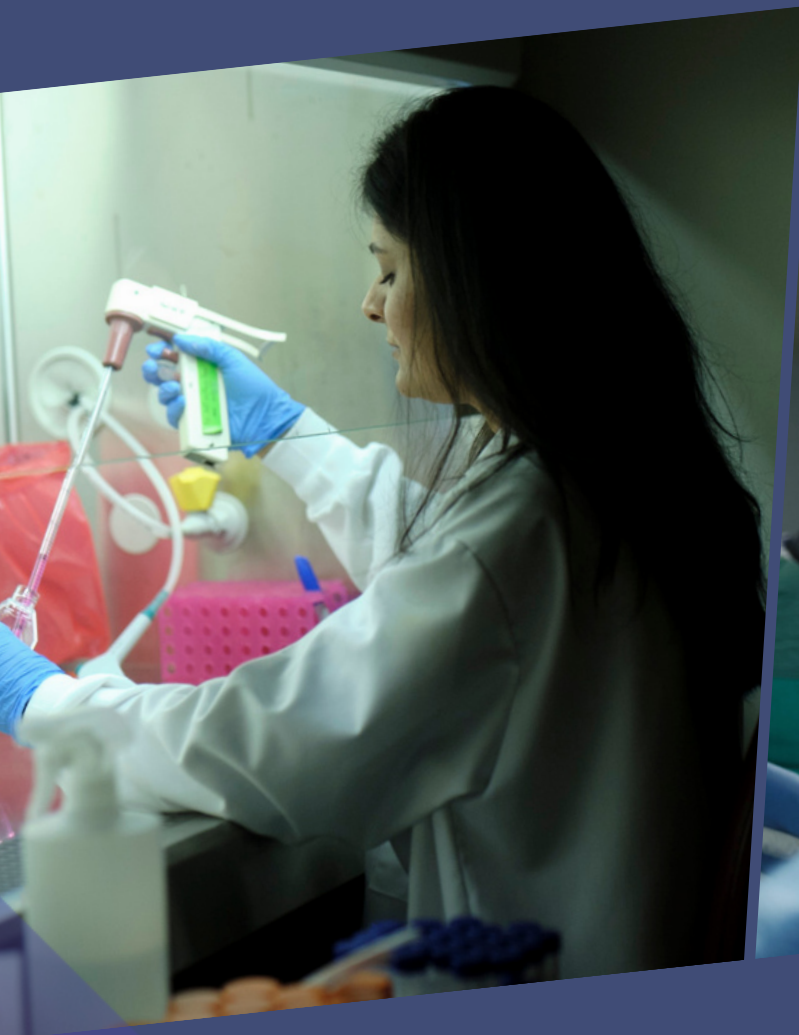




UNIVERSITY of MARYLAND  
MEDICINE



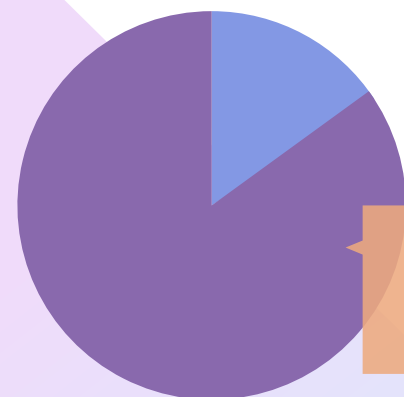
# UNIVERSITY OF MARYLAND NEUROSURGERY RESIDENCY PROGRAM



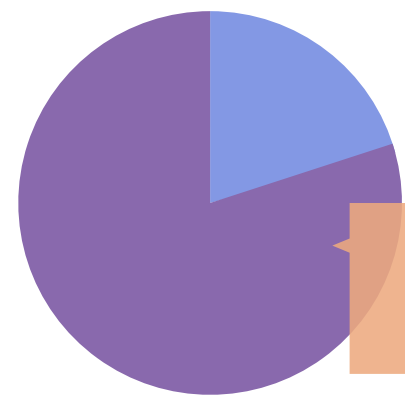
# OUR PROCESS, OUR GUARANTEE

1. Early operative exposure and progressive autonomy
2. Volume and variety of cases
3. Individualized training experience

## ALUMNI OVER A DECADE

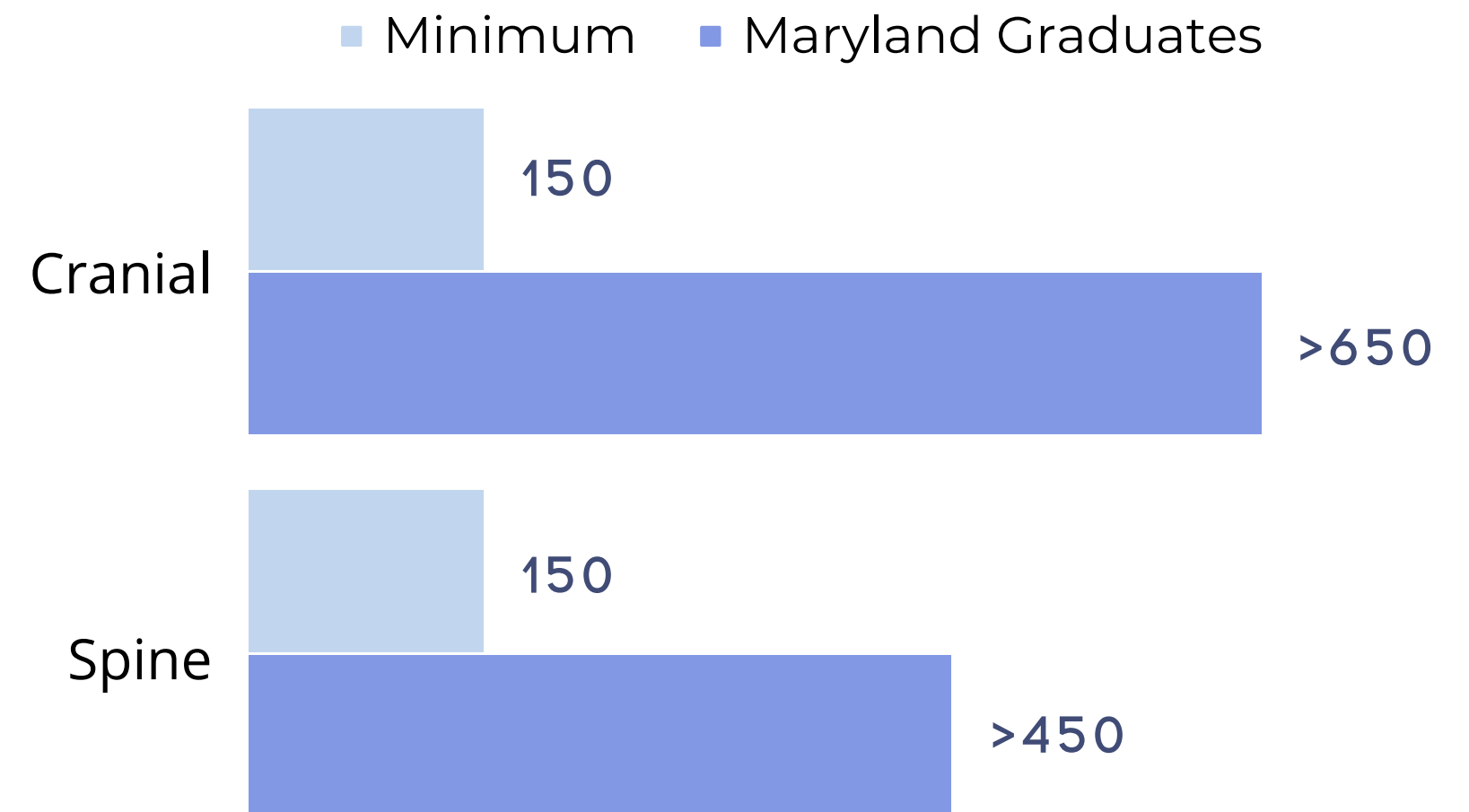


Fellowship-Trained



Academic Positions

## GRADUATE CASES AS LEAD RESIDENT



TOTAL GRADUATE LEAD  
CASES: >1500

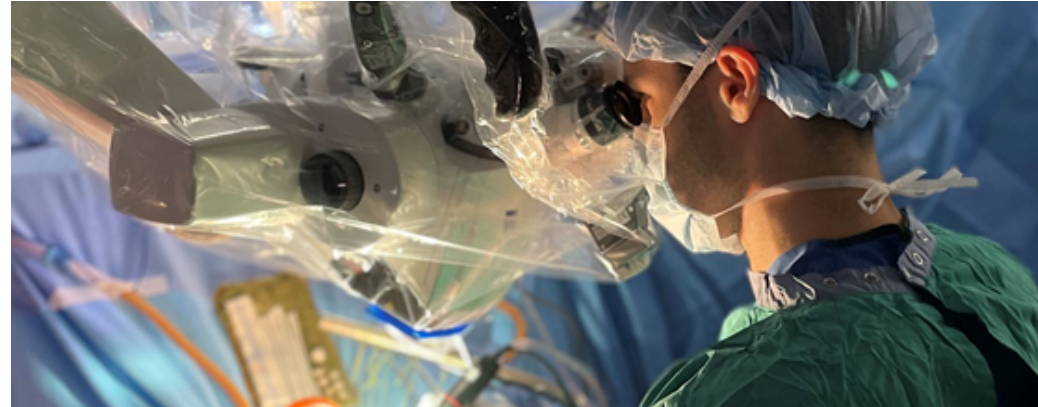


# RESIDENT OPERATIVE EXPERIENCE

ANNUAL PROGRAM  
CASE LOAD: >4800

Daily ORs  
Running

UMMC: 3-4  
STC: 1-2  
VA: 1



GRADUATE LEAD CASES: >1550

CRANIAL: >600

- Trauma: 190
- Tumor: 100
- Vascular: 300
- Pain, Functional, Epilepsy: 50

SPINE: >450

- Anterior Cervical: 110
- Posterior Cervical: 80
- Thoracolumbar & Sacral Instrumentation: 180
- Lumbar Decompression: 100



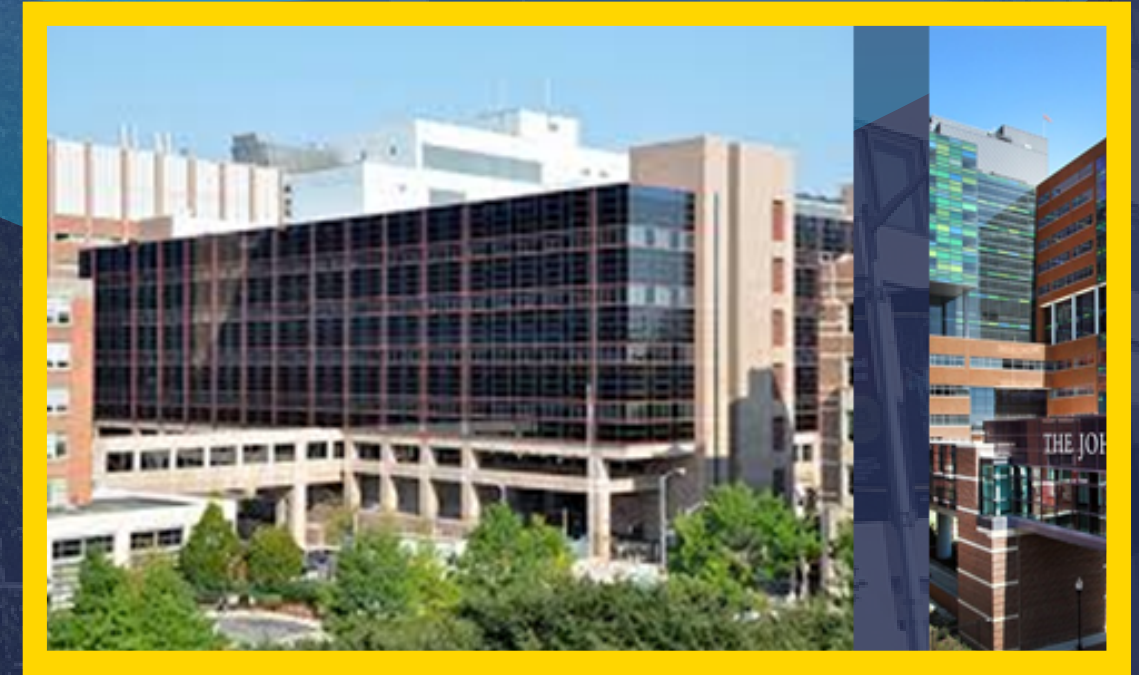
# WHERE WE TRAIN



University of Maryland Medical Center (UMMC)

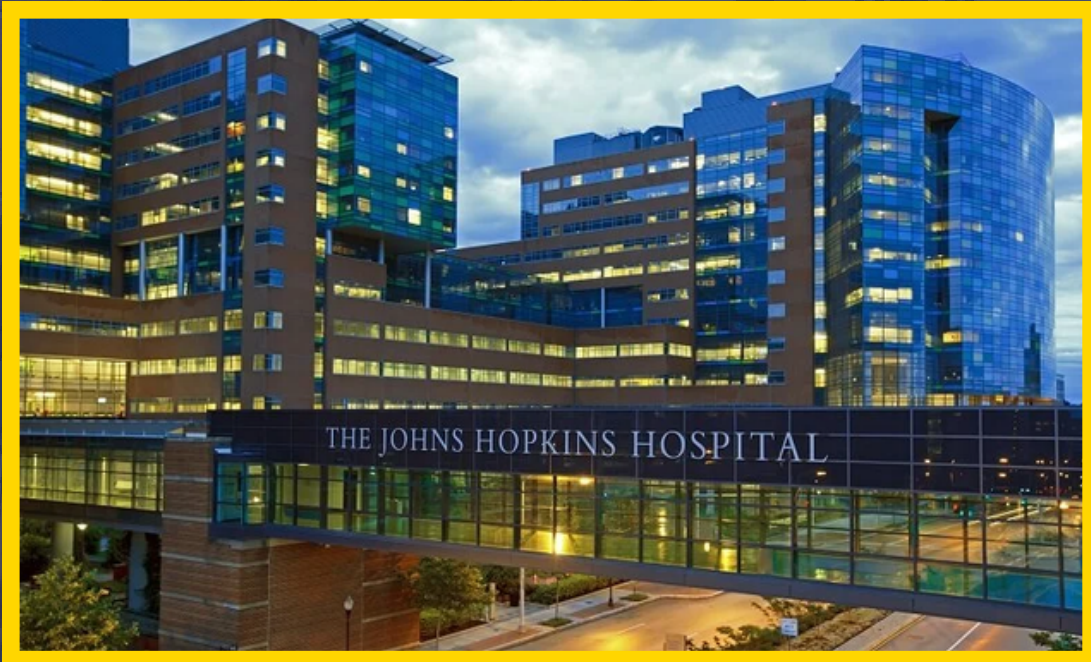
University of Maryland Shock Trauma Center (STC)

Baltimore VA Medical Center (VA)





# WHERE WE TRAIN



Johns Hopkins  
Hospital (JHH)



Greater Baltimore  
Medical Center (GBMC)



# CURRICULUM

Our program's individualized training structure allows residents to explore interests and tailor experiences to achieve practice and career goals.

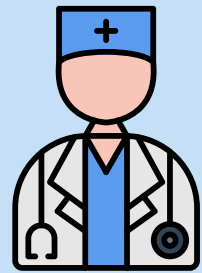
YEAR	ROTATION	MONTHS	SITE
PGY-1	Neurosurgery Service	3	UMMC
	VA Neurosurgery Service	3	VA
	Neurocritical Care	3	UMMC
	Clinical Neurosciences	3	UMMC
PGY-2	Neurosurgery Service	12	UMMC
PGY-3	Trauma Neurosurgery	3	STC
	Johns Hopkins Pediatrics	3	JHH
	Neurosurgery Night Float	6	UMMC
PGY-4	GBMC Neurosurgery	3	GBMC
	Endovascular Neurosurgery	3	UMMC
	VA Neurosurgery Chief	6	VA
PGY-5	Neurosurgery Senior	6	UMMC
	Elective	6	TBD
PGY-6	Chief Resident	12	UMMC
PGY-7	APEX Year	12	TBD

## PGY-7: ACADEMIC PATHWAYS TO EXCELLENCE (APEX)

- 1 Choose a Pathway**
  - Operations, Education, Research
- 2 Choose a Mentor**
- 3 Design & Implement a Proposal**
  - CAST Fellowship, Advanced Degree, Research, etc.



# PROGRAM FACULTY



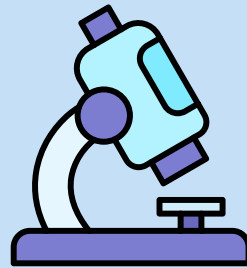
**13**

Clinical  
Faculty



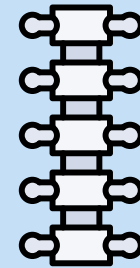
**11**

Offsite  
Faculty



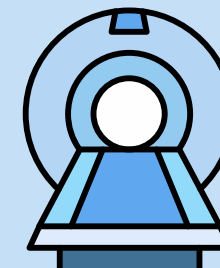
**10**

Research  
Faculty



**3**

Orthopedic  
Spine



**3**

Neurointerven-  
tional Radiology

**40**

**Faculty  
TOTAL**



**15** NPs & APPs

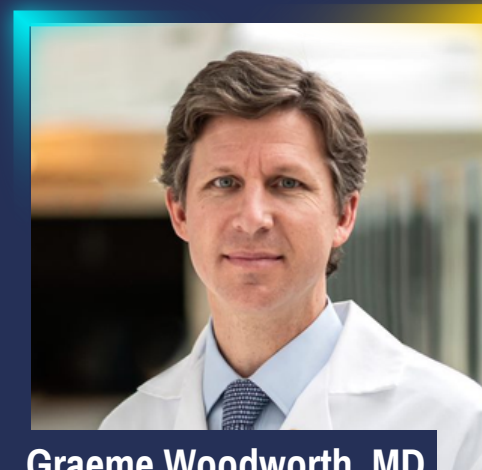
*Our unique culture fosters collegiality and collaboration within the neurosurgery team and across departments.*



# CORE CLINICAL FACULTY

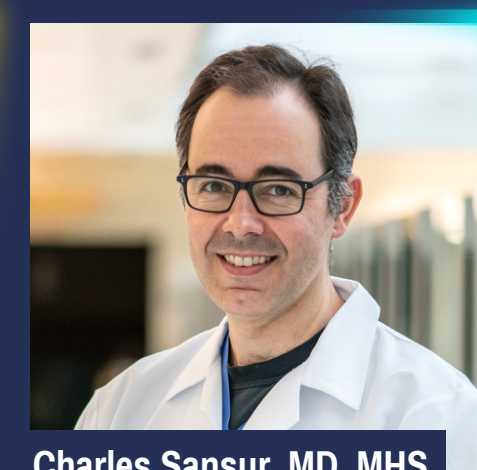
Cerebrovascular  
 Endovascular  
 Skull Base  
 Tumor  
 Neurotrauma  
 Complex Spine  
 Epilepsy  
 Functional  
 Pediatrics

DEPARTMENT  
CHAIR



Graeme Woodworth, MD

PROGRAM  
DIRECTOR

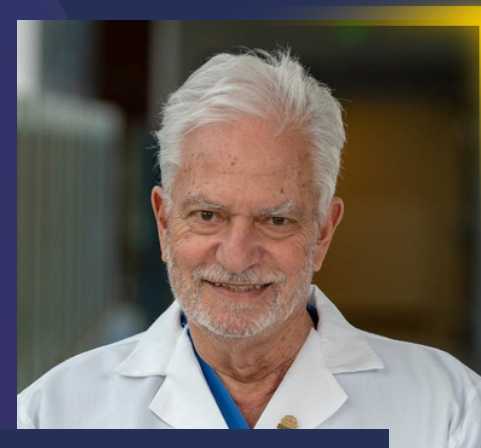


Charles Sansur, MD, MHS

ASSOC. PROGRAM  
DIRECTOR



Jacob Cherian, MD



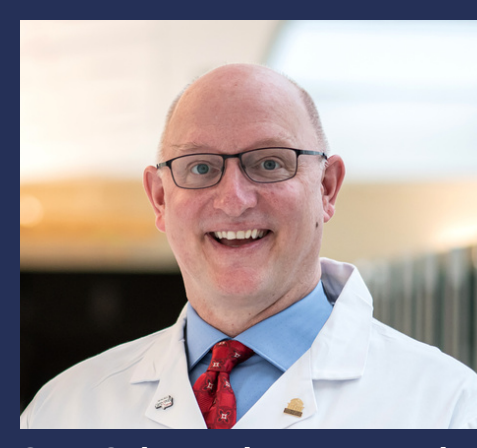
Howard Eisenberg, MD



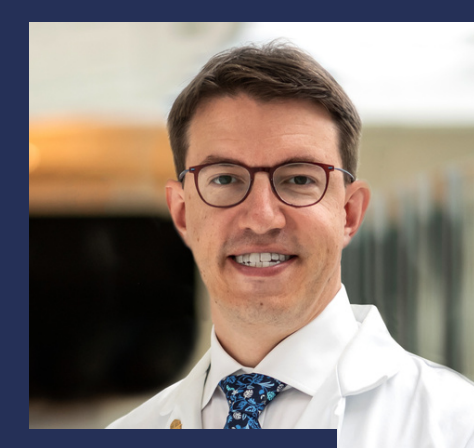
Marc Simard, MD, PhD



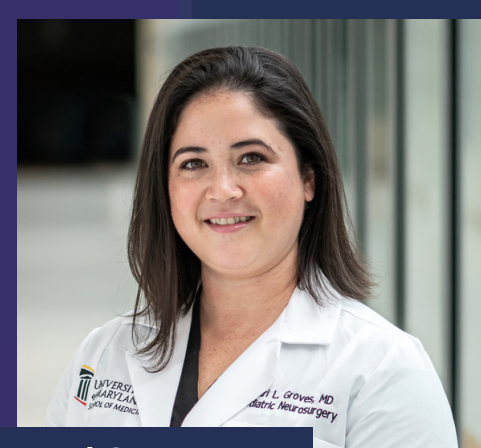
Bizhan Aarabi, MD



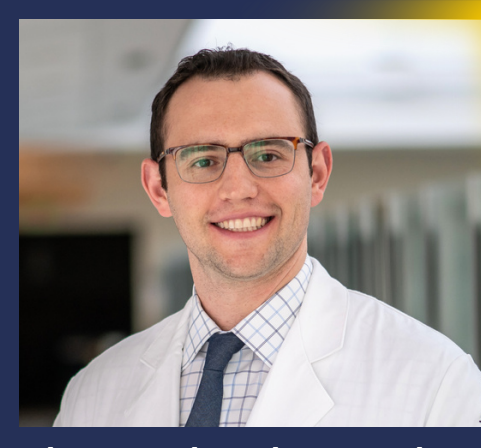
Gary Schwartzbauer, MD, PhD



Ken Crandall, MD



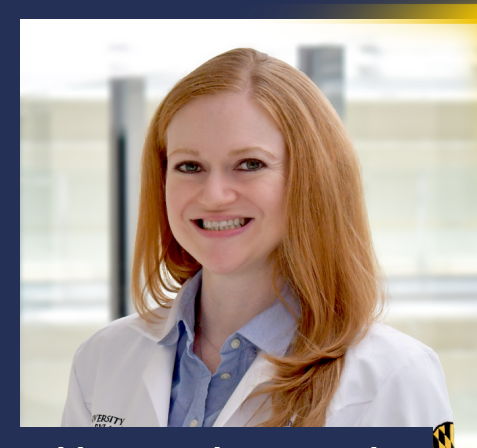
Mari Groves, MD



Alex Ksendzovsky, MD, PhD



Mohamed Labib, MD



Whitney Parker, MD, PhD



Tim Chryssikos, MD, PhD

Residency Program Leadership

Neurosurgeon Scientists

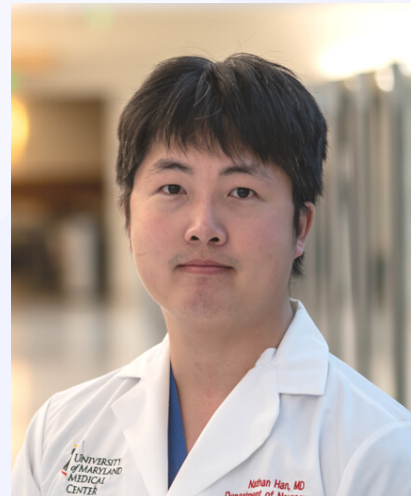


# MEET OUR RESIDENTS



**PGY-7**

Ashish Sharma,  
MD



**PGY-7**

Nathan Han, MD



**PGY-6**

Josh Olexa, MD



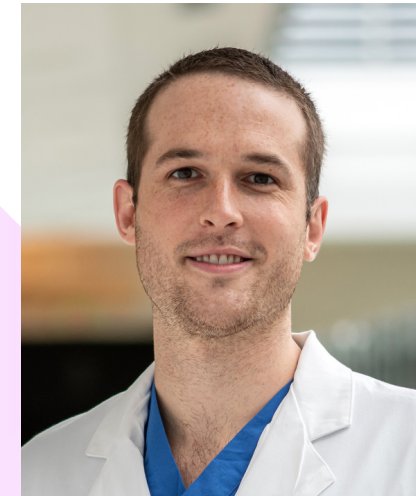
**PGY-6**

Abdul-Kareem  
Ahmed, MD, SM



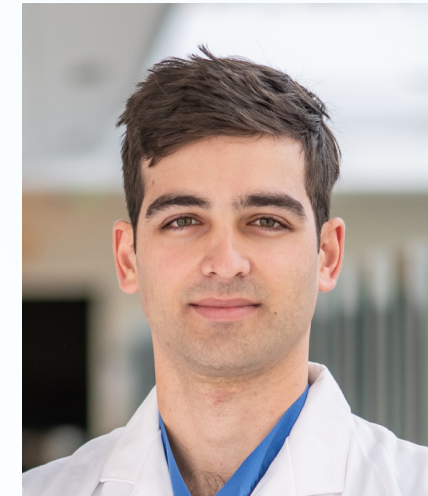
**PGY-5**

Jesse Stokum,  
MD, PhD



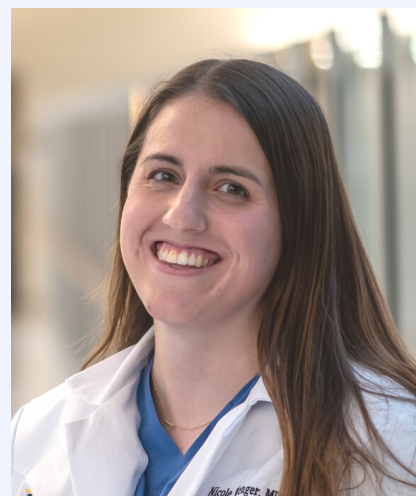
**PGY-5**

Phelan Shea, MD



**PGY-4**

Riccardo Serra,  
MD



**PGY-4**

Nicole Wenger,  
MBA, MD



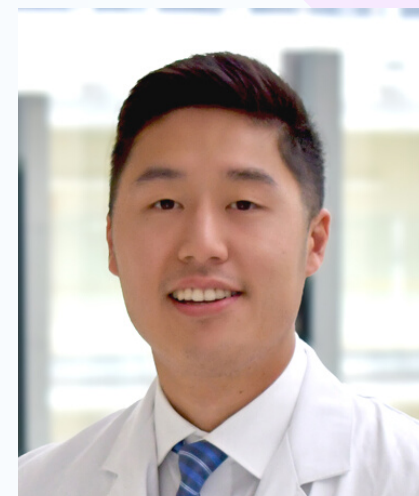
**PGY-3**

Parantap Patel,  
MD



**PGY-3**

Shreyas  
Panchagnula,  
MD, MHSc



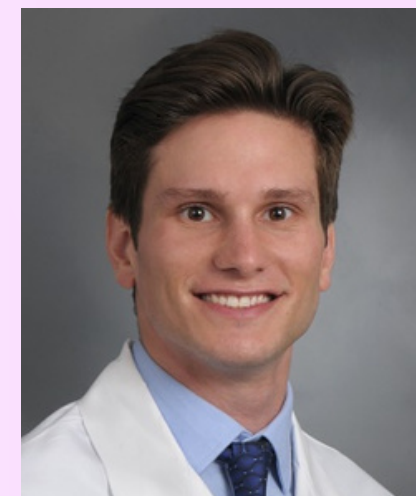
**PGY-2**

Kevin Kim, MD



**PGY-2**

Steve Yarmoska,  
MD, PhD



**PGY-1**

Jordan Saadon,  
MD



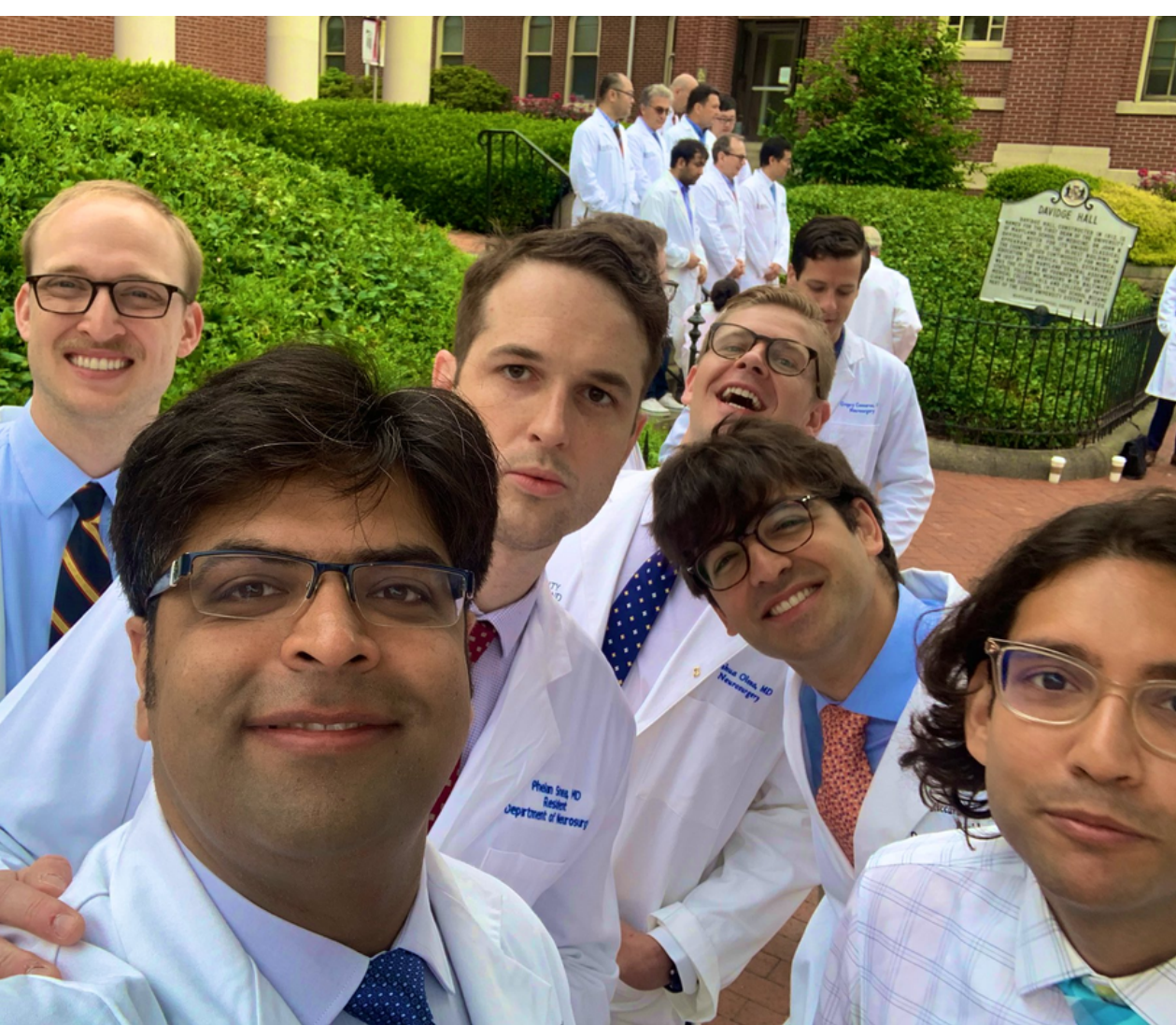
**PGY-1**

Maureen Rakovec,  
MD













# EDUCATIONAL CONFERENCES

## Multidisciplinary Conferences

Cerebrovascular Conference

Spine Conference

Tumor Board

Neurointerventional Radiology Conference

Skull Base/Pituitary Tumor Conference

Neurocritical Care Conference

Epilepsy Surgery Conference

Vascular Stroke Neurology Conference

## Weekly

Skull Base Conference

Case Conference

Grand Rounds

## Monthly

Mortality and Morbidity (M&M)

Journal Club

## Biannually

Neuroanatomy Workshop

Mock Oral Boards

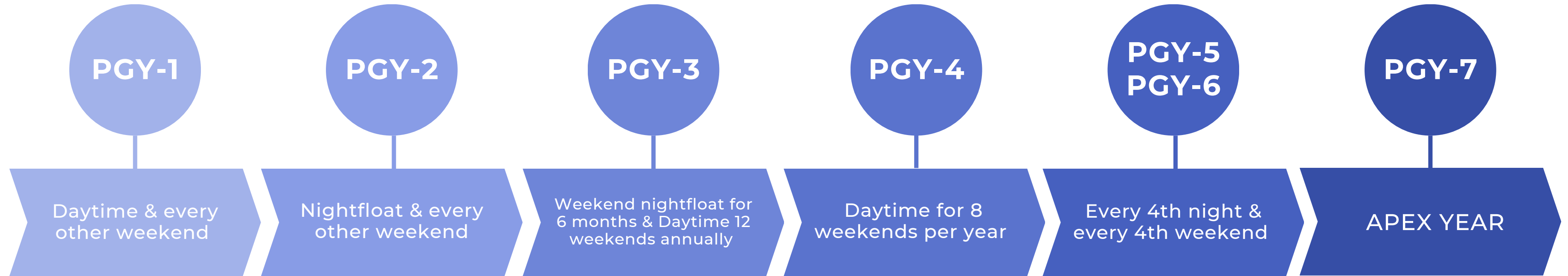
## Annually

Endonasal Skull Base Workshop

Henderson Lecture

Ibrahimi Lecture

# RESIDENCY CALL COVERAGE



=

**2 golden weekends each month**

=

**2 golden weekends each month**

=

**3 golden weekends each month**

=

**5 golden weekends over 6 weeks**

=

**3 golden weekends each month**





### Training Resources

- OR equipment (loupes, headlamp, and lead)
- Thieme e-book subscription
- Sponsorship for Step 3 and board certification exams
- Sponsorship for course and conference attendance
- More...

### Wellness Support

- \$450 available annually for wellness
- Sponsored team events
- Resident/Faculty Mentorship
- Flexibility for parental leave
- Institutional resources

### Funds for Training

- \$1,250 available annually
- \$3,000 available over 7 years

# TRAINING SUPPORT IN RESIDENCY



# RESEARCH OPPORTUNITIES





# BASIC & TRANSLATIONAL RESEARCH

## Five Labs: Simard, Woodworth, Jia, Ksendzovsky, & Parker Labs

- Cerebral edema drug development
- Malignant brain tumor drug delivery
- Molecular pathways of functional disorders
- Brain resuscitation
- Peripheral nerve and spinal cord injury

# CLINICAL RESEARCH

## MRI-Guided Focused Ultrasound

- 9 trials: movement disorders, pain, blood brain barrier disruption for tumors

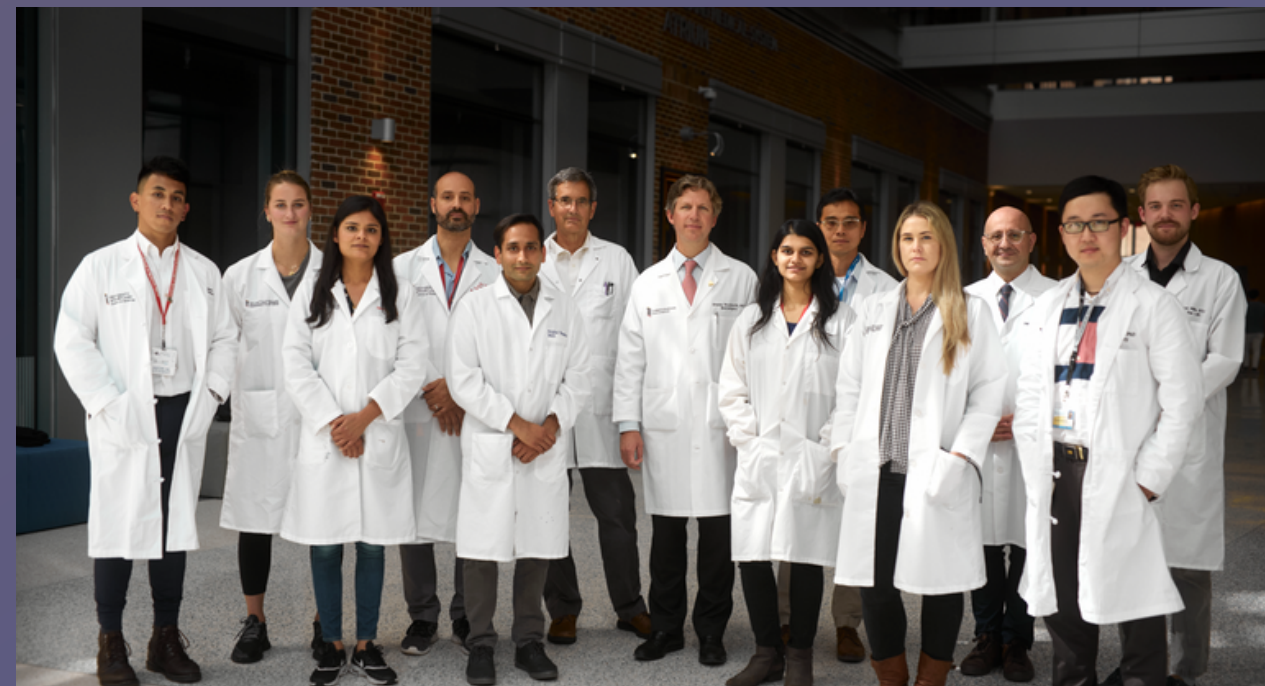
## Cerebrovascular and Endovascular Research

- SDH and ICH treatment

## Neurotrauma Research

## Spine Research

## Epilepsy Research





# RESEARCH SUPPORT IN RESIDENCY

## Data & Publication Support

- Faculty biostatistician: Chixiang Chen, PhD
- Medical illustrator: Tina Wang, MA
- Annual Research Fellow supports resident research
- Statistics/graphical software & REDCap access

## Curriculum Structure

- Elective time in PGY-3, -5, and -7
- Availability for pursuit of PhD or advanced degree
- Mentorship for NREF, NIH, & other grants

## Sponsorship for conference presentations



RESEARCH—HUMAN—CLINICAL STUDIES

# Low-Dose Intravenous Heparin Infusion After Aneurysmal Subarachnoid Hemorrhage is Associated With Decreased Risk of Delayed Neurological Deficit and Cerebral Infarction

Matthew J. Kole, MD \*

Aaron P. Wessell, MD \*


Beatrice Ugiliweneza, PhD,  
MSPH †

Gregory J. Cannarsa, MD \*

Enzo Fortuny, MD †

Jesse A. Stokum, MD, PhD \*

Phelan Shea, MD\*

Timothy Chryssikos, MD,  
PhD \*

Nicolas K. Khattar, MD †

George A. Crabill, BS \*

David L. Schreiber, MD §

Neeraj Badjatia, MD, MSc ¶

Dheeraj Gandhi, MD ||

E. Francois Aldrich, MD\*


Robert F. James, MD†#

J. Marc Simard, MD, PhD \*


MORE  
RESIDENT  
RESEARCH

Original Article

## A large portion of the astrocyte proteome is dedicated to perivascular endfeet, including critical components of the electron transport chain

Jesse A Stokum<sup>1</sup> , Bosung Shim<sup>1</sup>, Weiliang Huang<sup>2</sup>,  
Maureen Kane<sup>2</sup>, Jesse A Smith<sup>1</sup>, Volodymyr Gerzanich<sup>1</sup> and  
J Marc Simard<sup>1,3,4</sup>

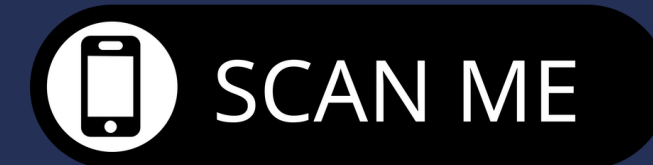
JCBFM

Journal of Cerebral Blood Flow &  
Metabolism  
0(0) 1–15  
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DOI: 10.1177/0271678X211004182  
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Residency  
Program  
Website



Follow Our Residents  
@UMDNeurosurgery



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**Kevin Kim, MD**  
*PGY-2 Resident*  
[ktkim@som.umaryland.edu](mailto:ktkim@som.umaryland.edu)

**Sophie White, MPH, C-TAGME**  
*Program Administrator*  
[swhite@som.umaryland.edu](mailto:swhite@som.umaryland.edu)