

STAR SPOTLIGHT

Newsletter

7/1/2025 - 12/31/2025



The Center for Shock, Trauma and Anesthesiology Research

Spotlight on STAR is a semi-annual publication designed to keep members informed about research activities during the current academic year within the Department of Anesthesiology, the Trauma Program, and the National Study Center.

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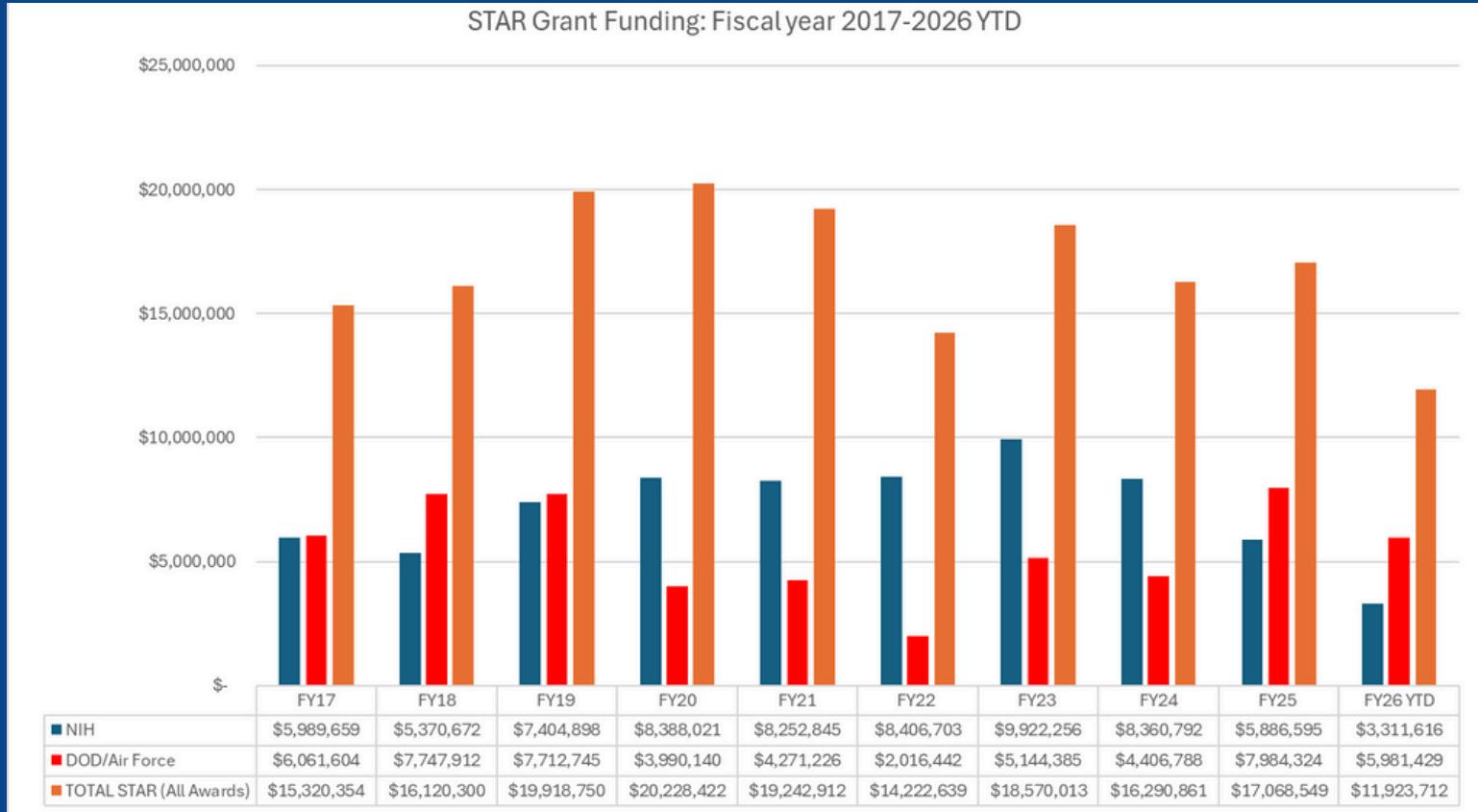
STAR Funding

2017-2026 YTD

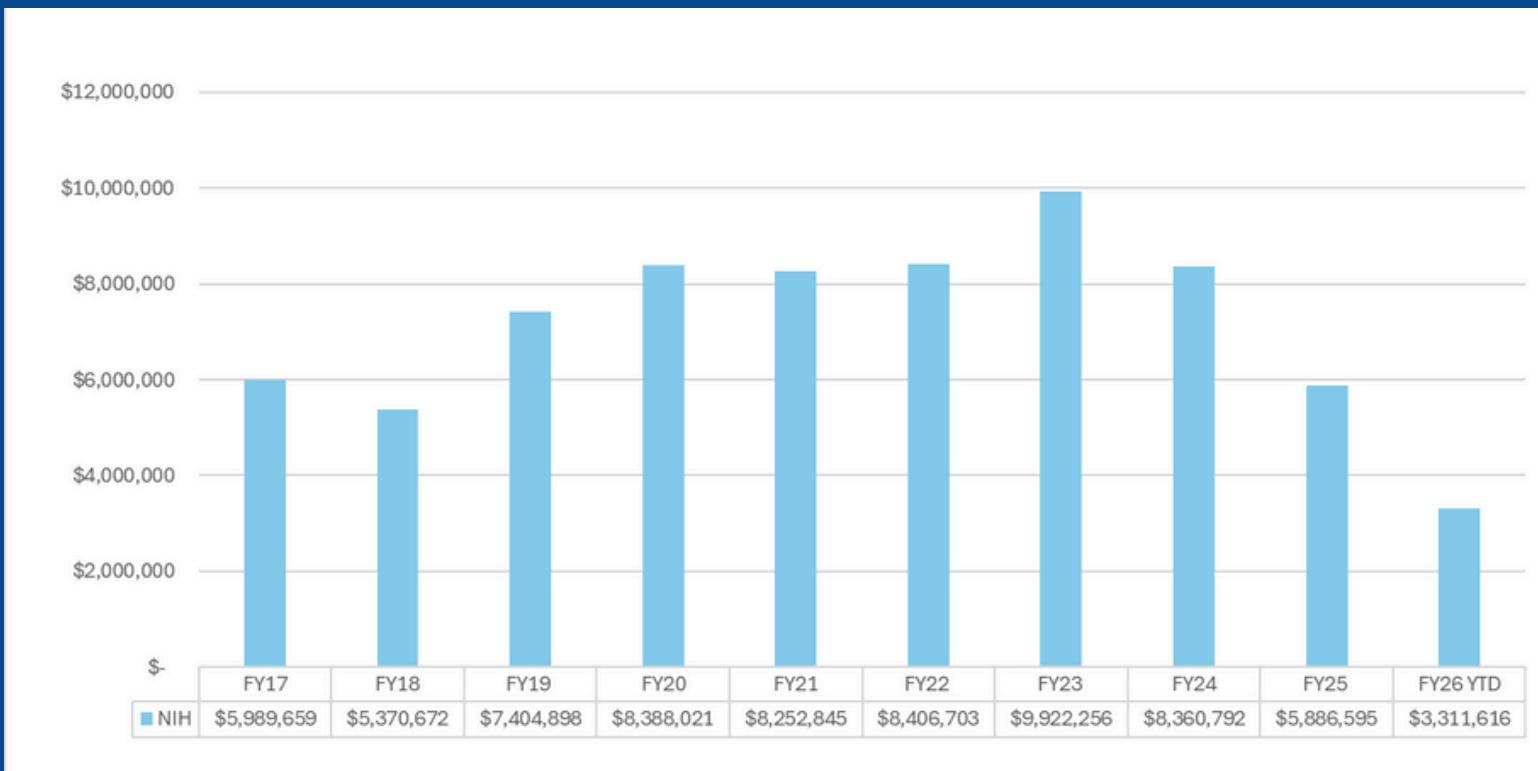


STAR Grant Funding

STAR Grant Funding: Fiscal year 2017-2026 YTD



NIH Funding Trend





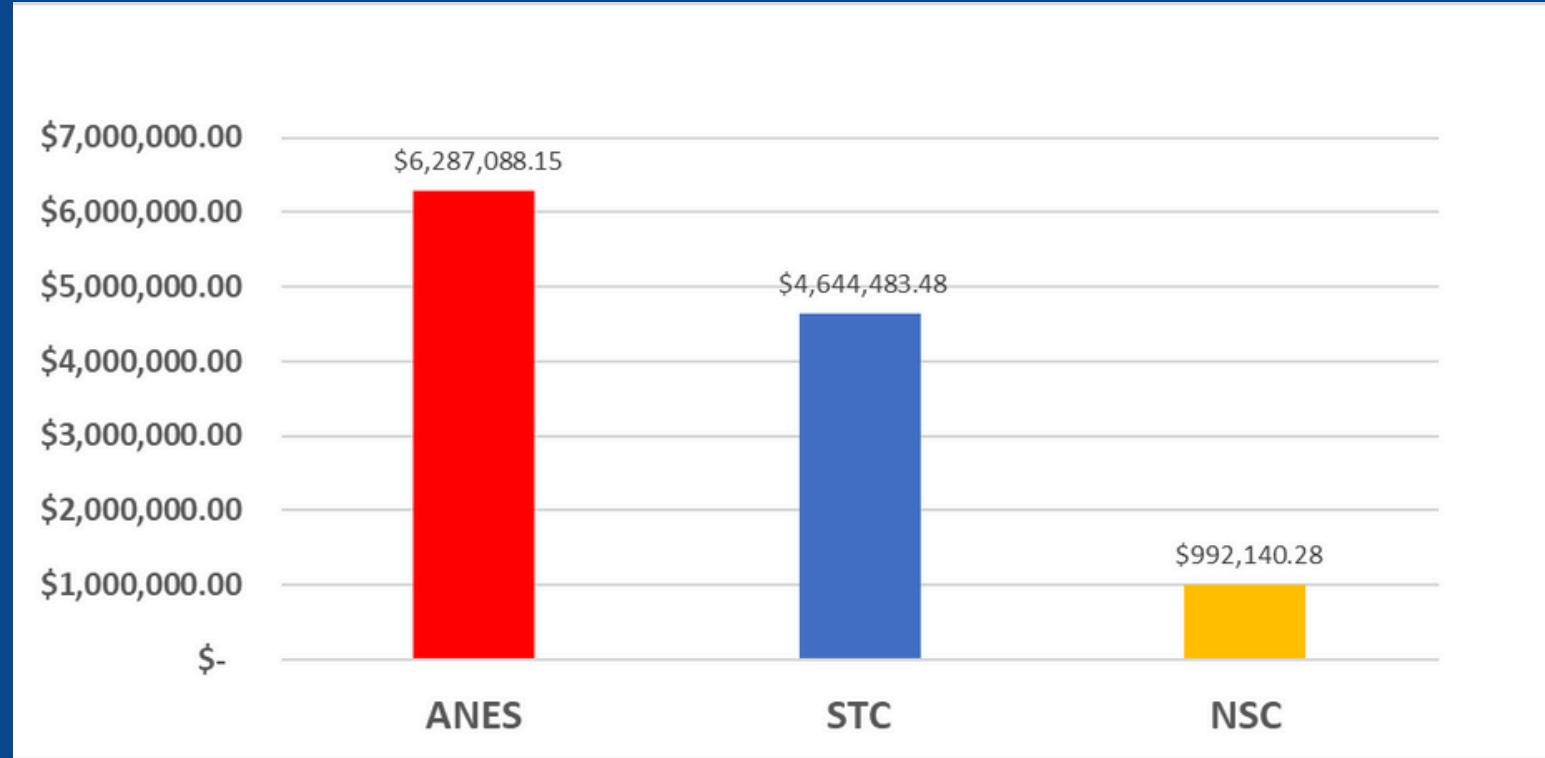
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2017-2026 YTD



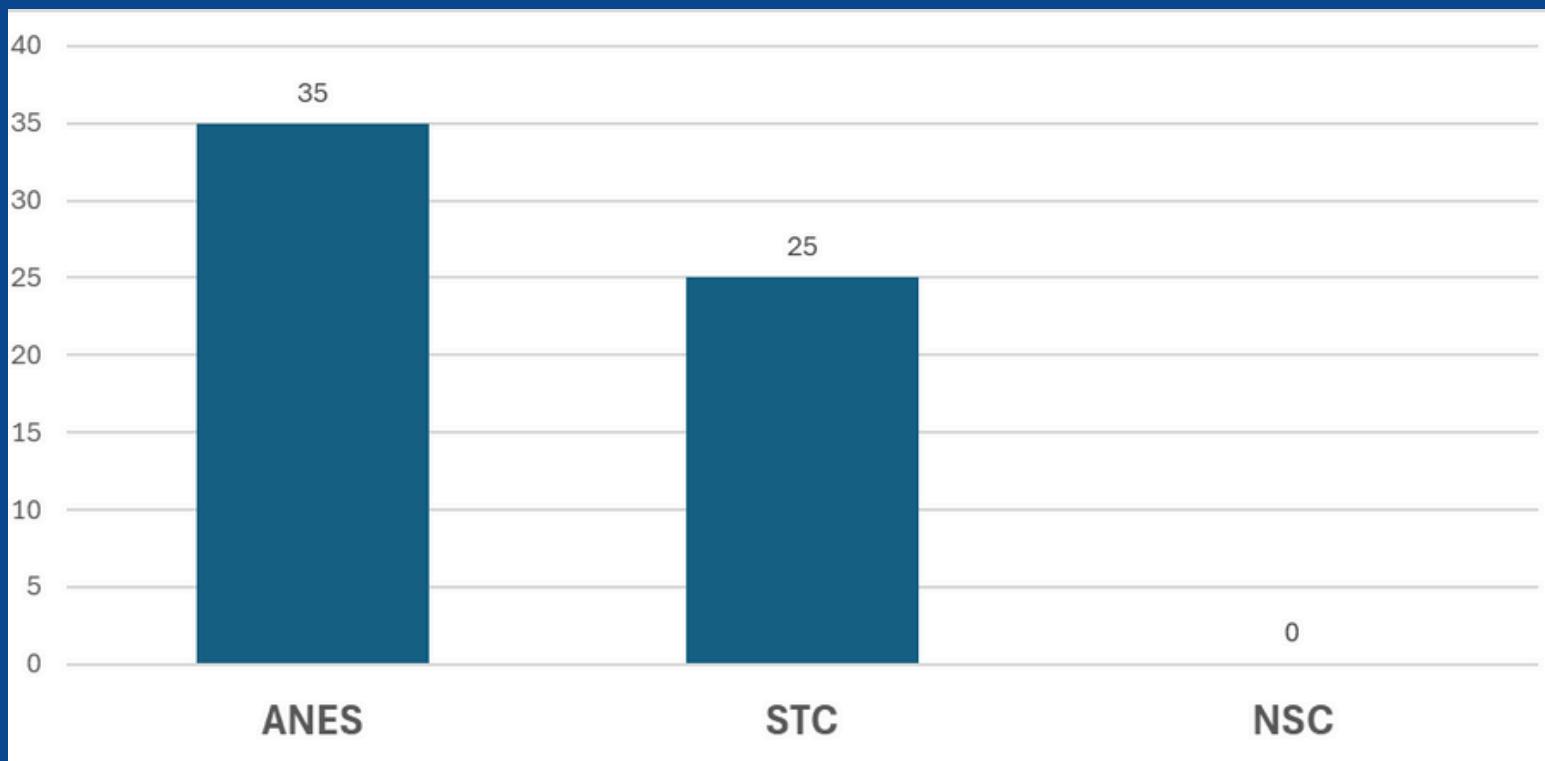
Research funding

Total - \$11,923,712



Proposals submitted

Total - 60 submissions





Active Clinical Studies



Anesthesiology

Principal Investigator	Study - Short Title	Sponsor	Enrolled (7/1/-12/31/25)	Total Enrolled
Wei Chao	SEPSIS study	IARS/NIH	8	127
Patrick Odonkor	ANH and AKI	PI-initiated	12	49
Patrick Odonkor	MINDDS	NIH	0	0
Brittney Williams	Plasma EVs in CPB	PI-initiated	0	26

Shock Trauma

Clinical Research Team (CRT)				
Principal Investigator	Study - Short Title	Sponsor	Enrolled (7/1/-12/31/25)	Total Enrolled
Gary Schwartzbauer	ARTIC	DoD	1	14
Rosemary Kozar	BIOBANK	Trauma	959	12936
Gary Schwartzbauer	BOOST_3	NIH	0	1
Deborah Stein	CIREN 2	NHTSA	29	302
Deborah Stein	CIREN MCC	NHTSA	15	29
Samuel Tisherman	EPR	DoD	0	13
Kinjal Sethuraman	HOBIT	NIH	2	25
Rosemary Kozar	MAUI 2	DoD	120	146
Neeraj Badjatia	MTEC	MTEC/DOD	2	65
Melike Harfouche	PRE-PELVIS	AAST	10	18
William Teeter, Peter Hu	RITMO	DARPA	204	646
William Teeter, Peter Hu	RITMO2	DARPA	67	233
Deborah Stein	TROOP	NIH	28	80

* Indicates an active study that is not enrolling at this time.

The **Clinical Research Team (CRT)** is onsite 24/7 and assesses over 5,500 STC admissions annually upon arrival for research inclusion.



Active Clinical Studies



RMS alerts for prospective observational studies

7/1/2025-12/31/2025

Study	Alerts Sent
BLUNT AORTIC INJURY	13
QA CRYSTALLOID	114
REBOA	2
RETRO_TBI	79
THORACOTOMY	16

The **Research Management System (RMS)** Alerts provide real-time identification of potential research subjects through automated EMR surveillance and prospective data capture for study protocols.

Neurocritical Care

Principal Investigator	Study Short Title	Sponsor	Enrolled (7/1-12/31/25)	Total Enrolled
Gunjan Parikh	DISCOVERY	MGH/NIH	38	279
Gunjan Parikh	REACH-ICH	MGH/NIH	11	23
Nicholas Morris	WHOL-PAIN	U of Florida (DUA)	6	32
Prajwal Ciryam	REACH CSF	N/A	14	109



DON'T FORGET!

Grant Proposal Submission



To improve the operation, efficiency, and quality, please keep the following deadlines in mind during grant submissions.

- Notify STAR Admin as soon as you have identified a potential grant submission- A minimum of 1 month prior to the deadline
- STAR as a subcontract - 3 weeks is required, 2 weeks may be feasible if STAR admin has the capacity and if the application can be quickly turned over.
- Exceptions must be approved by the STAR Administration (Co- Directors and Director of Operations)

UMB Grant Routing Timeline



- **STAR Director approval:** 9 business days prior to sponsor deadline (Final budget/justification)
- **Dean's Office:** 7 business days prior to sponsor deadline (Final budget/justification)
- **SPA:** 5 business days prior to sponsor deadline (All documents final)
Be mindful that STAR Admin requires time to review/upload documents into workflow system.



NIH- Upcoming Grant Deadlines

New

- **R01 - Feb.5, Jun.5, Oct.5**
- **K Awards - Feb.12, Jun.12, Oct. 12**
- **R03/R21 - Feb.16, Jun.16, Oct. 16**

Renewal / Resubmission

- **R01 - Mar.5, Jul.5, Nov.5**
- **K Awards - Mar.12, Jul.12, Nov.12**
- **R03/R21 - Mar.16, Jul.16, Nov. 16**

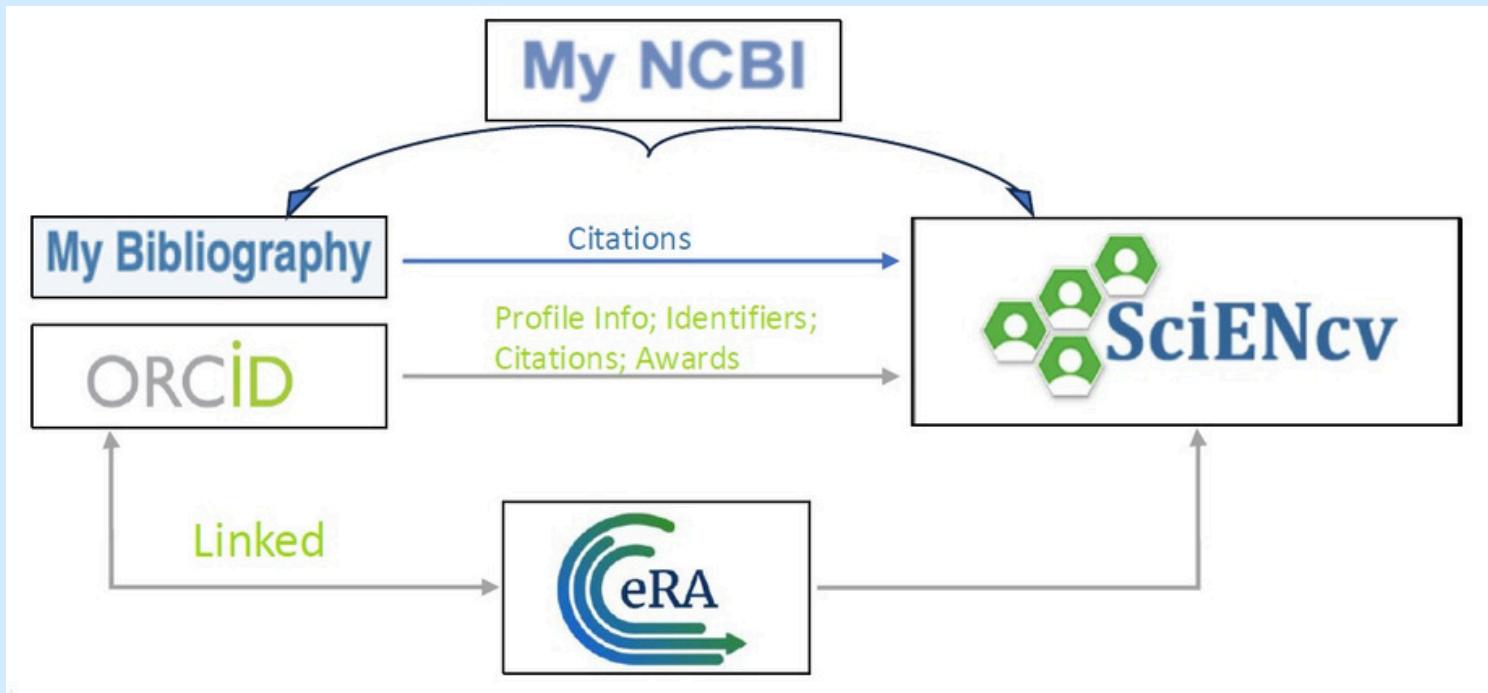


Biosketch & Other Support



Announcement: Beginning 1/25/2026, the NIH will adopt the Biographical Sketch Common Form and the Current and Pending (Other) Support Common Form.

NIH requires using of SciENcv to complete all NIH Common Forms



SciENcv is an electronic collection repository built by the National Center for Biotechnology Information (NCBI) that assists scientists in creating their biosketches and other support documents.

ORCID is a unique digital identifier that all key personnel on NIH applications must have linked to their eRA Commons personnel profile.

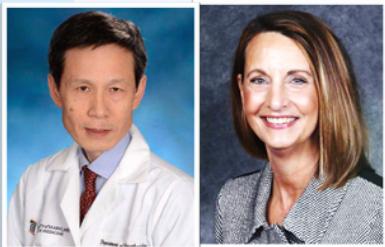
How to Prepare:

1. Create an ORCID iD and update your profile
 - Your ORCID information will feed into SciENcv for generating your Biosketch and Other Support documents.
2. Link your ORCID iD to eRA Commons account
 - This can be done through your Personnel Profile in eRA Commons.
3. Create a SciENcv account
 - SciENcv should automatically link to your ORCID iD and eRA Commons account.
4. Add delegations for the STAR team
 - For additional support, we recommend adding your C/G post-award specialist, as well as [Sophie Li](#), [Kalpana Vijay](#), and [Brandon Goldschmitt](#).

New Awards



Anesthesiology



Wei Chao, MD, PhD / Rosemary Kozar, MD, PhD

Trauma Immunology Research Award, JPC-6/CDMRP, DOD

"Plasma microRNA Signatures of Human Trauma Immunity and Injury"

\$1,973,263.00



Reney A. Henderson, MD

CSL Behring LLC

"Efficacy and Safety Of 4F-PCC in Adult Patients Undergoing Complex Cardiovascular Surgery with Cardiopulmonary Bypass"

\$346,191.00



Arrissa Torrie, MD, MHS

The Foundation for Anesthesia Education and Research (FAER GEMSSTAR)

"Association of Peripheral Nerve Blocks with Postoperative Outcomes and Readmissions in Older Adults Undergoing Hip Fracture Surgery"

\$50,000.00

NIA

"Association of Peripheral Nerve Blocks with Postoperative Outcomes and Readmissions in Older Adults Undergoing Hip Fracture Surgery"

\$388,750.00



Junfang Wu, MD, PhD / Marta M. Lipinski, PhD

NINDS

"The Function and Mechanisms of Autophagy in Spinal Cord Injury"

\$1,497,492.00



Junfang Wu, MD, PhD

NINDS (MPI: Gan Li, PhD – Cornell University)

"Mechanisms and Intervention of cGAS Signaling in Brain Trauma-Induced Neuroinflammation and Neurodegeneration"

\$3,215,590.00

NIA (MPI: Zhekang Ying, PhD)

"Olfactory Dysfunction as Predictor of PM2.5 Exposure Progression to Dementia"

\$3,264,260.00

New Awards



Shock Trauma



Prajwal Ciryam, MD, PhD

American Academy of Neurology

"CXCR2-Dependent Neutrophil Recruitment to the Brain after Traumatic Injury"

\$450,000.00



Nicholas A. Morris, MD, FAAN, FNCS

Univ. of Florida / NIH

"Pterygopalatine Fossa Block as an Opioid-Sparing Treatment for Acute Headache in Subarachnoid Hemorrhage"

\$170,873.00



Elizabeth Powell, MD

Blue Halo, LLC / AFOSR

"Efficacy of Frozen and Thawed Alcohol-Based Hand Sanitizers"

\$96,349.00

BAE Systems / AFOSR

"Strategic Purchasing Analyst, Principal - Subcontracts"

\$268,381.00

AFOSR

"Defining Laboratory Derangements from Non-Compressible Hemorrhage: A Pilot Study to Aid in Developing Blood Transfusion Solutions"

\$740,126.00



William Teeter, MD

Univ. of Pittsburgh / DOD

"Calcium and Vasopressin following Injury Early Resuscitation"

\$500,000.00

New Awards



National Study Center



Roumen Vesselinov, PhD

Maryland Motor Vehicle Administration / NHTSA

"Occupant Protection - Seatbelt FY26"

\$180,300.00

Maryland Motor Vehicle Administration / NHTSA

"2026 DC Seat Belt Study"

\$200,000.00

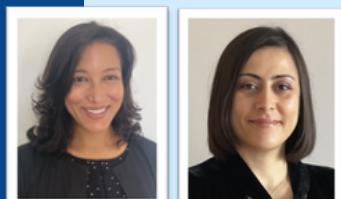
Honors & Highlights



Dr. Yijia Li Awarded the 2026 AHA Postdoctoral Fellowship

Yijia Li, MD/PhD, a postdoctoral fellow in the Anesthesiology Translational Research Program, has received a highly competitive American Heart Association (AHA) Postdoctoral Fellowship. Her funded project, *"Role of the TLR7-Itgam Pathway in Myocardial Ischemia-Reperfusion Injury,"* focuses on understanding immune pathways involved in cardiac injury following ischemia, with the goal of identifying new therapeutic targets to improve outcomes after myocardial infarction.

Congratulations to Dr. Li on this outstanding achievement!



Drs. Shailvi Gupta, Mira Ghneim, and Brittney Williams Selected for the Dean's Leadership Council

We are pleased to congratulate Drs. Shailvi Gupta, Mira Ghneim, and Brittney Williams on their acceptance into the Dean's Leadership Council, Cohort 1 (MDs), Class of 2026 at the University of Maryland School of Medicine.



The Dean's Leadership Council is a prestigious program that recognizes faculty members for their leadership potential, dedication to professional growth, and commitment to advancing the mission of the School of Medicine. Their selection is a well-deserved honor and reflects their outstanding contributions and leadership within our department.

Please join us in congratulating all three on this exciting achievement!

FY25 Dean's Research Incentive Awardees



Anesthesiology



James Barrett, PhD
Assistant Professor



Konstantin Birukov, MD, PhD
Professor



Wei Chao, MD, PhD
Professor



Alan Faden, MD
Professor



Peter Hu, PhD
Professor



Marta Lipinski, PhD
Associate Professor



Brian Polster, PhD
Professor



Bogdan Stoica, MD
Professor



Brittney Williams, MD
Associate Professor



Junfang Wu, MD, PhD
Professor



Shiming Yang, PhD
Associate Professor



Lin Zou, MD, PhD
Associate Professor

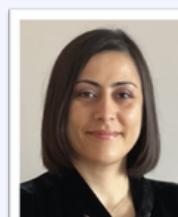
Shock Trauma



Neeraj Badjatia, MD
Professor



Prajwal Ciryam, MD, PhD
Assistant Professor



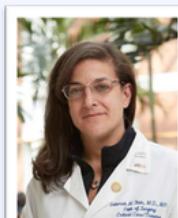
Mira Ghneim, MD
Assistant Professor



Rosemary Kozar, MD, PhD
Professor



Sarah Murthi, MD
Professor



Deborah Stein, MD
Professor



Samuel Tisherman, MD
Professor



William Teeter, MD
Associate Professor

National Study Center



Roumen Vesselinov, PhD
Assistant Professor

Researcher in the SPOTLIGHT



Lin Zou, MD, PhD ***Associate Professor***



Dr. Lin Zou, MD, PhD, is a tenure-track Associate Professor at the University of Maryland School of Medicine (UMSOM) and a principal investigator in the Center for Shock, Trauma, and Anesthesiology Research. Dr. Zou completed her medical training at Xiangya School of Medicine, Central South University in China, followed by joint PhD training at Massachusetts General Hospital (MGH). She then pursued postdoctoral training and held an instructor appointment in the Department of Anesthesia and Critical Care at MGH, where she developed expertise in innate immunity and inflammatory signaling. Dr. Zou joined UMSOM in 2016.

Dr. Zou's research focuses on how host innate immune responses drive inflammation and organ injury in critical illnesses, including sepsis, shock, and trauma. Her NIH-funded research program investigates the role of extracellular nucleic acids as endogenous danger signals that trigger excessive immune activation. Her laboratory has demonstrated that extracellular RNA and microRNA released during sepsis activate Toll-like receptor 7 (TLR7), leading to inflammatory lung and brain injury. Using murine models, her group has shown that TLR7 deficiency reduces lung inflammation, preserves barrier function, and improves survival, identifying nucleic acid-driven signaling as a potential therapeutic target.

Building on these findings, Dr. Zou has expanded her research to trauma and ventilator-induced lung injury, where extracellular RNA acts as a key mediator of innate immune activation. This work has been supported by an NIGMS R35 award, a Research Faculty Award from the Shock Society, and funding from the U.S. Department of Defense. Dr. Zou actively collaborates with Drs. Wei Chao, Rosemary Kozar, Konstantin Birukov, Junfang Wu, and Peter Hu within the STAR Center. Her laboratory is also evaluating immunomodulatory nanoparticles developed by Dr. Ryan Pearson at the University of Maryland School of Pharmacy to better understand how engineered materials regulate immune responses in sepsis, a project recently funded by a NIH R01.

Recent Publications:

- Park C, Lei Z, Li Y, Ren B, He J, Huang H, Chen F, Li H, Brunner K, Zhu J, Jay SM, Williams B, Chao W, Wu J, Zou L. Extracellular vesicles in sepsis plasma mediate neuronal inflammation in the brain through miRNAs and innate immune signaling. *J Neuroinflammation.* 2024 Oct 7;21(1):252. PMID: 39375720
- Suen AO, Chen F, Wang S, Li Z, Zhu J, Yang Y, Conn O, Lopez K, Cui P, Wechsler L, Cross A, Fiskum G, Kozar R, Hu P, Miller C, Zou L, Williams B, Chao W. Extracellular RNA Sensing Mediates Inflammation and Organ Injury in a Murine Model of Polytrauma. *J Immunol.* 2023 Jun 15;210(12):1990-2000. PMID: 37133342
- Huang H, Zhu J, Gu L, Hu J, Feng X, Huang W, Wang S, Yang Y, Cui P, Lin SH, Suen A, Shimada BK, Williams B, Kane MA, Ke Y, Zhang CO, Birukova AA, Birukov KG, Chao W, Zou L. TLR7 Mediates Acute Respiratory Distress Syndrome in Sepsis by Sensing Extracellular miR-146a. *Am J Respir Cell Mol Biol.* 2022 Sep;67(3):375-388. PMID: 35679261

Researcher in the SPOTLIGHT



Cole Sikon - Research to Real-Life



Cole Sikon, Senior Research Data Analyst with the STAR Clinical Research Team (CRT) at the R Adams Cowley Shock Trauma Center (STC), first joined STC as a volunteer in the Trauma Resuscitation Unit (TRU) after earning his bachelor's in Information Science from Cornell University. Exploring a potential career in medicine, his exceptional work led to a full-time position with the 24/7 CRT. Cole later combined his programming skills with clinical research to support the STC Research Management System, which coordinates many aspects of STC research in real time. He has also completed EMT training and the Science in the Evening postbaccalaureate program at the University of Maryland, College Park.

In late summer 2025, Cole was at the Maryland State Fair in his signature STC pink scrubs, staffing the EFIC (Exception From Informed Consent) event for an upcoming STC clinical trial in partnership with Maryland EMS, which evaluates pre-hospital blood transfusion and calcium levels. While distributing flyers and inviting public participation, Cole heard distressed screams nearby. A young woman urgently sought his help, reporting that a man had collapsed and was unconscious.

Cole immediately moved to the scene, where another bystander was performing CPR but appeared shaken. Calmly, Cole assessed the situation, took over CPR, and directed others in the crowd to assist—one to fetch an AED and another to contact EMS. He continued CPR until EMS arrived, confirmed the patient had regained a pulse, and transported him to the hospital.

This experience at the Maryland State Fair further fueled Cole's passion for medicine. He plans to apply to medical school next year, with the University of Maryland as his top choice.



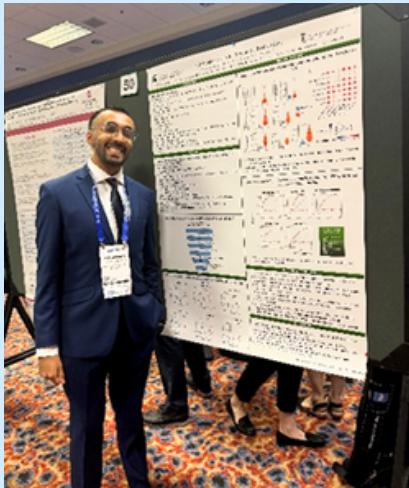
Events and News



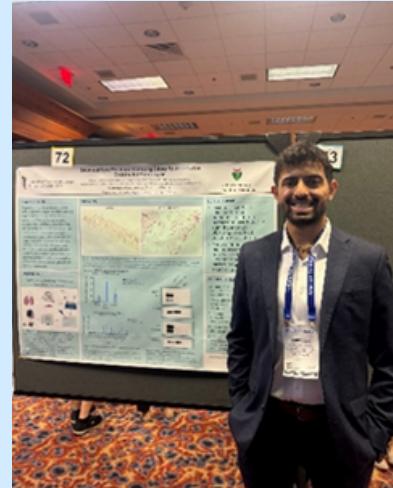
Summer Students Present Research at ASA 2025 Annual Meeting

Several trainees from the Department of Anesthesiology represented the department at the **American Society of Anesthesiologists (ASA) 2025 Annual Meeting**, held **October 10-14, 2025**, in San Antonio, Texas. Organized in part by the **Foundation for Anesthesia Education and Research (FAER)**, the meeting provided a national platform for trainees to present their work and engage with leaders in anesthesiology research.

Mohammed Riaz and **Ankush Verma**, both participants in the **FAER 2025 Medical Student Anesthesia Research Fellowship (MSARF) summer program**, presented their research during the FAER-organized MSARF session.



Mohammed Riaz, mentored by **Dr. Wei Chao**, presented "miRNA Biomarkers for Traumatic Brain Injury."



Ankush Verma, mentored by **Dr. Yifan Yuan**, presented his project titled "Decellularized Precision Cut Lung Slices Restore Native Endothelial Phenotypes."



Casey Hofstaedter, a trainee in the **Medical Scientist Training Program** at the University of Maryland School of Medicine, presented his research titled "Pseudomonas aeruginosa Lipid A Structural Variation In Vivo Impacts Immune Recognition."



Events and News



2025 Helrich-Matjasko Annual Lecture



The Department of Anesthesiology hosted the 2025 Helrich-Matjasko Annual Lecture on **October 22**, honoring Professors Martin Helrich and M. Jane Matjasko. This year's guest speaker, **Shiqian Shen**, M.D., of Massachusetts General Hospital and Harvard Medical School, presented **"Pain in the Head—Neural Substrate of Pain in Mice,"** highlighting his groundbreaking research on pain mechanisms.

The event brought together faculty, trainees, and guests for an evening of scientific discussion and community engagement.





5th Anesthesiology Research Retreat

Registration is now open for the **5th Anesthesiology Research Retreat**, to be held on **Monday, May 11, 2026**, at the UMB Southern Management Corporation Campus Center.

The retreat will feature oral and poster presentations, with awards recognizing the best presentations. This event offers an excellent opportunity for faculty, trainees, and staff to showcase their research and engage with colleagues.

Registration Deadline: Monday, February 2, 2026

Register Here: <https://forms.office.com/r/S3Wj1wHxPV>

PRIME-AI Lab Announces New Name and Leadership

The Big Data and Machine Learning Lab has been renamed **PRIME-AI** (Precision Research in Medicine and Engineering-AI), co-directed by Drs. Peter Hu, Shiming Yang, and William Teeter. PRIME-AI applies AI and machine learning to large-scale, trauma-focused clinical data, leveraging over 25 years of real-world trauma data, real-time physiologic waveforms, predictive analytics, and advanced video analytics to support clinical decision-making.



STAR Seminar



STAR Seminar Series

The STAR Seminar Series plays a vital role in advancing our research and educational missions, fostering collaboration and innovation across basic, translational, and clinical investigation.

Have a Guest You'd Like to Invite? Call for STAR Seminar Nominations

Research faculty are encouraged to nominate outstanding colleagues and collaborators to speak at our monthly STAR Seminar Series. This is a wonderful opportunity to showcase innovative work, strengthen partnerships, and bring new scientific perspectives to our community.

STAR will cover all costs for external speakers. We look forward to your nominations and to another engaging lineup of seminars in the months ahead. Drs. Brittney Williams and Chinmoy Sarkar will coordinate and organize these important lectures.

For questions or nominations, please contact:

- Brittany.williams@som.umaryland.edu
- Csarkar@som.umaryland.edu



STAR Seminars - Fall 2025 (Sep.-Dec.)			
Date	Speaker	Topic	Faculty Host
9/15/25	Ryan Pearson, PhD UMB, School of Pharmacy	<i>Nanoparticle Immunoengineering at the UMSOP Bio- and Nano-Technology Center</i>	Lin Zou
11/24/25	Gaurav Chopra, PhD Purdue University	<i>How do Lipids mediate Glial Cell Dysfunction in Neurodegeneration?</i>	Marta Lipinski
12/8/24	Andrew Gaudet, PhD The University of Texas at Austin	<i>Pathways to Neuroprotection: Modulating Neuroinflammation to Boost Repair After Spinal Cord Injury</i>	Junfang Wu



STAR Administrative Team



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Rosemary Kozar, M.D., Ph.D. Co-Director, STAR ORC

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