino, Stephanie Wong, [A. X. Lozano](#). OncoXchange, Panel Discussion, Dec 11 2025, San Antonio, TX.
- 2025 **Doctors + Disrupters, a New York Tech Week Panel,** Florence Comite, Poonam Desai, Shohib Imtiaz, Kian Sadeghi, Hillary Lin, [A.X. Lozano](#). New York Tech Week, June 2, 2025, New York, NY.
- 2025 **Digital Health Inside Out, Longevity Episode,** Hillary Lin, Rahul Mehendale, Igor Korolev, Sergei Polevikov, Alex Koshykov, [A.X. Lozano](#). Online Podcast, July 30, 2025.
- 2025 **Biomarkers for Longevity** [A.X. Lozano](#). Talk at DeSci NYC, May 13 2025, New York, NY.

Academic Talks

- 2018 **Machine Learning for Analysis of Circulating Tumor Cells.** [A.X. Lozano](#), C.C. Ooi, D.J. Wong, S. Park, M.G. Ozawa, S.S. Gambhir, S.X. Wang. SystemX Fall Conference, Stanford, CA.

Phenotate: Crowdsourcing phenotype annotations of genetic disorders through student exercises A.X. Lozano, W.H. Chang, M. Brudno, G. Baynam. Association of Professors of Human and Medical Genetics conference (APHMG 2018), Santa Fe, NM.

2015 **Light Localization in Axisymmetric Nano-Structured Plasmonic Gratings.** Alexander X. Lozano, Moein Shayegannia, Arthur O. Montazeri, Yuan Fang, Kaveh Moussakhani, Nazir P. Kherani. Conference on Laser and Electro-Optics (CLEO 2015, San Jose, CA).

2014 **Incorporating Nanotruss-Structured Si Anodes Into Lithium Ion Batteries.** Alexander X. Lozano, X. Wendy Gu, Julia R. Greer. Alexander Lozano at Caltech Summer Undergraduate Research Fellowship program.

PATENTS, APPLICATIONS, & PROVISIONAL PATENTS

2022/23 **Liquid Biopsy Analysis of Cellular States to Predict Immunotherapy Toxicity.** US and international patents filed. Aadel A. Chaudhuri, Aaron M. Newman, Alexander X. Lozano. US application 18/729,150 International application PCT/US2023/060573

2023 **Smart Toilet for Human Health Monitoring.** Seung-min Park, Daeyoun Won, Brian J Lee, Sunil Bodapati, Alexander X. Lozano, Diego Escobedo, Sanjiv S. Gambhir. Awarded US patent March 14 2023. Patent number US 11,604,177. Related to *Nature Biomedical Engineering Publication*.

2020 **Patient and Disease-Specific Speech Recognition and Translation Systems for Individuals with Speaking Difficulties.** Richard Hu, Alexander X. Lozano, Shan X Wang, Rongxiang Hu. US provisional patent application.

2012 **Self-Replenishing Energy Storage Device and Method for Footwear**
US patent application; publication number US 2013/0020986 A1. Filed 17 July 2012
Inventors: Joseph Linzon and Alexander X. Lozano

POSTERS

2025 **Choice in HER2-positive locally Advanced breast cancer of Neoadjuvant Taxane: a retrospective review of practice.** Raissa Barros, Belinda Jiao, Alexander X. Lozano (presenter), Anshini Shah, Erika Bushatsky Andrade de Alencar, Max Frija-Gruman, Jonathan Cools-Lartigue, Nicholas Gagnon-Choy, Ipshita Prakash, Kim Ma. San Antonio Breast Cancer Symposium (SABCS), 2025.

2024 **Single-cell Profiling and Integrative TCR Analysis Reveals Tumor-mutation Associated Phenotypes and Immune Repertoire in Lung Adenocarcinoma** Alexander X. Lozano, Maryam Ghaedi, Arvin Azarmina, Azin Sayad, Scott C. Lien, Shirin Soleimani, Douglas C. Chung, Nicolas Jacquelot, Thomas K. Waddell, Kazuhiro Yasufuku, Marc de Perrot, Lawson Eng, Frances A. Shepherd, Penelope A. Bradbury, Natasha B. Leighl, Geoffrey Liu, Ming-Sound Tsao, Trevor J. Pugh, Pamela S. Ohashi, Adrian G. Sacher. European Society for Medical Oncology (ESMO), 2024. *ESMO merit travel grant award*.

2020 **Analysis of Lung Carcinoma from Blood and Effusion Specimens Utilizing Circulating Tumor Cell Technology.** Yili Zhu, Alexander X. Lozano, Grace Peters-Schulze, Danielle Pancirer, Joel Neal, Sukhmani Padda, Heather Wakelee, Shan Wang, Alarice Lowe. Abstract published in Journal of the American Society of Cytopathology November 2020, Volume 9 (Issue6), and presented as a poster by Yili Zhu.

2019 **Rapid Enrichment, Classification, Enumeration, and Single Cell mRNA Sequencing Machine Learning Analysis of Circulating Tumor Cells** Alexander X. Lozano, Seung-min Park, Chin C. Ooi, Dawson J. Wong, Travis Shaffer, Jared Nesvet, Amin Aalipour, Alice C. Fan, Michael G. Ozawa, Sanjiv S. Gambhir, Shan X. Wang. Stanford Center for Nano Technology Excellence NIH Update Meeting, 2019.

Phenotate: Crowdsourcing phenotype annotations of genetic disorders through student exercises. Willie H. Chang*, Alexander X. Lozano*, Michael Brudno, Gareth Baynam. *Chang and Lozano co-presented, and attended. American Society for Human Genetics 2017, Orlando, FL.

2014 **Plasmonic Light Localization in Bull's Eye-Structured Nano-Gratings.** Alexander X. Lozano, Arthur O. Montazeri, Moein Shayegannia, Yuan Fang, Kaveh Moussakhani, Nazir P. Kherani. Poster presented by Alexander Lozano at the University of Toronto Institute for Sustainable Energy industry board meeting.

AWARDS & GRANTS

2024	Teaching Excellence Award, University of Toronto Faculty of Medicine
2024	European Society for Medical Oncology Merit Travel Award, €1,400
2021	Golden Stethoscope Award, University of Toronto Faculty of Medicine
2019	10x Genomics Research Award Program Pilot Grant – Lead author on a successful grant that funded two full 10x single cell mRNA-sequencing runs total valued at approximately US\$6000. Top 4/84 applications.
2017 – 2020	NSERC PGS-D Award \$63,000 over 3 years of PhD studies. Highest amount from this agency at the time for a Canadian pursuing a PhD at a foreign school.
2017 and 2016	2 x CREMS Summer Fellowship \$5,500. Accepted 2017, declined for other summer position, 2016.
2015	Berkeley Fellowship for Graduate Study, US\$30,000 plus tuition Funding to pursue a PhD at UC Berkeley, declined for Stanford University.
2015	Cambridge International Scholarship, £13,000 plus tuition Funding for PhD at the University of Cambridge, declined for Stanford University.
2015	University of Toronto UTAA Scholar, \$1000
2015	Trinity College Provost Scholar, \$200
2012 – 2015	University of Toronto Dean's List
2014 and 2013	2 x California Institute of Technology Summer Undergraduate Research Fellowship (SURF), USD\$6000.
2014 and 2013	2 x NSERC summer fellowship award, \$5000. Declined for Caltech fellowship.
2014	Trinity College Chancellor's Scholarship, \$500
2013	Trinity College Drew Thompson Scholarship, \$400
2013	The Duke of Edinburgh's Gold Award. dukeofed.org
2011	The University of Toronto President's Scholarship, \$2000
2011	Upper Canada College Music prize (Richard Sadlier Prize)

LEADERSHIP & OTHER

2022 – Present	Co-inventor, LiquidCell DX Inc. – Company that was generated from my PhD thesis to commercialize our pre-treatment blood biomarker for predicting immune related adverse events in patients with melanoma undergoing treatment with immunotherapy
2018 – 2019	Software Co-lead – Preventa Medical Corporation – My role was to develop an app and machine learning for automated retina analysis in order to detect diabetic retinopathy. Took two classes at Stanford Graduate School of Business in relation to this start-up.
2019	Cardinal Ventures (Stanford) Spring 2019 cohort – \$2000 seed funding for Preventa Medical, and entrepreneurial mentorship.
2011 – 2018	Board Member & Treasurer – Children of Hope Uganda. A not-for-profit dedicated to providing education for about 500 students per year in Barlonyo, Uganda. The charity has raised over CAD\$1.2M since its inception.
2011 – 2015	Co-founder – PowerSole Inc. Energy Harvesting Shoes Raised USD\$57,500 at a valuation of USD\$598,000. Goal was to license technology in America and fund distribution in the developing world. I developed the prototype and wrote the provisional patent.
2013 – 2015	Trinity College Entrepreneurship Club – Founder
2012 – 2013	Trinity College Soccer Team
2007 – 2011	High school jazz band – Drums/Percussion

TEACHING & OUTREACH

2023 – 2025	U of T Faculty of Medicine Portfolio – Tutor Co-led small group sessions of year 2 medical students during portfolio meetings to guide their reflections on topics arising in their medical education including communication, diversity, their career, and professionalism.
2018 – 2021	U of T Faculty of Medicine Community of support – Mentored a student interested in medicine and biomedical research. Phone calls, advice, and application support. My mentee was accepted into the U of T Translational Research Master's program to start September 2021.
Spring 2019	Teaching Assistant – Stanford MATSCI 83N, Great Inventions that Matter
2018	Stanford Splash tutoring volunteer – Preparing science lessons for high school students
Fall 2018 – Present	Graduate Student Mentor – Mentored a high school student on a machine learning project in which we made a voice recognition application for patients with speech disabilities.
2015 – 2016	Massey College Tutoring & Mentorship volunteer – Tutoring grade 11 students from under-represented backgrounds. councilofeducators.ca/search-programs/program.html?id=307
2015 – 2016	Volunteer High School Tutoring – MD class of 2019 Representative Tutoring underrepresented high school students in STEM as part of a U of T Medical School initiative

Medical License –Independent Practice Licence, Ontario, Canada (CPSO) since July 2026

Memberships– American, European, Canadian Cancer Societies (ASCO, AACR, ESMO, CAMO), Canadian Medical Associations (OMA, CMA), Fellow of the Royal College of Physicians and Surgeons of Canada (FRCPC)

Citizenships – Canada & Spain (EU) | **Certifications** – Advanced Cardiac Life Support

Research Skills – Python, R, machine learning, biostatistics, bioinformatics, biomarker discovery

Languages – I care for patients in English, Spanish, and French | **Hobbies** – Music recording, running.