DIVISION OF VASCULAR SURGERY
NEW YORK UNIVERSITY LANGONE HEALTH
OUR MISSION

The NYU Langone Division of Vascular Surgery is dedicated to the understanding, prevention, and treatment of all aspects of vascular disease, and to providing outstanding outcomes and treatment for patients with vascular disease. The Division offers expert care to the vascular patient utilizing individualized open vascular surgical techniques and endovascular surgery, as well as medical and non-surgical management. The Division stresses the minimally invasive approach to the diagnosis and treatment of vascular conditions when feasible. We offer all of the resources of a major university hospital, the brand new Kimmel Pavilion of NYU Langone, and a nationally top-ranked medical school, the NYU School of Medicine. We are located in the middle of New York City, one of the world’s major metropolitan centers. Our mission is threefold:

1. Outstanding individualized care of the patient with vascular disease.

2. Cutting-edge vascular research involving both clinical investigation and basic science laboratories.

3. Outstanding medical education for medical students, general and vascular surgical residents and fellows, and for surgeons in practice.
VASCULAR SURGERY RESIDENCY AND FELLOWSHIP TRAINING PROGRAMS

Overview

We maintain dual post-graduate medical education pathways to become a Vascular Surgeon: an Integrated Vascular Surgery Residency (0+5) as well as a traditional Vascular Surgery Fellowship (5+2) to be pursued following a General Surgery Residency. One resident is selected each year for the five-year integrated training program, and one fellow is selected each year for the Vascular Surgery Fellowship Program.

Eligibility Requirements

NYU participates in the National Resident Matching Program (NRMP) for both its integrated residency program and its fellowship program.

Trainees are selected on the basis of their preparedness, ability, aptitude, academic credentials, communication skills, and personal qualities such as motivation and integrity. Prior to admission to our fellowship program, applicants are required to have completed an accredited general surgery residency program. Prior to admission to our integrated residency program, applicants are required to have graduated from an accredited medical school.

Residency & Fellowship

NYU Langone Medical Center offers two training programs covering all aspects of vascular and endovascular surgery: an integrated five-year residency program and a two-year fellowship program. The goal of the Division of Vascular Surgery at NYU Langone is to prepare its trainees to function independently as outstanding qualified vascular surgeons upon completion of their training program. In this regard, we follow a philosophy of progressive independence and graduated responsibility.

Under the guidance of Program Director Caron Rockman, MD, these programs offer rich and extensive opportunities to participate in both routine and complex open surgical and endovascular procedures, participate in leading-edge basic science and clinical research, and present at local and national vascular surgery conferences. Trainees complete the programs prepared to successfully achieve board certification. Former NYU Langone Vascular Surgery Residents and Fellows hold prominent positions in our field, have received numerous awards, and gained leadership positions throughout North America and internationally.
Rotations

Clinical training sites

Trainees rotate at three major hospitals:

- The Kimmel Pavilion of the NYU Langone, a large technologically advanced tertiary care center, with 8 hybrid open surgical / endovascular operating suites.

- Bellevue Hospital, the flagship and historic public hospital of the New York Health and Hospitals Corporation, which provides vascular surgical care to a diverse urban population and functions as the premier Level I Trauma Center in New York City.

- the VA New York Harbor Health Care System, which provides vascular surgical care to our Veterans, and is the referral center for vascular surgical care of several nearby VA hospitals.

Both our Fellowship and Integrated Residency programs comprise hands-on surgical rotations at each of the three hospitals affiliated with NYU Langone: the Kimmel Pavilion, Bellevue Hospital, and the VA Hospital. Additionally, residents and fellows participate in outpatient service rotations, including the Outpatient Center for Vascular Intervention and our outpatient Vein Center. Additional rotations in the non-invasive Vascular Laboratory and Clinical Research rotations are available. Individualized study and collaboration with the Departments of Cardiology, Vascular Medicine and Interventional Radiology is offered.
The vascular surgery residency program is largely integrated into the outstanding general surgery residency, receiving the required 18 months of Core General Surgery experience. Vascular Surgery Integrated Residents typically spend six months out of each of the first three years on relevant rotations including trauma, critical care, and acute care surgery, developing a strong foundation of general surgical skills. The remainder of their time, including the entire fourth and fifth years, are dedicated to vascular surgery services. Our program allows flexibility and individualization of some aspects of the trainee education pathway, and can include dedicated research rotations as well as interdisciplinary rotations including interventional radiology, cardiology and neuro-interventional experience.

At the Kimmel Pavilion, residents and fellows gain experience supervising the vascular surgery service, with patients directly under their care; participating in and performing both routine as well as difficult and complex vascular surgery open surgical and endovascular procedures; directly overseeing general surgical residents, medical students, and nurse practitioners; and seeing patients in the offices of the vascular surgery attending faculty members.

At Bellevue Hospital, a Level I trauma center in one of the largest cities in the world, the vascular residents and fellows encounter broad and in-depth experience in the area of vascular trauma and in caring for a population notable for its incredible socioeconomic, linguistic, and geographic origin diversity. While the vascular residents and fellows deal with all aspects of vascular surgery, Bellevue Hospital provides a particularly rich experience in thoracic aortic aneurysms and aortic dissections.

At the VA Hospital, the vascular fellows and senior vascular residents act as junior attendings for the vascular surgical services. Here, the residents and fellows manage the inpatient service, oversee all consults, and do the preoperative planning for all vascular surgery cases. In addition, the trainee gains valuable teaching experience while helping to train general surgical residents in all of these areas, managing the outpatient clinics, managing the endovascular inventory of the operating room, and working on academic research projects.

During the outpatient services rotation, the trainee participates in all aspects of the outpatient experience. This includes working in the non-invasive vascular laboratory, where the fellow learns to perform and interpret the results of noninvasive testing modalities necessary to the diagnosis and treatment of vascular disease. The trainee is expected to qualify to take the Registered Physician in Vascular Interpretation (RPVI) examination for vascular laboratory certification.

In addition to our three major hospitals / inpatient sites, we have the following additional clinical resources and rotations:

- **Outpatient Vascular Intervention Center**
  - Including both percutaneous arterial and venous interventions performed in an outpatient setting
- **Academic Outpatient Vein Center**
  - Including all procedures for varicose veins and venous insufficiency, including ablation, microphlebectomy, and sclerotherapy.
- **IAC Accredited Non-Invasive Vascular Laboratory**
  - Managed by the Division of Vascular Surgery
- **Surgical Skills Simulation Center**
  - Offering detailed instruction in vascular surgical techniques
- **Outpatient clinics at all three hospital centers**

The Division of Vascular Surgery performs annually approximately
- 800 major vascular surgical procedures (including both open surgical and endovascular interventions) at the Kimmel Pavilion
- 500 major outpatient percutaneous arterial and venous interventions at our Outpatient Vascular Intervention Center
- 2000 outpatient interventions for varicose veins and venous insufficiency at our Vein Center

An additional 500 vascular procedures performed at Bellevue Hospital and the VA Hospital.
Clinical Experience

The graduate training program in vascular surgery is designed to provide the educational resources appropriate for the development of proficiency and the diagnosis and treatment of diseases of the arterial, venous and lymphatic circulatory systems. We offer appropriate didactic and clinical learning in both the inpatient and outpatient arenas. Our programs and expertise include clinical training in the following areas:

- Carotid Artery and Cerebrovascular Disease
  - Carotid Endarterectomy
  - TCAR
  - Transfemoral carotid stenting.
  - Advanced complex endovascular and open surgical approaches to cerebrovascular disease
- Aortic Aneurysm
  - EVAR, FEVAR, PEVAR, TEVAR
  - Branched and fenestrated devices
  - Open surgical repair
  - Treatment of aortic dissection
  - Treatment of complex aortic conditions using a variety of open surgical and complex endovascular techniques
- Lower Extremity Peripheral Arterial Disease
  - Traditional and complex endovascular procedures, including angioplasty, stenting, atherectomy, and thrombolysis
  - Open surgical techniques, including complex bypass surgery and other techniques
  - Treatment of less common vascular conditions, including lower extremity aneurysm, popliteal entrapment, and other conditions
- Venous Disease
  - Treatment of venous insufficiency, including venous ablation, microphlebectomy, and other techniques
  - Cosmetic treatment of venous lesions
  - Complex endovascular intervention for chronic deep venous disease, including iliacaval recanalization
  - Medical and intervention treatment of acute DVT, including thrombolysis and other techniques
- Dialysis Access
- Management of Diabetic Foot Complications
  - Affiliation with our Academic Wound Center, including hyperbaric oxygen availability
- Thoracic Outlet Syndrome
  - Surgical management techniques
- Vascular Trauma
  - Including cases at Bellevue Hospital Center, a Level-I Trauma Center
- Mesenteric Vascular Conditions
  - Mesenteric ischemia, open and endovascular interventions
  - Renal artery conditions
  - Visceral aneurysm intervention, open and endovascular intervention.
- Rare vascular conditions
  - Congenital vascular malformations
  - Upper extremity ischemic conditions
  - Lymphatic disorders
  - Vasculitides
  - Upper extremity vascular / ischemic conditions
**Didactics**

The NYU Langone Division of Vascular and Endovascular Surgery Weekly Conference is held weekly on Tuesday mornings from 7:00AM to 8:00AM in the Skirball 3rd Floor Seminar Room.

Each week, the Division of Vascular Surgery holds a conference at which the vascular trainees make presentations about research, review core topics in vascular surgery, present educational cases, and foster discussion about ideal treatment strategies. All aspects of the disease condition and treatment are discussed. Residents and fellows also attend the Department of Surgery's weekly Mortality and Morbidity conference, monthly Grand Rounds, daily teaching rounds, and monthly Journal Club meetings.

The NYU Langone Division of Vascular and Endovascular Surgery Weekly Conferences provide a forum for the presentation of clinical advances in vascular disease. The topics selected specifically address the educational needs of physicians in the Department of Surgery as well as trainees in the residency and fellowship programs.

Speakers include the vascular fellows and residents, Department of Surgery residents, visiting professors and lecturers, as well as the Division's faculty. The program provides an interdisciplinary educational forum for an interdisciplinary discussion of the diagnosis, treatment, and management of vascular disease, and is attended by members of the departments of surgery, interventional radiology, cardiology, anesthesiology, and other specialties.

In addition to the formal weekly Vascular Surgery Didactic Conference, additional didactic teaching conferences include:

- Morbidity and Mortality Conference
- Journal Club
- Wound Center Interdisciplinary Conference
- Aortic Center Interdisciplinary Conference
- General Surgery Teaching and Didactic Conferences
RESEARCH

The Division of Vascular Surgery at NYU Langone maintains active research programs both in the clinic and basic science areas. Faculty are deeply involved in scholarly activity. Trainees are expected to participate in research projects during their tenure.

The academic education of the vascular surgery residents and fellows is enhanced by the pursuit of clinical research projects. Accordingly, they are provided with significant time for independent reading, research, and conference preparation. Trainees routinely submit and present their research to regional and national vascular surgery conferences and meetings. Appropriate mentoring and infrastructure is provided, including:

- Faculty mentoring
- Support for grant writing and proposals
- Statistical support
- Support for IRB proposals and submission
- Support from interdisciplinary faculty
- Participation in the Vascular Quality Initiative Program
- Data entry managers and support teams
- Dedicated divisional clinical research nurse

Division of Vascular Surgery Research Faculty

Dr. Jeffrey Berger, MD
Associate Professor of Medicine and Vascular

Dr. Berger has established an independent NIH-funded research program investigating the role of platelet activity and thrombotic biomarkers in cardiovascular disease. As part of those studies, he oversees a laboratory investigating the contribution of platelet activity to disease processes. A major goal of the laboratory is to use ex vivo and in vitro techniques to investigate the genetics of platelet activity and the mechanism of how platelets contribute to atherosclerosis and thrombosis.

Dr. Bhama Ramkhelawon, PhD.
Assistant Professor of Surgery and Cell Biology

Dr. Ramkhelawon has established an independent NIH-funded research program investing the molecular process underlying the formation of abdominal aortic aneurysm. She has recently been awarded an R-01 NIH Grant for her project, entitled Dysregulation of Neuronal Guidance Cue Netrin-1 in Accelerated AAA.
FACULTY

Dr. Glenn R. Jacobowitz
Chief, Division of Vascular Surgery
Frank Veith Professor of Vascular Surgery

Dr. Caron Rockman
Program Director in Vascular Surgery
Vice-Chief, Division of Vascular Surgery
Florence and Joseph Ritorto Professor of Surgical Research

Dr. Michael Barfield
Clinical Assistant Professor of Surgery
Associate Site Director, Manhattan VA

Dr. Todd Berland
Director of Outpatient Interventions
Associate Professor of Surgery

Dr. Neal Cayne
Director of Endovascular Surgery
Director, Aortic Center
Professor of Surgery

Dr. Karan Garg
Clinical Assistant Professor of Surgery

Dr. Patrick J. Lamparello
Associate Professor of Surgery

Dr. Joanelle Lugo
Assistant Professor of Surgery
Chief, Vascular Surgery, Bellevue Hospital

Dr. Thomas Maldonado
Schwartz Buckley Professor of Surgery
Director, Aortic Center
Director of Endovascular Surgery
Medical Director, Venous Thromboembolic Center
Chief, Vascular Surgery, Manhattan VA Medical Center

Dr. Mikel Sadek
Associate Program Director
Assistant Professor of Surgery
Director, NYU Langone Vein Center

Dr. Frank Veith
Professor, Department of Surgery

Affiliated and Research Faculty

Dr. Jeffrey Berger
Associate Professor, Department of Medicine
Associate Professor, Department of Surgery
Dr. Bhama Ramkhelawon
Assistant Professor of Surgery
Assistant Professor, Department of Cell Biology
Director, Vascular Surgery Scientific Research

The Vascular Surgery Faculty members are national leaders, academically active and productive, and include:

- Members of the Editorial Boards and Editors of major vascular surgery journals
- Officers and committee members of major national and regional vascular surgery societies
- Editors of and contributors to major vascular surgery textbooks
- Members of vascular surgery guideline-writing committees
- Administers of the oral board certifying examination in vascular surgery
- Principal Investigators of major clinical trials
- Recipients of major NIH grants
CLINICAL TRIALS

ANCHOR: Aneurysm Treatment using the HeliFX Aortic Securement System Global Registry

Evaluation of the Zilver\textsuperscript{®} Vena\textsuperscript{™} Venous Stent in the Treatment of Symptomatic Iliofemoral Venous Outflow Obstruction (VIVO Clinical Study)

Platelet Activity In Vascular Surgery and Cardiovascular Events (PACE)

Platelet Activity and Thrombosis Registry (THoR)

SeCure- A Prospective Safety and Effectiveness Study: VenaCure Endovenous Laser Treatment (EVLT) 400 \textmu m Fiber Procedure Kit for Treatment of Incompetent Perforator Veins

VIRTUS: Safety and Efficacy of the Veniti Vic\textsuperscript{™} Venous Stent System (Veniti Inc.) when Used to Treat Clinically Significant Chronic Non-malignant Obstruction of the Iliofemoral Venous Segment

Zenith\textsuperscript{®} Low Profile AAA Endovascular Graft Clinical Study

Zenith\textsuperscript{®} p-Branch\textsuperscript{™} Pivotal Study
RECENT SELECTED PUBLICATIONS

Vascular Surgery Recent Selected Publications

Mapping Semaphorins and Netrins in the Pathogenesis of Human Thoracic Aortic Aneurysms.

Myocardial Injury after Non-Cardiac Surgery: A Systematic Review and Meta-analysis.

Presentation and Management of Inferior Vena Cava Thrombosis.

Regional variation in patient outcomes in carotid artery disease treatment in the Vascular Quality Initiative.

Peripheral vascular disease risk in diabetic individuals without coronary heart disease.

Practice Patterns of Fenestrated Aortic Aneurysm Repair: Nationwide Comparison of Z-Fen Adoption at Academic and Community Centers Since Commercial Availability.

Gore Iliac Branch Endoprosthesis for treatment of bilateral common iliac artery aneurysms.

Clinical significance of reversal of flow in the vertebral artery identified on cerebrovascular duplex ultrasound.

Platelet-Derived MRP-14 Induces Monocyte Activation in Patients With Symptomatic Peripheral Artery Disease.

Endovascular Treatment of Spontaneous Renal Artery Dissection After Failure of Medical Management.

Novel association between bone mineral density scores and the prevalence of peripheral artery disease in both sexes.
Compression versus No Compression after Endovenous Ablation of the Great Saphenous Vein: A Randomized Controlled Trial.

Increased Prevalence of Moderate and Severe Peripheral Arterial Disease in the American Indian (AI)/Alaskan Native (AN) Population: A Study of 96,000 AI/AN.

Mesenteric vein thrombosis can be safely treated with anticoagulation but is associated with significant sequelae of portal hypertension.
CONTACT INFORMATION

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