



# Vascular Surgery Residency at the University of Wisconsin

Paul D. DiMusto, MD

Associate Professor of Surgery

Program Director, Vascular Surgery

Division of Vascular Surgery

University of Wisconsin, Madison



# Departmental Leadership



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



**Brigitte Smith, MD, MPHE**  
Associate Professor, Division of Vascular Surgery  
Vice Chair of Education



**Kristin Long, MD, MPH**  
Associate Professor, Division of Endocrine Surgery  
Vice Chair of Global Surgery

# Program Leadership



**Paul D. DiMusto, MD**  
Associate Professor  
Program Director, Vascular Residency  
& Fellowship



**Courtney Morgan, MD**  
Associate Professor  
Associate Program Director, Vascular  
Residency & Fellowship

# 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.
- Board approval to count towards training.



# Programs and Clinical Trials

- Limb Salvage Angioplasty Program
- Hemodialysis Access
  - Percutaneous AV Fistula
- Thoracic Outlet Syndrome
- 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

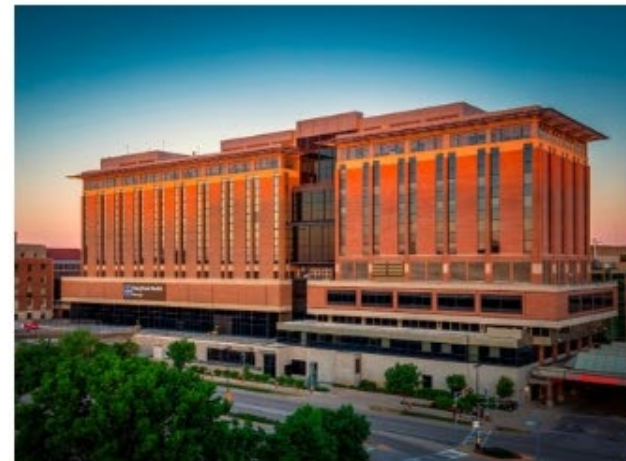


# Vascular Surgery Residency - Sites

- Four integrated sites:
  - University Hospital
  - William S. Middleton VA Hospital (connected by corridor)
  - Meriter Hospital (10 minute drive)
  - Arbor Gate Vein Clinic (15 minute drive)
- Affiliated Rotation:
  - UW Health Northern Illinois - Swedish American Hospital in Rockford, IL
  - Private practice, community vascular surgery rotation

# MAJOR CLINICAL FACILITIES

- UW Hospital - 505 beds
- Meriter Hospital - 450 beds
- Veterans Hospital - 90 beds
- American Family Children's Hospital - 87 beds
- East Madison Hospital - 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

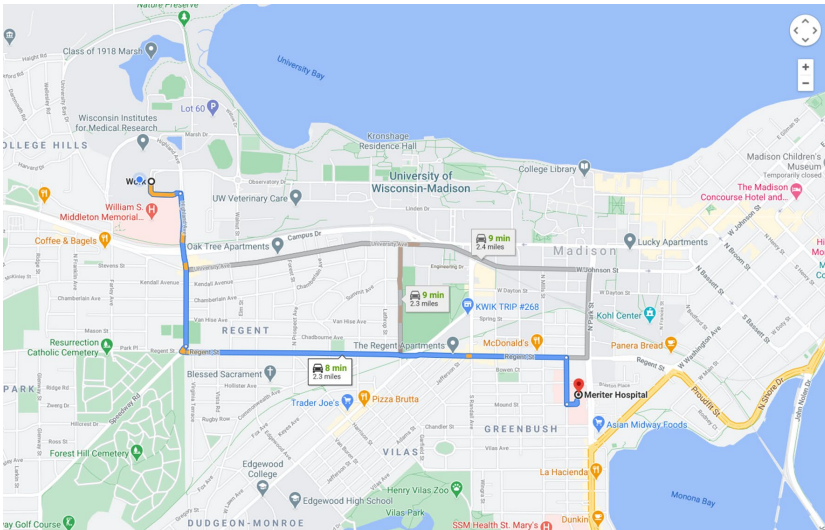
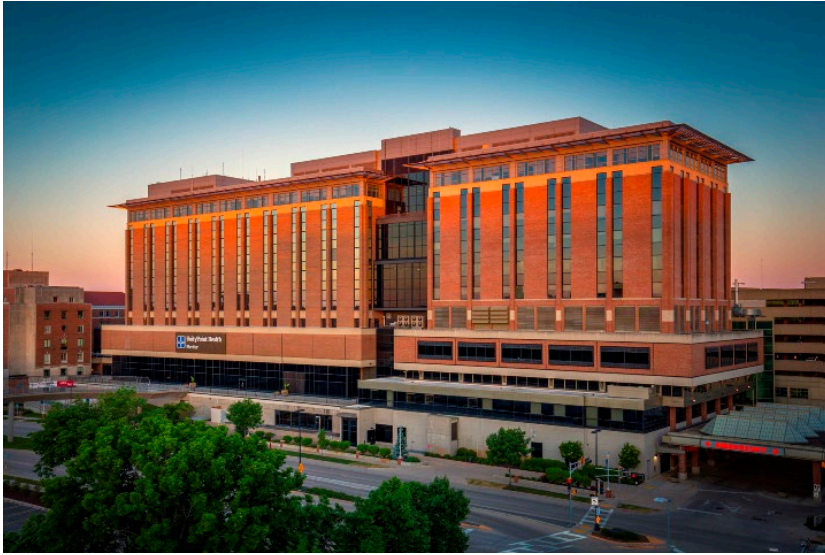
# VA Hospital

- 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, SwedishAmerican Hospital



- 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
  - 22 weeks Core and 30 weeks Vascular
- Research Years 1 & 2 – Academic Development
  - Weekend Coverage
- PGY 3 year - Clinical
  - 12 weeks Core and 40 weeks Vascular
- PGY 4 and PGY 5 - Clinical
  - All vascular, all the time!
- 3 weeks of vacation each year

# Core Rotations

- Core General Surgery:
    - Surgical Intensive Care 2 months
    - Trauma 2 months
    - Night Float 2 months
    - CT-ICU 1 month
    - General Surgery 8 months
  - Core Surgical subspecialties:
    - Cardiac Surgery 1 month
    - Plastic Surgery 1 month
    - Otolaryngology 1 month
- 18 months**

# Core Surgery Training

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

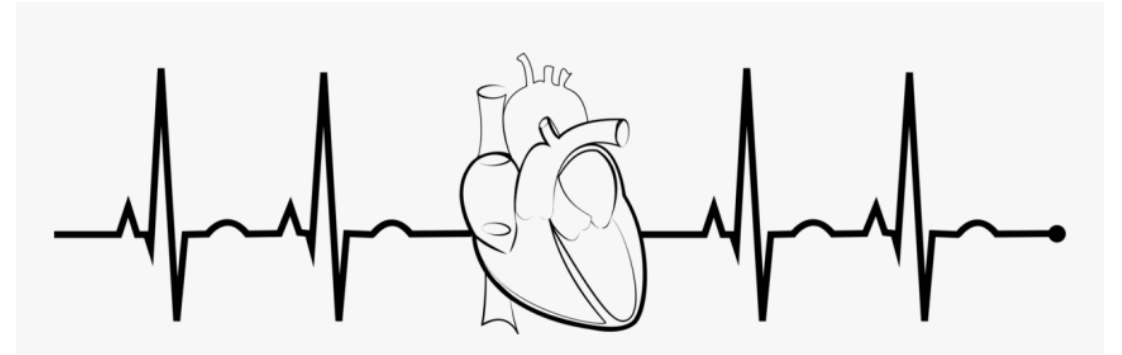


# Cardiology Rotation PGY1

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

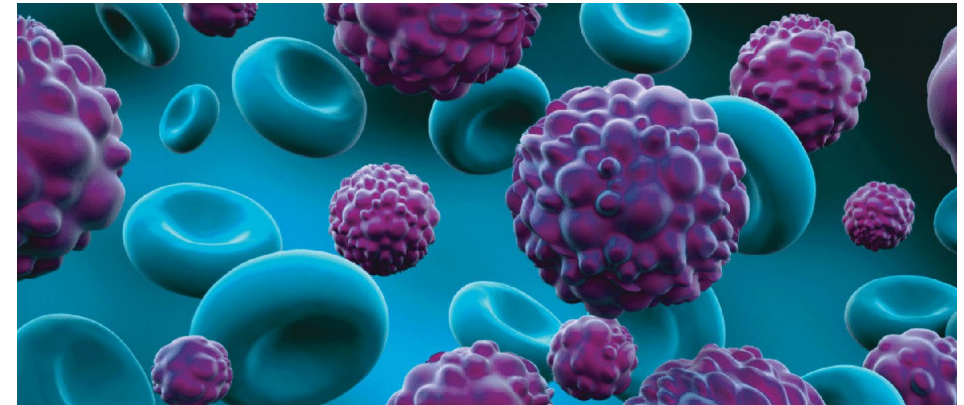


# Junior Resident Vascular Rotations

- Junior vascular resident on the UW vascular team working with Gen Surg PGY 1 and Vascular PGY 4 & 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 PGY 2 year
- Vein Clinic Rotation PGY 3 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

## 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 funded faculty researchers!
  - NIH, AHA, PCORI, NPCRC, etc.
- Basic Science - AAA - Dr. Liu
- Outcomes - WiSOR
- Data and Data Analysis - Dr. Bennett
- AAA - Dr. Yamanouchi
- Global Surgery - Dr. Tefera
- Bioethics, Studies to change clinical practice - Dr. Schwarze



# Venous Disease Rotation

- Arbor Gate 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 (12 months total)**
  - 6 two-month blocks over the PGY 4 & 5 years
    - Senior residents work opposite the fellows (ACGME rule)
  - Vascular PGY 2 or 3 also on service
  - General Surgery PGY 1
  - Inpatient APP support
- 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 (6 months total\*)**
- 3 two-month blocks as chief over the PGY 4 & 5 years
  - General surgery PGY3 and APPs
- Responsible for covering vascular cases at Meriter, particularly endovascular cases (mostly PAD)
- 1 month rotation with IR at UH
- 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)
- Vascular Clinic at UW Health 1 S Park at least 1 day/wk

# Senior Vascular Rotations

- **VA Rotation (6 months total)**
- 3 two-month blocks as chief over the PGY 4 & 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
    - ICU, 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 4<sup>th</sup> weekend (in rotation with other senior trainees)
  - Weekend Midlevel NP support at UH

# Overall Schedule

	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
	Jun 24 - Jun 30	Jul 1 - Jul 7	Jul 8 - Jul 14	Jul 15 - Jul 21	Jul 22 - Jul 28	Jul 29 - Aug 4	Aug 5 - Aug 11	Aug 12 - Aug 18	Aug 19 - Aug 25	Aug 26 - Sep 1	Sep 2 - Sep 8	Sep 9 - Sep 15	Sep 16 - Sep 22	Sep 23 - Sep 29	Sep 30 - Oct 6	Oct 7 - Oct 13	Oct 14 - Oct 20	Oct 21 - Oct 27	Oct 28 - Nov 3	Nov 4 - Nov 10	Nov 11 - Nov 17	Nov 18 - Nov 24	Nov 25 - Dec 1	Dec 2 - Dec 8	Dec 9 - Dec 15	Dec 16 - Dec 22	Dec 23 - Dec 29	Dec 30 - Jan 5	Jan 6 - Jan 12	Jan 13 - Jan 19	Jan 20 - Jan 26	Jan 27 - Feb 2	Feb 3 - Feb 9	Feb 10 - Feb 16	Feb 17 - Feb 23	Feb 24 - Mar 2	Mar 3 - Mar 9	Mar 10 - Mar 16	Mar 17 - Mar 23	Mar 24 - Mar 30	Mar 31 - Apr 6	Apr 7 - Apr 13	Apr 14 - Apr 20	Apr 21 - Apr 27	Apr 28 - May 4	May 5 - May 11	May 12 - May 18	May 19 - May 25	May 26 - Jun 1	Jun 2 - Jun 8	Jun 9 - Jun 15	Jun 16 - Jun 23
PGY1	Vascular		Cardiology			Anesthesia			NF (VVT)			Transplant			Blue			Meriter			Plastics			Orange			EGS			EMH			Vascular			NF (VVT)																
PGY2	SICU		Trauma Day		UW				EGS				UW				Access				UW				UW				SICU		Trauma Day																					
PGY3	UW				Veins		Plastics		UW				CTICU		OTO				UW				Cardiac				Meriter GS				UW																					
PGY4	Meriter		VA		UW				VA				UW				Meriter				Ethiopia				IR		UW																									
PGY5	VA		Meriter		UW				Meriter				UW				VA				UW				Ethiopia				IR		UW																					
Fellow 1			UW		Meriter				VA		UW				VA				UW				Ethiopia				IR		Meriter																							
Fellow 2	UW				VA		Meriter		UW				Meriter				UW				Ethiopia				IR		UW																									
Graduating Fellow	UW																																																			
Research Residents	RESEARCH																																																			
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- UW Vascular Surgery
- General Surgery
- Meriter
- VA Vascular Surgery
- Ethiopia
- Vasc Access
- Rockford
- IR
- Veins

# 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
- Monthly simulation sessions – FEVS curriculum
- UCLA/SVS Vascular Review Course in September of PGY4
- RPVI Prep and Exam (Division covers cost)



# Vascular Conferences

- Wednesday morning
  - 6:30-7:20am Teaching conference – VSCORE Curriculum
  - 7:20-8:20am M&M and Indications
  - 7:20-8:20am 10 required Department Grand Rounds throughout the year
  - 8:20-9:20am Trainee Didactic Hour
- Complex Aortic Disease Conference with CT Surgery
  - 5:30-6:30pm fourth Thursday of the month
- Monthly Journal Club
  - 6:30pm third Thursday of the month
- Conferences are hybrid

# Case Numbers – Vascular

## Updated Categories

LW

Category	Minimum	Total
<b>Vascular Procedures</b>		
Open Abdominal	30	67
Aortic	15	60
Open Peripheral	50	214
Open Cerebrovascular	25	49
Endovascular	200	460
Aortoiliac	25	51
Peripheral	50	190
Thoracic	5	11
Venous	20	70
Open Dialysis Access	15	52
Other Major	30	138
Amputation	10	100
<b>Major/Minor Vascular Procedures</b>		
Major Vascular Procedures	250	612
Minor Vascular Procedures	0	408
<b>Total Major/Minor Vascular Procedures</b>	<b>0</b>	<b>1020</b>

# Case Numbers - Vascular

		BR	AU	AL	ST
Category	Minimum	Total	Total	Total	Total
Vascular Procedures					
Abdominal	30	55	90	78	78
Cerebrovascular	25	47	55	67	41
Peripheral	45	140	181	148	111
Complex	10	63	68	92	66
Endovascular Diagnostic	100	304	284	228	255
Endovascular Therapeutic	80	148	246	256	262
Endovascular Aneurysm Repair	20	53	54	77	50
Major/Minor Vascular Procedures					
Major Vascular Procedures	250	474	706	678	600
Minor Vascular Procedures	0	478	500	547	417
Total Major/Minor Vascular Procedures	0	952	1206	1225	1017

# Case Numbers – General Surgery

General Surgery Procedures	LW	BR	AU	AL	ST
Skin, Soft tissue and Breast	32	5	16	41	28
Head and Neck	0	0	1	4	6
Alimentary Tract	7	0	5	32	32
Abdominal (GS)	68	7	20	64	53
Liver	0	0	0	2	2
Pancreas	1	0	0	1	0
Endocrine	0	0	1	3	3
Trauma	2	1	9	21	4
Trauma Non-Operative	0	0	0	0	0
Thoracic	0	0	2	9	14
Pediatric	0	0	0	0	0
Plastic	0	1	9	7	6
Laparoscopic - Basic	5	1	0	14	29
Endoscopy	0	0	0	2	1
Laparoscopic - Complex	5	0	0	5	7

# What Our Graduates Are Doing:

- **Brigitte Smith, MD**, University of Wisconsin School of Medicine
  - Academic Practice, University of Wisconsin
- **Jessica Secor, MD**, Boonshoft School of Medicine at Wright State University
  - Private Practice, Peoria, Illinois
- **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
- **Andrea Um, MD**, Sanford School of Medicine of University of South Dakota
  - Private Practice, Lincoln, Nebraska
- **Brooks Rademacher, MD**, University of Rochester School of Medicine and Dentistry
  - Community Practice, Peoria, Illinois
- **Laura Wolf, MD**, University of Utah School of Medicine
  - Private Practice, Sioux Falls, South Dakota



# Contact Information

Paul DiMusto, MD

Program Director

[dimusto@surgery.wisc.edu](mailto:dimusto@surgery.wisc.edu)

(o) 608-265-4420

(c) 734-276-8058

Sarah Hays

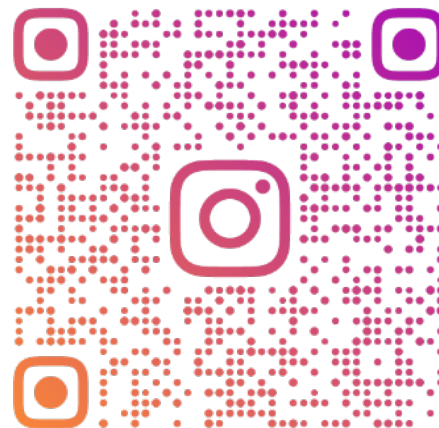
Program Coordinator

[hayss@surgery.wisc.edu](mailto:hayss@surgery.wisc.edu)

608-890-0554

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

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