Research Summary (Past/Current):

My work has focused on the mechanisms underlying acute and chronic rejection in solid organ allografts, with specific emphasis on heart transplants. The research runs the gamut from mouse transplant models to human clinical transplantation, and is focused on understanding the immunologic pathways that drive rejection and ultimately graft failure. In particular, the lab is interested in the mechanisms that induce the process of “chronic rejection” whereby vessels in solid organ transplants undergo progressive intimal hyperplasia. The research has broader applicability beyond transplantation, since the inflammatory mediators that drive the occlusive process in transplanted hearts also underlie the vascular hyperplasia that characterizes more “typical” atherosclerosis and stent restenosis lesions. Besides in vivo models, the lab also has developed novel microfluidic devices to characterize vessel wall and inflammatory cell interactions.

Recent Publications:


Future Research Directions / Areas Looking For Scientific Synergies:

High throughput screening for small molecule inhibitors that interfere with smooth muscle recruitment and activation in vascular lesions.