Gerstner Sloan Kettering
Graduate School of Biomedical Sciences

CANCER BIOLOGY & GENETICS PROGRAM

The Craig Thompson Lab

Research

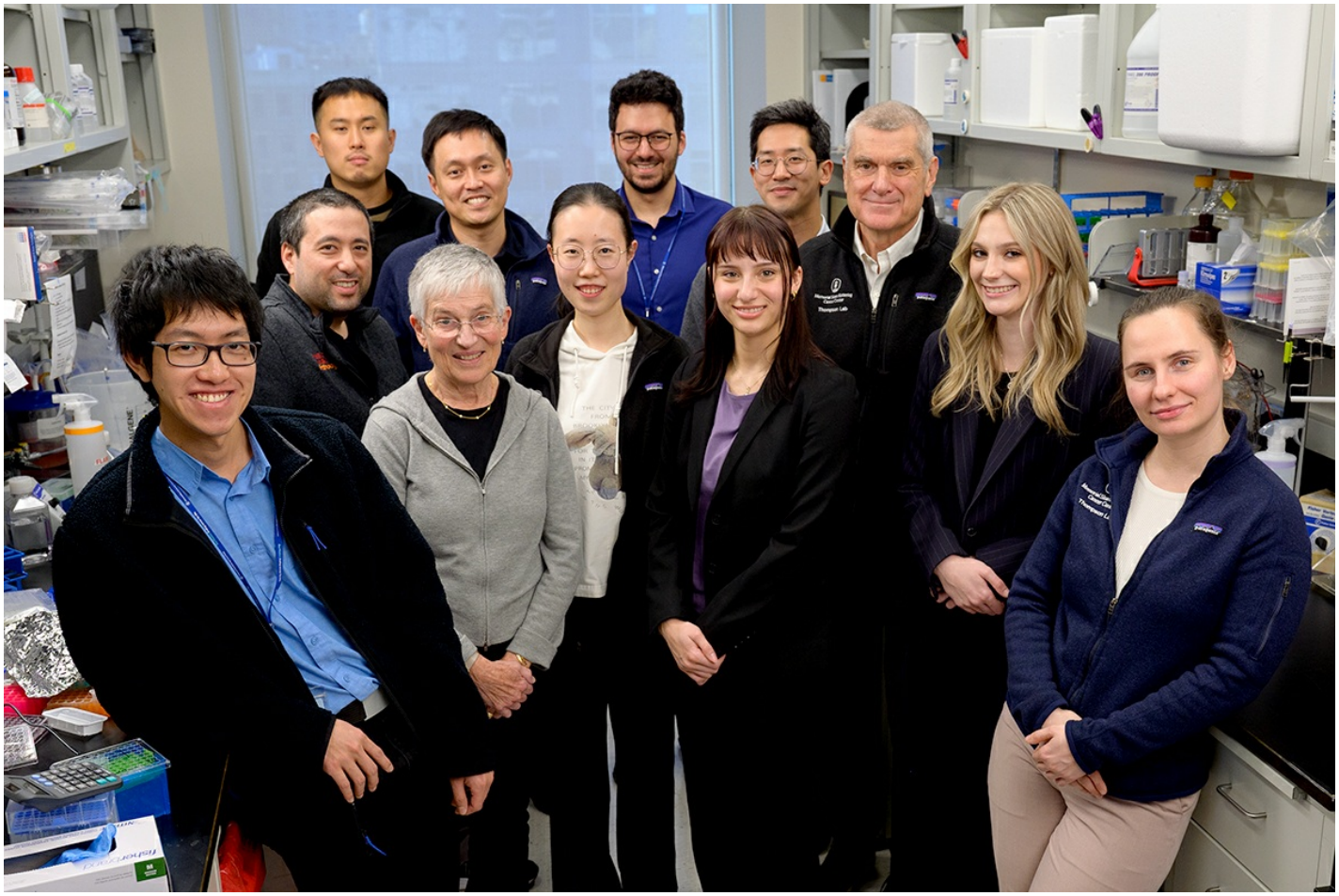
Craig B. Thompson, MD

Benno C. Schmidt Chair of Cancer Research

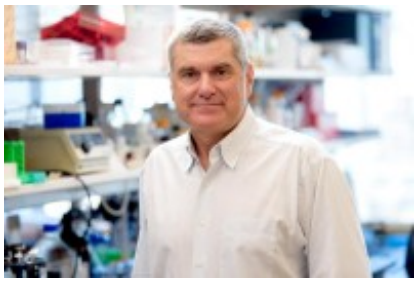
Professor

The Thompson laboratory has proposed that the basis of metazoan cell survival is determined by the inability of cells to take up nutrients in a cell-autonomous fashion. This hypothesis was formulated to explain how multicellularity might have arisen during evolution. We believe the lack of a cell-intrinsic mechanism to regulate nutrient uptake provides the first and most fundamental barrier to cell transformation.

View Lab Overview (https://www.sloankettering.edu/research-areas/labs/craig-thompson/overview)



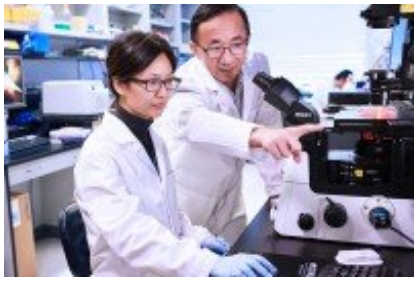
Featured News



New MSK Research Reveals How Mitochondria Function Under Stress Like Cancer

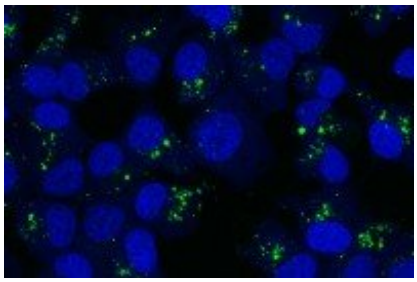
Mitochondria provide both the energy cells need to survive and the building blocks they need to grow and divide. Researchers at the Sloan Kettering Institute reveal for the first time how mitochondria choose between these opposing paths — and what implications it may have for cancer.

IN THE LAB



More Evidence that Cellular ‘Death by Iron’ Could Be Promising Avenue of Cancer Treatment

Cancers with certain mutations are vulnerable to ferroptosis, a form of iron-dependent cell death.



Research Published in Genes and Development from Craig Thompson Lab

New research from the Craig Thompson Lab offers a closer look at the transcriptional activators, Yap/Taz, and the role they play in cell growth and macropinocytosis.

View All Featured News

Publications Highlights

King, B., Araki, J., Palm, W., & Thompson, C. B. (2020). Yap/Taz promote the scavenging of extracellular nutrients through macropinocytosis. *Genes & development*, 10.1101/gad.340661.120. Advance online publication.

Vardhana, S. A., Hwee, M. A., Berisa, M., Wells, D. K., Yost, K. E., King, B., Smith, M., Herrera, P. S., Chang, H. Y., Satpathy, A. T., van den Brink, M., Cross, J. R., & Thompson, C. B. (2020). Impaired mitochondrial oxidative phosphorylation limits the self-renewal of T cells exposed to persistent antigen. *Nature immunology*, *21*(9), 1022–1033.

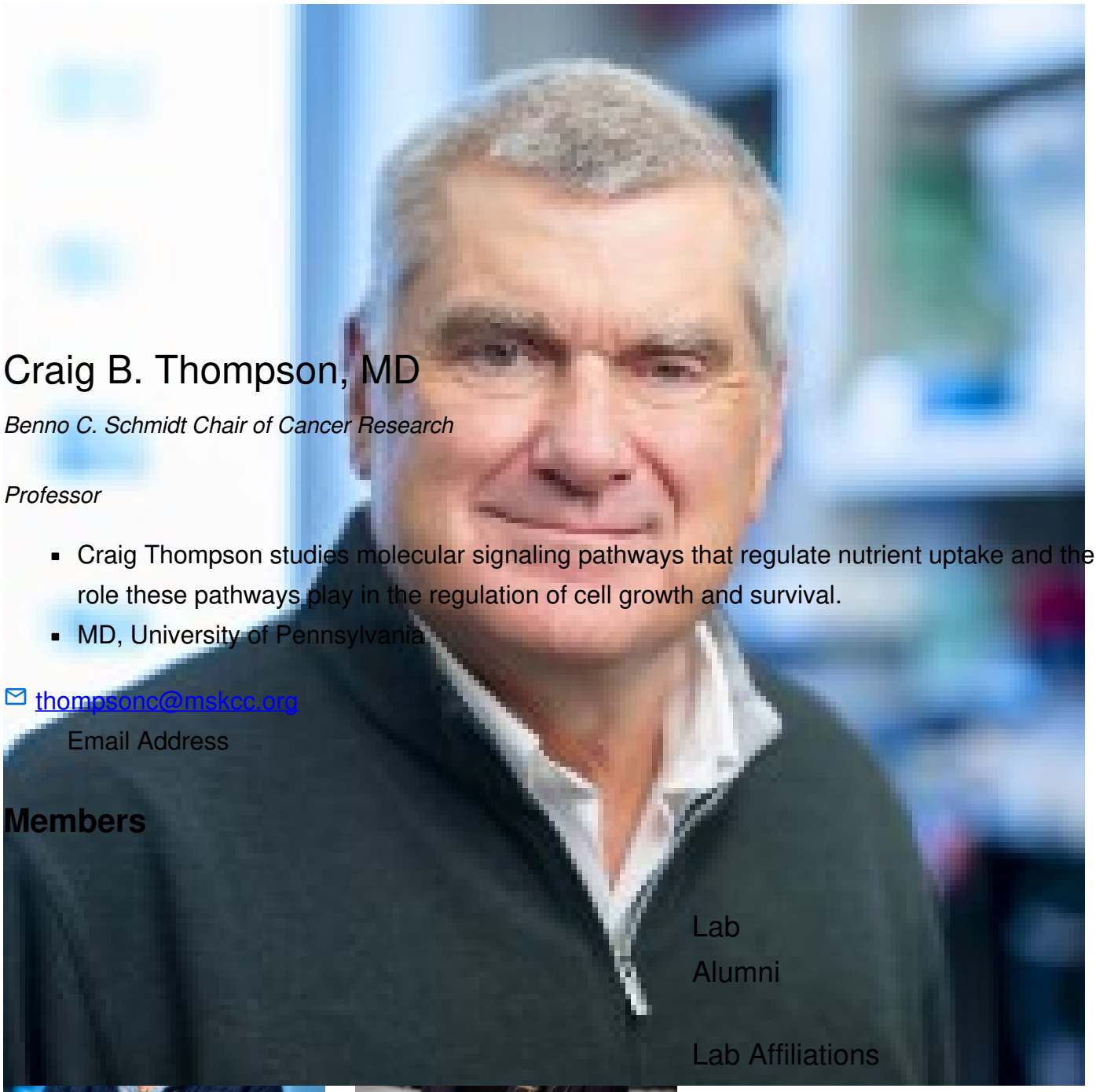
Schwörer, S., Berisa, M., Violante, S., Qin, W., Zhu, J., Hendrickson, R. C., Cross, J. R., & Thompson, C. B. (2020). Proline biosynthesis is a vent for TGFβ-induced mitochondrial redox stress. *The EMBO journal*, *39*(8), e103334.

Li, A. M., Ducker, G. S., Li, Y., Seoane, J. A., Xiao, Y., Melemenidis, S., Zhou, Y., Liu, L., Vanharanta, S., Graves, E. E., Rankin, E. B., Curtis, C., Massagué, J., Rabinowitz, J. D., Thompson, C. B., & Ye, J. (2020). Metabolic Profiling Reveals a Dependency of Human Metastatic Breast Cancer on Mitochondrial Serine and One-Carbon Unit Metabolism. *Molecular cancer research : MCR*, *18*(4), 599–611.

Zhu, J., Berisa, M., Schwörer, S., Qin, W., Cross, J. R., & Thompson, C. B. (2019). Transsulfuration Activity Can Support Cell Growth upon Extracellular Cysteine Limitation. *Cell metabolism*, *30*(5), 865–876.e5.

View All Publications

People



Craig B. Thompson, MD

Benno C. Schmidt Chair of Cancer Research

Professor

- Craig Thompson studies molecular signaling pathways that regulate nutrient uptake and the role these pathways play in the regulation of cell growth and survival.
- MD, University of Pennsylvania

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Members

Lab
Alumni

Lab Affiliations

Tullia Lindsten
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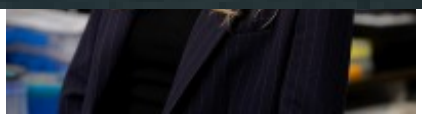

Shelby Brown
Research Technician

Open Positions

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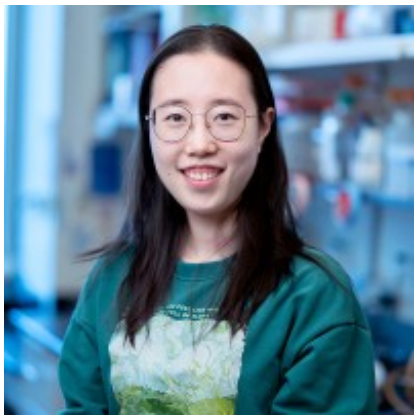
To learn more about compensation and benefits for postdoctoral researchers at MSK, please visit Resources for Postdocs



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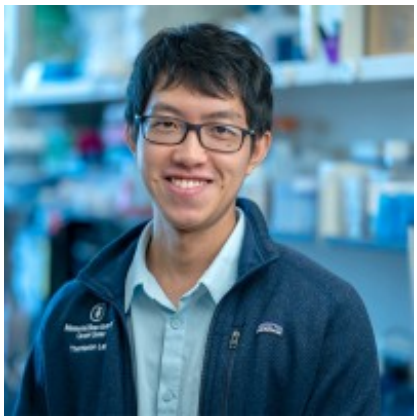

Tak Shun Fung

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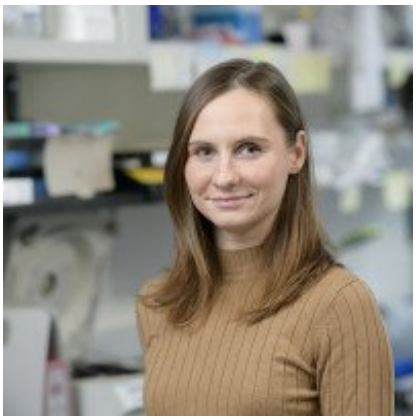

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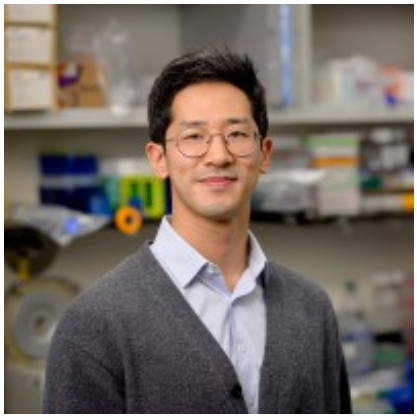
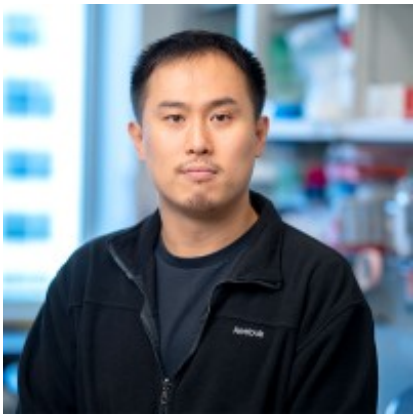
Lab Administrative Assistant



Ji-Young Kim

Research Fellow



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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.

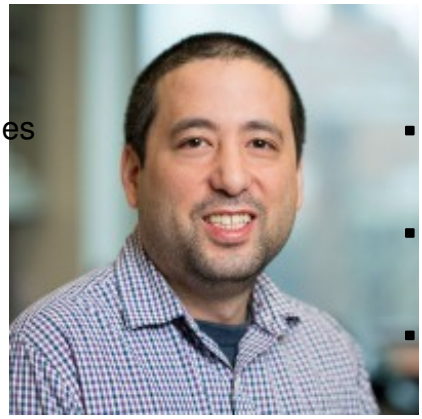
MSK requires doctors, faculty members, and leaders to report ("disclose") the relationships and financial interests they have with external entities. As a commitment to transparency with our community, we make that information available to the public. Not all disclosed interests and relationships present 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.

Craig B. Thompson discloses the following relationships and financial interests:

- Albert and Mary Lasker Foundation

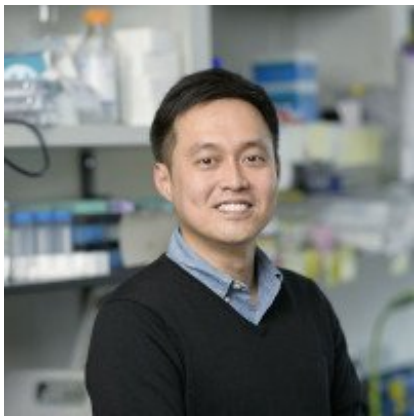
Alexandria Markovitz

Research Technician



Charles Ng

Research Fellow



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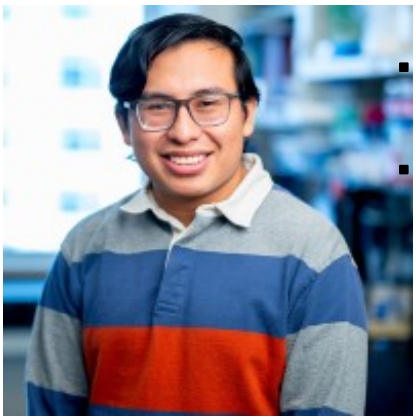
Postdoctoral fellow



Elias Tzoc-Pacheco

Research Tech

Charles River Laboratories

Professional Services and Activities

(Uncompensated)

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- Economic Club of New York

  Fiduciary Role / Position
- Elsevier

  Intellectual Property Rights
- Hakluyt & Company

  Professional Services and Activities
- Howard Hughes Medical Institute

  Professional Services and Activities
- Regeneron Pharmaceuticals, Inc.

  Equity; Fiduciary Role / Position

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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.

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