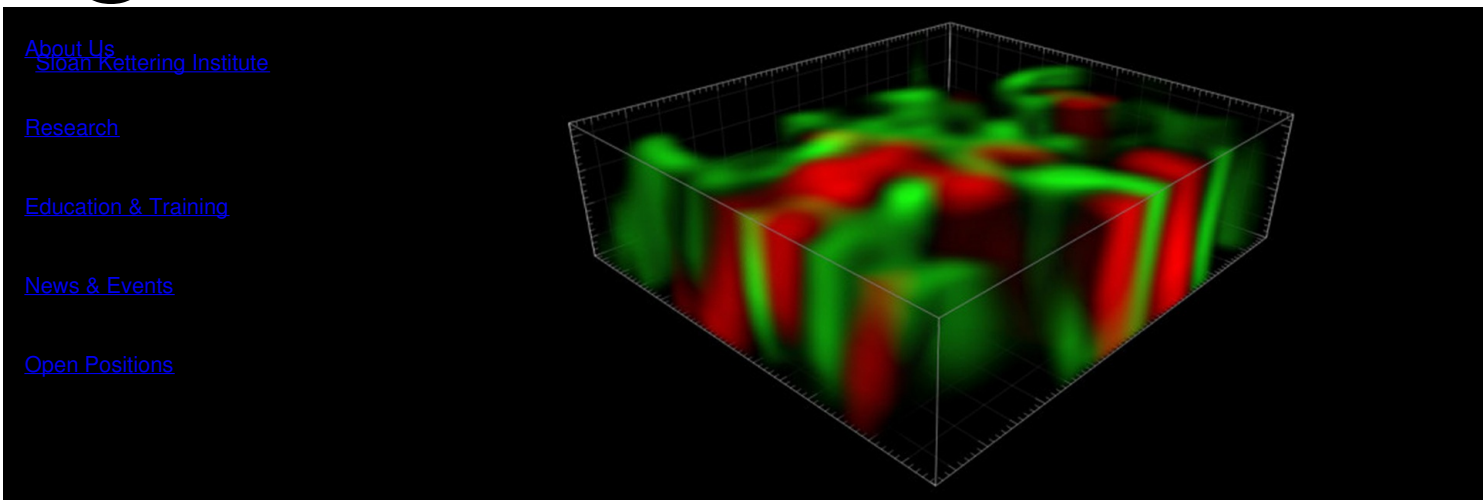


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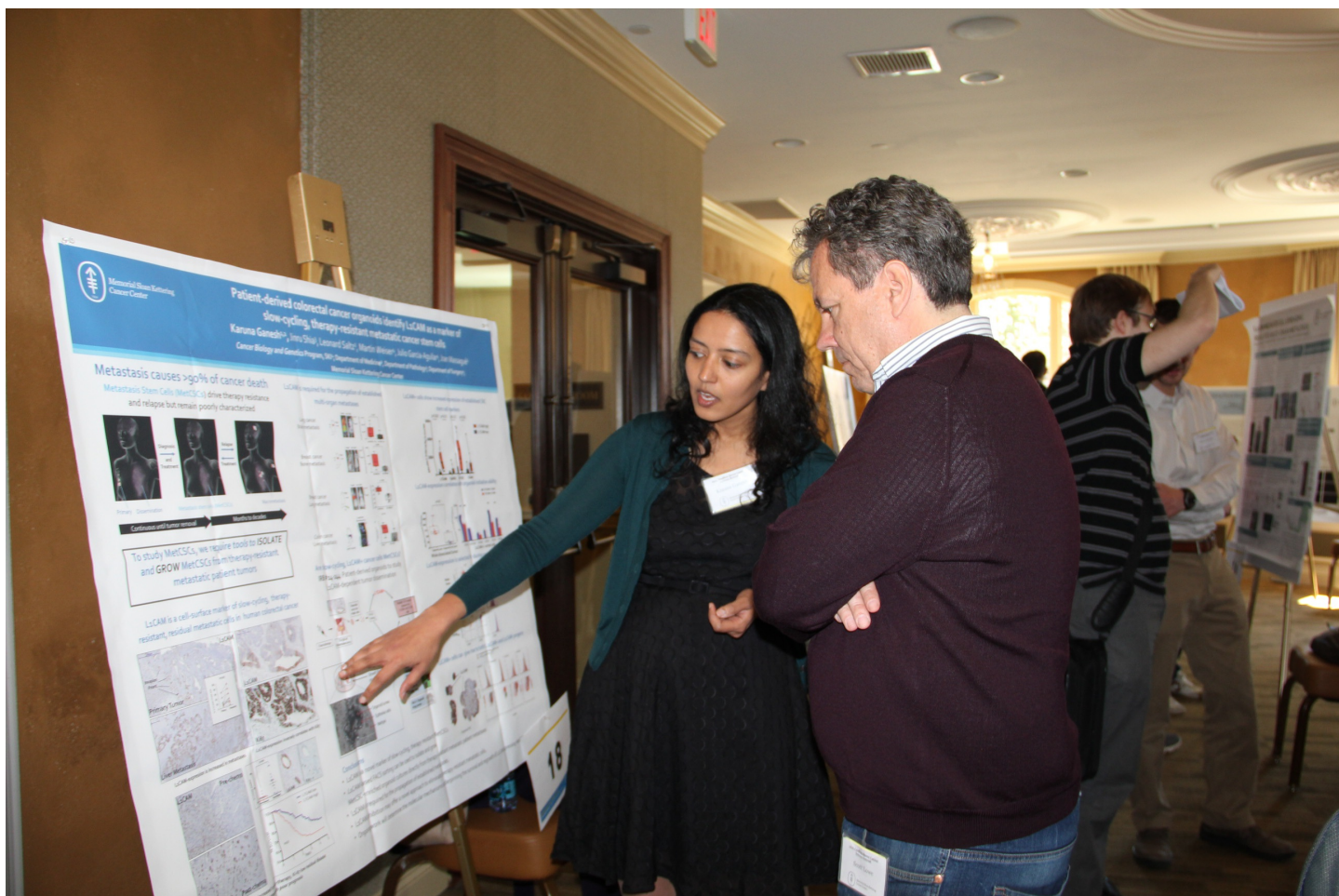


# Cancer Biology & Genetics Program

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The Cancer Biology and Genetics (CBG) Program is on a quest to catalyze mechanism-driven science and foster paradigm-shifting cancer concepts. Our labs pursue research bridging basic and clinical cancer science with the goal of improving diagnosis, treatment, and prevention. Our multidisciplinary approach spans areas such as tumor progression and metastasis, tumor microenvironment, mechanisms of drug sensitivity and resistance, and epigenetic sources of tumorigenic traits.

We draw from fundamental mechanisms of cell and tissue development and homeostasis, animal models of disease, and clinical samples in order to enhance our understanding of the biological processes relevant to cancer and to produce or validate new targets that might form the basis of new drugs or therapeutic approaches. Our close alliances with clinicians place us in a unique position, allowing the CBG Program to expedite translational research and make a significant impact on patient care.



CBG Program Chair Scott Lowe with physician-scientist Karuna Ganesh at the annual retreat sponsored by MSK's Geoffrey Beene Cancer Research Center.

## Our Faculty

[Scott W. Lowe, PhD](#)

Chair, Cancer Biology & Genetics Program

[Robert Benezra, PhD](#)

Cancer biologist Robert Benezra studies the molecular mechanisms of tumor growth and metastatic progression using mouse models. In addition, he studies the spindle assembly checkpoint which ensures proper chromosome segregation and is often deregulated in cancer.

[Joan Massagué, PhD](#)

Joan Massagué studies the control of stem cell growth and phenotype in tumor progression, metastasis, and response to therapy.

[Christine Mayr, MD, PhD](#)

Molecular and cell biologist Christine Mayr studies how 3'UTRs regulate protein functions and how mRNAs contribute to cytoplasmic organization.

[Luis F. Parada, PhD](#)

Developmental biologist Luis F. Parada uses genetically engineered mouse models to study neurofibromatosis, brain tumors, cancer stem cells, and tumor progression.

[Mara Sherman, PhD](#)

The Mara Sherman lab aims to understand the heterocellular interactions among pancreatic cancer cells and their surrounding microenvironment, and to target these networks for therapeutic benefit.

[Tuomas Tammela, MD, PhD](#)

Cancer biologist Tuomas Tammela investigates cellular heterogeneity in lung and pancreatic cancers.

[Craig B. Thompson, MD](#)

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

[Andrea Ventura, MD, PhD](#)

Cancer biologist Andrea Ventura studies non-coding RNAs in cancer and development

[Hans-Guido Wendel, MD](#)

Cancer biologist Hans-Guido Wendel pursues both disease-centered and basic discovery research. The disease focus is on lymphocyte malignancies and the basic science arm of the lab explores fundamental mechanisms that control aberrant mRNA translation programs in cancer. Work in these two research areas frequently intersects in surprising ways.

## **Joint Appointees**

[Kenneth Offit, MD](#)

Cancer geneticist Kenneth Offit focuses on gene characterization; genetic and epidemiologic studies of cancer-predisposing alleles; and the therapeutic, prognostic, and psychosocial translation of these findings.

[Viviane Tabar, MD](#)

Physician-scientist Viviane Tabar focuses on stem cells as tools for brain repair and for modeling brain cancer.

## **Adjunct Faculty**

[Richard White, MD, PhD](#)

Cancer biologist and oncologist Richard White uses the zebrafish to dissect interactions between tumor cells and the microenvironment that promote metastasis.

## Collaborations & Resources

SKI offers a wide array of core facilities and other technologies, as well as significant opportunity for collaboration. Scientists in the CBG Program derive particular benefit from close ties to the following:

- [Cell Biology Program](#)
- [Computational & Systems Biology Program](#)
- [Human Oncology & Pathogenesis Program](#)
- [The Geoffrey Beene Cancer Research Center](#)
- [The Alan and Sandra Gerry Metastasis and Tumor Ecosystems Center](#)

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