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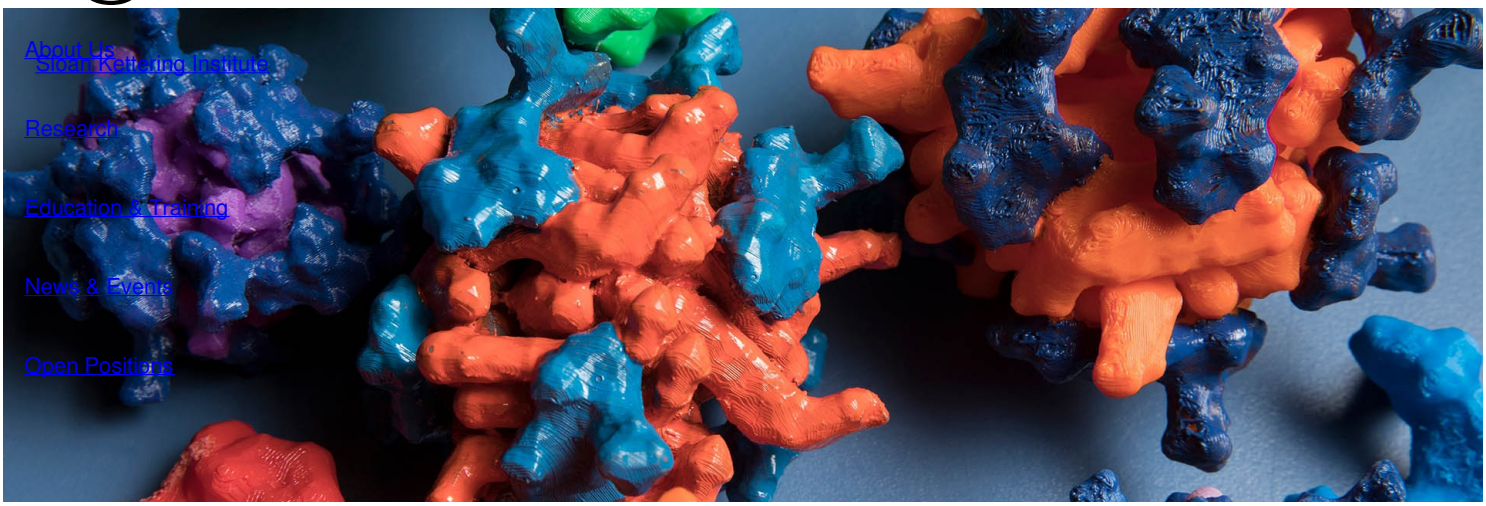
Memorial Sloan Kettering Cancer Center





# Molecular Pharmacology Program

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The Molecular Pharmacology Program at SKI serves as a conduit for advancing basic biological discoveries into the preclinical and clinical settings. Our research spans the full spectrum of pharmacological interests, from small molecule drug development, drug sensitivity and resistance, molecular biology of drug action, cell signaling, drug delivery, transcriptional regulation, stem cells, and neuropharmacology to nanoparticle design and applications, smart drugs, imaging agents, and antibody, cell, vaccine, and cytokine therapies. Discoveries in the laboratory are often tested in clinic at Memorial Hospital, where many of our faculty also hold appointments.

Our multidisciplinary collaborations across the MSK community as well as with nearby Rockefeller University and Weill Cornell Medicine place us in a unique position to accelerate the development of novel therapies for patients.

Molecular Pharmacology Chair Omar Abdel-Wahab

## Our Faculty

Omar Abdel-Wahab, MD
Chair, Molecular Pharmacology Program
Physician-scientist Omar Abdel-Wahab studies the functional genomics of hematopoietic malignancies.

Karuna Ganesh, MD, PhD
Physician-scientist Karuna Ganesh studies stem cell plasticity in metastasis, therapy resistance and tissue regeneration.

Jan Grimm, MD, PhD

Radiologist and Nuclear Medicine physician Jan Grimm develops novel approaches for improved diagnosis, monitoring and therapy of prostate and other cancers.

Daniel A. Heller, PhD

Biomedical engineer Daniel Heller is Head of the Cancer Nanotechnology Laboratory, which invents disruptive technologies to revolutionize the diagnosis and treatment of cancer and allied diseases.

Hedvig Hricak, MD, PhD

Radiologist Hedvig Hricak researches methodologies of molecular imaging of prostate and gynecologic tumors.

Alex Kentsis, MD, PhD

Cancer biologist and pediatric oncologist Alex Kentsis leads research in the functional proteomics and molecular pharmacology of refractory childhood cancers.

Michael G. Kharas, PhD

Cancer biologist Michael Kharas studies RNA regulators of self-renewal in both normal and leukemic hematopoiesis.

Richard N. Kolesnick, MD

Physician-scientist Richard Kolesnick studies the role of ceramide signaling in radiation-induced vascular dysfunction and tumor regression.

Neal Rosen, MD, PhD

Pharmacologist Neal Rosen focuses on understanding biochemical mechanisms underlying phenotypes caused by tyrosine kinase activation in epithelial tumors and developing new therapeutic strategies.

David A. Scheinberg, MD, PhD

Molecular Pharmacology Program Member David Scheinberg focuses on the discovery and development of novel, specific immunotherapeutic agents and targeted nanodevices for cancer therapy.

Xinbo Yang, PhD

Xinbo Yang's lab applies structural biology and protein engineering to decode T cell receptor specificity in cancer and autoimmune disease.

## Joint Appointees

Kayvan R. Keshari, PhD

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

Jason S. Lewis, PhD

Radiochemist Jason Lewis develops molecular imaging agents for the imaging and therapy of cancer.

Charles M. Rudin, MD, PhD

Physician-scientist Charles Rudin focuses on the development and testing of novel therapeutic approaches to lung cancer in preclinical models.

## Emeritus

Ronald Blasberg, MD

Zvi Fuks, MD

## Collaborations & Resources

SKI offers a wide array of core facilities and other technologies, as well as significant opportunity for collaboration across MSK. Members of the Molecular Pharmacology Program derive particular benefit from close ties to the following:

- Center for Experimental Therapeutics
- Center for Molecular Imaging and Nanotechnology
- Geoffrey Beene Cancer Research Center
- Tri-Institutional Therapeutics Discovery Institute

## Education & Training

The Molecular Pharmacology Program regularly hosts postdoctoral fellows and students from the following graduate programs:

- Gerstner Sloan Kettering Graduate School for Biomedical Sciences
- Weill Cornell Graduate School of Medical Sciences
- Tri-Institutional MD/PhD Program

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