CURRICULUM VITAE

Mariam Thomas Mathew

Board certification

2019 **Diplomate**, **American Board of Medical Genetics and Genomics-** *Laboratory Genetics and Genomics.*

Employment

2019-present **Director,** Clinical Laboratory, Institute for Genomic Medicine, Nationwide Children's Hospital, Columbus, OH

- Clinical sign-out and reporting of a variety of molecular and NGS cases including diagnostic and carrier screening.
- Directing and reviewing testing and validation for new instrument, assay, and software implementation.
- Review of laboratory protocols to ensure compliance with regulatory requirements.
- Promoting educational opportunities for laboratory staff through case conferences.

2017- 2019 **Post-doctoral Scholar**, ABMGG training program in Laboratory Genetics and Genomics, Department of Human Genetics, University of Chicago, Chicago, IL
Training Directors: Daniela del Gaudio, PhD, FACMG; Carrie Fitzpatrick, PhD, FACMG; Michelle Le Beau, PhD, FACMG; Darrel Waggoner, MD, FACMG

- Interpret genetic diagnostic tests from a wide range of cytogenetic and molecular methodologies that assess chromosomal aneuploidies, rearrangements, genomic copy number, and sequence changes.
- Integrate clinical data into personalized patient report interpreting laboratory findings.
- Communication of laboratory results with members of the clinical care team.

2013 – 2017 **Post-doctoral Variant Interpretation Specialist,** Dept. of Pathology, Advanced Molecular Diagnostics Laboratory, Princess Margaret Cancer Centre, University Health Network, Toronto, Canada.
Training Directors: Suzanne Kamel-Reid, Phd, FACGM; Tracy Stockley, PhD, FCCMG, FACMG

- Analyze and review data for validation of a commercially available NGS targeted panel for myeloid malignancies.
- Review and classification of variant profiles for >700 patients in an institution wide research study for the assessment of NGS testing and clinically actionable variants in hematological malignancies (AGILE).
- Working within a multi-disciplinary team to assess clinical actionability and pathogenicity for >2000 variants identified in high throughput sequencing studies/clinical trials.
- Provide analytical support and validation of informatics approaches for amplicon based NGS panels

- Write and review documentation and standard operating protocols for variant analysis and curation.

Education

2005 – 2013 **PhD,** Dept. of Medical Biophysics, University of Toronto
Supervisor – Dr. Suzanne Kamel-Reid. Advisory committee members – Drs. Aaron Schimmer and Susan Done.
Thesis: Identifying converging pathways in the pathogenesis of Acute Promyelocytic Leukemia

2001-2005 **BSc. (Honors) with Distinction,** University of Toronto
Specialist, Genetics and Biotechnology.
Relevant courses: Bioinformatics, microbiology laboratory, genetics, molecular biology, biotechnology, and statistics

Published and submitted refereed manuscripts

Garg S, Grenier S, Misyura M, Sukhai M, Thomas M, Kamel-Reid S, Stockley T. Assessing the diagnostic yield of targeted next-generation sequencing for melanoma and gastrointestinal tumors. *Accepted for publication in Journal of Molecular Diagnostics, 2020.*

Sukhai MA, Misyura M, Thomas M, Garg S, Zhang T, Stickle N, Virtanen C, Bedard PL, Siu LL, Smets T, Thijs G, Van Vooren S, Kamel-Reid S, Stockley TL. Somatic Tumor Variant Filtration Strategies to Optimize Tumor-Only Molecular Profiling Using Targeted Next-Generation Sequencing Panels. J Mol Diagn. 2018 Dec 18. pii: S1525-1578(17)30598-6. doi: 10.1016/j.jmoldx.2018.09.008

Spiegel JY, McNamara C, Kennedy JA, Panzarella T, Arruda A, Stockley T, Sukhai M, Thomas M, Bartoszko J, Ho J, Siddiq N, Maze D, Schimmer A, Schuh A, Sibai H, Yee K, Claudio J, Devlin R, Minden MD, Kamel-Reid S, Gupta V. Impact of genomic alterations on outcomes in myelofibrosis patients undergoing JAK1/2 inhibitor therapy. Blood Adv. 2017 Sep 8;1(20):1729-1738.

Alduaij W, McNamara CJ, Schuh A, Arruda A, Sukhai M, Kanwar N, Thomas M, Spiegel J, Kennedy JA, Stockley T, Tsui H, Devlin R, Sibai H, Maze D, Schimmer A, Yee K, Chan S, Kamel-Reid S, Gupta V. Clinical utility of next generation sequencing in the management of myeloproliferative neoplasms.*[Published in HemaSphere; an online journal of the European Hematology Association] April 2018.*

Thomas M, Sukhai M, Zhang T, Dolahasti R, Stickle N, Virtanen C, Minden M, Gupta V, Schuh A, Stockley T, Kamel-Reid S. (2016) Integration of Technical, Bioinformatic and Variant Assessment Considerations in the validation of a Targeted Next-Generation Sequencing Panel for Molecular Diagnostics of Myeloid Malignancies. Arch Pathol Lab Med. 2017 Jun;141(6):759-775.

Misyura M, Zhang T, Sukhai MA, Thomas M, Garg S, Kamel-Reid R, Stockley TL (2016). Comparison of Next Generation Sequencing panels and platforms for detection and verification of somatic variants from formalin-fixed paraffin embedded tumor in clinical diagnostics. J Mol Diagn. 2016 Nov;18(6):842-850.

Sukhai MA (*), Craddock KJ (*), Thomas M, Hansen AR, Zhang T, Siu L, Bedard P, Stockley TL, Kamel-Reid S (2015). A classification system for clinical relevance of somatic variants identified in molecular profiling of cancer. Genetics in Medicine. doi: 10.1038/gim.2015.47.

Thomas M, Sukhai MA, Kamel-Reid S. An Emerging Role for Retinoid X Receptor A in Malignant Hematopoeisis. Leukemia Research. 2012 36(9):1075-81.

Sukhai MA, Thomas M, Hamadanizadeh SA, Xuan Y, Wells RA, Kamel-Reid S. Correlation among nuclear localization of NuMA-RARα, deregulation of gene expression and leukemic phenotype of hCG-NuMA-RARα transgenic mice. Leukemia Research. 2011 Jan 19.

Thomas M, Sukhai MA, Kamel-Reid S. (2008) Many paths to one disease: the role of the variant fusion proteins NPM-RARα and NuMA-RARα in acute promyelocytic leukemia biology. *Cell Science Reviews* 4 (4).

Sukhai MA, Thomas M, Xuan Y, Chan LSA, Hamadanizadeh SA, Zhang T, Bharadwaj RR, Schuh AC, Wells RA, and Kamel-Reid S. (2008) Evidence of functional interaction between NuMA-RAR**A** and RXR**A** in an in vivo model of acute promyelocytic leukemia. *Oncogene* 27;4666-4677.

Goswami RS, Sukhai MA, Thomas M, Reis PP, Kamel-Reid S. (2008) Applications of Microarray Technology to Acute Myelogenous Leukemia. *Cancer Informatics* 4:1-43.

Published and submitted abstracts – International conferences

1. Mathew MT, Subramanian HP, Sanyoura M, Helgeson M, Kandikatla P, Arndt K, Ma Lan, Waggoner D, Das S, del Gaudio D. Identification of the genetic basis of disease in patients with epilepsy related phenotypes by exome analysis. *Presented at the **American College of Medical Genetics** Meeting, April 2019.*

2. Law AD, Sukhai MA, Thomas M, Arruda A, Ibrahimova N, Chan SM, Gupta V, Minden MD, Schimmer AD, Sibai H, Yee K, Barber DL, Stockley TL, Kamel-Reid S and Schuh AC. Utility of Next Generation Sequencing in Prognostication and Therapeutic Decision Making in Cytogenetically Normal AML with DNMT3A Mutations. Blood 2016 128:2886; *Presented at the 2016 **American Society of Hematology** Meeting, December 2016.*

3. Spiegel J*, McNamara C*, Arruda A, Panzarella T, Kennedy J, Stockley T, Sukhai M, Thomas M, Bartoszko J, Ho J, Siddiq N, Schimmer A, Schuh A, Sibai H, Yee K, Claudio J, Devlin R, Minden M, Kamel-Reid S, Gupta V, Impact of Genomic Alterations on Outcome in Myelofibrosis Patients Undergoing JAK1/2 Inhibitor Therapy. *Presented at the 2016 **American Society of Hematology** Meeting, December 2016.*

4. Thomas M, Zhang T, Dolatshahi R, Sukhai MA, Garg S, Misyura M, Pugh TJ, Stockley TL, Kamel-Reid S. Development of a diagnostic workflow for the detection of clinically actionable variants using the TruSight Myeloid Sequencing Panel and complementary assays for testing of Hematologic Malignancies. *Poster Presentation, **Association of Molecular Pathology** Annual Meeting, November 2016.*

5. Thomas M, Sukhai M, Garg S, Misyura M, Zhang T, Schuch A, Stockley T, Kamel-Reid S. Molecular Profiling of Hematological Malignancies: Implementation of a Variant Assessment Algorithm for Next-Generation Sequencing Data Analysis and Clinical Reporting. *Poster presentation at the 2016 **Human Genome Meeting**, February 28-March 02, 2016, Houston, TX.*

6. Misyura M, Sukhai MA, Thomas M, Garg S, Kamel-Reid S, Stockley TL. Paired somatic and

germline variant filtering algorithms for identification of clinically actionable cancer variants from Next-Generation Sequencing. *Poster presentation at the 2016* ***American College of Medical Genetics and Genomics*** *Meeting, March 08-11, 2016, Tampa, FL.*

7. Garg S, Sukhai MA, Misyura M, Thomas M, Zhang T, Siu LL, Bedard PL, Stockley TL, Kamel-Reid S. Impact of TP53 status and molecular classification on molecular profiles in breast cancer subtypes. *Poster presentation at the 2016* ***American Association of Cancer Research*** *Meeting, April 16-20, 2016, New Orleans, LA.*

8. Hojilla CV, Thomas M, Sukhai M, Zhang T, Kamel-Reid S, Schuh A, Minden MD, Porwit A. CD7 and CD34 Co-expression Identify a subpopulation of Nucleophosmin 1-mutated Acute Myeloid Leukemia (NPM1+ AML) Patients with Increased Risk of Relapse. *Submitted for presentation at 21st Congress of the* ***European Hematology Association****, 2016.*

9. Hojilla CV, Thomas M, Sukhai M, Kamel-Reid S, Rajab A, Minden MD, Schuh A, Porwit A. Genetic Heterogeneity, CD7 and CD34 Expression Identifies a Subpopulation of Nucleophosmin 1-mutated Acute Myeloid Leukemia (NPM1+ AML) with Early Relapse. *Submitted for presentation to the* ***United States & Canadian Academy of Pathology (USCAP)*** *Annual Meeting 2016.*

10. Porwit A, Thomas M, Sukhai M, Zhang T, Rajab A, Schuh A, Minden MD, Stockley T, Kamel-Reid S. Comparison of phenotype and mutational status in acute myeloid leukemia (AML) with normal karyotype at diagnosis and relapse: a pilot study. *Submitted for presentation to the* ***International Clinical Cytometry Society*** *Meeting 2016.*

11. Stockley TL, Sukhai M, Garg S, Zhang T, Thomas M, Misyura M, Bedard B, Siu LL, Kamel-Reid S. (2016) Comparison of Yield of Actionable Variants Identified by Tumor Molecular Profiling using Next Generation Sequencing of Targeted Panels Versus Non-NGS Methods. *Poster presentation at the* ***Advances in Genome Biology and Technology Conference****, February 10-13, 2016, Orlando, FL, USA*.

12. Kamel-Reid S, Thomas M, Sukhai MA, Barber DL, Garg S, Misyura M, Dolatshahi R, Harbi D, Zhang T, Porwit A, Delabie JMA, Ibrahimova N, Shanavas M, Yee KWL, Pugh TJ, Schimmer AD, Stockley TL, Gupta V, Minden MD, Schuh AC. Prospective Next-Generation Sequencing Molecular Profiling of Myeloid Malignancies: Assessment of Information Benefit and Impact on Clinical Care. *Accepted for presentation at the 2015* ***American Society of Hematology*** *Meeting, December 05-08, 2015, Orlando, FL, USA.*

13. Sukhai M, Thomas M, Misyura M, Garg S, Zhang T, Schuh A, Minden M, Shockley T, Kamel-Reid S. Comparison of Information Benefit and Potential Impact on Patient Care for High Throughput Targeted Panels for Myeloid Malignancies. *Accepted for presentation at the 2015* ***Association of Molecular Pathology*** *Meeting, November 04-06, 2015, Austin TX, USA.*

14. Stockley TL, Sukhai M, Garg S, Zhang T, Thomas M, Misyura M, Bedard B, Siu LL, Kamel-Reid S. Comparison of Yield of Actionable Variants Identified by Tumor Molecular Profiling using Next Generation Sequencing of Targeted Panels Versus Non-NGS Methods. *Accepted for presentation at the 2015* ***Association of Molecular Pathology*** *Meeting, November 04-06, 2015, Austin TX, USA*.

15. Garg S, Sukhai MA, Thomas M, Mah M, Zhang T, Pugh T, Stockley TL, Kamel-Reid S.

Determinants of quality of Next-Generation Sequencing output from the strand-specific TruSight Tumor Sequencing Panel in a clinical diagnostic setting. *Poster presentation,* ***American Association for Cancer Research*** *Meeting, April 18-22, 2015, Philadelphia, PA.*

16. Thomas M, Sukhai MA, Zhang T, Harbi D, De Souza J, McDonald K, Pugh T, Yee K, Minden MD, Schuh A, Stockley TL, Kamel-Reid S. Clinical testing and implementation of the TruSight Myeloid Next Generation Sequencing (NGS) panel for identification of clinically relevant variants in hematological malignancies. *Poster presentation,* ***American Association for Cancer Research*** *Meeting, April 18-22, 2015, Philadelphia, PA.*

17. Sukhai MA, Craddock KJ, Thomas M, Hansen AR, Zhang T, Siu L, Bedard P, Stockley TL, Kamel-Reid S. A classification system for clinical relevance of somatic variants identified in molecular profiling of cancer. *Poster Presentation,* ***AACR Special Conference: Translating the Cancer Genome****, February 07-09, 2015, San Francisco, CA*.

18. Zhang T, Sukhai MA, Thomas M, Forrest D, Soboleva A, Wei C, Stockley TL, Kamel-Reid S. Comparison of Illumina and Life Technologies Benchtop Sequencing Platforms in the Detection of Somatic Variants in a Cancer Diagnostic Setting. *Platform and Poster Presentation,* ***Association of Molecular Pathology*** *Annual Meeting, November 11-15, 2014, Washington DC.*

19. Sukhai MA, Zhang T, Thomas M, Pugh T, Kamel-Reid S, Stockley TL. A Protocol for Clinical Validation of Next-Generation Sequencing (NGS) Diagnostic Tests for Somatic Mutation Detection. *Poster Presentation,* ***Association of Molecular Pathology*** *Annual Meeting, November 11-15, 2014, Washington DC.*

20. Sukhai MA, Thomas M, Zhang T, Wei C, Trudel S, Yee K, Minden MD, Schuh A, Stockley T, Kamel-Reid S. High-Throughput Multiplex Sequenom MassARRAY Clinical Diagnostic Assay for the Identification of Actionable Genetic Variants in Hematologic Malignancies. *Poster presentation at the* ***American Association of Cancer Research*** *Annual Meeting, April 06-09, 2014, San Diego, CA.*

21. Graham DM, Arseneault M, Sukhai MA, Letourneau L, Karimzadeh M, Zhang T, Thomas M, Roehrl MHA, Chen EX, Krzyzanowska M, Moore MJ, Giesler A, Yu C, Bedard P, Kamel-Reid S, Siu LL, Riazalhosseini Y. Analysis of clonal evolution in colorectal cancer. *Platform presentation,* ***American Society of Clinical Oncology*** *Annual Meeting, 2014.*

22. Kamel-Reid S, Sukhai MA, Thomas M, Zhang T, Wei C, Craddock K, Shaw P, Hwang D, Mulligan A-M, Siu L, Bedard P. The use of next-generation sequencing for somatic mutation detection in a clinical laboratory setting. *Presented at the Canadian College of Medical Genetics Annual Meeting, Toronto, Ontario, November 07-09, 2013*

23. Thomas M, Sukhai MA, Kamel-Reid. Functional Deregulation of NF-kB and abnormal TNFa response in Acute Promyelocytic Leukemia. *Accepted at the* ***Canadian Cancer Research Conference*** *Nov 27-30, 2011, Toronto, Canada.*

24. Thomas M, Sukhai MA, Schuh N, Xuan Y, Minden M, Kamel-Reid. Functional Deregulation of NF-kB and abnormal TNFa response in Acute Promyelocytic Leukemia. *Accepted at the* ***European Hematology Association*** *Congress, June 9-13, 2010, Barcelona, Spain.*

25. Thomas M, Sukhai MA, Schuh N, Xuan Y, Minden M, Kamel-Reid. Functional Deregulation of NF-kB and abnormal TNFa response in Acute Promyelocytic Leukemia. *Accepted at the **American Association for Cancer Research Meeting,** April 2010, Washington DC.*

26. Sukhai MA, Thomas M, Hummel JL, Xuan Y, Mahindra S, Zhang T, Reis PP, Kamel-Reid S. (2010) Nucleophosmin is universally deregulated In Acute Promyelocytic Leukemia. *Accepted at the **American Association for Cancer Research**, April, 2010, Washington, DC.*

27. Sukhai MA, Thomas M, Hummel JL, Xuan Y, Mahindra S, Zhang T, Reis PP, Kamel-Reid S. (2010) Nucleophosmin is universally deregulated In Acute Promyelocytic Leukemia. *Accepted at the **European Hematology Association Congress**, June 9-13, 2010, Barcelona, Spain.*

28. Thomas M, Sukhai MA, Xuan Y, Kamel-Reid S. Comparative Analysis of the Downstream Genetic Targets of the Variant Acute Promyelocytic Leukemia Fusion Protiens NuMA- and NPM-RARA. ***Federation of American Societies of Experimental Biology (FASEB)** Summer Research Conference: Hematological Malignancies,* Saxton's River, Vermont. USA, August 2-7, 2009.

29. Sukhai MA, Thomas M, Xuan Y, Reis PP, Kamel-Reid S. Deregulation of transcription factors GATA-1, GATA-2 and C/EBPa accurately distinguishes acute promyelocytic leukemia from other forms of acute myelogenous leukemia. *Accepted at the **American Society of Hematology** meeting, Dec 6-9, 2008, San Francisco CA.*
30. Thomas M, Sukhai MA, Xuan Y, Hamadanizadeh SA, Goswami RS, Bharadwaj RR, Reis PP, Kamel-Reid S. Comparative Analysis Of Downstream Genetic Targets Of The Variant Acute Promyelocytic Leukemia Fusion Proteins NPM-RARA And NuMA-RARA. ***Blood (ASH Annual Meeting Abstracts)*** 110: 3166.
31. Sukhai MA, Thomas M, Xuan Y, Hamadanizadeh SA, Bharadwaj RR, Schuh A, Wells RA, Kamel-Reid S. Nuclear localization of the NuMA-RARA/RXRA complex is necessary for leukemogenesis in *hCG-NuMA-RARA* transgenic mice. ***Blood (ASH Annual Meeting Abstracts)*** 108: 1403.
32. Sukhai MA, Thomas M, Xuan Y, Bharadwaj RR, Reis PP, Kamel-Reid S. Systems analysis reveals regulators of apoptosis, cell cycle, signal transduction and transcription as novel direct targets of the Acute Promyelocytic Leukemia fusion protein NuMA-RARA. ***Blood (ASH Annual Meeting Abstracts)*** 108: 2247.
33. Thomas M, Sukhai MA, Xuan Y, Wells RA, Kamel-Reid S. Effects of the loss of RXRA function on the promyelocytic leukemia phenotype. ***American Association of Cancer Research** Meeting* Abstracts 2005: 243-244.
34. Thomas M, Sukhai MA, Xuan Y, Hamadanizadeh SA, Zhang T, Bharadwaj R, Chan A, Wells RA, Kamel-Reid S. Loss of retinoid X receptor α function leads to amelioration of leukemic phenotype in hCG-NuMA-RARα transgenic mice. ***Federation of American Societies of Experimental Biology (FASEB)** Summer Research Conference: Hematological Malignancies, Saxton's River, Vermont. USA,* July 30-August 4, 2005.

Published contributions to a collective work (collective works derived from local conferences or symposia)

1. Schuh NW, Thomas M, Sukhai MA, Reis PP, Kamel-Reid S. Canonical NF-κB Deregulation in U937 Acute Promyelocytic Leukemia Models. ***Dept. of Laboratory Medicine and Pathobiology Summer Student Research Day***. Toronto, August 18, 2009.
2. Sukhai M, Thomas M, Xuan Y, Reis PP, Kamel-Reid S. Deregulation of transcription factors *GATA-1*, *GATA-2* and *C/EBPα* accurately distinguishes Acute Promyelocytic Leukemia from other forms of Acute Myelogenous Leukemia. ***Applied Molecular Oncology Retreat***. Toronto, May 8, 2009
3. Thomas M, Sukhai MA, Xuan Y, Kamel-Reid S. Functional deregulation of NF-□B and abnormal TNF□ response in Acute Promyelocytic Leukemia. ***Applied Molecular Oncology Retreat***. Toronto, May 8, 2009.
4. Thomas M, Sukhai MA, Xuan Y, Kamel-Reid S. Functional deregulation of NF-□B and abnormal TNF□ response in Acute Promyelocytic Leukemia. ***James Leapock Memorial Student Research Symposium,*** University of Toronto, May 15, 2009.
5. Thomas M, Sukhai MA, Xuan Y, Hamadanizadeh SA, Bharadwaj RR, Reis PP, Kamel-Reid S. Comparative Analysis Of Downstream Genetic Targets Of The Variant Acute Promyelocytic Leukemia Fusion Proteins NPM-RARA And NuMA-RARA. ***Divison of Applied Molecular Oncology Annual Retreat****,* May 2*,* 2008.
6. Thomas M, Sukhai MA, Xuan Y, Hamadanizadeh SA, Reis PP, Kamel-Reid S. Comparative Analysis Of Downstream Genetic Targets Of The Variant Acute Promyelocytic Leukemia Fusion Proteins NPM-RARA And NuMA-RARA. ***Department of Medical Biophysics Student Research Symposium***, University of Toronto, June 22, 2008.
7. Thomas M, Sukhai MA, Xuan Y, Hamadanizadeh SA, Reis PP, Kamel-Reid S. Identifying downstream genetic targets of APL fusion proteins X-RARalpha *Accepted for presentation at the* ***UHN Research Day*****,** October 29, 2007.
8. Sukhai MA, Thomas M, Xuan Y, Bharadwaj RR, Reis PP, Kamel-Reid S. Systems analysis reveals regulators of apoptosis, cell cycle, signal transduction and transcription as novel direct targets of the Acute Promyelocytic Leukemia fusion protein NuMA-RARA. ***Division of Applied Molecular Oncology Annual Retreat****,* May 4*,* 2007.
9. Sukhai MA, Xuan Y, Thomas M, Reis PP, Kamel-Reid S. Regulators of apoptosis, cell cycle, signal transduction and transcription are novel direct targets of the Acute Promyelocytic Leukemia fusion gene NuMA-RARa. ***Department of Medical Biophysics Student Research Symposium***, University of Toronto, May 19, 2006.
10. Sukhai MA, Xuan Y, Thomas M, Kamel-Reid S. Correlation between gene dosage and phenotype onset & gene expression alterations in *hCG-NuMA-RARa* transgenic mice. ***Department of Medical Biophysics Student Research Symposium****,* University of Toronto, September 20, 2005.
11. Sukhai MA, Thomas M, Xuan Y, Hamadanizadeh SA, Zhang T, Bharadwaj R, Chan A, Wells RA, Kamel-Reid S. Loss of retinoid X receptor α function leads to amelioration of leukemic phenotype in hCG-NuMA-RARα transgenic mice. ***University Health Network Research Day***, November 1, 2005.
12. Thomas M, Sukhai MA, Xuan Y, Wells RA, Kamel-Reid S. (2004) Effects of the loss of RXRα function on the promyelocytic leukemia phenotype. ***University Health Network Research Day***, November 02, 2004.

Presentations

Thomas M, Sukhai MA, Xuan Y, Hamadanizadeh SA, Zhang T, Bharadwaj R, Chan A, Wells RA, Kamel-Reid S. Loss of retinoid X receptor α function leads to amelioration of leukemic phenotype in hCG-NuMA-RARα transgenic mice. ***Department of Medical Biophysics Student Research Symposium***, University of Toronto, September 20, 2005. [Platform Presentation]

Thomas M, Sukhai MA, Xuan Y, Kamel-Reid S. Identifying downstream genetic targets of APL fusion proteins X-RARA. ***James Leapock Memorial Student Research Symposium***, Department of Medical Biophysics, University of Toronto, June, 2007. [Platform Presentation]

Conferences/Courses Attended

American College of Medical Genetics, April 2019, Seattle, WA

Summer Program in Clinical Epidemiology and Biostatistics, May- Aug, 2016, Toronto, Canada

Human Genome Meeting (HUGO), Feb 2016, Houston, USA.

American Association for Cancer Research (AACR), April 2015, Philadelphia, USA.

American Association for Cancer Research (AACR), April 2014, San Diego, USA.

Understanding the Mystery of Lean: An Introduction, May 2014, University Health Network, Toronto, Canada.

Canadian Cancer Research Conference, Nov 2011, Toronto, Canada.

Bioinformatics for Cancer Genomics, Canadian Bioinformatics Workshop, Nov 2011, Toronto, Canada

Keystone Symposia – Changing landscape of the Cancer Genome, June 2011, Boston, USA.

Advanced course in Functional Genomics and Systems Biology, June 2010**,** Hinxton, U.K.

European Hematology Association (EHA), June 2010, Barcelona, Spain.

American Association for Cancer Research (AACR), April 2010, Washington DC, USA.

American Association of Cancer Research Grant Writing Workshop, April 2010, USA

Federation of American Societies of Experimental Biology (FASEB) Summer Research Conferences – Hematological Malignancies, August 2009, Vermont, USA.

American Society of Hematology (ASH), December 2007, Atlanta, USA.

International Society for Stem Cell Research (ISSCR), June 2006, Toronto, Canada.

Memberships

American College of Medical Genetics – Fellow Member (2019 – present)

Association of Molecular Pathology – Member (2019 – present)

European Hematology Association – Associate Member (2010)

American Association for Cancer Research – Associate Member (2010)

American Society for Hematology – Associate Member (2007)

Awards

2010	Recipient, **Wellcome Trust Advanced Courses** merit-based competitive bursary, London, UK. £ 450.
2009-2012	Recipient, **Frederick Banting and Charles Best Canada Graduate Scholarships Doctoral Award,** Canadian Institutes of Health Research, $35,000 per annum.
2009-2010	Recipient, **Ontario Graduate Scholarship,** Ministry of Training, Colleges and Universities, Ontario, $5,000 per annum (declined).
2008	Recipient, **Princess Margaret Hospital Foundation Graduate fellowship in Cancer Research,** Dept. of Medical Biophysics, Univ. of Toronto, $5000.
2008	Finalist, **Dina Gordon Malkin Ontario Graduate Scholarships in Science and Technology,** Faculty of Medicine, Univ. of Toronto.
2007	Recipient, **David Rae Graduate Scholarship**, Faculty of Medicine, Univ. of Toronto, $2538.
2007	Recipient, **Princess Margaret Hospital Foundation Graduate fellowship in Cancer Research,** PMH/OCI, and Dept. of Medical Biophysics, Univ. of Toronto, $5000.
2007	Recipient, **James Lepock Memorial Student Research Symposium - Oral Presentation Award**, Dept. of Medical Biophysics, Faculty of Medicine, Univ. of Toronto, $150.
2006	Recipient, **Princess Margaret Hospital Foundation Graduate fellowship in Cancer Research,** PMH/OCI, and Dept. of Medical Biophysics, Univ. of Toronto.
2006	Recipient, **David Rae Graduate Scholarship**, Faculty of Medicine, Univ. of Toronto.
2006	Recipient, **University of Toronto Fellowship – Medical Biophysics**
2005	Recipient, **Medical Biophysics Oral Presentation Award**, Dept. of Medical Biophysics, Faculty of Medicine, Univ. of Toronto.
2002	**Dean's List Scholar**, Faculty of Arts and Science, Univ. of Toronto.
2002	Invitation, **Golden Key Honors Society,** Univ. of Toronto.

Technical Skills

Variant interpretation and assessment: Proficient in mining variant and medical literature databases, expertise in next generation sequence analysis and molecular test design, writing summaries of variants for clinical reports, development and optimization of variant curation protocols and test validation documentation.

Bioinformatical/computational analyses: Next Generation Sequencing analysis software including NextGENe (SoftGenetics), Cartagenia (Agilent), Variant Studio (Illumina), microarray data analyses using software including Genespring, GCOS, Ingenuity Pathways Analysis, PathwaysAssist, and online annotation tools including GENEcodis, and DAVID.

Hematological techniques: Preparation and analysis of stained blood smears and bone marrow preparations. Hematopoeitic stem cell isolation and progenitor assays, and primary culturing of blood cells. Immunophenotyping blood and bone marrow cells by flow cytometry. Culturing primary and immortalized cell lines.

Molecular biology: Nucleic acid and protein extraction, PCR primer design, and PCR genotyping. Protein western blotting, and mRNA expression analysis via quantitative real-time reverse transcriptase PCR. Cloning techniques including bacterial transformation, restriction digests, and cloning purified inserts into plasmid vectors. Yeast 2-hybrid assays, RNAi assays in mammalian and worms, RNA-seq, and miRNA-seq methods.

Animal handling experience: trained in appropriate handling of laboratory mice, accepted methods of animal sacrifice, as well as exploratory surgery and hind limb bone excision for bone marrow analysis.

Supervisory experience

May – Aug 2015 **Sharisa Naidoo**, Summer Student, University Health Network
Study: Identification of intronic, splice site variants in hematological malignancies

May - Aug 2009 **Nicholas Schuh,** Summer Student, Department of Laboratory Medicine and Pathobiology, University of Toronto, University Health Network
Study: Canonical NF-κB Deregulation in U937 Acute Promyelocytic Leukemia Models

Feb – June 2008 **Shevani Mahindra**, Co-Op Student, University of Waterloo
Study: Delocalization of NPM in Acute Promyelocytic Leukemia

May – Aug 2007 **Bharat Srinivasa**, Summer Student, University Health Network
Study: Role of deregulation of Nucleophosmin in Acute Promyelocytic Leukemia

Teaching experience

Sept '08-2012 **Head Teaching Assistant** – PCL 365Y Toxicology Laboratory
Dept. of Pharmacology, University of Toronto.

- Designed, tested, and worked with a team to implement two advanced level undergraduate laboratory modules:
    - Introducing the concepts of high throughput gene expression array analysis in response to drug treatments
    - Use of assays to assess toxicological effects of selected compounds in cell culture models.
- Led discussions and demonstrated techniques relevant to molecular pharmacology and toxicology with groups of 11-40 senior undergraduate students.

Oct '07-2011 **Head Teaching Assistant** – PCL471Y (Molecular Pharmacology component)

Oct '06 **Teaching Assistant** – PCL471Y (Molecular Pharmacology component), Dept. of Pharmacology, University of Toronto

- Assisted in designing experiments and preparation of laboratory manual.
- Conducted laboratory module and explained techniques and experimental design to students
- Evaluated student assignments and final term tests.