Meet Four Recipients of the Damon Runyon Physician-Scientist Training Award

Physician-scientists are uniquely positioned to conduct research that can improve and prolong the lives of their patients.

June 6, 2024 By Damon Runyon Cancer Research Foundation

Four scientists with exceptional promise and novel approaches to fighting cancer have been named the 2024 recipients of the Damon Runyon Physician-Scientist Training Award. This award, established to help bolster the ranks of this vital cohort of cancer researchers, provides physicians who have completed clinical specialty fellowship training with the opportunity to become leaders in translational and clinical research. The awardees are selected through a highly competitive and rigorous process by a committee of leading cancer researchers who are themselves physician-scientists.

Physician-scientists are uniquely positioned to conduct research that has the potential to be translated into therapies that improve and prolong the lives of their patients. However, the pipeline of physician-scientists is dwindling. Damon Runyon seeks to address the financial disincentives that often deter physicians from pursuing a research career by providing considerably higher funding than most research fellowships—$100,000 in the first year, with increases of $10,000 per year over the next three years ($460,000 total over four years). It will also retire up to $100,000 of any medical school debt still owed by an award recipient. (The average medical school debt now exceeds $200,000.)

Since its launch in 2015, the program has funded 42 new physician-scientists from across a range of disciplines. Their research has not only brought forth insights into how cancer develops and spreads but also led to the development of new therapies, including several in clinical trials.

The Physician-Scientist Training Award was established thanks to the generosity of Damon Runyon Board members Leon Cooperman and Michael Gordon.

2024 Physician-Scientists

Rahul S. Bhansali, MD, with mentor Gerd A. Blobel, MD, PhD, at University of Pennsylvania, Philadelphia

Dr. Bhansali is studying how epigenetic processes—specifically the three-dimensional folding of DNA—promote the development, growth, and survival of cancers. His research focuses on T-cell acute lymphoblastic leukemia (T-ALL), an aggressive blood cancer affecting both children and adults for which traditional chemotherapy remains the mainstay of treatment. LDB1 is a protein involved in the process of DNA folding that partners with another protein called LMO2, which is highly expressed in up to 75% of T-ALL. Dr. Bhansali hypothesizes that LDB1/LMO2 rewire the normal gene expression machinery in our blood cells in a way that activates cancer-promoting genes to cause leukemia. Targeting this process may shed light on new treatment avenues and ways to overcome resistance to treatment.

Xiaoli Mi, MD, with mentors Omar Abdel-Wahab, MD, and Dan A. Landau, MD, PhD (Weill Cornell Medicine), at Memorial Sloan Kettering Cancer Center, New York

Chimeric antigen receptor (CAR) T cells are a type of immunotherapy that uses genetically engineered T cells from patients to treat cancer. While a one-time treatment has the potential to generate long-term protection from relapse, CAR T cells often fail due to poor persistence. Dr. Mi recently studied samples from patients with durable remissions of leukemia and found that rare persistent CAR T cells share a distinct set of molecular and cellular features. She will now define the properties of persistent CAR T cells across multiple blood cancers, trace their T cell origins and evolutionary dynamics using novel technologies, and experimentally evaluate her findings in preclinical models. These studies could illuminate how CAR T cells change over time in patients and help guide development of future cellular therapies with more durable effects for patients with different types of cancers.

Vignesh Shanmugam, MD, with mentor Todd R. Golub, MD (Broad Institute of MIT and Harvard), at Brigham and Women’s Hospital, Boston

It has been long recognized that B-cell malignancies such as follicular lymphoma (FL) are dependent on interactions with nearby non-malignant cells for survival. However, this dependency has yet to be exploited therapeutically. Dr. Shanmugam aims to define the pro-tumorigenic growth factors in the environment around malignant B cells in FL and elucidate the mechanisms of how these growth factors promote FL cell survival and proliferation. This knowledge will enable the development of new treatments that block these interactions and new laboratory models of follicular lymphoma.

Rebecca L. Zon, MD, with mentor Benjamin L. Ebert, MD, PhD, at Dana-Farber Cancer Institute, Boston (The Mark Foundation for Cancer Research Physician-Scientist)

Thalidomide derivatives are a mainstay of treatment in multiple myeloma, a cancer of white blood cells called plasma cells. However, around one in ten individuals treated with thalidomide derivatives for multiple myeloma will develop a blood clot, which can be life-threatening. It is critical to determine how to continue to use thalidomide derivatives to kill myeloma cells, while working to understand why these drugs increase the likelihood of clotting. Thalidomide derivatives work by degrading proteins important to myeloma cell growth; Dr. Zon hypothesizes that these drugs could similarly lead to the degradation of proteins that prevent blood clotting. She is comprehensively evaluating what factors promote blood clots in patients with multiple myeloma, with the goal of developing more targeted medications to prevent blood clots and improve treatment outcomes in blood cancer patients.

This post was originally published May 23, 2024, by Damon Runyon Cancer Research Foundation. It is republished with permission.

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