

# Cancer Immunotherapy: What You Need To Know

## CME

Cancer immunotherapy was named the 2013 “Breakthrough of the Year” by Science Magazine, but how well do you understand it? In this course, designed for physicians, scientists, staff, and trainees, MSK experts will explain what you need to know about using the immune system to fight cancer.

## Educational Objectives

As a result of this activity, participants will be expected to:

1. Have a better understanding of the components of the immune system and how they may be used to treat cancer
2. Appreciate what cancer immunotherapeutic techniques may be applicable to their patients with specific cancers
3. Gain awareness of potential side effects of cancer immunotherapy
4. Learn about ongoing cancer immunotherapy research at MSK, which may help them identify trials for which their patients are eligible, colleagues who can consult on their patients, and potential collaborators in translational research

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## Event Information

### Course Director:



**Laura Liberman, MD**  
**Director of the Office of Faculty Development**  
**Attending Radiologist, Breast Imaging Service**  
**Department of Radiology**

## **Date(s) & Time(s)**

### **Cancer Immunotherapy at MSK: Where we are and how we got there (everything else is someone else's talk)**

**Date: September 9, 2014**

**Time: 12-1 pm**

#### **Location Information:**

Zuckerman Auditorium (417 East 68<sup>th</sup> Street, between York and 1<sup>st</sup>)

**Speaker: Jedd Wolchok, MD, PhD**



Attending Physician and Chief, Melanoma and Immunotherapeutics Service, Department of Medicine, MH; Lloyd J Old/Virginia and Daniel K Ludwig Chair in Clinical Investigation; Associate Director, Ludwig Center for Cancer Immunotherapy; Member, MSK

Description: Modulation of the host immune response has emerged as a way to induce durable regressions in a variety of cancer types. The mechanism of action of immune modulation is distinct from that of cytotoxic therapies. This necessitates the introduction of new means to judge clinical activity and recognize unique patterns of adverse events.

## **Cancer Immunotherapy 101**

**Date: September 16, 2014**

**Time: 12-1 pm**

**Location Information:**

Zuckerman Auditorium (417 East 68<sup>th</sup> Street, between York and 1<sup>st</sup>)

**Speaker: Dmitriy Zamarin, MD**



Attending Physician, Gynecologic Medical Oncology Service, Department of Medicine, MH; Assistant Member, Level I, MSK

**Description:** Immune recognition of cancer is a complex process which is orchestrated by both the innate and the adaptive arms of the immune system. Our evolving understanding of the role of each component in the anti-tumor immunity as well as of the mechanisms of immune suppression active within the tumor microenvironment has led to development of various immune therapeutic strategies aimed to enhance the anti-tumor immune response. In this lecture we will review the basic components of the immune system, the process of antigen recognition and the immune response, and how each step of the immune response could be targeted by specific immunotherapeutic approaches.

## **Cancer Immunotherapy: The Tumor Microenvironment**

**Date: September 23, 2014**

**Time: 12-1 pm**

**Location Information: NOTE ROOM CHANGE!**

Rockefeller Research Labs Auditorium (entrance 430 East 67<sup>th</sup> Street)

**Speaker: Johanna Joyce, PhD**



Associate Member, Cancer Biology and Genetics Program, SKI

**Description:** Cancers develop in complex tissue environments, which they depend upon for sustained growth, invasion and metastasis. The tumor microenvironment (TME) comprises innate and adaptive immune cells, fibroblasts, extracellular matrix, and blood and lymphatic vascular networks, which collectively have critical modulatory functions in tumor development and metastasis. Positive and negative influences of the TME in cancer progression and modulating the response to therapy will be discussed.

## **Cancer Immunotherapy: Allogeneic hematopoietic stem cell therapy, the original immunotherapy of cancer**

**Date: September 29, 2014 (Note: this is a Monday!)**

**Time: 12-1 pm**

### **Location Information:**

Zuckerman Auditorium (417 East 68<sup>th</sup> Street, between York and 1<sup>st</sup>)

**Speaker: Marcel van den Brink, MD, PhD**



Head, Division of Hematologic Oncology; Attending Physician, Bone Marrow Transplant Service, Department of Medicine, MH; Alan N. Houghton Chair; Member, MSK

**Description:** Allogeneic bone marrow transplantation (allo-BMT) is a potentially curative therapy for a variety of hematological (and some solid) malignancies. With better understanding of the immunological mechanisms at play in allo-BMT the emphasis has shifted from a high dose therapy with stem cell rescue to a platform of graft-versus-tumor activity mediated primarily by donor T and NK cells.

# **Cancer Immunotherapy: Chimeric Antigen Receptor (CAR) T Cell Therapy for Leukemia**

**Date: October 7, 2014**

**Time: 12-1 pm**

**Location Information:**

Zuckerman Auditorium (417 East 68<sup>th</sup> Street, between York and 1<sup>st</sup>)

**Speaker: Renier Brentjens, MD, PhD**



Associate Attending Physician, Leukemia Service, Department of Medicine & Hematology Laboratory Service, Department of Laboratory Medicine, MH; Associate Member, Molecular Pharmacology and Chemistry Program, SKI

**Description:** A patient's own T cells may be modified to express artificial T cell receptors, termed chimeric antigen receptors (CARs) which allows T cells to recognize tumor associated antigens and thereby allow these genetically modified immune T cells to ideally target and ultimately lyse tumor upon reinfusion back into the patient. Over the last 15 years we have developed this technology in the laboratory (see Sadelain lecture) and more recently translated it into the clinic as trials conducted at MSKCC. In this lecture, we will discuss the very promising clinical trial results in high risk chemotherapy refractory patients with B cell cancers. We'll discuss etiologies of different clinical outcomes in different B cell malignancies as well as reported clinical outcomes using this technology at other centers.

# **Cancer Immunotherapy: Principles of Chimeric Antigen Receptor (CAR) T Cell Therapy**

**Date: October 14, 2014**

**Time: 12-1 pm**

**Location Information:**

Zuckerman Auditorium (417 East 68<sup>th</sup> Street, between York and 1<sup>st</sup>)

**Speaker: Michel Sadelain, MD, PhD**



Member, Molecular Pharmacology and Chemistry Program, SKI; and Stephen and Barbara Friedman Chair; Director, Center for Cell Engineering, MSK

**Description:** Chimeric antigen receptors (CARs) are synthetic receptors designed to target and reprogram T cells to fight cancer. Once introduced into patient T cells, CARs enable the T cells to attack the tumor and overcome some of the obstacles that tumors oppose to immune rejection. When these genetically modified T cells are infused back into the patient, ideally, they may target and lyse tumor. The most striking application of this technology to date has been in acute lymphoblastic leukemia (see Brentjens lecture). This lecture will focus on the design of CARs and future applications of this novel form of immunotherapy based on T cell engineering.

# Cancer Immunotherapy: Targeting Undruggable Cancer Targets with Antibodies

**Date: October 21, 2014**

**Time: 12-1 pm**

## **Location Information:**

Zuckerman Auditorium (417 East 68<sup>th</sup> Street, between York and 1<sup>st</sup>)

**Speaker: David Scheinberg MD, PhD**



Chair, Molecular Pharmacology and Chemistry Program, SKI; Vincent Astor Chair;  
Attending Physician, Leukemia Service, MH; Member, MSK

Description: Monoclonal antibodies are highly versatile therapeutic agents that are becoming the most important, safe and effective (and expensive) drugs available for cancer, autoimmunity and metabolic diseases. Antibodies to treat cancer include formats that block growth receptors, inhibit angiogenesis, activate the immune effectors, carry toxins or isotopes, redirect T cells to cancers, or unleash the immune system non-specifically. Antibodies to intracellular targets will also be discussed.

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## **Sponsor(s)**

Memorial Sloan-Kettering Cancer Center

## **Credit**

Memorial Sloan-Kettering Cancer Center designates this conference for a maximum of **1.0 AMA PRA Category 1 Credits**<sup>™</sup>. Each physician should claim only those hours of credit he/she actually spent in the conference.

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## **Contact Information**

### **E-mail**

RSVP to [ofd@mskcc.org](mailto:ofd@mskcc.org) if you'd like to attend.

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