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IMMUNOLOGY PROGRAM

# **The Joseph Sun Lab**

[Cancer Biology](#)

## **Research**

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[Cancer Engineering](#)

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Joseph Sun, PhD

Professor

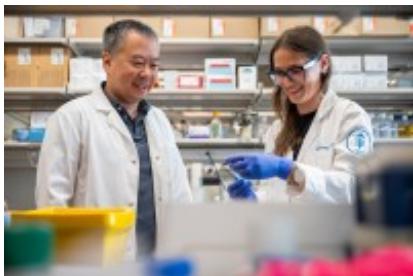
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The immune system responds to viral infections by introducing a complex interplay of immune cells and factors, whose goal is to eliminate the intruding pathogen. One such effector cell in the antiviral response is the Natural Killer (NK) cell, which secretes inflammatory cytokines and directly kills infected cells. The focus of our research is aimed at defining the signals that NK cells require to mount an effective immune response against pathogens. We are also exploring the regulatory mechanisms keeping NK cells in check, thereby safeguarding against potential autoimmunity.

[View Lab Overview](https://www.sloankettering.edu/research-areas/labs/joseph-sun/overview) (<https://www.sloankettering.edu/research-areas/labs/joseph-sun/overview>)

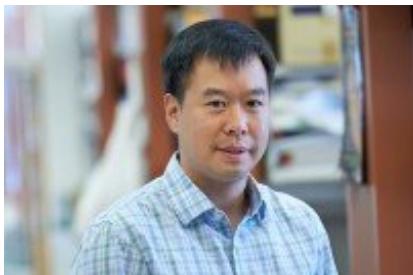


## Featured News



## Fasting Primes the Immune System's Natural Killer Cells to Better Fight Cancer, New Study in Mice Finds

Animal model research from MSK has shown for the first time that fasting can reprogram the metabolism of natural killer cells, helping them to survive in the harsh environment in and around tumors, while also improving their cancer-fighting ability.



## At Work: Immunologist Joseph Sun

Immunologist Joseph Sun is an investigator in the Sloan Kettering Institute's Immunology Program. Dr. Sun's research is focused on natural killer cells, a part of what is called the innate immune system.

### FEATURE



## Meet the Unsung Immune Cell that Could Change Immunotherapy

A lesser-known immune cell is suddenly getting more attention in the field of cancer immunology.

## **Publications Highlights**

Delconte RB, Owyong M, Santosa EK, Srpan K, Sheppard S, McGuire TJ, Abbasi A, Diaz-Salazar C, Chun J, Rogatsky I, Hsu KC, Jordan S, Merad M, Sun JC. 2024. Fasting reshapes tissue-specific niches to improve NK cell-mediated anti-tumor immunity. *Immunity*. 57(8):1923-1938.e7.

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Santosa EK, Kim H, Rückert T, Le Luduec JB, Abbasi AJ, Wingert CK, Peters L, Frost JN, Hsu KC, Romagnani C, Sun JC. 2023. Control of nutrient uptake by IRF4 orchestrates innate immune memory. *Nat Immunol*. 24(10):1685-1697.

[View All Publications](#)

## People



## Joseph Sun, PhD

Professor

- Immunologist Joseph Sun investigates the natural killer cell response against infection and cancer.
- PhD, University of Washington

[✉ sunj@mskcc.org](mailto:sunj@mskcc.org)

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## Members



Veronica Shields  
Administrative Assistant



Teresa Cato  
Research Technician

Lab  
Alumni

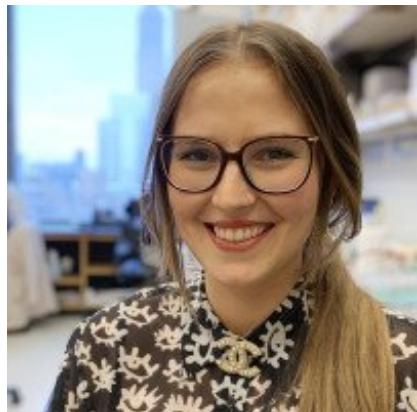
Lab Affiliations

## Achievements

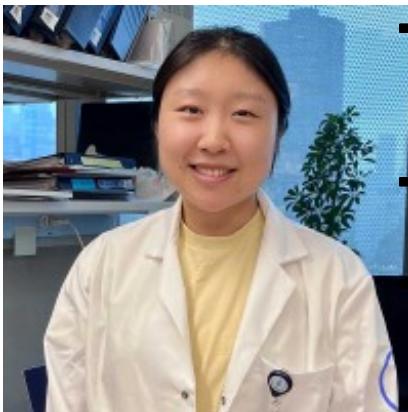
- Weill Cornell Graduate School Outstanding Teaching & Mentoring

Award (2022)

- American Cancer Society Research Scholar (2017)



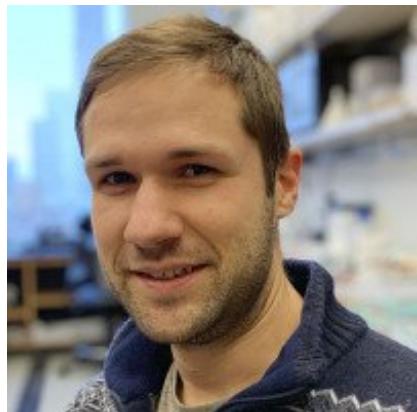
Rebecca Delconte  
Research Fellow



Sherry Fan  
Graduate Student

- Burroughs Wellcome Fund Investigator in Infectious Disease (2016)
- Boyer Young Investigator Award for Basic Research (2015)
- Geoffrey Beene Junior Faculty Chair (2014)

## Lab News & Events



Simon Grassmann  
Research Fellow



Hyunu Kim  
Graduate Student



Mariah Lee  
Graduate Student



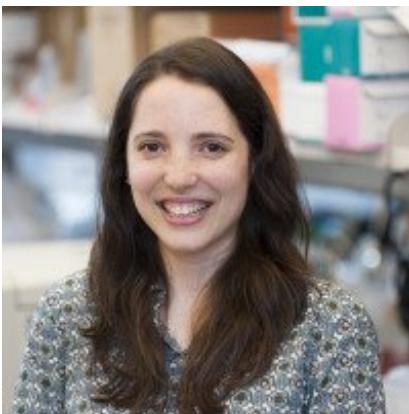
Tomi McGuire  
Graduate Student

[Lab Photo Album](#)

## 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](#)



Adriana Mujal  
Research Fellow



Mark Owyong  
Graduate Student



Timo Ruckert  
Research Fellow

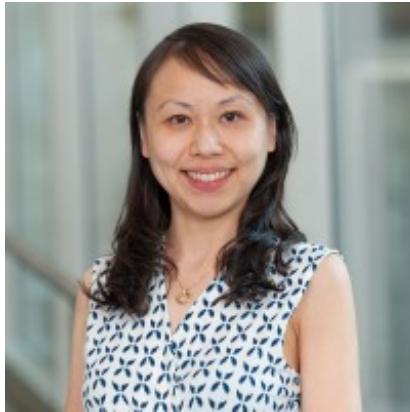


Jack Sauter  
Research Technician



Joseph Sun  
Member

[now \(<https://www.sloankettering.edu/research-areas/labs/joseph-sun/career-opportunities>\)](https://www.sloankettering.edu/research-areas/labs/joseph-sun/career-opportunities)



Jennifer Tsai  
Clinical Fellow

## Career Opportunities

[Apply](#)



Jennifer Zhang

Research Technician

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Office Fax

📞 [646-888-3237](tel:646-888-3237)

Lab Phone

## 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.

Joseph Sun discloses the following relationships and financial interests:

*No disclosures meeting criteria for time period*

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.

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This page and data include information for a specific MSK annual disclosure period (January 1, 2024 through disclosure submission in spring 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](mailto:ecoi@mskcc.org).

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

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