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Richard J. O'Reilly, who also heads the Pediatric Bone Marrow Transplant Service.

The inaugural retreat concentrated on immune engineering, which involves manipulating immune cells in the laboratory to enhance their therapeutic effect after they are infused into a patient. The speakers addressed the use of T cells — a type of immune cell — to stimulate the body's immune response to cancer while reducing the risk that the immune cells attack normal tissues.

Several presenters described techniques for isolating and expanding specific T cell subsets from a donor before infusing them into a patient who has received a stem cell transplant. These approaches aim to prevent graft-versus-host disease, a potentially life-threatening condition in which transplanted immune cells attack a recipient's tissues.

Other speakers addressed novel strategies to generate active antitumor T cells derived from the patient (thus avoiding the risk of graft-versus-host disease) by stimulating them with engineered cells or targeting them through genetic engineering. Memorial Sloan Kettering investigators recently initiated a clinical study using genetically engineered patient T cells to target leukemia.

Dr. O'Reilly noted that the recent advances add to a "burgeoning development of new approaches designed to enhance the ability of patients' own immune systems to resist disease."

Keynote presentations were made by Bruce R. Blazar, professor of pediatrics at the University of Minnesota, and Carl H. June, professor of pathology and laboratory medicine at the University of Pennsylvania. Memorial Sloan Kettering scientists and physicians who presented were Marcel R. van den Brink, Chief of the Adult Bone Marrow Transplant Service; Isabelle Rivière, Director of the Gene Transfer and Somatic Cell Engineering Facility; medical oncologist Guenther Koehne; and medical oncologist Renier J. Brentjens.

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