HUMAN ONCOLOGY & PATHOGENESIS PROGRAM

The Ross Levine Lab

Research

Ross L. Levine, MD

Chief Scientific Officer; Edward P. Evans Endowed Chair for MDS

Professor

The goal of our research is to improve our understanding of the genetic basis of blood disorders known as myeloid malignancies, and to use this knowledge to improve therapies for patients with these disorders. Our efforts are focused on the identification and characterization of somatic mutations in hematologic malignancies using candidate gene, genome-wide, and functional approaches, with a specific interest in the role of aberrant signal transduction in malignant transformation and in the effects of mutations in epigenetic modifiers in myeloproliferative neoplasms (MPNs) and acute myeloid leukemia (AML). As a physician-scientist, we have a specific interest in translating this knowledge back to the clinic, in the preclinical and clinical evaluation of targeted therapies for leukemia patients, and in the development of clinically tractable genomic assays for patients with hematologic malignancies.

Featured News

Ross Levine, MD, Named Chief Scientific Officer of Memorial Sloan Kettering Cancer Center

Memorial Sloan Kettering Cancer Center (MSK) announced today that Ross Levine, MD, has been named MSK's new Chief Scientific Officer (CSO). A renowned physician-scientist, Dr. Levine previously served as Senior Vice President of Translational Research in Memorial Hospital (MH) and holds the Edward P. Evans Endowed Chair for Myelodysplastic Syndromes at MSK.

IN THE LAB

AACR 2021 Research Roundup: Chromosomal Instability, Early Changes in Blood Cancer, Revamping CAR T Cell Therapy

MSK researchers shared their latest research developments at the 2021 meeting of the American Association for Cancer Research.

IN THE LAB

Single-Cell Study Sheds Light on Leukemia's Family Tree

New research looks at how a series of mutations in normal blood cells can lead to them becoming cancerous and how these mutations accumulate as cancer progresses.

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Publications Highlights

Dunbar A.J., Bowman R.L., Park Y.C., O'Connor K., Izzo F., Myers R.M., Karzai A., Zaroogian Z., Kim W.J., Fernandez-Maestre I., Waarts M.R., Nazir A., Xiao W., Codilupi T., Brodsky M., Farina M., Cai L., Cai S.F., Wang B., An W., Yang J.L., Mowla S., Eisman S.E., Hanasoge Somasundara A.V., Glass J.L., Mishra T., Houston R., Guzzardi E., Martinez Benitez A.R., Viny A.D., Koche R.P., Meyer S.C., Landau D.A., Levine R.L. Jak2V617F Reversible Activation Shows Its Essential Requirement in Myeloproliferative Neoplasms. Cancer Discov. 2024 Jan 12. doi: 10.1158/2159-8290.CD-22-0952. Epub ahead of print.

Stonestrom A.J., Menghrajani K.N., Devlin S.M., Franch-Expósito S., Ptashkin R.N., Patel S.Y., Spitzer B., Wu X., Jee J., Sánchez Vela P., Milbank J.H., Shah R.H., Mohanty A.S., Brannon A.R., Xiao W., Berger M.F., Mantha S., Levine R.L. High-risk and silent clonal hematopoietic genotypes in patients with nonhematologic cancer. Blood Adv. 2024 Feb 27;8(4):846-856. doi: 10.1182/bloodadvances.2023011262. PMCID: PMC10875331.

Perner F., Stein E.M., Wenge D.V., Singh S., Kim J., Apazidis A., Rahnamoun H., Anand D., Marinaccio C., Hatton C., Wen Y., Stone R.M., Schaller D., Mowla S., Xiao W., Gamlen H.A., Stonestrom A.J., Persaud S., Ener E., Cutler J.A., Doench J.G., McGeehan G.M., Volkamer A., Chodera J.D., Nowak R.P., Fischer E.S., Levine R.L., Armstrong S.A., Cai S.F. MEN1 mutations mediate clinical resistance to menin inhibition. Nature. 2023 Mar;615(7954):913-919. doi: 10.1038/s41586-023-05755-9. Epub 2023 Mar 15. PMCID: PMC10157896.

Dunbar A.J., Kim D., Lu M., Farina M., Bowman R.L., Yang J.L., Park Y., Karzai A., Xiao W., Zaroogian Z., O'Connor K., Mowla S., Gobbo F., Verachi P., Martelli F., Sarli G., Xia L., Elmansy N., Kleppe M., Chen Z., Xiao Y., McGovern E., Snyder J., Krishnan A., Hill C., Cordner K., Zouak A., Salama M.E., Yohai J., Tucker E., Chen J., Zhou J., McConnell T., Migliaccio A.R., Koche R., Rampal R., Fan R., Levine R.L., Hoffman R. CXCL8/CXCR2 signaling mediates bone marrow fibrosis and is a therapeutic target in myelofibrosis. Blood. 2023 May 18;141(20):2508-2519. doi: 10.1182/blood.2022015418. PMCID: PMC10273167.

Miles L.A., Bowman R.L., Merlinsky T.R., Csete I.S., Ooi A.T., Durruthy-Durruthy R., Bowman M., Famulare C., Patel M.A., Mendez P., Ainali C., Demaree B., Delley C.L.,

Abate A.R., Manivannan M., Sahu S., Goldberg A.D., Bolton K.L., Zehir A., Rampal R., Carroll M.P., Meyer S.E., Viny A.D., Levine R.L. Single-cell mutation analysis of clonal evolution in myeloid malignancies. Nature. 2020 Nov;587(7834):477-482. doi: 10.1038/s41586-020-2864-x. Epub 2020 Oct 28. PMCID: PMC7677169.

View All Publications

People

Ross L. Levine, MD

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Professor

- Mechanisms of genetic and epigenetic cooperativity which drive myeloid transformation; Elucidating and modeling evolution from hematopoietic stem/progenitor cells to clonal hematopoiesis and then to myeloid malignancies; Identification and credentialing novel therapeutic dependencies in myeloid malignancies
- MD, Johns Hopkins School of Medicine

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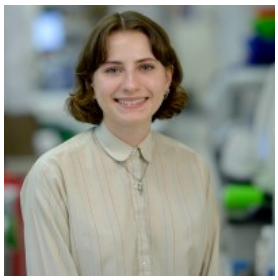
Members



Maya Bagish
Research Technician

Sheng Cai
Assistant Attending

Maria Teresa Calvo-Fernandez
Researcher and Leader

Lab Alumni

Lab Affiliations

Achievements

- Scholar, Leukemia and Lymphoma Society Scholar (2012)
- Louis and Allston Boyer Young Investigator Award for Basic Research, Memorial Sloan Kettering Cancer Center (2011)
- Member, American Society of Clinical Investigation (2011)
- Sir William Osler Young Investigator Award, Interurban Clinical Club (2011)

Christine Caprioli
Project Coordinator

Subyeta Chowdhury
MSK Bridge Program Scholar

Alexa Cohen
Research Technician

Hannah Fay
Research Scholar

Rebecca Gelfer
GSK Graduate Student

Open Positions

To learn more about available postdoctoral opportunities, please visit our Career Center

Alexander G. Goglia
Holman Research Pathway

Amritha Varshini Hanasoge Somasundara

To learn more about compensation and benefits for postdoctoral researchers at MSK, please visit Resources for Postdocs

Get in Touch

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Resident

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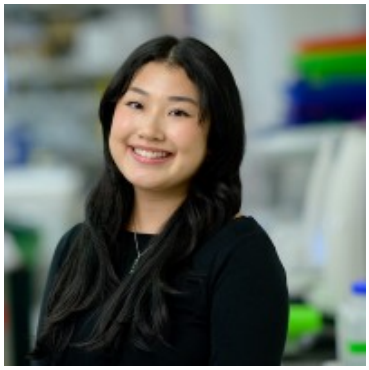
Lab Head Email

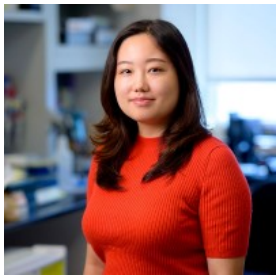


Celina Huang

Senior Research Technician

Mahak Kathpalia

Research Technician



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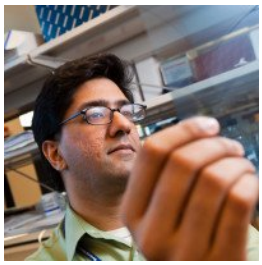


Raajit K. Rampal

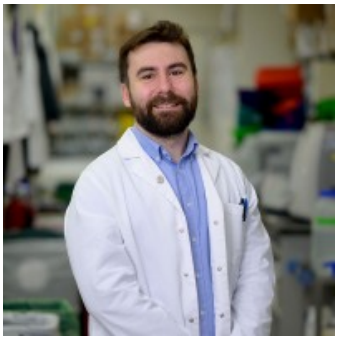
Associate Attending

Merve Sahin

Data Scientist II

Aisha Saldanha

GSK Graduate Student



Pablo Sánchez Vela

Senior Research Scientist

Matthew Wereski

Research Assistant

Wenbin Xiao

Associate Attending

Xiaodi Wu

Instructor

Disclosures

Members of the MSK Community often work with pharmaceutical, device, biotechnology, and life sciences companies, and other organizations outside of MSK, to find safe and effective cancer treatments, to improve patient care, and to educate the health care community. These activities outside of MSK further our mission, provide productive collaborations, and promote the practical application of scientific discoveries.

MSK requires doctors, faculty members, and leaders to report (“disclose”) the relationships and financial interests they have with external entities. As a commitment to transparency with our community, we make that information available to the public. Not all disclosed interests and relationships present conflicts of interest. MSK reviews all disclosed interests and relationships to assess whether a conflict of interest exists and whether formal COI management is needed.

Ross L. Levine discloses the following relationships and financial interests:

- Ajax Therapeutics, Inc.

  Equity; Intellectual Property Rights; Professional Services and Activities
- Auron Therapeutics, Inc.

  Equity

- Cure Breast Cancer Foundation

  Intellectual Property Rights

- Qiagen

  Equity; Professional Services and Activities

- The Mark Foundation for Cancer Research

  Fiduciary Role / Position

The information published here is a complement to other publicly reported data and is for a specific annual disclosure period. There may be differences between information on this and other public sites as a result of different reporting periods and/or the various ways relationships and financial interests are categorized by organizations that publish such data.

This page and data include information for a specific MSK annual disclosure period (as of December 2025). This data reflects interests that may or may not still exist. This data is updated annually.

Learn more about MSK's COI policies here . For questions regarding MSK's COI-related policies and procedures, email MSK's Compliance Office at ecoi@mskcc.org .

View all disclosures (https://www.sloankettering.edu/disclosures)