

# Distinguished Lecture Series

Tuesday, March 11, 12:00pm

Brady Auditorium | [Zoom Access](#)

*Due to recent policy changes, lunch will not be provided. Please feel free to bring your own lunch.*

## OPPORTUNITIES AND CHALLENGES IN TRANSLATING COMBINATIONS OF RADIATION THERAPY AND IMMUNOTHERAPY TO THE CLINIC

### Sandra Demaria, MD

Professor of Radiation Oncology and Pathology and Laboratory  
Medicine, Weill Cornell Medicine

#### Needs:

Radiation therapy (RT) is often used in patients receiving immunotherapy. Despite a large body of work demonstrating that RT has multiple pro-immunogenic effects, it remains unclear how RT alters the response to immune checkpoint inhibitors (ICI) to achieve a clinical benefit. Clinical studies testing combinations of RT with ICI have been performed in unselected patient populations often without a mechanistic understanding of which pro-immunogenic effect of RT are required to provide a measurable benefit. Improved understanding of the cancer cell-intrinsic molecular features and the immune escape mechanisms in the tumor microenvironment that affect the ability of RT to promote or hinder anti-tumor immune responses is required to improve cancer patient treatment. Preclinical and early clinical data about promising combinations of radiation and immunotherapy targeting different pathways to reduce immunosuppression and improve innate immune activation in the irradiated tumor will be presented and future directions discussed.

#### Objectives:

1. Explain the effects of radiation on different phases of the anti-tumor immune response
2. Discuss the limitations of combinations of radiation and immune checkpoint inhibitors
3. Identify novel combinations of radiation and immunotherapy



Dr. Sandra Demaria obtained her MD from the University of Turin, Italy, and then moved to New York City for her post-doctoral training in immunology, followed by a residency in anatomic pathology at NYU School of Medicine. Dr. Demaria is internationally known for her pioneering studies demonstrating the synergy of radiation with immunotherapy. She was the first to show that focal radiation therapy can overcome the resistance of poorly immunogenic tumors to immune checkpoint inhibitors, a finding later translated in clinical trials.

As a breast cancer pathologist, Dr. Demaria played a fundamental role in establishing the original guidelines for the evaluation of tumor-infiltrating lymphocytes (TILs) in breast cancer (Ann Oncol 2015, 26(2):259-71) and was a founding member of the International Immuno-Oncology Biomarker Working Group on Breast Cancer (<https://www.tilsinbreastcancer.org/>) that developed a consensus for the evaluation of TILs in breast cancer. She has continued to work with the group to validate the evaluation of TILs as a predictive and prognostic marker in breast cancer.

Dr. Demaria's responsibilities lie in the performance of diagnostic breast pathology, including support of the clinical, research, and educational missions of the Breast Pathology Service through resident and fellow education, tumor board participation, consensus conference attendance, and translational research initiatives.



Continuing Medical Education  
Yale CME