Microsurgery Core: A Decade of Dedication to NU Research

This year officially marks the 10th anniversary of Microsurgery Core at Comprehensive Transplant Center (CTC). With its mission to provide comprehensive microsurgery services for advancing basic and preclinical animal research, the Core has offered a variety of small animal surgical models and perioperative diagnostically tests (e.g. blood gas/chemistry assays) for in-vivo mechanistic studies and drug discovery over the past decade. The core has established a long-track record of outstanding microsurgical services and collaborative interactions with numerous investigators with Northwestern research community and external academic centers and has become an important resource for all investigators who conduct in-vivo studies using small animal models.

The Core was created in 2009 when the CTC was founded in the Feinberg School of Medicine. It began with one surgeon and one surgical microscope supporting two investigators in the Division of Transplantation. The initial seed funding was provided to support expansion in terms of both surgeons and scopes. In parallel, there was a tremendous effort to increase awareness about the Core to members of the CTC through newsletters and stakeholder meetings. Under director Dr. Zhang’s leadership, the Core has noticeably expanded its space, equipment and number of services. Currently, there are three microsurgery operating rooms with four double-headed Zeiss operating microscopes and surgical units along with a satellite animal care facility. The Core acquired state of art blood bio-analyzers 4 years ago, which has allowed the Core to provide multiple peri-operative blood chemistry testing, such as hematology, kidney and liver functional panels and gas analysis. Service volumes have been continually growing and currently supports 20+ investigators across disciplines, departments and schools at NU with approximately 30 service categories. The Core performs 600+ complex vascular microsurgical procedures and more than 3,000+ other lab procedures including cell isolation from tissues (e.g. kidney, liver and islets), drug deliveries, necropsy/tissue processing annually, serving >20 investigators from different departments and disciplines.

The Microsurgery Core continues to perform well and has achieved high level of users’ satisfaction and was rated above average. In addition to providing technical services, we have also provided consultations to PIs on experiment design, outcome discussion and data interpretation, and new model development. The core productivity is also reflected by more than 10 abstracts at national or international conferences (American Transplant Congress, International Herpesvirus Workshop, Liver meeting and 14th Congress of International Society of Experiment Microsurgery) and 5 publications in 2018-19. The Core has helped secure multiple external funding for frontier research in transplantation, immunology, regenerative medicine and bioengineering. through multiple productive collaborations cross the different departments at Northwestern. The Core has participated in the annual user survey over the last five consecutive years, and was scored favorably and noticeably higher than the mean scores in all areas regarding services and staff each year. The Core received Highly Performing Core Award in recognition of distinguished achievement in our core operation last year (2018). Moreover, the Microsurgery Core is one of the winners for the 2019 Simpson Querrey Institute’s Core Facilities Service Excellence Award.

For additional information, please contact Core Director, Jenny Zhang, MD at zjzhang@northwestern.edu.