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Session 1B: Microbiome and Intestinal Failure and Transplantation: A: Impact of the microbiome on transplant outcomes and how that can be manipulated to prolong graft survival; July 1, 2023; 8:30am-8:50am

My laboratory is interested in T cell responses in settings of transplantation, with an emphasis on mouse models and emerging extensions onto clinical translation. A main focus of the laboratory is on T cell tolerance in transplantation and how infections and inflammatory events can affect induction or maintenance of tolerance. We have found that transplantation tolerance can exist at different levels of robustness based on the number of mechanisms of T cell tolerance that are engaged, and that infections or inflammation can erode such tolerance. The impact of bacterial infections on transplant outcomes has led us to discover that the microbiota also influences immune responses to transplanted organs and can be manipulated to prolong graft survival. Similarly, we have shown that environmental factors that influence the microbiota composition, such as obesity and exercise, also affect the immune responses against transplanted organs and the kinetics of transplant rejection. Our clinical studies have focused on the immunology of transplant recipients and of patients infected with the bacteria that influence transplant outcomes and, collaboratively, we have explored the involvement of the microbiota in the responsiveness of melanoma patients to immunotherapy.