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The Kayvan Keshari Lab

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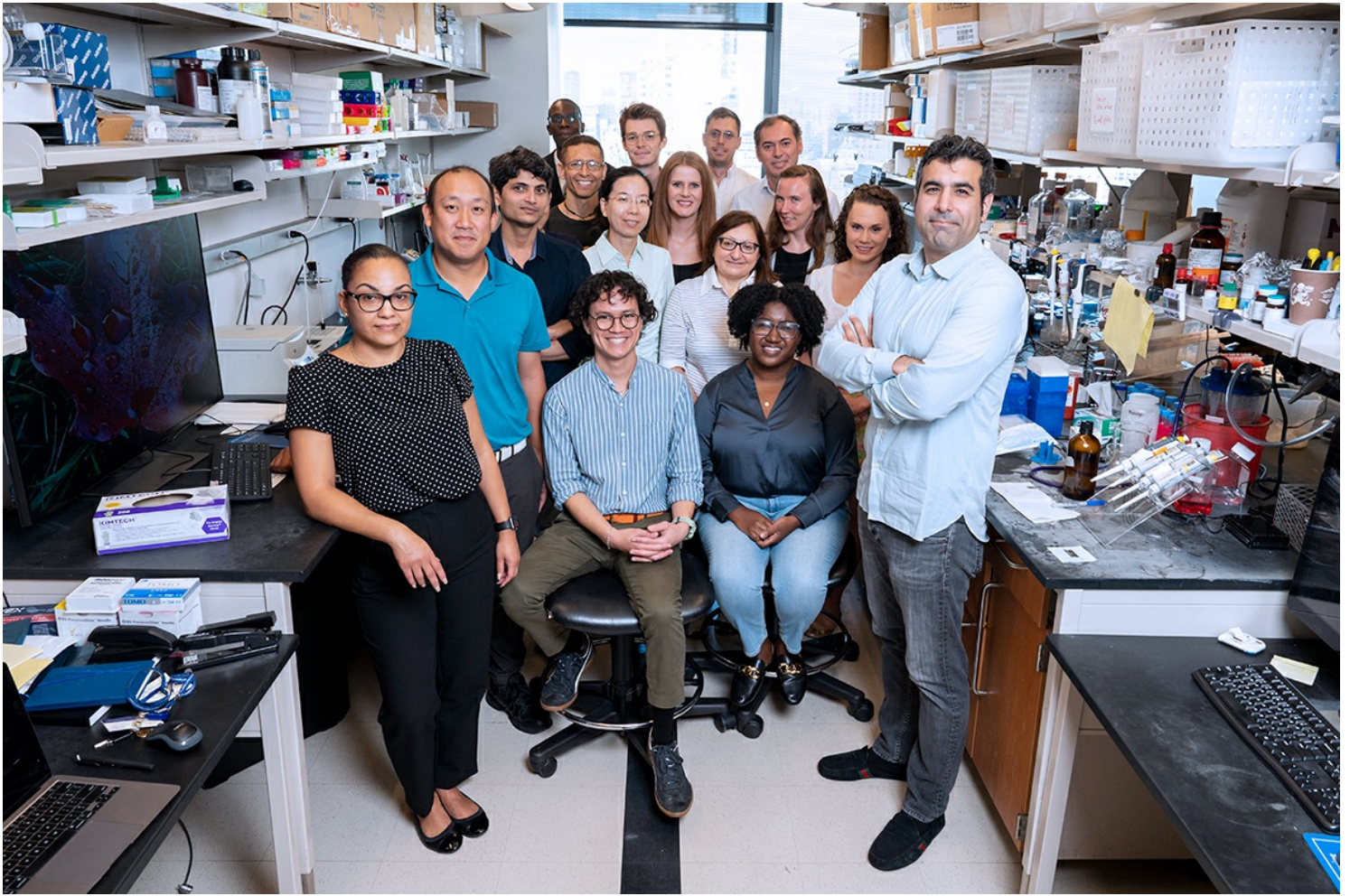
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Kayvan R. Keshari, PhD
Fred Lebow Chair at MSK

The goal of our research program is to improve our biochemical understanding of cancer metabolism and use metabolic changes to develop non-invasive methods for diagnosis as well as approaches to treat cancer. Our work takes advantage of multi-modality methods at all scales, with a special focus in hyperpolarized magnetic resonance, allowing us the ability to bring these approaches to the clinic.

[View Lab Overview](#) →



Featured News

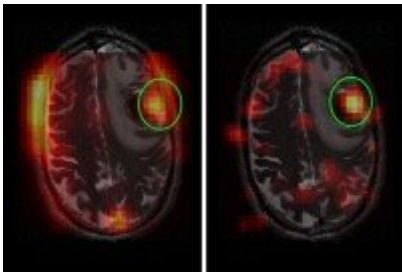
IN THE LAB



[Fructose Could Play a Role in Targeting Leukemia](#)

Leukemia cells metabolize fructose in a way that could make them easier to target with drugs.

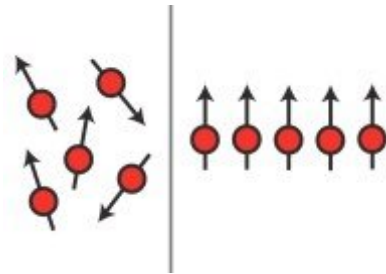
FEATURE



[New Imaging Technique Provides Snapshot of Brain Tumor Activity](#)

A new imaging approach could shorten the time needed to determine whether a brain tumor treatment is working.

IN THE CLINIC



[Hyperpolarized MRI: A New Tool to Assess Treatment Response within Days](#)

Hyperpolarized MRI could allow doctors to get a read on a tumor's response to treatment quickly.

Publications Highlights

DeBerardinis, R. J., & Keshari, K. R. (2022). Metabolic analysis as a driver for discovery, diagnosis, and therapy. *Cell*, 185(15), 2678–2689. <https://doi.org/10.1016/j.cell.2022.06.029>

Tee, S. S., Kim, N., Cullen, Q., Eskandari, R., Mamakhanyan, A., Srouji, R. M., Chirayil, R., Jeong, S., Shakiba, M., Kastenhuber, E. R., Chen, S., Sigel, C., Lowe, S. W., Jarnagin, W. R., Thompson, C. B., Schietinger, A., & Keshari, K. R. (2022). Ketohexokinase-mediated fructose metabolism is lost in hepatocellular carcinoma and can be leveraged for metabolic imaging. *Science advances*, 8(14), eabm7985. <https://doi.org/10.1126/sciadv.abm7985>

Jeong, S., Savino, A. M., Chirayil, R., Barin, E., Cheng, Y., Park, S. M., Schurer, A., Mullarky, E., Cantley, L. C., Kharas, M. G., & Keshari, K. R. (2021). High Fructose Drives the Serine Synthesis Pathway in Acute Myeloid Leukemic Cells. *Cell metabolism*, 33(1), 145–159.e6. <https://doi.org/10.1016/j.cmet.2020.12.005>

Granlund, K. L., Tee, S. S., Vargas, H. A., Lyashchenko, S. K., Reznik, E., Fine, S., Laudone, V., Eastham, J. A., Touijer, K. A., Reuter, V. E., Gonen, M., Sosa, R. E., Nicholson, D., Guo, Y. W., Chen, A. P., Tropp, J., Robb, F., Hricak, H., & Keshari, K. R. (2020). Hyperpolarized MRI of Human Prostate Cancer Reveals Increased Lactate with Tumor Grade Driven by Monocarboxylate Transporter 1. *Cell metabolism*, 31(1), 105–114.e3.

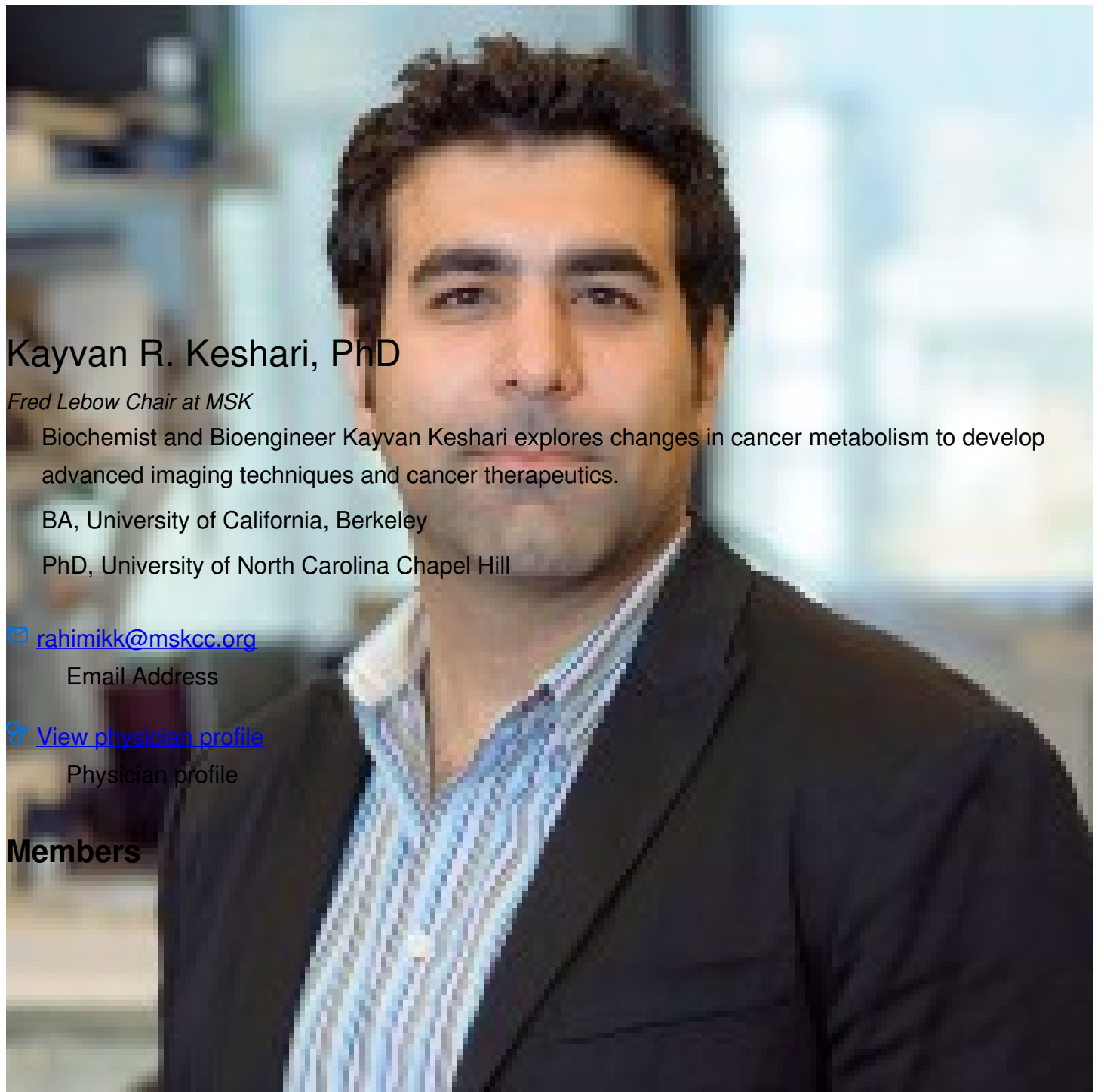
<https://doi.org/10.1016/j.cmet.2019.08.024>

Salamanca-Cardona, L., Shah, H., Poot, A. J., Correa, F. M., Di Gialleonardo, V., Lui, H., Miloushev, V. Z., Granlund, K. L., Tee, S. S., Cross, J. R., Thompson, C. B., & Keshari, K. R. (2017). In Vivo Imaging of Glutamine Metabolism to the Oncometabolite 2-Hydroxyglutarate in IDH1/2 Mutant Tumors. *Cell metabolism*, 26(6), 830–841.e3.

<https://doi.org/10.1016/j.cmet.2017.10.001>

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People



Kayvan R. Keshari, PhD

Fred Lebow Chair at MSK


Biochemist and Bioengineer Kayvan Keshari explores changes in cancer metabolism to develop advanced imaging techniques and cancer therapeutics.

BA, University of California, Berkeley

PhD, University of North Carolina Chapel Hill

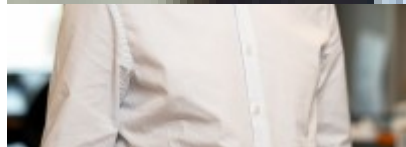
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Physician profile

Members



Marjan Berishaj

Senior Research
Technician



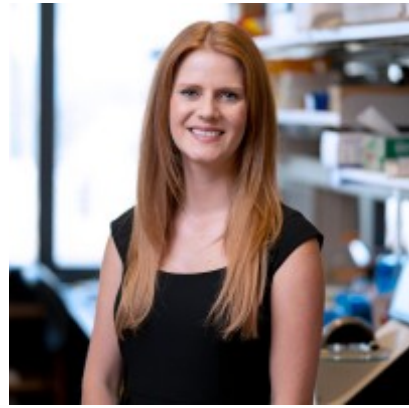
**Ross
Boltyanskiy**

Assistant Director- Imaging
& Bioengineering Lead



Yolanda Bryce

Assistant Attending



Elizabeth Coffee

Instructor, Neuro-Oncology

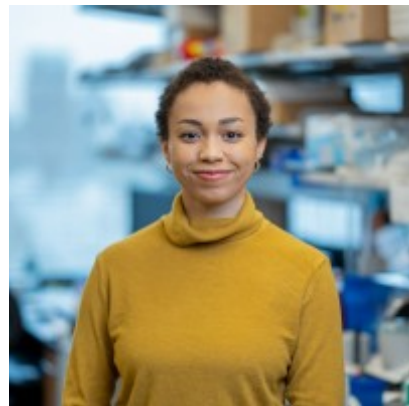
John Consiglio



Quinlan

Cullen

Graduate Student



Lyric Haughton

Research Technician



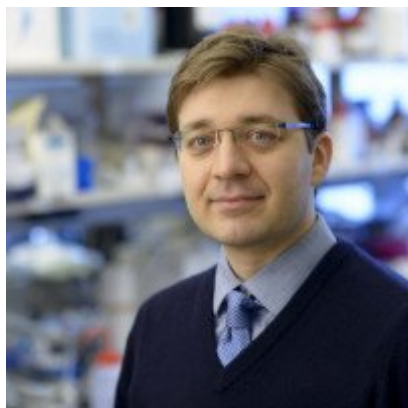
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Project Coordinator



Celia Martinez de la
Torre

Research Scholar



Vesselin
Miloushev

Assistant Attending



Saket
Patel

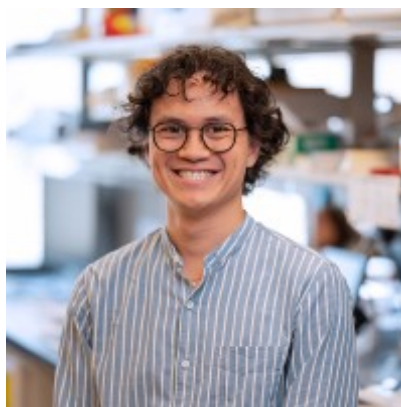
Research Scholar

Thasin Peyear
Graduate Student



Paola Porcari

Senior Research Scientist



Thomas Ruan

Graduate Student



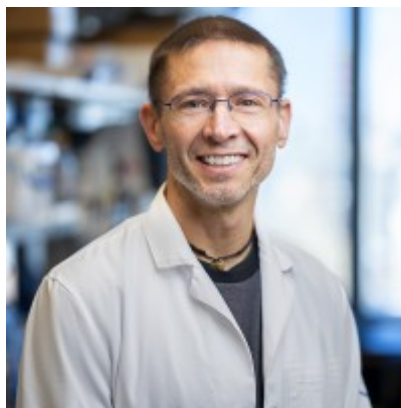
Nancy Santiappillai

Research Fellow



Tanya Schild

Research Fellow

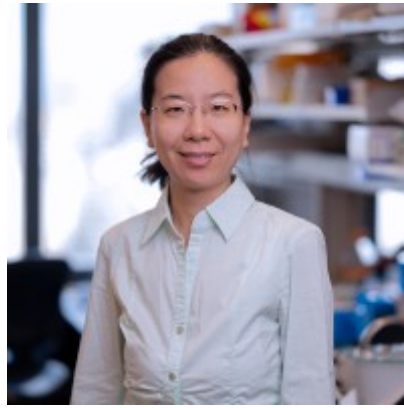


Thomas
Smoot

Research Technician



Briana Turner
Graduate Student



Guannan
Zhang
Research Fellow

Lab Alumni
+

Lab Affiliations
+

Achievements

NIH Pathway Independent Award 2012

Lab News & Events

UPCOMING EVENT

[“IMAGE BASED” CANCER SYSTEMS BIOLOGY - The Next Frontier in Oncoengineering...](#)

Tuesday, March 19, 2024 - 4:00 PM to 5:00 PM

Memorial Sloan Kettering Cancer Center
Rockefeller Research Laboratories

430 East 67th Street
Room RRL-116
New York, NY 10065

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Get in Touch

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Disclosures

Doctors and faculty members 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.

MSK requires doctors and faculty members 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.

Kayvan R. Keshari discloses the following relationships and financial interests:

Atish Technologies, Inc.

Equity; Intellectual Property Rights

Bruker BioSpin GmbH

Professional Services and Activities (Uncompensated)

Imaginostics, Inc.

Equity

NVision Imaging Technologies GmbH

Equity; Professional Services and Activities

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This page and data include information for a specific MSK annual disclosure period (January 1, 2022 through disclosure submission in spring 2023). 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.

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