

STAR SPOTLIGHT

Newsletter

End of Year 2023
7/1/2022 - 6/30/2023

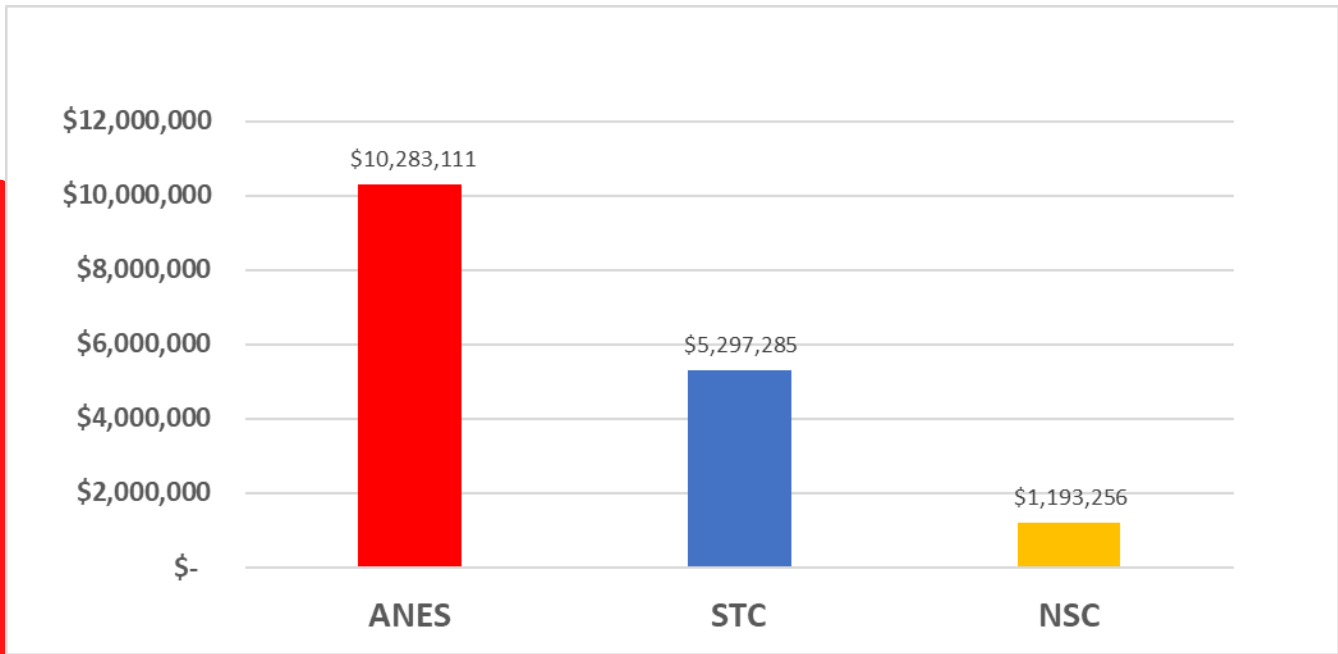
The Center for Shock, Trauma and Anesthesiology Research

Spotlight on STAR is a semi-annual distribution that serves to keep its members informed of research activities for the current academic year in the Department of Anesthesiology, the Program in Trauma and the National Study Center. The Spotlight on STAR includes current information about funding, grants submitted, new awards, top enrolling clinical studies and helpful contact information for the STAR administrative team. We also selectively publish stories of STAR investigators and introduce their research interests and accomplishments.

FY23 STAR'S TRENDING GRAPHS

7/1/2022-6/30/2023

Research Funding



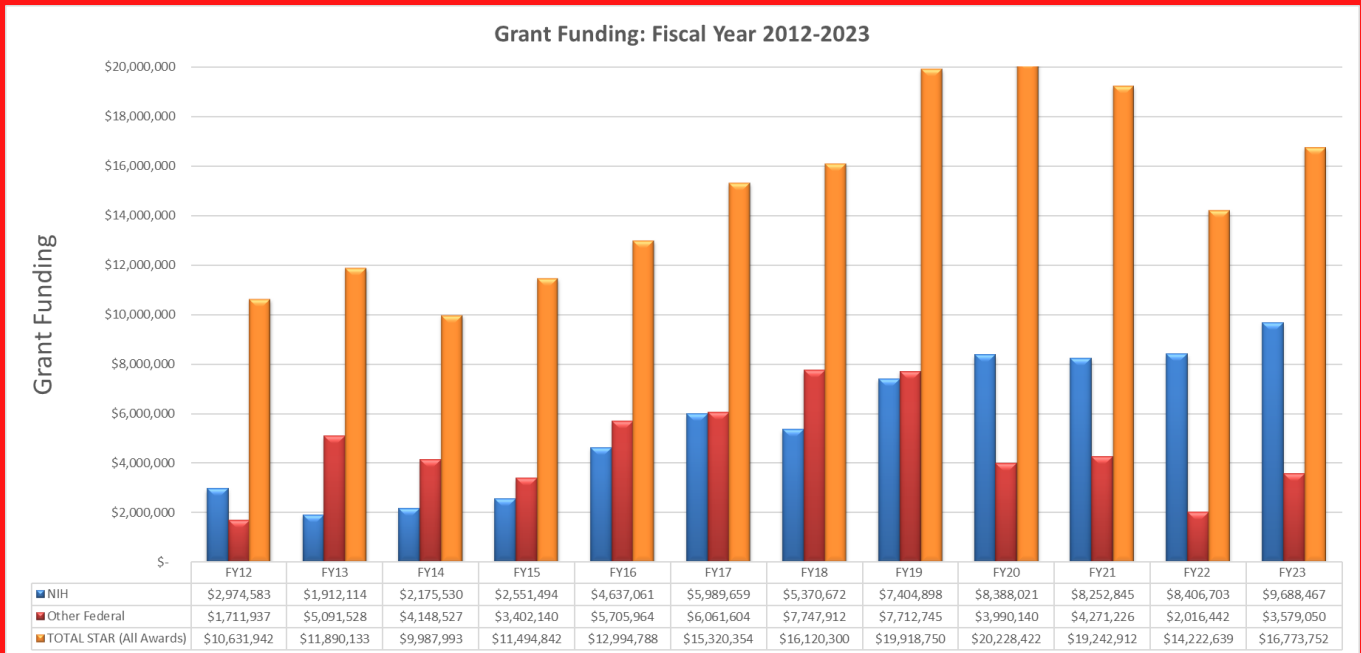
Total - \$16,773,652

Proposals Submitted

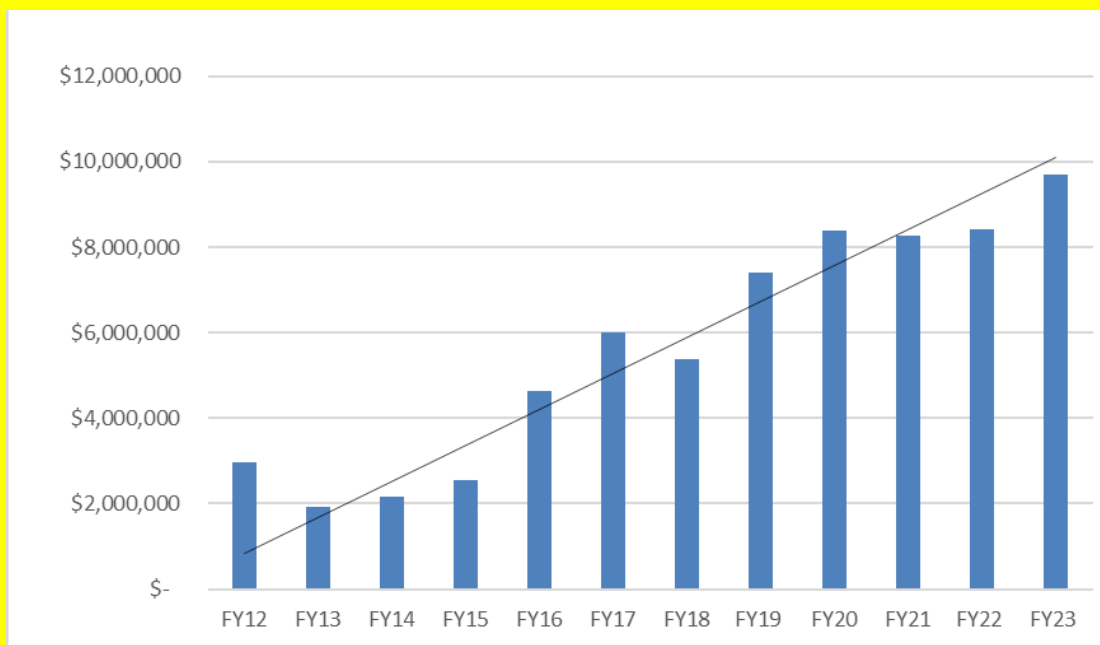


FY23 STAR'S TRENDING GRAPHS

STAR's Grant Funding - 10 years



NIH Funding Trend



DON'T FORGET

DON'T FORGET

Grant Submission Timeline

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

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

UMB Grant Routing Timeline:

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

Upcoming Grant Deadlines

National Institutes of Health (New):

- **R01 - October 5, 2023**
- **K Awards - October 12, 2023**
- **R21 - October 16, 2023**

National Institutes of Health (Resubmissions):

- **R01 - November 5, 2023**
- **K Awards - November 12, 2023**
- **R21 - November 16, 2023**

Anesthesiology

New Awards FY23:



Alan Faden, MD (Bogdan Stoica, MD: Co-PI)

NIH-R01 -National Institute of Neurological Disorders & Stroke "*Bi-directional Brain-Gut Interactions, Chronic Neuroinflammation and Neurodegeneration After Traumatic Brain Injury*"

\$3,098,905.00



Reney Henderson, MD

Cellphire

"*CRYPTICS -Randomized Controlled Trial Comparing Dimethyl Sulfoxide Cryopreserved Platelets to Liquid Stored Platelets in Patients Undergoing Cardiopulmonary Bypass Surgery*"

\$384,284.00

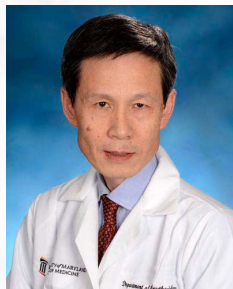


Bogdan Stoica, MD

NIH-R01 -National Institute of Neurological Disorders & Stroke

"*NOX2 Drives Microglia-Dependent Neurodegeneration After Traumatic Brain Injury*"

\$1,959,560.00



Brittney Williams, MD, and Wei Chao, MD, PhD

AFOSR-Air Force Office of Scientific Research

"*Trauma-induced Coagulopathy: Impact of Aeromedical evacuation and novel intervention*"

\$1,221,517.00



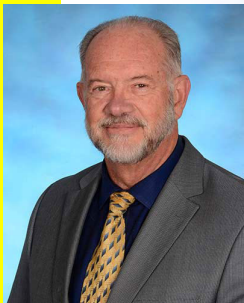
Thelma Wright, MD, JD

NIH-R56- National Institute of Biomedical Imaging and Bioengineering

"*A Novel Continuous Real-time Non-invasive CO2 Monitor to Help Prevent Death in the Underserved Minority Population from Opioid Overdose*"

\$510,528.00

New Awards FY23:



Gary Fiskum, PhD

AFOSR-Air Force Office of Scientific Research
"Genomics of Hypobaric Following Polytrauma"
\$316,705.00



Samuel Galvagno, DO, PhD

Maryland Industrial Partnerships
"Linshom Continuous Predictive Respiratory Monitor"
\$80,944.00

Program in Trauma

New Awards FY23:



Melike Harfouche, MD

DOJ - US Department of Justice
"Violence Prevention Program Byrne Discretionary"
\$497,000.00



Rosemary Kozar, MD, PhD

AFOSR - Air Force Office of Scientific Research
"Fibrinogen-Based Resuscitation to Improve Outcomes from Sepsis after Hemorrhagic Shock"
\$999,499.00



Prajwal Ciryam, MD, PhD

Henry M. Jackson Foundation for the Advancement of Military Med/USU

"Immune-Mediated Neurological Deterioration After Traumatic Brain Injury"

\$311,120.00



Peter Hu, PhD and William Teeter, MD

DOD-DARPA-Defense Advanced Research Projects Agency

"Shock Trauma Center Research Infrastructure for Trauma with Medical Observations (STC_RITMO)"

\$7,359,043.00



Gunjan Parikh, MD

Massachusetts General Hospital/NINDS

"Race/Ethnicity, Hypertension and Prevention of VCID and Stroke After Intracerebral Hemorrhage"

\$460,369.00



Deborah Stein, MD, MPH

University of Alabama at Birmingham/NHLBI

"Trauma Resuscitation with Group O Whole Blood or Products (TROOP) Trial"

\$292,536.00

National Study Center



Kartik Kaushik, MSc, PhD

Dunlap and Associates

"Dunlap DUID-Analysis of Drugged Driving Investigations and Sanction"

\$125,000.00



Deborah Stein, MD, MPH

US Department of Transportation - National Highway Traffic Safety Administration

"Crash Injury Research and Engineering Network (CIREN)"

\$2,983,956.00



Roumen Vesselinov, PhD

STMD - Maryland Motor Vehicle Administration

"Seat Belt Observation Project FY23 (Occupant Protection-Seatbelt) "

\$130,146.00

STMD-Maryland Motor Vehicle Administration

"Section 109: Race/Ethnicity and Traffic Stops in Maryland "

\$12,884.00

Clinical Studies

Anesthesiology Clinical Studies

Active Studies- FY23:

Principal Investigator	Study - Short Title	Total Enrolled	Enrollment status
Rock, Peter	GeneTICS	114	Open
Rock, Peter	C19BB Study- Employee/Non-patient	8339	Open
Rock, Peter	C19BB Study- Inpatient	145	Open
Henderson, Reney	HABIT	58	Active
Henderson, Reney	OPSTAHT	13	Active
Chao, Wei	Plasma miRNAs and Exomes in Sepsis	52	Active
Rock, Peter	PBAS	27	Active
Henderson, Reney	ROTEM: Art V Venous	11	Active
Henderson, Reney	EAPH	3	Active

Clinical Studies

Trauma Clinical Research Studies

Active Studies- FY23:

Principal Investigator	Study - Short Title	Screened	Eligible	Enrolled	Failed	Months Active**
PROSPECTIVE						
Badjatia	MTEC	1418	156	16	1262	6
Lauerman	CIREN	535	54	8	481	5
Albrecht	RETRO-TBI	148	51	13*	97	2
Cain	SiVent	145	1	0	144	2
Chang	BOOST	570	0	0	570	1
Kundi	Humacyte					ON HOLD
Fiskum	Genomics	2074	18	10	2056	7
Gullapali	Magnets	2371	676	31	1695	11
Kozar	Endoshock2	993	181	117	812	12
Kozar	BIOBANK	2699	2601	2605	98	6
Kozar	Lipid Analysis	919	59	59	860	3
Kozar	VTE	2261	101	55	2160	9
Sethuraman	HOBIT	2920	5	3	2915	12
Harfouche	Psychotherapy	158	100	19	58	9
Haase	VBI	2	1	1	1	7
Schwartzbauer	Artic	2871	5	3	2866	12
Schwartzbauer	ASTRAL	1916	0	0	1916	9
Tisherman	EPR					ON HOLD
PROSPECTIVE STUDIES						
Cain	TBI-AAST	481				12
Teeter	Aortic Injury	50				12
Teeter	REBOA	20				12
Teeter	Thoracotomy	47				12
Kundi	REDSOC	150				12
COORDINATING CENTER						
Harfouche	AAST HIPS	54 Active sites				

*Flyer packet delivered



The **Clinical Research Team (CRT)** is responsible for 24/7 research coverage of the Shock Trauma Center, including Acute Care Emergency Surgery (ACES, Critical Care Resuscitation Unit (CCRU), and the Soft Tissue Service. The enrollment table shows major studies supported by the CRT this past year. The CRT can prospectively screen in excess of 6,000 patients per year for one study, depending on the protocol criteria. From July 1, 2022 through June 30, 2023 the CRT prospectively screened more than 5,700 patients at the Shock Trauma Center. The CRT is the coordinating center for the American Association for the Surgery of Trauma's Hemorrhage Control Interventions in Pelvic Fractures Study (HIPS) and has trained and qualified for enrollment initiation 54 sites across the country.

Clinical Studies

Retrospective Trauma Studies

Investigator	Study Title
Ghneim, Mira	Pediatric Pneumothorax
Stein, Deb	Laryngeal Penetrating Injury
Aarabi, Bizhan	Spinal Cord Perfusion Monitoring
Aarabi, Bizhan	Epidemiology of Spinal Trauma
Aarabi, Bizhan	Traumatic Aneurysms Post GSW to the Head
Harfouche, Melike	Offender/Victim Relationship in Gun Violence
O'Connor, Jim	Modern Outcomes of Thoracic Damage Control Surgery
Harfouche, Melike	Single-Center Evaluation of the Impact of Fasciotomy Timing on Outcomes
Gage, Mark	Dyvascular Limb Outcomes Assessment
Tran, Quincy	TBI and Blood Pressure Variability
Kundi, Rishi	Contemporary Outcomes After Pelvic Angioembolization
Slobogean, Gerard	Rehabilitation Enhanced by Partial Arterial Inflow Restriction
Kundi, Rishi	Intraoperative Findings in Cirrhotic Patients
Harfouche, Melike	COVID and Black Women Violence

Researcher in the SPOTLIGHT



Junfang Wu, MD, MS, PhD

***Director of the Anesthesiology
Center for Neuroscience Research***

***Exploring the Frontier of Traumatic Brain
and Spinal Cord Injury Research***

Dr. Wu is a tenured Professor of Anesthesiology at the Center for Shock, Trauma and Anesthesiology Research (STAR). She received her MD, PhD from China and completed her postdoctoral training in both China and NIH. For more than 10 years, Dr. Wu's research program has been concentrated on examining secondary injury processes following traumatic spinal cord/brain injury (SCI/TBI) and pharmacological/gene therapeutic interventions for SCI/TBI. Her lab is particularly interested in studying pathological mechanisms including disruption of autophagy and lysosomal pathway, microglial Hv1 channel, NOX2, extracellular vesicles (EVs), astrocytic TrkB.T1, and their contribution to neuroinflammation and neurodegeneration in both acute CNS trauma and aging conditions including chronic SCI/TBI and Alzheimer's disease and related dementia (AD/ADRD). Dr. Wu's research capitalizing on powerful cutting-edge technologies to address mechanistic questions on neurotrauma is currently supported by seven R01 level NIH programs.

More recently, Dr. Wu's research exploits cutting edge technologies to close important and previously unbridgeable gaps in our knowledge on brain aging following SCI and the mechanistic actions of microglia for olfactory dysfunction and TBI on olfactory processing at the cellular, circuit, and behavioral levels. These findings will not only advance our understanding of the cellular and molecular mechanisms of functional recovery after neurotrauma but also potentially shed light on developing effective approaches for early and accurate diagnosis of AD or ADRD in the SCI/TBI populations.

Dr. Wu was recently named as Associate Director of University of Maryland-Medicine Institute for Neuroscience Discovery (UM-MIND), for the Neuro-Injury Pillar of MIND. She is also a newly appointed Director of the Anesthesiology Center for Neuroscience Research (ACNR). The goals of the Center are to coordinate and enhance the STAR brain and spinal cord injury research, promote mentorship, grow the STAR neuroscience research portfolio, and promote interdisciplinary collaborations between basic and clinical investigators across the STAR.

UMB Air Force Research Team



En Route Care—Primary Lines of Effort

Autonomous Care for Patient Movement

Define, develop, and deliver new paradigms for providing AE care without human clinical interaction



- Autonomous AE blueprint for acquisition
- Operational definitions/FDA collaboration
- Enabling tech: monitoring, clinical decision support, closed-loop control, robotics

Optimization of Patient Movement

Augment, extend, and optimize the capabilities of AE teams/care providers through improved tactics, teaming, training and equipment



- Define scenarios, patient/personnel req'ts
- Digitize medical sims, big data approach
- Human factors teaming/training solutions

Ground Medical Operations in ACE

Inform and improve operational triage, combat casualty care, and expeditionary medicine in austere/prolonged field care



- Far forward blood supply solutions
- CREMO med equipment, supplies, facilities
- New medical interventions/tools, Role 1/2



UNIVERSITY OF
Cincinnati

- Central monitoring capability, AI decision support, data transfer, EHR integration (BATDOK™, etc.)

- Digital and medical modelling and simulation with future scenarios (UC, UMB, APL, AFMMAST)

- GSU clinical and operational research partners: "The Tetrad" (UC, UMB, CSTARS, RHB)



UNIVERSITY OF MARYLAND
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RESEARCH CENTER

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AFRL

Categories of ERC Research Where UMB Excels

1. Clinical Decision Support
2. Blood Solutions
3. New Medical Interventions for Military Polytrauma
4. Endovascular Resuscitation and Trauma Management

DoD JPC-6 Submissions

PI	PI Rank	Dept.	Title	\$\$ Requested (in millions)
Neeraj, Badjatia, MD, MS	Professor	Neurology, Anesthesiology	Measuring Dysautonomia for the Rapid Determination and Progression of TBI	2.276
Wei Chao, MD, PhD, FAHA & Rosemary A. Kozar, MD, PhD	Professors/Co-Directors of STAR	Anesthesiology and Surgery	Extracellular RNAs as a Novel Mediator and Biomarker in Hemorrhagic Trauma	1.56
Allan Doctor, MD	Professor	Pediatrics	Generation of "Low Titer" O Negative Whole Blood by Adsorption of Anti-A and -B Isoagglutinins	2.293
Molly Jo Goodfellow, PhD	Research Associate	Anesthesiology	Deferoxamine as a Resuscitative Adjuvant to Mitigate Damage Caused by Combined Traumatic Brain Injury, Hemorrhagic Shock, and Delayed Hypobaric Exposure	1.237
Joseph Rabin, MD, MS, MIA	Associate Professor	Surgery	Trans-Esophageal Aortic Blood Flow Occlusion to Control NonCompressible Torso Hemorrhage	0.641
William A. Teeter, MD	Assistant Professor	Emergency Medicine	Clinical Feasibility and Outcomes of Selective Aortic Arch Arterial Perfusion for Non-Compressible Torso Hemorrhage and Hemorrhage Induced Cardiac Arrest	2.567
Brittney Williams, MD	Associate Professor	Anesthesiology	Hypercoagulability in TIC and Role of Plasma Extracellular Vesicles	1.266
Lin Zou, MD. PhD	Associate Professor	Anesthesiology	Targeting extracellular miRNAs sensing in trauma-induced acute lung injury	1.237
Potential Funding:				\$13,077,000

DoD Other Intramural Submissions

PI	Proposal Type	Title	\$M Requested
Allan Doctor, MD/SWRI	Medical Technology Enterprise Consortium (MTEC) – Armed Forces Institute for Regenerative Medicine (AFIRM)	Generation of "Low Titer" O negative Whole Blood by Adsorption of Anti-A & -B Isoagglutinins – Preparation for FDA Approval	1.90
Sarah Murthi, MD	Chief Scientist Funding for Applied S&T (C-FAST)	Development of Extended Reality Platforms for Extracorporeal Membrane Oxygenation Cannulation Training	0.50
CSTARS Cincy w/ Baltimore	C-FAST	Advanced Development of the SPIRITUS Manual Ventilation Feedback Device	0.50
William A. Teeter, MD	Peer Reviewed Medical Research Program (PRMRP) Investigator-Initiated Research Award (IIRA)	Clinical Feasibility and Outcomes of Selective Aortic Arch Arterial Perfusion for Non-Compressible Torso Hemorrhage and Hemorrhage Induced Cardiac Arrest	2.00
Elizabeth Powell, MD	PRMRP: Discovery Award	Physiologic Response of an Animal Model in Hemorrhagic Shock while on Veno-Venous Extracorporeal Membrane Oxygenation	0.20
Elizabeth Powell, MD	PRMRP: IIRA	Development of an Extracorporeal Membrane Oxygenation Device for use in Austere Far-Forward Environments	2.471
Rosemary Kozar, MD, PhD	PRMRP - Technology/Therapeutic Development Award	Therapeutics to Mitigate Von Willebrand Factor-Induced Endotheliopathy and Coagulopathy after Hemorrhagic Shock in the Traumatically Injured Warfighter	2.629
Joseph Rabin, MD	Combat Readiness-Medical Research Program (CRRP)	Trans-Esophageal Aortic Blood Flow Occlusion to Control Non-Compressible Torso Hemorrhage	1.10
Elizabeth Powell, MD	SOCOM BAA – Pre-Proposal	Advanced Development of an Extracorporeal Membrane Oxygenation Device for use in Austere Far-Forward Environments	2.471
Allan Doctor, MD/SWRI	SOCOM BAA – Pre-Proposal	Generation of Low Titer Type O Whole Blood by Adsorption of AntiA & -B Isoagglutinins	2.293
Potential Funding:			\$16,064,000

DoD Other Intramural Submissions (continued)

PI	Proposal Type	Title	\$M Requested
Rosemary Kozar, MD, PhD	Trauma Immunology Research Award (TIRA)	Plasma microRNA Signatures of Human Trauma Immunity and Injury	2.00
Wei Chao, MD, PhD	TIRA	Extracellular RNA as a Novel DAMP in Trauma Immunology and Organ Injury	2.00
Ryan Pearson, PhD	TIRA	Immunomodulatory Nanoparticles as a Novel Therapeutic Approach for Traumatic Injury	2.00
Alan Faden, MD	TIRA	Identification of epigenetic biomarkers and therapeutic targets for chronic TBI and associated motor/cognitive decline	2.00
Jonathon Pearl, MD	Joint Warfighter Medical Research Program (JWMRP) – Pre-Proposal	Wearable Ultrasound For Identification, Monitoring, and Treatment of Hemorrhage on the Battlefield	3.50
Rosemary Kozar, MD, PhD	JWMRP – Pre-Proposal	New Immediate Use Cryoprecipitate Products to Augment ADAMTS13-VWF Based Protection and Evaluation of Product-Induced Changes in Coagulation	0.60
Potential Funding:			\$12,100,000

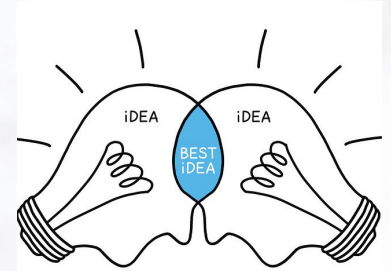
Events and News

TBI/SCI Research Collaboration Group

TBI/SCI Research Collaboration (First meeting was 1/4/2023)- TBI and spinal cord injury represent a major cause of morbidity and mortality in trauma. Goal - Strengthen the collaboration between clinical and basic investigators on TBI and spinal cord injury.

Interested- Contact Dr. Rosemary Kozar for more information

rkozar@som.umaryland.edu



Stay tuned for details on 2nd TBI Research Collaborative Group Meeting being planned for October 2023

STAR Lecture Series Returns

This lecture series serves as an important part of our research and educational missions and had a significant impact on what we do as basic, translational, and clinical investigators.

Have a guest you would like to invite? Drs. Brittney Williams and Chinmoy Sarkar will direct and organize these important lectures.

brittany.williams@som.umaryland.edu

csarkar@som.umaryland.edu

Upcoming Lectures in HSFI Auditorium

Presenter	Institution	Date
Jing-fei Dong	University of Washington	Sept. 25th
Samuel Tisherman	University of Maryland	Oct. 18th
Bradlee Heckmamm	University of South Florida	Nov. 27th
Josh Morganti	University of Kentucky	Dec. 18th

Events and News

STAR Website
Remodeled

WE NEED YOUR HELP!

The STAR-ORC website continues to be remodeled and improved over time. Our goal is to update the website with current achievements, grants/awards, and projects. To help with this process we ask you to keep your SOM Faculty Profile up to date. Within this portal, you can also schedule to have your portrait taken.

How to update your Faculty Profile:

<https://www.medschool.umaryland.edu/newprofile/>

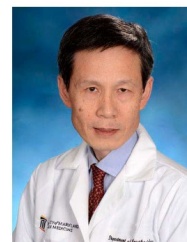
**UPDATE YOUR
PROFILE**

- Your educational background
- Your biosketch
- Research and/or clinical interests
- publications

Wei Chao, MD, PhD, FAHA

Anesthesiology Endowed Professor of Translational Research

Academic Title: Professor
Primary Appointment: Anesthesiology
Secondary Appointment(s): Physiology
Administrative Title: Vice-Chair For Translational Research; Co-Director of the STAR Center
Additional Title: Co-Director, Shock, Trauma and Anesthesiology Research Center
Email: wchao@som.umaryland.edu
Location: UMMC, HSF-2
Phone (Primary): (410) 328-2660
Fax: (410) 328-5531



LOOKING FOR A NEW GRANTS???



Find Funding Opportunities

The University of Maryland, Baltimore (UMB) is the state's public health, law, and human services university devoted to excellence in professional and graduate education, research...

FUNDING SOURCE CONSULTATIONS

Stacie Mendoza,
Program Director for Research
Career Development,
can help faculty identify
funding sources.

Email:
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STAR Administrative Team

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