ORBIT and basic science research

Modern surgical research is the intersection of basic scientific discovery of life processes involved in the surgical management of disease and the translation of that knowledge into actual patient care. A continuum of laboratory investigation from bench to bedside must always benefit the patient but typically starts with laboratory investigation of the physiological and biochemical adjustments to diseases and their surgical treatments. Basic science conducts state-of-the-art hypothesis testing designed to answer biological questions with an eye on the progressive translation of the concepts to surgical practice by scaling scientific model complexity from the cell and molecular universe through tissue, organ, systems and clinical paradigms. While basic research results are stressed in ORBIT, education of students, residents, trainees and faculty goes hand in hand to make future discovery-based surgical treatments sustainable.

Basic research provides scientists and trainees with:

- Cutting-edge equipment and techniques to conduct research
- Generous laboratory infrastructure

Leadership in ORBIT provides decades of experience in:

- Conducting and teaching productive research in the surgical sciences
- Fundraising to sustain the activities and missions of ORBIT

In the end, in order to continue providing outstanding patient care, we must strive to discover new ideas, new technologies and concepts through research.

“True innovative, scientific advancements require dismissal of derivative thinking, bold leaps over established paradigms, creativity, hard work and a strong tolerance to repeated criticism.”

Martin J. Mangino, Ph.D., associate chair for basic research, VCU Department of Surgery

Contact us

To learn more about ORBIT, email orbit@vcuhealth.org.
As an emerging leader in surgical collaborations, ORBIT: Where team-based science can flourish

The Office of Research, Biomedicine, Innovation and Technology, known as ORBIT, supports best researchers in the field of surgery and to receive funding from top federal and private sources. What’s more, the infrastructure ORBIT provides enables the Department of Surgery to recruit the best researchers in the field of surgery and to receive funding from top federal and private sources.

What’s more, the infrastructure ORBIT provides enables the Department of Surgery to recruit the best researchers in the field of surgery and to receive funding from top federal and private sources.

What we do

As an emerging leader in surgical collaborations, ORBIT:

• Provides start-to-finish administrative support to researchers while improving communication and reducing duplication of tasks

• Expands VCU Surgery’s outreach as a premier surgical department

• Provides support and mentorship to junior faculty and researchers interested in pursuing external funding by connecting junior researchers with expert peers, providing startup resources to supplement competitive projects, and distributing internal and external funding opportunities

• Improves and creates additional opportunities and partnerships for VCU Surgery in global education, mentorship, research and clinical care via our Global Surgery Program

• Creates an environment in which robust, multidisciplinary team-based science can flourish.

• Improves and creates additional opportunities and partnerships for VCU Surgery in global education, mentorship, research and clinical care via our Global Surgery Program

• Creates an environment in which robust, multidisciplinary team-based science can flourish.

ORBIt and translational research/clinical trials

High-quality clinical and translational research is a key component of Surgeon’s mission. A critical objective of ORBIT, therefore, is to facilitate bench-to-bedside discoveries that can truly impact all aspects of the surgical experience. To spur clinical and translational research, ORBIT assists surgeon-scientists with:

• Clinical trials — Design, regulation, coordination and implementation through the use of research coordinators and research infrastructure improvement

• Translational studies — Identification of basic scientists who can help translate clinical questions into testable experimental models

• Regulatory support — Guidance to help get your study approved or renewed through the IRB

• Statistics — Using the correct statistical methods for your clinical or translational study

• Grants — Grant writing, budgeting and administration

• Seed funding — Grants of variable amounts for high-quality projects that can be used to generate preliminary data necessary to obtain extramural funding

• Research mentorship — Mentoring by experienced senior investigators in surgical research to help faculty at all levels navigate the research maze

• Marketing — Leveraging research accomplishments to gain increased visibility in the local, regional and national communities

• Program Scholar Track — A short-term clinical experience in a project country along with participation in short courses in research methodology

• Residency Track — One to two years of mentored research, time living in-country and participation in a formal master’s program in global health/public health/research

• Clinical Fellowship Track — One to two years of clinical work in-country after completion of fellowship, supervision of one or more clinical-or research-track scholars and participation in a formal master’s program in global health/public health/research

• Program Scholar Track — An open one- to two-year track for residents from nonsurgical fields and non-VCU clinicians to work with VCU’s global surgery collaborations, receive mentorship by VCU’s global surgeons and participate in formal research courses

The Program for Global Surgery offers a web-based platform to feature ongoing global partner- ships and experiences of scholars, and administrative support to oversee candidate recruitment, project management, IT support and program development.

ORBIt and the Program for Global Surgery

VCU surgeons have had a long history of contributing to the care of patients on nearly every continent in the world. Through the Program for Global Surgery, ORBIT showcases VCU surgeons as they:

• Strengthen surgical systems through global partnerships

• Conduct needs assessments and research through global collaborations

• Promote local and global capacity building through training and education

• Advocate for sustainable, equitable access to surgical care around the world

The program has five global surgery scholar tracks in which interested medical students, residents and fellows are mentored by VCU surgeons to work with various global surgical collaborations:

• Clinical Scholar Track — A short-term clinical experience in a project country with pre-trip preparation and an opportunity to obtain case credit for surgery residency

• Research Scholar Track — A mentored research project relevant to a project country along with participation in short courses in research methodology

• Strengthen surgical systems through global partnerships

• Conduct needs assessments and research through global collaborations

• Promote local and global capacity building through training and education

• Advocate for sustainable, equitable access to surgical care around the world

• ORBIT will be a catalyst for continued innovation and partnerships.

— William Maixner, MHA, FACHE, associate administrator, ORBIT and Transplant Surgery, VCU Department of Surgery

• ’s vision, and the vision of ORBIT in the Department of Surgery, is to foster an environment in which robust, multidisciplinary team-based science can flourish.

— Adam Klausner, M.D., associate chair for clinical and translational research, VCU Department of Surgery

• Formal global surgical programs are an indicator of commitment to sustainable, high-impact collaborations.

— Nina Wickramaratne, M.D., VCU surgery resident