



Vascular Surgery Residency at the University of Wisconsin

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University of Wisconsin, Madison



Leadership



Rebecca M. Minter, MD.
A.R. Curreri Distinguished Professor
Chair, Department of Surgery



John E. Rectenwald, MD.
Susan Behrens MD (Class of 1975)
Surgery Education Chair
Vice Chair of Education



Girma Tefera, MD.
Chair & Professor,
Division of Vascular Surgery
Vice Chair of Global Surgery

Vascular Training Programs

- Fellowship started in 1999; Integrated residency established with ACGME approval in 2009.
- *Designed to produce surgeons who can provide comprehensive care to the vascular patient and be expected to fully participate in the rapid expansion of the field of vascular surgery, both clinically and academically.*

Our Mission...

- To train the **future leaders** in Vascular Surgery
 - Compassionate physicians
 - Technical excellence
 - Mature judgement
 - Leadership skills
 - Research experience



What's Special about Vascular Training at Wisconsin?

- Breadth of advanced clinical experience
- Depth of faculty experience across fields
- Diversity of training backgrounds of the faculty
- Commitment to resident education
 - Progressive educational opportunities
- Commitment to resident research and academic development
- Commitment to development of leadership skills
- 50/50 Complex open/endovascular case mix



Global Vascular Surgery: Addis Ababa, Ethiopia

- Began in 2018
- The first vascular residency in Africa (outside South Africa)
- Opportunity for PGY-4 Vascular resident to rotate for 1 month when UW faculty present at end of 4th year.



Programs and Clinical Trials

- Limb Salvage Angioplasty Program
- Hemodialysis Access
- Percutaneous AV Fistula
- Thoracic Outlet Syndrome
- Carotid Stent Program
- Complex Thoracic Endograft Program
- Fenestrated EVAR Program
- BEST CLI Trial
- GORE® TAG® Thoracic Branch Endoprosthesis (TBE)
- GORE TAMBE Trial
- CREST 2 Trial; CEA vs CAS vs Medical Management

Vascular Surgery Residency - Sites

- Four integrated sites:
 - University Hospital
 - William S. Middleton VA Hospital (connected by corridor)
 - Meriter Hospital (10 minute drive)
 - Arborgate Vein Clinic (15 minute drive)
- Current Affiliated Rotation: St Mary's Hospital, Madison
 - Transitioning to Swedish American Hospital/UW Health Northern Illinois in Rockford, IL
 - PGY 3 year
 - Both offer a private practice, community rotation

Madison Facilities

MAJOR CLINICAL FACILITIES

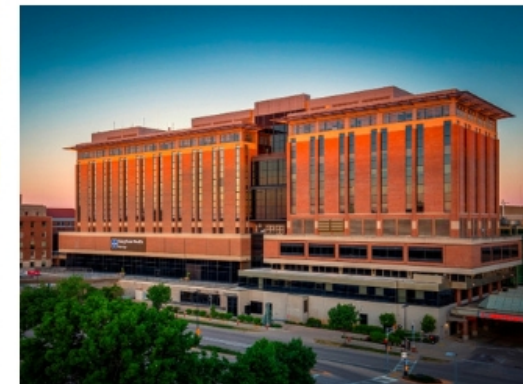
UW Hospital - 505 beds

Meriter Hospital - 450 beds

Veteran's Hospital - 90 beds

American Family Children's Hospital - 87 beds

UW Health at The American Center - 56 beds



UW Health Main Campus



University Hospital



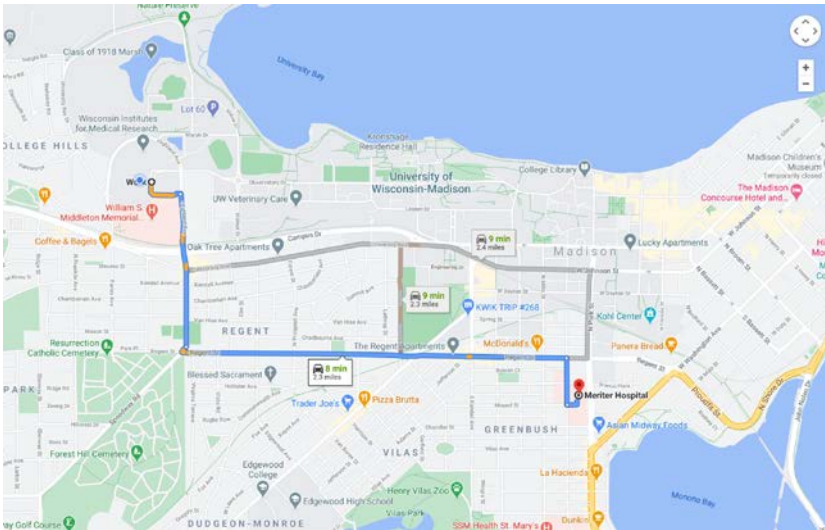
- Tertiary referral center
- Hybrid operating room
- Dedicated OR Team
- Cardiovascular Anesthesia
- Closed SICU
- Dedicated IMC/general care floor
- Vascular lab
- Any vascular operation can be done here
- Faculty are “on service” for the week
- Two APPs during the week, one on weekends

VA Hospital

- Hybrid Operating Room
- Weekly Clinic
- Vascular Lab
- Almost all vascular procedures done here
 - Complex aortic surgery done at the University
- Inpatient and outpatient APP support



Meriter Hospital



- Community hospital
 - JOA with UW
- Dedicated Vascular Service
 - Senior vascular trainee and general surgery PGY 3
 - APP support during the week
 - APP, general surgery, and vascular lab residents help cover weekends
- Peripheral endovascular, dialysis access, varicose vein, carotid endarterectomy
- Faculty “on service” for a week

UW Health Northern Illinois



- 357 beds
- New ICU and moderate care tower
- New Women and Children's tower
- Level II Trauma Center
- 3 vascular surgeons and 2 APPs
- 75 miles from Madison
- Practice the spectrum of community vascular surgery
- Complex procedures referred to Madison

Rotations - Overview

- PGY 1 year – Clinical
 - 13 four-week rotations
 - 10 Core, 2 Vascular Surgery, 1 Cardiology
- PGY 2 year – Clinical
 - 20 weeks Core and 32 weeks Vascular
- PGY 3 and PGY 4 – Academic Development
 - Occasional Weekend Coverage
- PGY 5 year - Clinical
 - 12 weeks Core and 40 weeks Vascular
- PGY 6 and PGY 7 - Clinical
 - All vascular, all the time!
- 3 weeks of vacation each year

Core Rotations

- Core General Surgery:
 - Surgical Intensive Care 3 months
 - Trauma 1 month
 - Night Float 2 months
 - Off-site general/vascular 2 months
 - St Mary's
 - General Surgery 5 months
- Core Surgical subspecialties:
 - Transplantation (PGY 1 and 3) 3 months
 - Plastic Surgery 1 month
 - Thoracic Surgery 1 months
18 months

Core Surgery Training

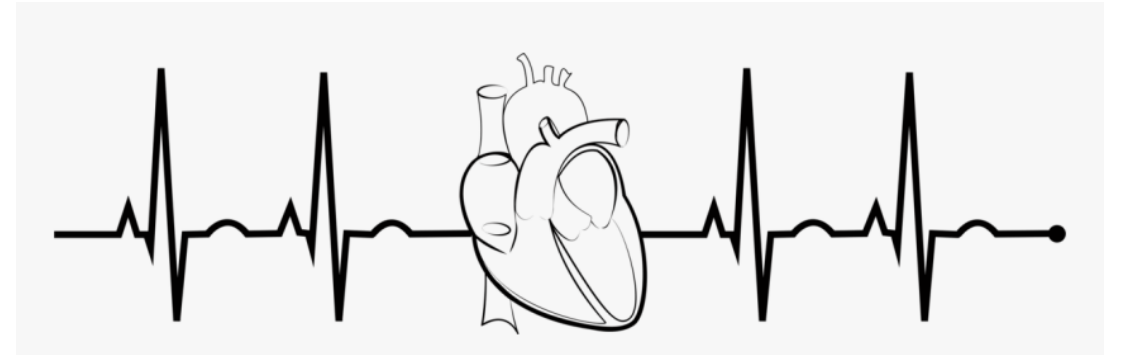
- Specialized core surgery conferences
- Excellent working relationship with general surgery
 - You get same training as the general surgery residents
 - Simulation labs, Intern Surgical Olympics, central line training
- Resident Evaluation by core faculty
- Call:
 - Intern year – night float system
 - SICU – in house call (typically q4)
 - Share transplant call as PGY3 with the fellows

Cardiology Rotation PGY1

A focused exposure to consultative cardiovascular medicine, echocardiography and nuclear myocardial perfusion imaging stress testing.

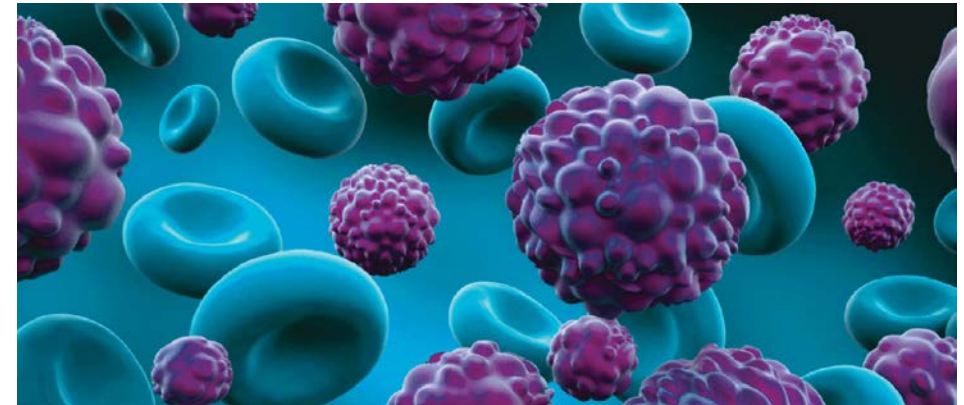
2 weeks with the UW Hospital Cardiology Consult Service, and spending 1 week each reading studies in the UW Hospital Echocardiography Laboratory and Nuclear Cardiology Laboratory.

Will function on each service in a role equivalent to a first year cardiovascular medicine fellow



Academic Development Time (2 years, between PGY 2/3)

- 2 years of Academic Development Time is required for the Vascular Surgery Residency
- Division of Vascular Surgery has 6 funded faculty researchers!
 - NIH, AHA, PCORI, NPCRC, etc.
- Basic Science – AAA- Dr. Liu
- Outcomes – WiSOR
- Data and Data Analysis – Dr. Bennett
- AAA- Dr. Yamanouchi, Dr. Matsumura
- Global Surgery – Dr. Tefera
- Bioethics, Studies to change clinical practice- Dr. Schwarze



Junior Resident Vascular Rotations

- Junior vascular resident on the UW vascular team working with Gen Surg PGY1 and Vascular PGY4&5/fellows
- See consults, develop therapeutic plans, perform endovascular and open interventions and follow up the patients
- Gain experience in endovascular and open interventions
- Perform general vascular cases eg. CEA, femoral to popliteal bypass, CFA endarterectomy, EVAR, amputations and assist with complex open aortic reconstructions
- Participate in weekly VA clinics
- Dialysis Access Rotation PGY2 year
- Vein Clinic Rotation PGY3 year
- Call: Typically take 1 night of senior call from home during the week when on vascular surgery rotations with senior backup
- Work every other weekend with primary call (from home) Saturday night

Venous Disease Rotation

- Arborgate Vein Clinic
- Office-based and hospital operating room-based interventions
- Minimally invasive techniques, and the postoperative care of patients with venous disorders
- Hands on venous imaging in the vascular lab
- Also participate in vein care during Meriter Hospital rotations



Senior Vascular Rotations

- **UW Vascular Service (6 months/yr)**

- 2 three-month blocks each of the PGY4 & 5 years
 - Senior residents work opposite the fellows (ACGME rule)
 - Vascular PGY2 or 3 also on service
 - General Surgery PGY1
 - Inpatient APP support
- Brand new Artis Pheno Hybrid Operating Suite at UH
- Do the range of vascular surgery – particularly complex open, endovascular and hybrid procedures
- Night and weekend call q4 from home – shared with the other senior trainees
- Trauma team sees the ER consults at night and staffs them directly with the faculty

Senior Vascular Rotations

- **Meriter Rotation (3 months/yr)**
- 1 three-month block as chief each of the PGY4 & 5 years
 - General surgery PGY3 and APPs
- Responsible for covering vascular cases at Meriter, particularly endovascular cases (mostly PAD)
- Hemodialysis Access creation and endovascular procedures
- Vein care
- Open arterial cases
- Time for research, vascular lab work and additional vein care opportunities
- Ethiopia rotation would be during this time
- Share night and weekend call with the other senior residents (q4)

Senior Vascular Rotations

- **VA Rotation (3 months/yr)**
- 1 three-month block as chief each of the PGY4 & 5 years
 - APPs, occasional general surgery PGY1
- Responsible for running the service
 - Faculty rotate by the day
- Complete range of vascular surgery cases
- Run the outpatient clinic with faculty supervision (1 day/week)
- Share night and weekend call with the other senior residents (q4)

Vascular Call

- PGY 1 – Night float with GS residents (2 months)
- PGY 2&3
 - On core rotations
 - Every third night call from home
 - Except 2 months SICU, in-house every fourth night
 - On vascular rotations
 - Back-up call from home for in-house night-float intern one night a week
 - Every other weekend with Saturday night primary call from home
- PGY 4&5
 - Backup night-float intern from home every 4th night during week
 - Work every 4th weekend (in rotation with other senior trainees)
 - Weekend Midlevel NP support at UH

Overall Schedule

VASCULAR	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53
	Jun 24 - Jun 27	Jun 28 - Jul 4	Jul 5 - Jul 11	Jul 12 - Jul 18	Jul 19 - Jul 25	Jul 26 - Aug 1	Aug 2 - Aug 8	Aug 9 - Aug 15	Aug 16 - Aug 22	Aug 23 - Aug 29	Aug 30 - Sep 5	Sep 6 - Sep 12	Sep 13 - Sep 19	Sep 20 - Sep 26	Sep 27 - Oct 3	Oct 4 - Oct 10	Oct 11 - Oct 17	Oct 18 - Oct 24	Oct 25 - Oct 31	Nov 1 - Nov 7	Nov 8 - Nov 14	Nov 15 - Nov 21	Nov 22 - Nov 28	Nov 29 - Dec 5	Dec 6 - Dec 12	Dec 13 - Dec 19	Dec 20 - Dec 26	Dec 27 - Jan 2	Jan 3 - Jan 9	Jan 10 - Jan 16	Jan 17 - Jan 23	Jan 24 - Jan 30	Jan 31 - Feb 6	Feb 7 - Feb 13	Feb 14 - Feb 20	Feb 21 - Feb 27	Feb 28 - Mar 6	Mar 7 - Mar 13	Mar 14 - Mar 20	Mar 21 - Mar 27	Mar 28 - Apr 3	Apr 4 - Apr 10	Apr 11 - Apr 17	Apr 18 - Apr 24	Apr 25 - May 1	May 2 - May 8	May 9 - May 15	May 16 - May 22	May 23 - May 29	May 30 - Jun 5	Jun 6 - Jun 12	Jun 13 - Jun 19	Jun 20 - 23
Gober	Vascular			Transplant			NF (VVT)			Anesthesia			Cardiology			EGS			Thoracic			VAH			Plastics			Orange			TAC			Vascular			NF (VVT)																
Bontekoe	Trauma (4)			SICU (6)			UW			Meriter Vascular			Access (4)			VA Gen Surg (4)			UW			SICU (6)			UW																												
Wolf	UW						St Marys (8)						UW						Transplant (8)						UW			Vein Rotation			UW																						
Rademacher	UW									VA									UW									Meriter																									
Um	UW									Meriter									UW									VA																									
Afraz							Meriter						UW									VA									UW																						
Whittington	VA									UW									Meriter									UW																									
Zaza	RESEARCH																																																				
DeRoos	RESEARCH																																																				

Didactic Curriculum

- Follow the Vascular SCORE (VSCORE) for our weekly didactic curriculum
 - Topics/schedule known in advance to allow for pre-reading
 - Interactive lectures given by faculty and residents
- Indications and M&M conference alternate weekly
- Monthly multi-disciplinary Complex Aortic Disease Conference
- Faculty-sponsored Monthly Journal Club
- Quarterly simulation sessions – FEVS curriculum
- UCLA/SVS Vascular Review Course in September of PGY4
- RPVI Exam (Division covers cost)

Vascular Conferences

- Monday morning 6:30 am
 - 6:30 to 7:30 Indications and M&M
 - 7:30 to 8:00 Web-Ex morning sign out
- Wednesday morning 7:00 to 8:00 am
 - Teaching conference – VSCORE Curriculum
- Complex Aortic Disease Conference – 5-6pm first Thursday of the month
- Monthly Journal Club – Third Thursday of the month in the evening
- Conferences are virtual with COVID

Case Numbers - Vascular

		AL	ST	JL	CM
Category	Minimum	Total	Total	Total	
Vascular Procedures					Total
Abdominal	30	78	78	47	69
Cerebrovascular	25	67	41	69	48
Peripheral	45	148	111	119	143
Complex	10	92	66	45	82
Endovascular Diagnostic	100	228	255	307	352
Endovascular Therapeutic	80	256	262	285	325
Endovascular Aneurysm Repair	20	77	50	61	55
Major/Minor Vascular Procedures					
Major Vascular Procedures	250	678	600	624	
Minor Vascular Procedures	0	547	417	588	
Total Major/Minor Vascular Procedures	0	1225	1017	1212	

Case Numbers – General Surgery

General Surgery Procedures	AL	ST	JL	CM
Skin, Soft tissue and Breast	41	28	27	16
Head and Neck	4	6	9	0
Alimentary Tract	32	32	39	33
Abdominal (GS)	64	53	83	66
Liver	2	2	1	0
Pancreas	1	0	0	1
Endocrine	3	3	4	0
Trauma	21	4	97	9
Trauma Non-Operative	0	0	0	1
Thoracic	9	14	19	42
Pediatric	0	0	2	1
Plastic	7	6	9	0
Laparoscopic - Basic	14	29	26	31
Endoscopy	2	1	1	9
Laparoscopic - Complex	5	7	17	26

What Our Graduates Are Doing:

- **Brigitte Smith, MD**, University of Wisconsin School of Medicine
 - Assistant Professor Univ. of Utah
- **Jessica Secor, MD**, Boonshoft School of Medicine at Wright State U
 - Private practice Peoria, Illinois; Asst. Professor Univ. of IL, Peoria
- **Elena Rinehardt, MD**, University of Washington School of Medicine
 - Private practice Seattle, Washington
- **Christopher McAninch, MD**, St. Louis University School of Medicine
 - Private practice Minneapolis, Minnesota
- **Jason Le, MD**, Chicago Medical School at Rosalind Franklin University
 - Private practice Appleton, Wisconsin
- **Shruthi Thiagarajasubramanian, MD**, Michigan State University SOM
 - Academic Practice- Alleghany Medical Center, Pittsburgh, PA.
- **Alex Leung, MD**, Boston University School of Medicine
 - Private Practice, Denver, Colorado

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<https://www.surgery.wisc.edu/education-training/residencies/vascular-surgery-residency/>

