



VASCULAR SURGERY VIRTUAL SUB-INTERNSHIP 2020

OVERVIEW

Thank you for your interest in the LSU Vascular Surgery 0+5 residency program. We look forward to working with you during your virtual away rotation. The SARS-CoV2 pandemic presents an unusual challenge for prospective medical students to safely partake in sub-internship rotations at an outside institution. At LSU, we understand the importance of away rotations for future trainees.

We have developed a virtual away rotation for interested fourth-year medical students that are applying for a residency position in the 2021 match. The program will provide an opportunity to maximize exposure to the culture at LSU Vascular and interact with faculty/residents. The curriculum will include virtual involvement in clinical and academic training experiences. Our intent is for prospective trainees to enhance their understanding of the pathogenesis and treatment of vascular disease.

Our integrated program was started in 2012. We accept two residents each year. Our six graduates are working in a variety of academic and private practice settings. Our program offers a wide range of high volume experiences in Vascular and Endovascular Surgery in different clinical settings. Trainees rotate through a level 1 tertiary care center, private hospitals, and a VA. Given our location in southeast Louisiana, trainees are exposed to a large volume and variety of vascular pathology. Our graduates routinely finish with open and endovascular case volumes in the top 10th percentile.

GENERAL INFORMATION

This course is designed for 4th-year medical students interested in vascular and endovascular surgery.

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Division of Vascular and Endovascular Surgery
Program Director

ADMINISTRATOR:

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INSTRUCTORS:

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Assistant Professor of Clinical Surgery and Chief of Vascular Surgery at the VA

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Assistant Professor of Clinical Surgery

FELLOWS/RESIDENTS:

https://www.medschool.lsuhscc.edu/surgery/meet_the_residents.aspx

WORK LOCATIONS:

Virtual experiences for clinical and academic teaching sites. Primary rotation sites include West Jefferson Medical Center and University Medical Center New Orleans.

PREREQUISITES:

Must be a 4th Year Medical Student.

SCHEDULE OF REQUIRED ACTIVITIES

WEEK 1: Vascular Principles

Vascular Access & Closure	
Sheath Removal	https://www.youtube.com/watch?v=dSyZWCDG7U8
Ultrasound-Guided Femoral Access	https://www.youtube.com/watch?v=45Rs90giA8E
Transradial Access	https://www.youtube.com/watch?v=8PNzEcvtnkI
Direct Puncture of Vascular Lesions	https://www.youtube.com/watch?v=F-POH4lpX0I
Ultrasound-Guided Jugular Access	https://www.youtube.com/watch?v=UvPc2c_hE9g

M

- *8AM Vascular Case Conference*
- *Mentor faculty meeting (1hr)*
- *Mentor resident meeting (1hr)*
- *Dr. Sheahan meeting (1hr)*
- Arterial/Venous Anatomy
 - Morgan's 2,3
- Vascular Biology/Physiology
 - Morgan's 5, 6, 7

T

- *Faculty/Resident Lecture*
- *Dr. Sheahan meeting (1hr)*
- Coagulation/Thrombosis
 - Morgan's 7, 8
- Vascular Exam/Clinic
 - Morgan's 9-12

W

- *Mentor faculty meeting (1hr)*
- *Mentor resident meeting (1hr)*
- *Dr. Sheahan meeting (1hr)*
- Vascular Lab/Imaging
 - Morgan's 13, 15-22

Th

- *Faculty/Resident Lecture*
- *Dr. Sheahan meeting (1hr)*
- Peri-operative Care
 - Morgan's 23-25
- Assigned Rutherford Chapters

F

- *Guidry Teaching Conference*
- *"How I Do It": Multi-Institution Vascular Case Conference*
- *Mentor faculty meeting (1hr)*
- *Mentor resident meeting (1hr)*
- *Dr. Sheahan meeting (1hr)*
- *Simulation Lab*

Sat/Sun

- Key vascular publications (x2)

WEEK 2: Arterial

M

- *8AM Vascular Case Conference*
- *Mentor faculty meeting (1hr)*
- *Mentor resident meeting (1hr)*
- *Dr. Sheahan meeting (1hr)*
- Cerebrovascular Disease
 - Morgan's 26, 27

Carotid Subclavian Bypass with TEVAR

https://www.youtube.com/watch?v=0SXQwJG4LDI

Carotid-Carotid-Subclavian Bypass	https://www.youtube.com/watch?v=wzHmnIuVgDw
Carotid Endarterectomy (Full)	https://www.youtube.com/watch?v=AWXCpRJAN8M
Carotid Endarterectomy Part 1	https://www.youtube.com/watch?v=wZ8PzhwmSXQ
Carotid Endarterectomy Part 2	https://www.youtube.com/watch?v=E_wWpRKBy4w
Aorta to Right Carotid Bypass	https://www.youtube.com/watch?v=7LIrcSM7_Ic
Temporal Artery Biopsy	https://www.youtube.com/watch?v=zzYRhSfVSBk
Open Repair of Carotid Artery Pseudoaneurysm	https://www.youtube.com/watch?v=xuvCsWb6_YE

T

- *Faculty/Resident Lecture*
- *Dr. Sheahan meeting (1hr)*
- Lower extremity arterial disease, Part 1
 - Morgan's 34-37
 - Morgan's 41, 42

Superficial Femoral Artery to Dorsalis Pedis Artery Bypass	https://www.youtube.com/watch?v=QXjsre0kP4k
Left Common Femoral Artery to Anterior Tibial Artery Bypass using PTFE Graft	https://www.youtube.com/watch?v=xG2aF-vNSr4
Left Femoral to Peroneal Bypass by Reversed Ipsilateral Great Saphenous Vein	https://www.youtube.com/watch?v=z9T9DZB6C0g
Posterior Approach Right Popliteal Artery Aneurysm Repair	https://www.youtube.com/watch?v=gaGcnYtKWhk
Popliteal Aneurysm and Fistula	https://www.youtube.com/watch?v=hXV_fGcjdI4

W

- *Mentor faculty meeting (1hr)*
- *Mentor resident meeting (1hr)*
- *Dr. Sheahan meeting (1hr)*
- Lower extremity arterial disease, Part 2
 - Morgan's 55, 56, 58

Obturator Bypass	https://www.youtube.com/watch?v=G4FF-9JOV90
Aorto Iliac PTFE Graft (Cadaver)	https://www.youtube.com/watch?v=2RQb29QhFRQ
Exposing Right Iliac Artery for a Distal Anastomosis: Aortoiliac Bypass	https://www.youtube.com/watch?v=NmODIdoJDas
Exposing Left Iliac Artery for a Distal Anastomosis: Aortoiliac Bypass	https://www.youtube.com/watch?v=XEJbPA6Hdvg
Open Aorta: Completed Aortoiliac	https://www.youtube.com/watch?v=GnG0WoOLvHY

Th

- *Faculty/Resident Lecture*
- *Dr. Sheahan meeting (1hr)*
- *Journal Club*
- Visceral Arterial Disease
 - Morgan's 60-62
- Assigned Rutherford Chapter

Right Visceral Rotation	https://www.youtube.com/watch?v=DPxiDYzJwcY
Left Visceral Rotation	https://www.youtube.com/watch?v=KVuMiAuw5zc

Aorta to Superior Mesenteric Artery and Hepatic Artery Bypass	https://www.youtube.com/watch?v=xPNDY2ki_Z0
Aortic Exposure at Hiatus (Cadaver)	https://www.youtube.com/watch?v=dK_KeRv4DKo
SMA Exposure, Thromboembolotomy, Patch Angioplasty and Retrograde Stenting	https://www.youtube.com/watch?v=4vyx9LmJCKA
SMA Aneurysm - Open Surgical Repair	https://www.youtube.com/watch?v=OuK4hgofDjQ
SMA Stenting	https://www.youtube.com/watch?v=-4PXsMu8d9M
Iliac to SMA Bypass Ringed ePTFE	https://www.youtube.com/watch?v=g9F0BIXvFeU
SMA Embolotomy	https://www.youtube.com/watch?v=5Bv_8xPTgPU
Open Repair of Renal Artery Aneurysm in Solitary Kidney	https://www.youtube.com/watch?v=PF5RYg6V4Gk

F

- *Guidry Teaching Conference*
- *“How I Do It”: Multi-Institution Vascular Case Conference*
- *Mentor faculty meeting (1hr)*
- *Mentor resident meeting (1hr)*
- *Dr. Sheahan meeting (1hr)*
- *Simulation Lab*
- Thoracic Aorta:
 - Morgan’s 32, 33

TEVAR of Contained Rupture Descending Thoracic Aorta	https://www.youtube.com/watch?v=Hlhez-m-a9E4
Thoracic Endovascular Repair of Rapidly Expanding False Lumen of Chronic Type III Aortic Dissection	https://www.youtube.com/watch?v=jGkLTCVEQ_I
Ascending Aortic Debranching	https://www.youtube.com/watch?v=y76-6SsCA-E
Endovascular Treatment of Iatrogenic Subclavian Arteriovenous Fistula	https://www.youtube.com/watch?v=J0CvTwIrQuU
Thoracoabdominal Exposure (Cavader)	https://www.youtube.com/watch?v=HEL0o7dbM_g

Sat/Sun

- Aortic/Peripheral Aneurysms
 - Morgan’s 28-31
- Key vascular publication (x1)

WEEK 3: Venous/Lymphatic

M

- *8AM Vascular Case Conference*
- *Mentor faculty meeting (1hr)*
- *Mentor resident meeting (1hr)*
- *Dr. Sheahan meeting (1hr)*
- DVT
 - Morgan’s 50-52

Open IVC Filter Removal	https://www.youtube.com/watch?v=GCz2L-hgHp0
Left Iliofemoral DVT Thrombectomy Using INARI ClotTrier	https://www.youtube.com/watch?v=NjlQZuBkFAQ

T

- *Faculty/Resident Lecture*
- *Dr. Sheahan meeting (1hr)*
- Varicose Veins/Venous Hypertension
 - Morgan's 53, 54
- Lymphedema
 - Morgan's 57

Left Innominate Vein Bypass	https://www.youtube.com/watch?v=U4mpl1W7w4M
Endovenous Laser Treatment (EVLT) of the Greater Saphenous Vein	https://www.youtube.com/watch?v=WGW8BUKp76g
Mechanochemical Endovenous Ablation (MOCA) of the Greater Saphenous Vein	https://www.youtube.com/watch?v=cKzT1k3Ib8k
SVC Replacement	https://www.youtube.com/watch?v=2lVauaz5DY0
Leiomyosarcoma of IVC	https://www.youtube.com/watch?v=yZQKtldcG-8

W

- *Mentor faculty meeting (1hr)*
- *Mentor resident meeting (1hr)*
- *Dr. Sheahan meeting (1hr)*
- Upper Extremity/Thoracic Outlet
 - Morgan's 43-45

Thoracic Outlet Syndrome	
First Rib Resection Using an Infraclavicular Anterior Approach	https://www.youtube.com/watch?v=cEEpEC3yTew

Th

- *Faculty/Resident Lecture*
- *Dr. Sheahan meeting (1hr)*
- *Journal Club*
- Vasculitis
 - Morgan's 46-47
- Assigned Rutherford Chapters

F

- *Guidry Teaching Conference*
- *"How I Do It": Multi-Institution Vascular Case Conference*
- *Mentor faculty meeting (1hr)*
- *Mentor resident meeting (1hr)*
- *Dr. Sheahan meeting (1hr)*
- *Simulation Lab*

Sat/Sun

- Vascular Trauma
 - Morgan's 39, 40
- Key vascular publication (x1)

WEEK 4: HD/Malformations

M

- *8AM Vascular Case Conference*
- *Mentor faculty meeting (1hr)*
- *Mentor resident meeting (1hr)*
- *Dr. Sheahan meeting (1hr)*
- Hemodialysis Access
 - Morgan's 134

Creation of Radiocephalic Fistula	https://www.youtube.com/watch?v=JGJzKRkrzYg
Right Upper Extremity Infected Arteriovenous Fistula Excision	https://www.youtube.com/watch?v=eBBb2rgkjtE
Right Upper Extremity Arteriovenous Fistula Revision	https://www.youtube.com/watch?v=CNEPhctwY28
Left Upper Extremity Brachiobasilic Arteriovenous Fistula Creation	https://www.youtube.com/watch?v=Rn5dO8_-8eo
Arteriovenous Fistula (AVF) Superficialization	https://www.youtube.com/watch?v=G7VG1NgVg-8
Hero Graft Placement	https://www.youtube.com/watch?v=soSHOvSgzlY
Tunneled Dialysis Catheter Placement	https://www.youtube.com/watch?v=nSe4Gceg11w
Tunneled Dialysis Catheter Removal After Inadvertent Placement in Carotid	https://www.youtube.com/watch?v=MWptbmuzEXQ
Cephalic Arch Reconstruction	https://www.youtube.com/watch?v=2uSJYa8l9VE
Left Cephalic Vein Turndown	https://www.youtube.com/watch?v=pfvxyJdcte8

T

- *Faculty/Resident Lecture*
- *Dr. Sheahan meeting (1hr)*
- Congenital Malformations
 - Morgan's 63

AV Malformations	
Embolization of Temporal Arteriovenous Malformations	https://www.youtube.com/watch?v=WVqjZLyeBSM

W

- *Mentor faculty meeting (1hr)*
- *Mentor resident meeting (1hr)*
- *Dr. Sheahan meeting (1hr)*
- *Vascular Case Presentation*

Th

- *Faculty/Resident Lecture*
- *Dr. Sheahan meeting (1hr)*
- *Vascular Research Presentation*
- Assigned Rutherford Chapters

F

- *Guidry Teaching Conference*
- *"How I Do It": Multi-Institution Vascular Case Conference*
- *Mentor faculty meeting (1hr)*
- *Mentor resident meeting (1hr)*
- *Dr. Sheahan meeting (1hr)*

COURSE MATERIALS/RESOURCES

REQUIRED:

- Must have access to a computer with video capabilities and internet connection.
- *Vascular and Endovascular Surgery at a Glance*
Morgan McMonagle, Matthew Stephenson
ISBN: 978-1-118-49603-9
- Simulation materials (recommended)
 - Castro needle driver
 - Suture
 - Practice graft material

SUGGESTED:

We suggest using ancillary vascular surgery textbooks and resources to supplement each student's learning. Utilize these texts for in-depth research projects or presentations.

Although a variety of texts are appropriate, we recommend the following:

Reference Textbooks

Rutherford's Vascular Surgery and Endovascular Therapy, 9th edition
Current Therapy in Vascular and Endovascular Surgery, 5th edition
Moore's Vascular and Endovascular Surgery: A Comprehensive Review, 9th edition
Haimovici's Vascular Surgery, 6th edition

Surgical Atlases

Anatomic Exposures in Vascular Surgery, 3rd edition (Wind & Valentine)
Atlas of Vascular Surgery and Endovascular Therapy, 1st edition (Chaikof & Cambria)

Handbooks

GORE Vascular/Endovascular Surgery Combat Manual (free PDF available online – email GORE for hard copy)
Handbook of Patient Care in Vascular Diseases, 6th edition

Online Resources

Audible Bleeding: Vascular surgery focused podcast with associated video lectures, exam reviews, and "how I do it" videos
Houston Methodist DeBakey CV Education: YouTube channel hosted by the Department of Cardiovascular Surgery at Houston Methodist Hospital boasting a large library of video resources including operative videos, recorded conferences, grand round lectures, and expert panels

COURSE LEARNING OBJECTIVES

Learning will be accomplished via:

1. Clinical and operative learning via virtual rounding and clinical/surgical case discussions with residents and faculty.
2. Weekly virtual didactic conferences: Resident education, Journal Club, Case Conference.
3. Dedicated 1:1 Faculty and Resident mentorship
4. Weekly reading assignment discussion with residents
5. Detailed case presentation

The specialty of vascular surgery encompasses the treatment of disease in the clinical and surgical setting, with lifelong patient-physician relationships. Consequently, the scope of this practice is broad and includes not only surgical/endovascular management but also medical treatment modalities.

In addition to basic surgical concepts, medical students will learn how to provide care for patients with complex arterial and venous pathologies:

- Atherosclerotic/embolic arterial disease
- Aneurysmal disease
- Aortic dissection
- Vascular trauma
- Venous/Lymphatic disease
- Vascular malformations
- Hemodialysis access
- Vascular medicine

Students will understand how principles of vascular surgery are founded in the systemic component of vascular disease, and integrated medical management. They will learn the role of the vascular surgeon as consultant to ancillary medical and surgical services.

The curriculum will be tailored to the educational goals of the student. Educational objectives will be reviewed on an individual basis prior to the rotation.

CORE COMPETENCIES

Evaluation of patients for vascular disease

- Thorough, complete medical history (including cardiovascular and peripheral vascular history)
- Assessment of cardiovascular risk factors
- Focused understanding of arterial and venous anatomy
- Physical examination (pulse examination, neurologic exam)
- Non-invasive assessment of peripheral vascular system (ankle-brachial indices, doppler exam)
- Introduction to advanced vascular testing (Duplex ultrasound, CT, MR, catheter-based angiography)

Preoperative and postoperative assessment

- Develop case presentation skills
- Identify common complications of vascular surgical procedures
- Wound care and management

Basic surgical technique

- Sterile technique
- Patient preparation for surgery (room setup, patient positioning, draping, etc.)
- Suturing
- Knot tying
- Introductory knowledge of common surgical instruments
- Introductory knowledge of endovascular platforms (sheaths, catheters, wires, balloons, stents)

ASSESSMENT/EVALUATION OF STUDENT PERFORMANCE

The Course Director/Residents/Faculty will meet with you each daily to request feedback and to discuss your educational and training goals and objectives. At the end of the week, any deficiencies will be addressed, and opportunities to meet your educational goals and objectives will be scheduled.

Medical students must complete the course and faculty evaluations of this and all School of Medicine courses in order to receive a grade. The identity of individual students will not be shared with the course instructors upon review of evaluations.

The Course Director collates evaluations and proposed scores (Non-pass/Pass/Honors*) from faculty and residents and assigns the final grade. Criteria for Honors or Extraordinary level of performance include knowledge at a Level 1 Vascular Surgery resident, self-starting, self-motivation, and impeccable work discipline.

*-some Schools do not accept grade "Honors"

It is expected that students who excel with a fundamental knowledge in vascular surgery, and exhibit dedication for vascular patient care will be a candidate for a letter of recommendation.

STUDENT EVALUATION

Anonymous pre-rotation and post-rotation surveys will be employed for feedback and improvement in the learning experience. Students will receive an email with a link to the evaluation survey. We appreciate your input and ask that you complete the evaluation.