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Memorial Sloan Kettering
Cancer Center

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CHEMICAL BIOLOGY PROGRAM

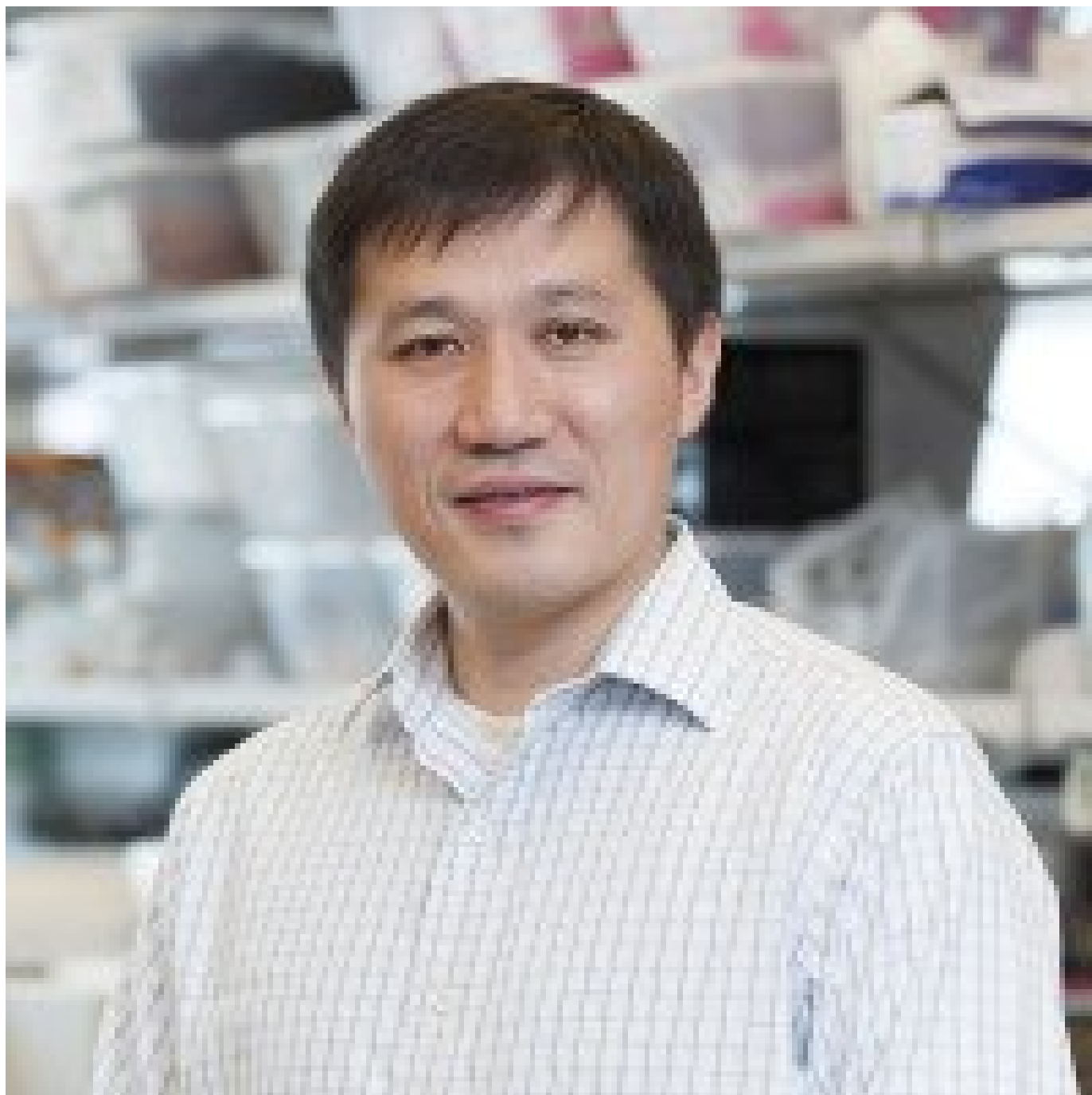
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The Minkui Luo Lab

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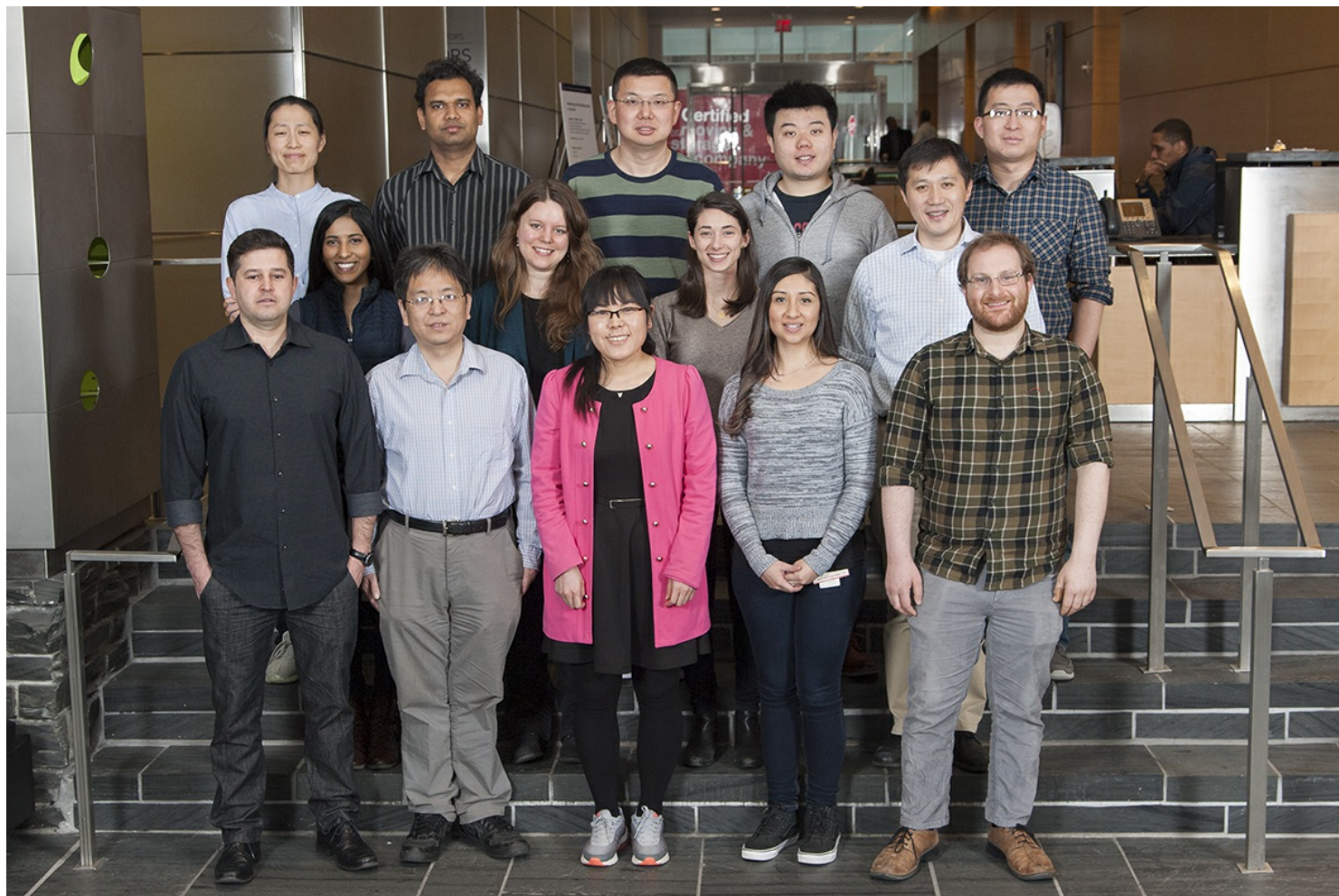
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Minkui Luo, PhD

The Luo Lab is interested in developing and leveraging novel approaches at the interface of chemistry and biology to annotate functional roles of epigenetic modulators. Epigenetic regulation is essential for maintaining cellular fates and its dysregulation has been associated with various diseases including cancer. Among key epigenetic modulators are diverse protein methyltransferases/demethylases and methyl-arginine/lysine (Rme/Kme) effector proteins. With novel chemical tools developed in-house, we aim to systematically interrogate Rme/Kme-involved epigenetics with emphasis on novel molecular mechanisms and biological outcomes. The Luo laboratory is also interested in designing and synthesizing epigenetic inhibitors with the emphasis of the distinct modes of action in disease-relevant contexts. Researchers in the Luo Lab with expertise in chemistry, biochemistry and biology work in a highly collaborative manner to develop unprecedented chemical reagents for biological discovery, elucidate disease-causing mechanisms with molecular details, and explore novel treatments against cancer.



Featured News

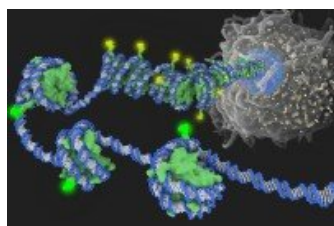
IN THE LAB



[Computational “Hive Mind” Helps Scientists Solve an Enzyme’s Cryptic Movements](#)

The breakthrough gives an unprecedented look at the varied and shifting poses of a protein in action.

Q&A



[Setting Cancer Cells on the Right Path: A New Leukemia Drug Shows Growing Promise](#)

An experimental drug for acute myelogenous leukemia might potentially help many more patients than previously thought by controlling epigenetic processes, according to a recent MSK study.

Publications Highlights

Cai XC, Zhang T, Kim EJ, Jiang M, Wang K, Wang J, Chen S, Zhang N, Wu H, Li F, Dela Seña CC, Zeng H, Vivcharuk V, Niu X, Zheng W, Lee JP, Chen Y, Barsyte D, Szewczyk M, Hajian T, Ibáñez G, Dong A, Dombrowski L, Zhang Z, Deng H, Min J, Arrowsmith CH, Mazutis L, Shi L, Vedadi M, Brown PJ, Xiang J, Qin LX, Xu W, Luo M. A chemical probe of CARM1 alters epigenetic plasticity against breast cancer cell invasion. *Elife*. 2019 Oct 28;8:e47110. This work was highlighted by Elife Digest.

Chen S, Kapilashrami K, Senevirathne C, Wang Z, Wang J, Linscott JA, Luo M. Substrate-Differentiated Transition States of SET7/9-Catalyzed Lysine Methylation. *J Am Chem Soc*. 2019 May 22;141(20):8064-8067.

Chen S, Wiewiora RP, Meng F, Babault N, Ma A, Yu W, Qian K, Hu H, Zou H, Wang J, Fan S, Blum G, Pittella-Silva F, Beauchamp KA, Tempel W, Jiang H, Chen K, Skene RJ, Zheng YG, Brown PJ, Jin J, Luo C, Chodera JD, Luo M. The dynamic conformational landscape of the protein methyltransferase SETD8. *Elife*. 2019 May 13;8:e45403. This work was highlighted by Elife Digest, News of Shanghai Institute of Materia Medica, MSKCC Blog, and TPCB Webpage.

[View All Publications](#)

People



Minkui Luo, PhD


Chemical Biologist Minkui Luo develops cutting-edge tools, technologies and concepts to annotate functions of protein-posttranslational modifications and designs inhibitors for cancer therapies.

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PhD, Princeton University

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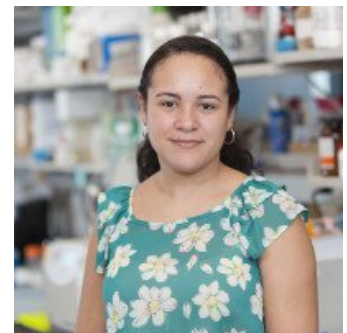
Members

Luo

Lab Head

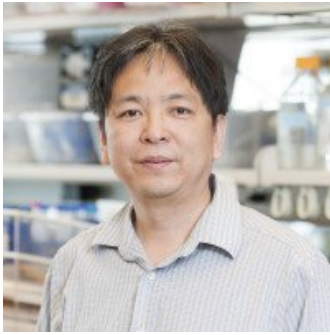
Research Technician

Former Research Fellow



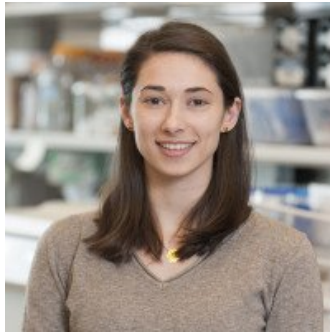
Laura Vidal

Administrative Assistant



Ke Wang

Senior Research Scientist



Nicole Weiss

Research Fellow

Yu

Zong

Research Fellow

Lab Alumni

+

Lab Affiliations

+

Achievements

Maximizing Investigators' Research Award (R35), NIGMS/NIH (2019)

Eli Lilly Award in Biological Chemistry, American Chemical Society (2015)

Clinical & Translational Science Center Novel Award, Weill Cornell Medical College (2014)

Basil O'Connor Starter Scholar, March of Dimes Birth Defects Foundation (2011)

Director's New Innovator Award, National Institutes of Health (2010)

Read more

+

Lab News & Events

UPCOMING EVENT

[A New Family of Metabolites-mediated Lysine Acylation Pathways: Biochemistry, Epigenetics and Pathophysiology](#)

Tuesday, May 7, 2024 - 4:00 PM to 5:00 PM

Memorial Sloan Kettering Cancer Center

Zuckerman Research Center

417 East 68th Street

Room ZRC-105

Open Positions

To learn more about available postdoctoral opportunities, please visit our [Career Center](#)

To learn more about compensation and benefits for postdoctoral researchers at MSK, please visit [Resources for Postdocs](#)

Career Opportunities

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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.

Minkui Luo discloses the following relationships and financial interests:

American Society for Biochemistry and Molecular Biology

Professional Services and Activities (Uncompensated)

Elsevier

Professional Services and Activities

FASEB

Professional Services and Activities (Uncompensated)

Gordon Research Conferences

Professional Services and Activities (Uncompensated)

King Abdullah University of Science and Technology

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Pacifichem, Inc.

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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.

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