Advances in microsurgical techniques have made it possible to mimic vascularized human transplants in small animals, including rats and mice. However, the microvascular techniques needed to perform these transplants, particularly in mice, require extensive training and skills on the part of the microsurgeon(s), as well as specialized equipment. The microvascular core of the Comprehensive Transplant Center at the Feinberg School of Medicine relies on individuals with significant experience utilizing these very specialized skills. The core facility is dedicated to assisting investigators, with centralized resources for creating mouse and rat models of organ transplantation, as well as other microsurgical procedures for diseases that can then be used in translational research, from animal studies to human diseases.

Located on the 11th floor of the Tarry Building at Northwestern University Feinberg School of Medicine, the microvascular core offers a wide variety of complex surgical models in rats and mice. These include a variety of transplant models (e.g., heart, kidney, intestine and ovary transplants), and non-transplant surgical procedures such as intestine resection (model of short bowel syndrome), liver/kidney ischemic/reperfusion or resection models, and thymectomy. In addition to the microsurgery service, we offer microsurgical skill training and technique assistance for faculty, staff, fellows and students whose work requires microsurgical manipulations. We are equipped to develop novel animal models that may complement ongoing studies or help investigators explore novel ways to test their hypotheses in vivo. We are always interested in collaborations and will attempt to accommodate any proposed project in a timely manner.

The microsurgical team, comprising four microsurgeons with significant expertise in microsurgical techniques, is led by Dr. Jenny Zhang, who has more than twenty years of experience in microsurgery and transplant immunology. Since its inception, the core has performed more than 3000 small animal surgical procedures with high success rate (>90%). Data from generated from these animal models has published in a variety of prestigious, peer-reviewed journals and presented in numerous presentations in national and international scientific conferences. The core has helped investigators secure funding support from various agencies, including the NIH.

Currently, the core is involved in more than ten different research projects with investigators in diverse disciplines cross the Northwestern community. For more information or to initiating a project with the core, please contact Dr. Jenny Zhang at zjzhang@northwestern.edu or 312-503-1682.