

***CURRICULUM VITAE***  
***William Brad Hubbard, PhD***

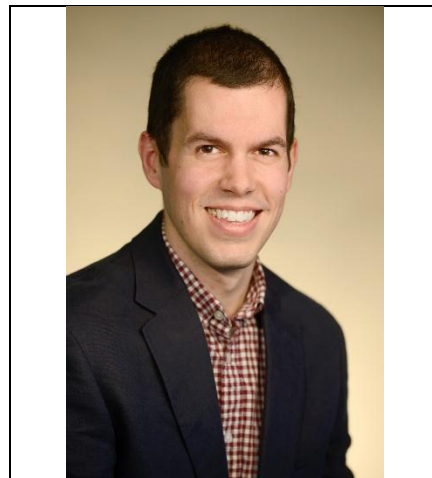
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## *CURRICULUM VITAE*

**William Brad Hubbard, PhD**  
**Assistant Professor**  
**Spinal Cord & Brain Injury Research Center**  
**Department of Physiology**  
**University of Kentucky College of Medicine**

**Research Physiologist**  
**Lexington VA Healthcare System**



### **I. CONTACT INFORMATION**

**Office Address**      741 S. Limestone, BBSRB B467  
Lexington, KY 40536

**Email**                      [bradhubbard@uky.edu](mailto:bradhubbard@uky.edu)

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### **II. LICENSURE and CERTIFICATION**

#### **Professional Licensure**

08/2021-10/2023      **Drug Enforcement Agency Controlled Substance Registration**  
#RH0605242

#### **Research Certification**

09/2020-                **University of Kentucky Collaborative Institutional Training Initiative**  
Completion Certificate

03/2022-09/2022      **University of Kentucky Good Research Practices Certification**  
Completion Certificate

05/2025                **CCTS CIMER Entering Mentoring Curriculum**  
Completion Certificate

### **III. EDUCATION**

#### **Undergraduate**

**University of North Carolina at Chapel Hill**  
Chapel Hill, NC  
08/2008-05/2012 Bachelor of Science, Applied Science in Biomedical Engineering

#### **Professional/Graduate**

**Virginia Tech**  
Blacksburg, VA  
08/2012-08/2016 Ph.D. in Biomedical Engineering

#### **Post-Graduate**

**University of Kentucky**  
Lexington, KY  
10/2016-01/2020 Postdoctoral Fellow, Spinal Cord and Brain Injury Research Center

### **IV. CONTINUING EDUCATION**

N/A

## V. NON-ACADEMIC PROFESSIONAL EXPERIENCES

|                 |   |
|-----------------|---|
|                 | <b>Lexington VA Healthcare System</b><br>Lexington, KY          |
| 07/2018-01/2020 | Research Associate, Research Division                           |
|                 | <b>Lexington VA Healthcare System</b><br>Lexington, KY          |
| 02/2020-present | Research Physiologist/Principal Investigator, Research Division |

## V. ACADEMIC APPOINTMENTS

### Trainee

|                 |   |
|-----------------|---|
|                 | <b>Virginia Tech</b><br>Blacksburg, VA                            |
| 07/2012-08/2016 | Graduate Research Assistant, Biomedical Engineering and Sciences  |
| 08/2016-10/2016 | Research Analyst, Biomedical Engineering and Sciences             |
|                 | <b>University of Kentucky</b><br>Lexington, KY                    |
| 10/2016-01/2020 | Postdoctoral Fellow, Spinal Cord and Brain Injury Research Center |

### Faculty

|                 |   |
|-----------------|---|
|                 | <b>University of Kentucky</b><br>Lexington, KY  |
| 02/2021-02/2022 | Adjunct Professor of Physiology, non-tenure-track, academic, part-time                                  |
| 04/2021-02/2022 | Faculty Associate in SCoBIRC, non-tenure-track, academic, part-time                                     |
| 03/2022-07/2023 | Assistant Professor, SCoBIRC, Department of Physiology, non-tenure, research track, academic, full-time |
| 08/2023-present | Assistant Professor, SCoBIRC, Department of Physiology, tenure track, academic, full-time               |

## VII. RESEARCH & SCHOLARLY ACTIVITY

### A. PUBLICATIONS

#### Peer-Reviewed Original Research in Professional, Scientific or Educational Journals

1. Hockey, KS, **Hubbard WB**, Sajja VS, Sholar CA, Thorpe C, VandeVord PJ, and Rzigalinski BA. A New Model for Mild Blast Injury Utilizing *Drosophila Melanogaster*. *Biomedical Sciences Instrumentation* 2013. 49:134-40
2. **Hubbard WB**, Hall C, Sajja VS, Lavik E, and VandeVord P. Examining lethality risk for rodent studies of primary blast lung injury. *Biomedical Sciences Instrumentation*. 2014. 50:92-9.
3. Bailey ZS, Sajja VS, **Hubbard WB**, VandeVord PJ. Blast-induced Neurotrauma leads to Changes in the Epigenome. *Biomedical Sciences Instrumentation*. 2015. 51: 423-30
4. Sajja VS, **Hubbard WB**, VandeVord PJ. Subacute oxidative stress and glial reactivity in the amygdala are associated with increased anxiety following blast neurotrauma. *SHOCK*. 2015. 44 Suppl 1: 71-8. doi: 10.1097/SHK.0000000000000311
5. Sajja S, **Hubbard WB**, Hall CS, Ghoddoussi F, Galloway M, VandeVord P. Enduring deficits in memory and neuronal pathology after blast-induced traumatic brain injury. *Scientific Reports*. 2015. 5:15075. doi: 10.1038/srep15075
6. **Hubbard WB**, Lashof-Sullivan M, Lavik E, VandeVord PJ. Steroid-loaded Hemostatic Nanoparticles Combat Lung Injury after Blast Trauma. *ACS Macro Letters*. 2015. 4(4): 387-391. doi: 10.1021/acsmacrolett.5b00061
7. **Hubbard WB\***, Bailey ZS\*, VandeVord PJ. Cellular Mechanisms and Behavioral Outcomes in Blast-induced Neurotrauma: Comparing Experimental Set-ups. *Methods in Molecular Biology*. 2016. 1462:119-38. doi: 10.1007/978-1-4939-3816-2\_8
8. **Hubbard WB**, Shaylen Greenberg, Carly Norris, Joseph Eck, Erin Lavik, and Pamela VandeVord. Distinguishing the Unique Neuropathological Profile of Blast Polytrauma. *Oxidative Medicine and Cellular Longevity* 2017, 2017:5175249. doi: 10.1155/2017/5175249
9. **Hubbard WB**, Lashof-Sullivan M, Greenberg, S, Norris C, Eck J, Lavik E, VandeVord PJ. Hemostatic nanoparticles increase survival, mitigate neuropathology and alleviate anxiety in a rodent blast trauma model. *Scientific Reports*. 2018, 8(1):10622. doi: 10.1038/s41598-018-28848-2.
10. **Hubbard WB**, Harwood C#, Geisler J, Vekaria H, Sullivan PG. Mitochondrial uncoupling prodrug improves tissue sparing, cognitive outcome, and mitochondrial bioenergetics after traumatic brain injury in male mice. *Journal of Neuroscience Research* 2018, 96(10):1677-1688 doi: 10.1002/jnr.24271.
11. **Hubbard WB\***, Bolton-Hall A\*, and Saatman KE. Experimental Designs for Repeated Mild Traumatic Brain Injury: Challenges and Considerations. *J Neurotrauma* 2019, 36(8):1203-1221 doi: 10.1089/neu.2018.6096.
12. **Hubbard WB**, Joseph B, Spry M, Vekaria H, Saatman KE, Sullivan PG. Acute mitochondrial impairment underlies prolonged cellular dysfunction after repeated mild traumatic brain injuries. *J Neurotrauma*. 2019, 36(8):1252-1263 doi: 10.1089/neu.2018.5990.

13. **Hubbard WB\***, Harwood C\*, Prajapati P, Springer JE, Saatman, KE, Sullivan PG. Fractionated mitochondrial magnetic separation for isolation of synaptic mitochondria from brain tissue. *Sci Reports*. 2019, 9(1):9656. doi: 10.1038/s41598-019-45568-3.
14. Zhang W, Sviripa VM, Kril L, Yu T, Xie Y, **Hubbard WB**, Sullivan P, Chen X, Zhan CG, Yang-Hartwich Y, Evers BM, Spear B, Gedaly R, Watt DS, Liu C. An Underlying Mechanism of Dual Wnt Inhibition and AMPK Activation: Mitochondrial Uncouplers Masquerading as Wnt Inhibitors. *J Med Chem*. 2019; 62(24):11348-11358. doi: 10.1021/acs.jmedchem.9b01685
15. Berkowitz BA, Olds HK, Richards C, Joy J, Rosales T, Podolsky RH, Childers KL, **Hubbard WB**, Sullivan PG, Gao S, Li Y, Qian H, Roberts R. Novel Imaging Biomarkers for Mapping the Impact of Mild Mitochondrial Uncoupling in the Outer Retina In Vivo. *PLoS One*. 2020 15(1):e0226840. doi: 10.1371/journal.pone.0226840
16. Yonutas, HM, **Hubbard WB**, Pandya JD, Vekaria H, Geldenhuys WJ, Sullivan PG. Bioenergetic restoration and neuroprotection after therapeutic targeting of mitoNEET: New mechanism of pioglitazone following traumatic brain injury. *Exp Neurology*. 2020 327:113243. doi: 10.1016/j.expneurol.2020.113243
17. Vekaria HJ, **Hubbard WB**, Scholpa NE, Spry ML, Gooch JL, Prince SJ, Schnellmann RG, Sullivan PG. Formoterol, a  $\beta$ 2-adrenoreceptor agonist, induces mitochondrial biogenesis and promotes cognitive recovery after traumatic brain injury. *Neurobiology of Disease*. 2020; 140:104866. doi: 10.1016/j.nbd.2020.104866.
18. **Hubbard WB\***, Readnower RD\*, Kalimon O, Geddes JW, Sullivan PG. Genetic Approach to Elucidate the Role of Cyclophilin D in TBI Pathology. *Cells*. 2021; 10(2):199. doi: 10.3390/cells10020199
19. **Hubbard WB#**, Dong JF, Cruz MA, Rumbaut RE. Links between Thrombosis and Inflammation in Traumatic Brain Injury. *Thrombosis Research* 2021. 198:62-71. doi.org/10.1016/j.thromres.2020.10.041
20. **Hubbard WB**, Banerjee M, Prakhya KS, Joshi S, Wang Q, Vekaria HJ, Saatman KE, Whiteheart S, Sullivan PG. Differential platelet and leukocyte profiles in distinct models of TBI. *Cells*. 2021; 10(3):500. doi: 10.3390/cells10030500.
21. **Hubbard, WB**, Spry, M.L., Gooch, J.L., Cloud, A.L., Vekaria, H.J., Burden, S., Powell, D., Berkowitz, B.A., Geldenhuys, W., Harris, N., Sullivan, P.G. Clinically relevant mitochondrial-targeted therapy improves chronic outcomes after traumatic brain injury. *Brain*. 2021; 144(12):3788-3807. doi.org/10.1093/brain/awab341
22. **Hubbard WB#**, Sim MMS, Saatman KE, Sullivan PG, Wood JP#. Tissue factor release following traumatic brain injury drives thrombin generation. *Res Pract Thromb Haemost*. 2022; 6(4):e12734. doi: 10.1002/rth2.12734.
23. **Hubbard WB#\***, Velmurugan GV\*, Brown EP, Sullivan PG. Resilience of females to acute blood-brain barrier damage and anxiety behavior following mild blast traumatic brain injury. *Acta Neuropathologica Communications*. 2022; 10(1):93. doi: 10.1186/s40478-022-01395-8.
24. Patel SP, Michael FM, Gollihue JL, **Hubbard WB**, Sullivan PG, Rabchevsky AG. Delivery of mitoceuticals or respiratory competent mitochondria to sites of neurotrauma. *Mitochondrion*. 2023; 68:10-14. Doi: 10.1016/j.mito.2022.11.001
25. **Hubbard, WB**, Vekaria, H.J., Kalimon O.J., Spry, M.L., Brown, E.P., Kilbaugh T.J., Sullivan, P.G. Pioglitazone restores mitochondrial function but does not spare cortical

- tissue following mild brain contusion. *Brain Communications*. 2023; 5(2)  
doi.org/10.1093/braincomms/fcad032
26. Velmurugan GV, **Hubbard WB**, Prajapati P, Vekaria HJ, Patel SP, Rabchevsky AG, Sullivan PG. LRP1 Deficiency Promotes Mitostasis in Response to Oxidative Stress: Implications for Mitochondrial Targeting after Traumatic Brain Injury. *Cells*. 2023; 12(10), 1445 doi.org/10.3390/cells12101445
  27. **Hubbard, WB#**, Vekaria, H.J., Velmurugan, GV, Kalimon O.J., Prajapati P, Brown, E.P., Geisler, JG, Sullivan, P.G.# Mitochondrial dysfunction following repeated mild blast traumatic brain injury is attenuated by a mild mitochondrial uncoupling prodrug. *J Neurotrauma*. 2023; doi: 10.1089/neu.2023.0102
  28. Kalimon O.J., Vekaria, H.J., Velmurugan, GV, **Hubbard WB**, Sullivan PG. Characterizing Sex Differences in Mitochondrial Dysfunction After Severe Traumatic Brain Injury in Mice. *Neurotrauma Rep*. 2023;4(1):627-642. doi: 10.1089/neur.2023.0046.
  29. Kilgore M.O., **Hubbard W.B.#** Effects of Low-Level Blast on Neurovascular Health and Cerebral Blood Flow: Current Findings and Future Opportunities in Neuroimaging. *IJMS*. 2024, 25(1), 642. <https://doi.org/10.3390/ijms25010642>.
  30. **Hubbard, WB#**, Velmurugan, GV, Sullivan, P.G.# The role of mitochondrial uncoupling in the regulation of mitostasis after traumatic brain injury. *Neurochem Int*. 2024, <https://doi.org/10.1016/j.neuint.2024.105680>.
  31. Sanganahalli BG, Mihailovic JM, Vekaria HJ, Coman D, Yackzan AT, Flemister A, Aware C, Wenger K, **Hubbard WB**, Sullivan PG, Hyder F, Lin AL. mTOR inhibition enhances synaptic and mitochondrial function in Alzheimer's disease in an APOE genotype-dependent manner. *J Cerebral Blood Flow & Metabolism*. 2024;0(0). doi:10.1177/0271678X241261942.
  32. Kalimon O.J., Vekaria, H.J., Prajapati P., Short S.L., **Hubbard WB**, Sullivan PG. The Uncoupling Effect of 17 $\beta$ -Estradiol Underlies the Resilience of Female-Derived Mitochondria to Damage after Experimental TBI. *Life (Basel)* 2024 Jul 30;14(8):961. doi: 10.3390/life14080961.
  33. Velmurugan, GV, Vekaria, H.J., Hartz AMS, Bauer B, **Hubbard, WB#**. Oxidative stress alters mitochondrial homeostasis in isolated brain capillaries. *Fluids Barriers CNS* 21, 81 (2024). <https://doi.org/10.1186/s12987-024-00579-9>.
  34. Velmurugan GV, Vekaria HJ, Patel SP, Sullivan PG, **Hubbard WB#**. Astrocytic mitochondrial transfer to brain endothelial cells and pericytes in vivo increases with aging. *J Cerebral Blood Flow & Metabolism*. 2024 Dec 12:271678X241306054. doi: 10.1177/0271678X241306054. Online ahead of print.
  35. Velmurugan G, Prajapati S, Tran S, Miller C, Burke B, **Hubbard WB#**. "Sex-Dependent Blood-Brain Barrier Alterations Following Repeated Mild Blast Traumatic Brain Injury at Varying Inter-Injury Intervals." in *Experimental Neurology* 2025 May 30:392:115325. doi: 10.1016/j.expneurol.2025.115325. Online ahead of print. [Selection of Image for Journal Issue Cover Page](#)
  36. Goli M, Sanni A, Gautam S, Mallah K, **Hubbard WB**, Reslan M, Haidar MA, Halabi K, Walker J, Mondello S, Kobeissy F, Mechref Y. "Exploring the Impact of Mitoquinone Supplementation on Glycan Profiles in a Repeated Mild Traumatic Brain Injury Mouse Model." in *Neurotrauma Reports* 2025; 6(1). Published online June 16, 2025. doi:10.1089/neur.2025.0054

37. **Hubbard WB#**, Abutarboush R, Ahlers ST, VandeVord PJ. “Letter to the editor: “Comparison of blood-brain barrier permeability changes in gyrencephalic (ferret & non-human primate) and lissencephalic (rat) models following blast overpressure exposures” by Kakulavarapu V. Rama Rao, et al.” *Experimental Neurology*. 2026 “*In press*”

#denotes corresponding author

\*denotes co-primary author

### **Pre-prints**

1. Velmurugan GV, Vekaria HJ, Rabchevsky AG, Saito K, Morganti JM, Patel S, Hubbard WB, Sullivan PG. Astrocytic response to traumatic brain injury to rescue neuronal mitochondrial dysfunction through mitochondrial transfer. bioRxiv. doi: <https://doi.org/10.64898/2026.01.22.701145>.

### **Books, Book Chapters, Monographs**

1. **Hubbard WB**, Davis LM, Sullivan PG. Mitochondrial Damage in Traumatic CNS Injury. In: *Acute Neuronal Injury*: D. G. Fujikawa, ed. 2, 2018. Springer, Cham. 978-3-319-77495-4
2. **Hubbard WB**, Vekaria HJ, Sullivan PG. Mitochondrial Drug Delivery Systems: Therapeutic Application for Clinical Bioenergetics in Neurodegenerative Disease. In: *Clinical Bioenergetics: From Pathophysiology to Clinical Translation*: S. Ostojic, 2021. Elsevier. Chapter 17. pgs 385-409.

### **Public Dataset**

1. Velmurugan, G. V., Brown, E., Prajapati, S., Tran, S., Miller, C., Burke, B., Hubbard, W. B.. 2024. Comparison of inter-injury intervals on pathological and behavioral outcomes after repeated mild blast traumatic brain injury in male and female rats. Open Data Commons for Traumatic Brain Injury. ODC-TBI:1219. <https://doi.org/10.34945/F5PS3V>

### **Dissertation**

1. **Hubbard WB**. Investigating Injury Pathology of Blast-induced Polytrauma and Assessing the Therapeutic Role of Hemostatic Nanoparticles after Blast Exposure. Virginia Tech 2016

## **VII. RESEARCH & SCHOLARLY ACTIVITY- *continued***

### **ABSTRACT PRESENTATIONS**

#### **Local/State/Regional Meetings**

1. Hubbard WB, Lashof-Sullivan M, Hall C, Lavik E, and VandeVord P. “Intravenously Administered Nanoparticles Improve Physiological and Cognitive Outcomes following Blast Trauma” at VT-WFU School of Biomedical Engineering and Sciences Annual Symposium, May 2014: Poster Presentation.
2. Hubbard, WB, Lashof-Sullivan, M, Hall, C, Lavik, E, and VandeVord P. Hemostatic Nanoparticles Mitigate Internal Bleeding and Lung Pathology After Blast Polytrauma at SBES Symposium – VT-Wake Forest, May 2015. Poster Presentation
3. Hubbard WB, Lashof-Sullivan M, Eck J, Lavik E, VandeVord PJ. “Characterizing the Role of HIF-1 $\alpha$  as a Mediator for Blood-Brain Barrier Dysfunction in Blast Polytrauma” at BMES Southeast Regional Meeting, October 2015: Poster Presentation
4. Hubbard WB, Kathryn Saatman, Patrick Sullivan, Mitochondrial dysfunction as an underlying mechanism of mild traumatic brain injury (TBI) at the 9th Annual College of Medicine Postdoctoral Poster Session, University of Kentucky, March 2017. Poster Presentation
5. Hubbard WB, Juras A, Joseph B, Vekaria H, Saatman K, Sullivan P. “Acute Mitochondrial Dysfunction after Mild Traumatic Brain Injury” at Lexington Veterans Affairs Medical Center Poster Day. May 2017; Poster Presentation.
6. Hubbard WB, Juras A, Joseph B, Vekaria H, Saatman K, Sullivan P. “Acute Mitochondrial Dysfunction after Mild Traumatic Brain Injury” at Kentucky Spinal Cord & Head Injury Research Trust Symposium. May 2017; Poster Presentation.
7. Hubbard WB, Joseph B, Vekaria H, Saatman K, Sullivan P. “Acute Mitochondrial Dysfunction after Mild Traumatic Brain Injury (mTBI) and Implications for Repeated mTBIs” at the 10th Annual College of Medicine Postdoctoral Poster Session, University of Kentucky March 2018; Poster Presentation.
8. Hubbard WB, Joseph B, Vekaria H, Saatman K, Sullivan P. “Acute Mitochondrial Dysfunction after Mild Traumatic Brain Injury (mTBI) and Implications for Repeated mTBIs” at the 2018 Center for Clinical and Translational Science Spring Conference/ 34th Annual Bluegrass Society for Neuroscience Day. Lexington, KY April 2018; Postdoctoral Award.
9. Hubbard WB, Joseph B, Vekaria H, Saatman K, Sullivan P. “Acute Mitochondrial Dysfunction after Mild Traumatic Brain Injury (mTBI) and Implications for Repeated mTBIs” at the 11th Annual College of Medicine Postdoctoral Poster Session, University of Kentucky, Lexington, KY March 2019 3rd Place Poster Award.
10. Hubbard, WB. “Remarkable Treatment Window for Pioglitazone Leads to Tissue Sparing and Rescue of Cognitive Function Following TBI” at VA Field-based Meeting on Thrombosis and Inflammation in Houston, TX. July 2019; Poster Presentation.
11. Hubbard WB, Banerjee M, Prakhya KS, Joshi S, Vekaria H, Saatman KE, Sim M, Wood J, Whiteheart SW, Sullivan PG. “Mechanisms of thromboinflammation following experimental traumatic brain injury” at KSCHIRT Annual Meeting 2021

12. Velmurugan GV, Brown EP, Spry ML, Sullivan PG, Hubbard WB. "Sex as a biological variable in the acute vascular and behavioral response following mild blast traumatic brain injury" at KSCHIRT Annual Meeting 2022.
13. Kalimon OJ, Vekaria H, Brown EP, Hubbard WB, Sullivan PG. "Effect of 17 $\beta$ -Estradiol on Mitochondrial Dysfunction in a Mouse Model of Traumatic Brain Injury" at NRPA Clinical Translational Research Symposium 2022.
14. Velmurugan GV, Hubbard WB, Vekaria H, Sullivan PG. "LRP1 knockout cells are more resilient to oxidative stress induced mitochondrial dysfunction" at NRPA Clinical Translational Research Symposium 2022.
15. Garrett J, Velmurugan GV, Brown EP, Hubbard WB. "Quantifying Astrocytes and Pericytes within the Cortex and Hippocampus after Mild TBI" at NRPA Clinical Translational Research Symposium 2022.
16. Velmurugan GV, Vekaria HJ, Pandya C, Hartz A, Bauer B, Sullivan PG, Hubbard WB. "Isolation of brain capillaries from mitochondria-labeled transgenic mice as a unique platform to study oxidative stress in neurodegenerative diseases ex-vivo" at 2023 Department of Chemistry Naff Symposium.
17. Miller H, Hubbard WB. "MP201 Alters Anxiety-Like Behaviors and Elevates Cognitive Function After Mild Blast Traumatic Brain Injury" at UK Undergraduate Research Day 2023.
18. Velmurugan GV, Hubbard WB, Vekaria HJ, Rabchevsky A, Patel S, Sullivan PG. "Deletion of LRP1 Imparts Resilience to Oxidative Stress-induced Mitochondrial Dysfunction: Identifying Pathophysiological Target for TBI" at 2023 KSCHIRT Symposium.
19. Gard J, Hubbard WB. "Characterizing the long-term consequences of repeated mild blast TBI" at UK Undergraduate Research Day 2024
20. Miller H, Hubbard WB. "Can 24 hour repeated mild blast TBI disrupt PRPC production in the hippocampus in rat models and cause insulin resistance?" at UK Undergraduate Research Day 2024
21. Prajapati S, Hunley C, Hubbard WB. "Modeling post-traumatic epilepsy after repeated blast-induced traumatic brain injury" at NRPA Clinical Translational Research Symposium 2024.
22. Velmurugan GV, Vekaria HJ, Meredith F, Sullivan E, Hubbard WB, Sullivan PG. "Neuron specific LRP1 knockout (NLKO) mice are protective against traumatic brain injury (TBI) induced mitochondrial dysfunction" at NRPA Clinical Translational Research Symposium 2024.
23. Velmurugan GV, Vekaria HJ, Patel S, Sullivan PG, Hubbard WB. "Astrocytic mitochondrial transfer to brain capillaries in vivo increases with aging" at 26<sup>th</sup> Annual Cardiovascular Research Day at UK 2024.
24. Velmurugan GV, Vekaria H, Velmurugan S, Fisher S, Hubbard WB, Sullivan PG. "Exploring Capillary Mitochondrial Dysfunction in Diabetic Brain Hypometabolism and Vascular Dementia: Unlocking the Therapeutic Potential of Mitochondrial Transfer" at Barnstable Brown Diabetes Center Rising Stars Symposium at UK 2024.
25. Alareidi A, Viswanathan VG, Ye S, Hunley C, Williams H, Johnson L, Hubbard WB. "Exploring Sildenafil as a Therapeutic Agent for Acute Repeated Mild Blast TBI: Insights from LC-MS-Based Metabolomics." at COBRE CNS Metabolism Symposium 2024.

26. Hunley C and Hubbard WB. " Modeling the Effects of Post-Traumatic Epilepsy After Repeated Blast-Induced Traumatic Brain Injury" at UK Undergraduate Research Day 2025
27. Gard J, Dunn S, Ye S, Alareidi A, Hubbard B. "Effects of Delayed Sildenafil Treatment on Glial Reactivity after Blast Traumatic Brain Injury" at UK Undergraduate Research Day 2025
28. Laye CJ, Alareidi A, Shaojing Y, Sunshine M, Velmurugan GV, Williams H, Johnson L, Hubbard WB. "Metabolic Profiling of Repeated Mild Blast-Induced TBI and Therapeutic Evaluation of P7C3-A20 in Mice" at the 2025 KSCHIRT Symposium
29. Alareidi A, Viswanathan VG, Ye S, Hunley C, Williams H, Johnson L, Hubbard WB. "Exploring Sildenafil as a Therapeutic Agent for Acute Repeated Mild Blast TBI: Insights from LC-MS-Based Metabolomics" at the 2025 KSCHIRT Symposium
30. Kilgore MO, Prajapati S, Velmurugan G, Gard J, Alareidi A, Ye S, Dundon S, Powell D, Hubbard WB. "Absence of Overt MRI-Detected CBF Changes After Repeated Blast TBI Highlights Need for in vivo Microvascular Analysis" at 2025 KSCHIRT Symposium
31. Gard, JE, Bojang, J, Dunn, S, Alareidi, A, Ye, S, Stroede, B, and Hubbard, WB. "Effects of Delayed Sildenafil Treatment on Glial Reactivity and Blood Brain Barrier Integrity after Blast Traumatic Brain Injury" at 2025 KSCHIRT Symposium
32. Shaojing Ye, Gopal Velmurugan, Alaa Alareidi, Madison O. Kilgore, Cortney J. Laye, Sushant Prajapati, Caleb A. Hunley, Jaycie Gard, W. Brad Hubbard. "Long term effect of repeated mild blast exposure and sildenafil on rat brain microvasculature" at 2025 KSCHIRT Symposium
33. Prajapati S, Hunley C, Eapen N, Mentzel H and Hubbard WB. "A Preclinical Model for Investigating Post-Traumatic Epilepsy Induced by Repeated Blast Exposure" at 2025 KSCHIRT Symposium
34. Eapen N, Prajapati S and Hubbard WB. "A Preclinical Pilot Model to Assess Seizure Susceptibility Following Blast Induced TBI" at 2025 KSCHIRT Symposium
35. Viswanathan VG, Velmurugan S, Sullivan E, Nathoo N, Stone J, Meredith F, Devore M, Marksbury A, Holden W, Johnson L, Hubbard B, Fisher S, Sullivan PG. "Role of Capillary Mitochondrial Dysfunction in Diabetic Brain Hypometabolism: Unlocking the Therapeutic Potential of Mitochondrial Transfer." at Barnstable Brown Diabetes Day 2025.
36. Laye CJ, Alareidi A, Shaojing Y, Velmurugan GV, Wood C, Johnson L, Hubbard WB. "Metabolic Profiling of Repeated Mild Blast-Induced TBI and Therapeutic Evaluation of P7C3-A20 in Mice" at Physiology Research Day 2025.
37. Kilgore MO, Ye S, Velmurugan GV, Alareidi A, Laye C, Prajapati S, Gard J, Hubbard WB. "Sildenafil improves mitochondrial, vascular, and behavioral outcomes following repeated mild blast traumatic brain injury" at Physiology Research Day 2025
38. Laye CJ, Alareidi A, Shaojing Y, Velmurugan GV, Wood C, Johnson L, Hubbard WB. "Metabolic Profiling of Repeated Mild Blast-Induced TBI and Therapeutic Evaluation of P7C3-A20 in Mice" at NRPA Clinical Translational Research Symposium 2025.
39. Kilgore MO, Ye S, Velmurugan GV, Alareidi A, Laye C, Prajapati S, Gard J, Hubbard WB. "Sildenafil improves mitochondrial, vascular, and behavioral outcomes following repeated mild blast traumatic brain injury" at NRPA Clinical Translational Research Symposium 2025.

40. Kilgore MO, Ye S, Velmurugan GV, Alareidi A, Laye C, Prajapati S, Gard J, Johnson, L, Hubbard WB. “Sildenafil promotes mitochondrial recovery and mitigates behavioral changes following repeated mild blast traumatic brain injury” at COBRE CNS Metabolism Symposium 2025.
41. Laye CJ, Velmurugan GV, Ye S, Wood C, Johnson L, Hubbard WB. “Time Course of Metabolic and Lipidomic Alterations after Repeated Mild Blast-Induced TBI” at COBRE CNS Metabolism Symposium 2025.

### **National/International Meetings (selected)**

1. Hubbard WB, Hockey KS, Sajja VS, Sholar CA, Thorpe C, VandeVord PJ, and Rzigalinski BA. “A New Model for Mild Blast Injury Utilizing Drosophila Melanogaster” at Rocky Mountain Bioengineering Symposium, April 2013: Poster Presentation.
2. Hubbard W, Sajja VS, Ereifej E, and VandeVord PJ. “Oxidative stress and glial response are associated with anxiety following varied levels of blast overpressure” at BMES Annual Meeting, Seattle, WA September 2013.
3. Hubbard WB, Lashof-Sullivan M, Sajja VS, Hall C\*, Shoffstall E, Lavik E, VandeVord P. “Hemostatic Nanoparticles with Dexamethasone Improve Physiological and Behavioral Outcomes Following Blast Trauma” at Military Health Systems Research Symposium, Fort Lauderdale, FL August 2014.
4. Hubbard WB, Lashof-Sullivan M, Eck J\*, Lavik E, VandeVord PJ. “Characterizing the Role of HIF-1 $\alpha$  as a Mediator for Blood-Brain Barrier Dysfunction in Blast Polytrauma” at Society for Neuroscience Annual Meeting, Chicago, IL October 2015.
5. Hubbard WB, Juras A, Joseph B, Vekaria H, Saatman K, Sullivan P. “Acute Mitochondrial Dysfunction after Mild Traumatic Brain Injury” at National Neurotrauma Society Annual Conference, Snowbird, UT July 2017.
6. Hubbard WB, Joseph B, Vekaria H, Saatman K, Sullivan P. “Acute Mitochondrial Dysfunction after Mild Traumatic Brain Injury (mTBI) and Implications for Repeated mTBIs” at the 2018 International Conference on Brain Energy Metabolism, Valdivia, Chile March 2018.
7. Hubbard WB, Joseph B, Vekaria H, Saatman K, Sullivan P. “Acute mitochondrial impairment underlies prolonged cellular dysfunction after repeated mild traumatic brain injuries” at Neurotrauma Annual Meeting. Toronto, CA. August 2018. Selected Abstract for Trainee Poster Competition (Top 20).
8. Hubbard WB, Harwood C, Prajapati P, Springer JE, Saatman, KE, Sullivan PG. “Fractionated mitochondrial magnetic separation for isolation of synaptic mitochondria from brain tissue.” At Neurotrauma Annual Meeting, Pittsburgh, PA. July 2019; Poster Presentation.
9. Hubbard, WB. “Platelet Function as a Potential Biomarker in Two Distinct Models of Traumatic Brain Injury” at VA Field-based Meeting on Thrombosis and Inflammation in Houston, TX. July 2019; Poster Presentation.
10. Hubbard WB, Banerjee M, Prakhya KS, Joshi S, Vekaria H, Saatman KE, Sim M, Wood J, Whiteheart SW, Sullivan PG. “Mechanisms of thromboinflammation following experimental traumatic brain injury” at Virtual Neurotrauma Annual Meeting 2021

11. Vekaria HJ, Hubbard WB, Kalimon OJ, Spry ML, Brown EP, Sullivan PG. “A bioenergetics approach to study pathway-specific mitochondrial metabolic dysfunction after traumatic brain injury” at National Neurotrauma Society Annual Meeting 2022.
12. Kalimon OJ, Vekaria HJ, Velmurugan GV, Spry ML, Brown EP, Hubbard WB, Sullivan PG. “Characterizing the Effect of 17 $\beta$ -Estradiol on Mitochondrial Dysfunction after Severe Controlled Cortical Impact in Mice” at National Neurotrauma Society Annual Meeting 2022.
13. Hubbard WB, Velmurugan GV, Brown EP, Spry ML, Sullivan PG. “Sex as a biological variable in the acute vascular and behavioral response following mild blast traumatic brain injury” at National Neurotrauma Society Annual Meeting 2022.
14. Kalimon OJ, Vekaria HJ, Velmurugan GV, Spry ML, Brown EP, Hubbard WB, Sullivan PG. “Characterizing the Effect of 17 $\beta$ -Estradiol on Mitochondrial Dysfunction after Severe Controlled Cortical Impact in Mice” at Society for Neuroscience 2022.
15. Kalimon OJ, Vekaria HJ, Velmurugan GV, Spry ML, Brown EP, Hubbard WB, Sullivan PG. “Characterizing the Effect of 17 $\beta$ -Estradiol on Mitochondrial Dysfunction Before and After Severe Controlled Cortical Impact in Mice” at American Society for Neurochemistry 2023.
16. Hubbard WB, Velmurugan GV, Brown EP, Kalimon OJ, Vekaria HJ, Sullivan PG. “Mitochondrial Dysfunction Following Repeated Mild Blast Traumatic Brain Injury is Attenuated by a Mild Mitochondrial Uncoupling Prodrug” at American Society for Neurochemistry 2023.
17. Velmurugan GV, Vekaria HJ, Hubbard WB, Sullivan PG. “Deletion of LRP1 Imparts Resilience to Oxidative Stress-Induced Mitochondrial Dysfunction in Traumatic Brain Injury” at American Society for Neurochemistry 2023.
18. Vekaria HJ, Velmurugan GV, Prajapati P, Hubbard WB, Sullivan PG. “Spatial and Temporal Specific Mitochondrial Dynamic Changes in Severe Controlled Cortical Impact Mouse Model of Traumatic Brain Injury” at American Society for Neurochemistry 2023.
19. Hubbard WB, Velmurugan GV, Brown E, Sullivan PG “Blood-brain barrier alterations following repeated mild blast traumatic brain injury” at Cerebrovascular Biology 2023 in Uppsala, Sweden.
20. Hubbard WB, Velmurugan GV, Brown E, Miller C, Glaser A, Burke B, Sullivan PG. “Sex-dependent blood-brain barrier alterations following repeated mild blast traumatic brain injury at varying inter-injury intervals” at National Neurotrauma Society Annual Meeting 2023.
21. Hubbard WB, Velmurugan GV, Brown E, Miller C, Glaser A, Burke B, Sullivan PG. “Sex-dependent blood-brain barrier alterations following repeated mild blast traumatic brain injury at varying inter-injury intervals” at Military Health System Research Symposium (MHSRS) 2023
22. Hubbard WB, Scruggs C, Tran S, Velmurugan GV, Prajapati P, Vekaria H, Geisler J, Sullivan PG. “Targeting mitochondrial dysfunction and behavioral impairments with a mitochondrial uncoupling prodrug following repeated mild blast traumatic brain injury” at Military Health System Research Symposium (MHSRS) 2023.
23. Kilgore M, Tran S, Prajapati S, Velmurugan G, Gard J, Dundon S, Powell D, Hubbard WB. “Repeated mild blast traumatic brain injury leads to prolonged alterations in

- cerebral vasculature and social behavior” at National Neurotrauma Society Annual Meeting 2024.
24. Kilgore M, Tran S, Prajapati S, Velmurugan G, Gard J, Dundon S, Powell D, Hubbard WB. “Repeated mild blast traumatic brain injury leads to prolonged alterations in cerebral vasculature and social behavior” at 2024 National Association of Veterans' Research and Education Foundations Conference; VA Career Development Awardee Track.
  25. Clossen B, Pacheco M, Buxton A, Viswanathan V, Alareide A, Roberts J, Messmer S, Mukherjee A, Schwieterman WD, McCreedy D, Hubbard WB, Adkisson HD. “Recombinant Human Perlecan Domain-V Laminin-like Globulin Domain 3 (rhPDVLG3): A Novel Basement Membrane-Derived Matrikine Targeting Neurovascular Injury and Repair” at 2025 American Society of Experimental Neurotherapeutics Conference.
  26. Hubbard WB, Vekaria H, Patel S, Sullivan P, Hartz A, Bauer B, Velmurugan G. "Mitochondrial (dys)function of Brain Capillaries in Aging and Oxidative Stress: Role of Mitochondrial Transfer." At BRAIN & BRAIN PET Seoul, South Korea 2025.
  27. Viswanathan VG, Vekaria H, Rabchevsky A, Morganti J, Patel S, Hubbard B, Sullivan P. “Therapeutic potential of mitochondrial transplantation using astrocytic extracellular vesicles containing mitochondria (Ast-EVmito) in traumatic brain injury” at 2025 National Neurotrauma Society Symposium
  28. Smith E, Llanes-Coronel DS, Nieto S, Hubbard WB, Vélez-Ortega AC. "Targeting Oxidative Stress in the Cochlea: Neuroprotective Potential of MP201 in Blast-Induced Hair Cell Damage." At American Academy of Otolaryngology - Head and Neck Surgery 2025.
  29. Prajapati S, Hunley C, Eapen N, Mentzel H and Hubbard WB. "A Preclinical Model for Investigating Post-Traumatic Epilepsy Following Repeated Blast Exposure" at 2025 BMES Symposium. Oral Presentation
  30. Eapen N, Prajapati S and Hubbard WB. “Service to Science: Public Impact of Integrating Military Veterans into Neuroscience Research” at SfN 2025
  31. Eapen N, Prajapati S, Wilbur G, Mentzel H and Hubbard WB. " A Preclinical Model for Investigating Post-Traumatic Epilepsy and Acute Seizure Susceptibility Following Repeated Blast Exposure" at SfN 2025.

## VII. RESEARCH & SCHOLARLY ACTIVITY- *continued*

### **B. SPONSORED RESEARCH PROJECTS, GRANT & CONTRACT ACTIVITIES**

#### **Active**

**Project Title:** Mitochondrial Uncoupling Prodrug as a Translational Therapy for TBI  
**Project Number:** R01 1R01NS112693-01A1  
**Principal Investigator(s):** Patrick G. Sullivan, PhD, Todd Kilbaugh, MD (Co-PIs)  
**Role in Project:** Co-I  
**Effort:** 10% (part-time)  
**Institution/University:** University of Kentucky/CHOP  
**Source of Funding:** NIH NINDS  
**Duration of Project:** 4/1/20-3/31/26  
**Total Award:** \$2,495,000 direct  
**Grant Number:** NS112693

**Project Title:** Targeting mitostasis via activation of mitochondrial biogenesis after TBI  
**Project Number:** VA Merit 2I01BX003405  
**Principal Investigator(s):** Patrick G. Sullivan, PhD  
**Role in Project:** Co-I  
**Effort:** 0.5 calendar months (VA; no salary requested)  
**Institution/University:** Lexington VA Healthcare System  
**Source of Funding:** Veterans Affairs BLR&D  
**Duration of Project:** 05/2022-04/2026  
**Total Award:** \$1.2 million  
**Grant Number:** BX003405

**Project Title:** Center of Biomedical Research Excellence in CNS Metabolism: Investigating and treating metabolic deficits in the neurovascular unit following mild traumatic brain injury  
**Project Number:** COBRE 5P20GM148326-03  
**Principal Investigator(s):** Patrick G. Sullivan, PhD  
**Role in Project:** Project Leader  
**Effort:** 6 calendar months  
**Institution/University:** University of Kentucky  
**Source of Funding:** National Institutes of Health NIGMS  
**Duration of Project:** 5/2023-2/2026  
**Total Award:** \$11.3 million (1.3 million for sub-project)  
**Grant Number:** 1P20GM148326-01; 8910

**Project Title:** Leveraging preclinical repeated blast traumatic brain injury to model military-relevant post-traumatic epilepsy  
**Project Number:** CDMRP ERP HT9425-24-1-0301

**Principal Investigator(s):** W. Brad Hubbard, PhD  
**Role in Project:** PI  
**Effort:** 1.2 calendar months  
**Institution/University:** University of Kentucky  
**Source of Funding:** DoD; USAMRAA  
**Duration of Project:** 06/2024-05/2027  
**Total Award:** \$450k direct; \$665k total  
**Grant Number:** HT9425-24-1-0301

**Project Title:** Targeting brain capillary-specific mitochondrial function following mild blast traumatic brain injury  
**Project Number:** VA Merit I01BX006494-01A1r01  
**Principal Investigator(s):** W. Brad Hubbard, PhD  
**Role in Project:** PI  
**Effort:** 5 calendar months  
**Institution/University:** Lexington VA  
**Source of Funding:** VA BLR&D  
**Duration of Project:** 04/2025-03/2029  
**Total Award:** \$1.2 million  
**Grant Number:** I01BX006494-01A1

**Project Title:** Assessment of astrocytic mitochondrial transfer to brain capillaries after repeated mild traumatic brain injury  
**Project Number:** KSCHIRT 24-8  
**Principal Investigator(s):** W. Brad Hubbard, PhD  
**Role in Project:** PI  
**Effort:** 0.24 calendar months  
**Institution/University:** University of Kentucky  
**Source of Funding:** KSHIRT  
**Duration of Project:** 2/1/25-1/31/28  
**Total Award:** \$300,000 direct  
**Grant Number:** 24-8

**Project Title:** Exploring the mechanism and therapeutic potential of mitochondrial transplantation (MT) using astrocytic extracellular vesicles containing mitochondrial (mtEV) in traumatic brain injury  
**Project Number:** KSCHIRT  
**Principal Investigator(s):** Patrick Sullivan, PhD  
**Role in Project:** Co-I  
**Effort:** 0.12 calendar months  
**Institution/University:** University of Kentucky  
**Source of Funding:** KSCHIRT  
**Duration of Project:** 2/1/25-1/31/28  
**Total Award:** \$299,991 direct  
**Grant Number:** --

**Project Title:** rLG3 to treat neurovascular disease  
**Project Number:** --  
**Principal Investigator(s):** W. Brad Hubbard, PhD (PI)  
**Role in Project:** PI  
**Effort:** 0.12 months  
**Institution/University:** University of Kentucky  
**Source of Funding:** Stream Biomed Incorporated  
**Duration of Project:** 3/1/25-2/28/26  
**Total Award:** \$24,141 direct  
**Grant Number:** --

**Project Title:** Histone lactylation-driven astrocyte metabolic reprogramming in chronic TBI: Mechanisms and therapeutic implications  
**Project Number:** KSCHIRT  
**Principal Investigator(s):** Velmurugan Viswanathan, PhD  
**Role in Project:** Co-I  
**Effort:** 0.12 calendar months  
**Institution/University:** University of Kentucky  
**Source of Funding:** KSCHIRT  
**Duration of Project:** 2/1/26-1/31/29  
**Total Award:** \$299,994 direct

**Project Title:** Targeting mitochondrial dysfunction to promote functional neuroprotection after spinal cord injury  
**Project Number:** KSCHIRT 25-20A  
**Principal Investigator(s):** Samir Patel, PhD  
**Role in Project:** Co-I  
**Effort:** 0.12 calendar months  
**Institution/University:** University of Kentucky  
**Source of Funding:** KSCHIRT  
**Duration of Project:** 2/1/26-1/31/29  
**Total Award:** \$300,000 direct

**Project Title:** Repetitive Mild TBI and Physiological Stress as Catalysts for Chronic Neurovascular Dysfunction  
**Project Number:** R21 (2<sup>nd</sup> percentile)  
**Principal Investigator(s):** Adam Bachstetter, PhD; W. Brad Hubbard, PhD (MPI)  
**Role in Project:** PI  
**Effort:** 1.0 calendar months  
**Institution/University:** University of Kentucky  
**Source of Funding:** NIH NINDS  
**Duration of Project:** 2/1/26-1/31/28  
**Total Award:** \$275,000 direct  
**Grant Number:** 1R21NS147149-01

**Pending**

**Project Title:** Regulation of Brain Capillary Mitochondrial Health by Astrocytic Mitochondrial Transfer after Repeated Mild TBI  
**Project Number:** R21  
**Principal Investigator(s):** W. Brad Hubbard, PhD  
**Role in Project:** PI  
**Effort:** 2.4 calendar months  
**Institution/University:** University of Kentucky  
**Source of Funding:** NIH NINDS  
**Duration of Project:** xxxx  
**Total Award:** \$275,000 direct  
**Grant Number:** --

**Project Title:** IL-1R1 antagonist to treat secondary stress following mild blast traumatic brain injury  
**Project Number:** VA Merit  
**Principal Investigator(s):** W. Brad Hubbard, PhD  
**Role in Project:** PI  
**Effort:** 5 calendar months  
**Institution/University:** Lexington VA  
**Source of Funding:** VA BLR&D  
**Duration of Project:** 01/2026-12/2029  
**Total Award:** \$1 million  
**Grant Number:** ---

**Inactive**

**Project Title:** Psychological deficits after low level blast exposure: role of neurovascular disruption  
**Project Number:** Career Development Award-2 (IK2)  
**Principal Investigator(s):** W. Brad Hubbard, PhD  
**Role in Project:** PI  
**Effort:** 8/8 VA  
**Institution/University:** Lexington VA Healthcare System  
**Source of Funding:** Veterans Affairs BLR&D  
**Duration of Project:** 1/1/20-12/31/24  
**Total Award:** \$1,100,000 direct  
**Grant Number:** BX004618

**Project Title:** Mitochondrial uncoupling prodrug to treat repeated mild traumatic brain injury  
**Project Number:** --  
**Principal Investigator(s):** W. Brad Hubbard, PhD, Patrick G. Sullivan, PhD (Co-PIs)  
**Role in Project:** PI  
**Effort:** 10% (part-time)

**Institution/University:** University of Kentucky  
**Source of Funding:** MTEC/BrightFocus foundations  
**Duration of Project:** 9/21/21-12/31/23  
**Total Award:** \$500,000 direct  
**Grant Number:** MTEC-20-16-mTBI-005

**Project Title:** Blast TBI rLG3 Therapeutic Study  
**Project Number:** --  
**Principal Investigator(s):** W. Brad Hubbard, PhD (PI)  
**Role in Project:** PI  
**Effort:** 1% (part-time)  
**Institution/University:** University of Kentucky  
**Source of Funding:** Stream Biomed Incorporated  
**Duration of Project:** 3/3/23-12/31/23  
**Total Award:** \$15,000 direct  
**Grant Number:** --

**Project Title:** Examining brain microvessel respiration following blast traumatic brain injury  
**Project Number:** --  
**Principal Investigator(s):** W. Brad Hubbard, PhD  
**Role in Project:** PI  
**Effort:** N/A  
**Institution/University:** University of Kentucky  
**Source of Funding:** UK Neuroscience Research Priority Area Early Career Pilot  
**Duration of Project:** 8/1/21-12/31/22  
**Total Award:** \$25,000 direct  
**Grant Number:** Internal NRPA016

**Project Title:** Examining mitochondrial bioenergetics after single and repeated mild closed head injuries  
**Project Number:** NSF Grant No. 1539068  
**Principal Investigator(s):** W. Brad Hubbard, PhD  
**Role in Project:** PI  
**Effort:** 25%  
**Institution/University:** University of Kentucky  
**Source of Funding:** NSF EPSCoR Brain Research Consortium  
**Duration of Project:** 01/2017-01/2018  
**Total Award:** \$15,000  
**Grant Number:** Seed Grant 4978/111315

## **VII. RESEARCH & SCHOLARLY ACTIVITY- *continued***

### **C. OTHER**

#### **PATENTS**

“Methods for Mitigating the Effects of Low-Level Blasts through Phosphodiesterase-5 Inhibition” Inventor: W. Brad Hubbard. U.S. Patent Application Serial No. 63/660,330 filed on June 14, 2024.

#### **ELECTRONIC MEDIA**

1. **Hubbard WB**, Sim M. Research and Practice in Thrombosis and Haemostasis Research Recap “Tissue Factor Release following Traumatic Brain Injury drives Thrombin Generation” <https://www.youtube.com/watch?v=tDq-wRE0akc&t=138s>
2. **Hubbard WB**, Harwood C, Prajapati P, Springer JE, Saatman, KE, Sullivan PG. Synaptic mitochondria isolation: Novel use of MACS® Technology to isolate, purify, and separate brain-derived non-synaptic and synaptic mitochondria. MACS Miltenyi Biotec. <https://www.miltenyibiotec.com/upload/assets/IM0023310.PDF>
3. **Hubbard WB**. Best Practices and How to Sustain a BMES Student Chapter, Webinar, February 2017; Biomedical Engineering Society; [https://www.youtube.com/watch?v=ihP\\_r9MHn6E](https://www.youtube.com/watch?v=ihP_r9MHn6E)

#### **MEDIA CONTRIBUTIONS**

- |         |  |
|---------|--|
| 07/2020 | <b>University of Kentucky</b><br>UK Receives \$3.2 Million for Traumatic Brain Injury Research, Article, Lexington, KY, Elizabeth Chapin (Research Communications)   |
| 09/2021 | <b>BusinessWire</b><br>Mitochon Pharmaceuticals and University of Kentucky Awarded MTEC Grant for MP-201 in Traumatic Brain Injury<br>Blue Bell, PA. <a href="https://www.mitochonpharma.com/news/mitochon-pharmaceuticals-and-university-of-kentucky-awarded-mtec-grant-for-mp-201-in-traumatic-brain-injury/">https://www.mitochonpharma.com/news/mitochon-pharmaceuticals-and-university-of-kentucky-awarded-mtec-grant-for-mp-201-in-traumatic-brain-injury/</a> |
| 09/2023 | <b>University of Kentucky</b><br>NIH awards \$10.6 million for central nervous system metabolism research center at UK, Article, Lexington, KY, Erin Wickey (Research Communications)  |

#### **Medical Technology Enterprise Consortium**

- 09/2023 Restoring mitochondrial bioenergetics following repeated mild blast-induced TBI, <https://mtec-sc.org/project-highlights/restoring-mitochondrial-bioenergetics-following-repeated-mild-blast-induced-tbi/>
- 11/2023 **BrightFocus Foundation**  
Updated Drug Could Treat Traumatic Brain Injuries Linked to Increased Risk for Neurodegenerative Disease,  
[https://www.brightfocus.org/news/updated-drug-could-treat-traumatic-brain-injuries-linked-increased-risk-neurodegenerative?sm\\_guid=NDkwMTcwfDM0MjA0OTMxfC0xfE1ueWt0eUBnbWFpbC5jb218NTA5ODc0N3x8MHwwfDEwMjk1MTg2MHw4Mzd8MHwwfHw0Nzc4Nzc1](https://www.brightfocus.org/news/updated-drug-could-treat-traumatic-brain-injuries-linked-increased-risk-neurodegenerative?sm_guid=NDkwMTcwfDM0MjA0OTMxfC0xfE1ueWt0eUBnbWFpbC5jb218NTA5ODc0N3x8MHwwfDEwMjk1MTg2MHw4Mzd8MHwwfHw0Nzc4Nzc1)
- 01/2025 **University of Kentucky**  
Breakthroughs in brain science: CNS-Met COBRE hosts inaugural symposium  
<https://medicine.uky.edu/news/breakthroughs-brain-science-cns-met-cobre-hosts-2025-01-18t20-21-58>

## VIII. INSTRUCTION

### A. LEADERSHIP ROLES in EDUCATION

- University of Kentucky**  
Lexington, KY
- 09/2025- Pathophysiology: Integrative Stud in Physiology and Medicine, Elective, PGY 560, ~5-10 students  
Fall Course Director
- 01/2026- Neuroscience Seminar: Vascular Response to Brain Injury, Elective, BIO 426, 15 students  
Spring Section Course Director

### B. FORMAL INSTRUCTION

- University of Kentucky**  
Lexington, KY
- 09/2023-12/2024 Advanced Neuroscience, Elective for Graduate Students, Traumatic Brain Injury Lecture (2 contact hours), ANA 636, ~5-10 students  
Eval: F24: 5.0, F23: 4.6
- 01/2018-01/2022 Elements of Neurochemistry, Chemistry/Neuroscience Major for Undergraduate/Graduates, Basic Neuroanatomy Lecture (1.5 contact hours), CHE 556, ~15-30 students

08/2017-08/2024 Neurobiology of Brain and Spinal Cord Disorders, Neuroscience Major for Undergraduate/Graduates, Basic Neuroanatomy Lecture (1.5 contact hours), ANA 410G, ~50 students  
Eval: F24: 4.3, S24: 4.1, F23: 4.2, S21: 4.3, F21: 4.2, S19: 3.9, F19: 4.0

### **C. MENTORING/ADVISING**

#### **Thesis & Dissertation**

##### **University of Kentucky Lexington, KY**

03/2026– Committee Member, Chloe Lucido, Physiology PhD Student  
02/2026– Committee Member, Amunet Jacobs, Physiology MD/PhD Student  
01/2026– Committee Member, Hanan Aljamal, Neuroscience PhD Student  
08/2025 Committee Member, Amanda Miller, MS in Medical Sciences  
08/2025 Committee Member, Driti Patel, MS in Medical Sciences  
05/2025– Committee Chair, Cortney Laye, Physiology PhD Student  
05/2025– Committee Chair, Madison Kilgore, Physiology MD/PhD Student  
01/2025– Committee Member, Clair Ashley, Physiology PhD Student  
01/2024– Committee Chair, Sushant Prajapati, Biomedical Engineering PhD Candidate  
01/2024–05/2024 Committee Chair, Cortney Laye, MS in Medical Sciences  
11/2023– Committee Member, Riley Irmey, Physiology PhD Student  
11/2023– Committee Member, Alyssa Franklin, Physiology PhD Student  
01/2023–05/2023 Committee Chair, Jaida Garrett, MS in Medical Sciences  
04/2023 Committee Member, Sarah Tran, MS in Medical Sciences  
08/2020–04/2024 Committee Member, Olivia Kalimon, Neuroscience PhD Student

#### **Graduate & Postdoctoral**

##### **University of Kentucky Lexington, KY**

03/2026 Mentor/PI, Shurthi Kandalai, MD/PhD Student, Spring Rotation  
01/2026–02/2026 Mentor/PI, Matthew Lanning, Integrated Biomedical Sciences (IBS) Program, Rotating Graduate Student  
08/2025–10/2025 Mentor/PI, Paula Monsalve-Lunari, Integrated Biomedical Sciences (IBS) Program, Rotating Graduate Student  
06/2025– Mentor/PI, Gage Haden, MD/PhD Student, Summer Rotation  
10/2024–12/2024 Mentor/PI, Elise Westhafer, Integrated Biomedical Sciences (IBS) Program, Rotating Graduate Student  
01/2024– Mentor/PI, Sushant Prajapati, Biomedical Engineering Graduate Program  
01/2024–02/2024 Mentor/PI, Karen Sofia Zuluaga, Integrated Biomedical Sciences (IBS) Program, Rotating Graduate Student

10/2023–12/2023 Mentor/PI, Madeline Skau, Integrated Biomedical Sciences (IBS) Program, Rotating Graduate Student

08/2023–10/2023 Mentor/PI, Clair Ashley, Integrated Biomedical Sciences (IBS) Program, Rotating Graduate Student

06/2023– Mentor/PI, Madison Kilgore, MD/PhD Student, Summer Rotation, 2024 Professional Student Mentored Research Fellowship (PSMRF) awardee

05/2023– Mentor/PI, Cortney Laye, Integrated Biomedical Sciences (IBS) Program, Rotating Graduate Student, Master of Medical Sciences Student, SCoBIRC AARTS Program, “Repeated Model Blast-Induced Traumatic Brain Injury and Quantifying Microvascular Network and Density of Acute Injury”  
2025 Lyman T. Johnson Torch Bearer Award

01/2023–03/2023 Mentor/PI, Elika Moallem, Integrated Biomedical Sciences (IBS) Program, 20Hrs/week, Rotating Graduate Student

08/2022–10/2022 Mentor/PI, Benjamin Burke, Integrated Biomedical Sciences (IBS) Program, Rotating Graduate Student

05/2022–05/2023 Mentor/PI, Jaida Garrett, Master of Medical Sciences Student, SCoBIRC AARTS Program, “Assessing the astrocytic and pericyte responses in the hippocampus after mild blast traumatic brain injury”

05/2021–08/2021 Mentor/PI, Erich Franz, MD/PhD Student

### Undergraduate

#### **University of Kentucky**

Lexington, KY

07/2025- Gavyn Wilbur, BME Undergraduate Student

05/2025– Paula Silva\*, Undergraduate Student, African American Research Training Scholars (AARTS) Program

03/2025– Henry Mentzel, Undergraduate Student

02/2025– Branden Stroede, Undergraduate Student

01/2025–02/2026 Nathan Eapen, Post-bac Student

06/2024–07/2025 Caleb Hunley, BME Undergraduate Student

05/2024–05/2025 Jalika Bojang\*, Undergraduate Student, African American Research Training Scholars (AARTS) Program

02/2024–05/2024 Brooks Mobley, BME Undergraduate Student

08/2023–07/2025 Mentor/PI, Jaycie Gard\*, Undergraduate Student, Office of Biomedical Education’s 2024 Summer Undergraduate Research Program Recipient. 2025 Sandra J. Legan Award for Outstanding Undergraduate Research in Neuroscience recipient.

08/2023–05/2024 Mentor/PI, Ryley Ortega, Undergraduate Student

08/2023– Mentor/PI, Sophia Dunn, Undergraduate Student

01/2023–05/2023 Mentor/PI, Jack Altman#, Undergraduate Honors Thesis

08/2022–12/2024 Mentor/PI, Hannah Miller\*, Undergraduate Student, Commonwealth Undergraduate Research Experience (CURE) Fellowship Recipient 2023

08/2022–07/2023 Mentor/PI, Anastasia Glaser, Undergraduate Student, Office of Biomedical Education’s 2023 Summer Undergraduate Research Program Recipient

08/2022–08/2023 Mentor/PI, Carter Miller

01/2022–05/2022 Co-Mentor, Mason Hewlett, Undergraduate Student

05/2020–12/2021 Co-Mentor, Naylan James, Undergraduate Student

01/2019–05/2019 Co-Mentor, Krista Spear\*, Undergraduate Student, “Delayed pioglitazone administration provides neuroprotective effects following severe TBI”

08/2018–05/2020 Co-Mentor, Nashwa Saleem\*#, Undergraduate Student, “Effects of repeated concussive brain injury on progression of tau hyper-phosphorylation”

01/2018–05/2018 Co-Mentor, Regan Lee\*#, Undergraduate Student, “MP201 Treatment Improves Cognitive Function Related to Hippocampal Neuron Density After Traumatic Brain Injury”

01/2018–05/2018 Co-Mentor, Hunter Kirby, Undergraduate Student

08/2017–05/2019 Co-Mentor, Christopher Harwood\*, Undergraduate Student, “Using magnetically-labeled anti-TOM22 microbeads to isolate mitochondria from mouse brain tissue: Advantages and applications”

### **Virginia Tech**

Blacksburg, VA

08/2015–05/2016 Co-Mentor, Joseph Eck\*, Undergraduate Student

05/2015–08/2015 Co-Mentor, Allie Brown\*, Undergraduate Student, REU program, “Novel Ideas for Evaluating Material Properties of Brain during Blast Exposure”

08/2014–05/2016 Co-Mentor, Carly Norris\*, Undergraduate Student

08/2014–05/2015 Co-Mentor, Ryan Brady, Undergraduate Student

08/2014–05/2015 Co-Mentor, Anthony De Gregorio, Undergraduate Student

08/2013–05/2015 Co-Mentor, Bryce Dunn, Undergraduate Student

08/2012–05/2016 Co-Mentor, Shaylen Hall Greenberg\*, Masters/PhD Student

### High School

06/2025- Mentor, Kered Anderson, MSTC (Math, Science, and Technology Center) program at Paul Laurence Dunbar High School

\*Student was co-author on peer-reviewed publication or gave local/national presentation

#Student completed Capstone Honors Project during this project

### Other Mentoring Experience

01/2024– T32 Neurobiology of CNS Injury and Repair mentor

08/2023– R25: University of Kentucky Neuroscience Postbaccalaureate Research Education Program (UKNeu-PREP) program mentor

06/2023 Mentor, Tabitha Green, Graduate Student – National Neurotrauma Society Mentoring Program

06/2023 Mentor, Eric Robinson, Graduate Student – National Neurotrauma Society Mentoring Program

05/2022 Mentor, Martina Hernandez, Graduate Student – National Neurotrauma Society Mentoring Program  
08/2014–08/2015 Mentorship Director, VT-WFU Biomedical Engineering and Sciences Mentorship Program – Virginia Tech, Blacksburg, VA  
08/2013–05/2016 Mentor, VT-WFU Biomedical Engineering and Sciences Mentorship Program – Virginia Tech, Blacksburg, VA  
01/2013–09/2016 Lab Supervisor for Undergraduate Research, Traumatic Nerve Technologies Lab – Virginia Tech, Blacksburg, VA

**Referee for Academic Appointment, Promotion or Tenure**

N/A

**Faculty Mentoring**

University of Kentucky

01/2025- Gopal V. Velmurugan, Research Assistant Professor, Department of Neuroscience

External

Taylor Kelty, PhD – University of Missouri – VA CDA-2 Co-Mentor  
Justin Courson, PhD – Baylor University – VA CDA-2 Reviewer

## **IX. SERVICE**

### **National/International**

- 01/2017-present      **National Neurotrauma Society**  
Abstract Reviewer, Annual Meeting
- 06/2022                **National Neurotrauma Society**  
Top 20 Poster Judge, Annual Meeting
- 03/2023                **ASN Meeting 2023, Lexington, KY**  
Session Chair, Mitochondrial Perspectives of Neurodegenerative Diseases
- 05/2023                **Kentucky Spinal Cord & Head Injury Research Trust Annual Symposium 2023, Lexington, KY**  
Session Chair, Neurological Consequences of Blast Exposure
- 05/2023-              **PRECISE-TBI Initiative**  
Preclinical TBI Model Core and CDE Working Group
- 12/2023-              **NNS Advocacy Website Committee**
- 03/2023                **Military Health System Research Symposium**  
Abstract Reviewer, Annual Meeting
- 03/2025                **2025 Mitochondrial Transplantation and Next Generation Therapeutics Conference**  
Abstract Reviewer
- 06/2026                **National Neurotrauma Society 2026 Symposium, Milwaukee, Wisconsin**  
Session Chair, Vascular Responses to Neurotrauma

### **Review Panels**

- 08/2021-present      **Baylor College of Medicine**  
Waco, Texas  
External Reviewer, Center for Innovations in Quality, Effectiveness, and Safety
- 09/2021-present      **VA Merit Review Neurobiology C (NURC) Panel**  
Reviewer

- Congressionally Directed Medical Research Programs (CDMRP),  
Traumatic Brain Injury and Psychological Health Research Program  
(TBIPH)**  
10/2021-present      Scientist Reviewer, Served on Multiple Panels
- Congressionally Directed Medical Research Programs (CDMRP),  
Peer Reviewer Medical Research Program (PRMRP)**  
06/2022-present      Scientist Reviewer
- New Jersey Commission on Brain Injury Research Independent  
Scientific Merit Review Panel**  
11/2022-present      Reviewer
- FY24 Combat Casualty Care Research Program (CCCRP) Traumatic  
Brain Injury (TBI) Panel Peer Review**  
01/2023-03/2023      Scientist Reviewer
- Trauma Research and Combat Casualty Care Collaborative (TRC4)**  
02/2024-present      Reviewer
- 11/2024      **NIH Special Emphasis Panel ZHD1 DSR-A (55) [Centers for  
Collaborative Research in Fragile X and FMR1-Associated Conditions  
(P50)]**
- 01/2026      **Biomedical and Human Performance Research and Development  
(BHPRD) Review Panel - 2026 U.S. Special Operations Command Broad  
Agency Announcement (USSOCOM-BAA)**  
Scientist Reviewer

### **Editorial Boards**

- 12/2021-present      NeuroMolecular Medicine

### **Journal Peer-Review**

Nature Reviews Neurology  
Journal of Neurotrauma  
Experimental Neurology  
Brain  
Acta Biomaterialia  
Signal Transduction and Targeted Therapy (Nature)  
Journal of Cerebral Blood Flow and Metabolism  
Journal of Neuroinflammation  
Fluids and Barriers of the CNS  
Acta Neuropathologica Communications

Brain Communications  
Journal of Neuropathology & Experimental Neurology  
Scientific Reports  
Military Medicine  
ACS Macro Letters  
Journal of Neuroscience Methods  
Journal of Alzheimer's Disease  
Molecular Neurobiology  
Neurochemistry International  
Neuroscience (Elsevier)  
Neurotrauma Reports  
Free Radical Biology and Medicine  
Frontiers in Neurology  
Frontiers in Neuroscience  
Frontiers in Cellular Neuroscience  
Neuroscience Letters  
Life Sciences  
Neurochemical Research  
Cannabis and Cannabinoid Research  
Biomedical Physics & Engineering Express  
Plos One  
Lasers in Surgery & Medicine  
Cellular and Molecular Neurobiology  
Neurotherapeutics  
JOVE  
Frontiers in Synaptic Neuroscience

### **State/Regional**

|                 |  |
|-----------------|--|
| 08/2017-05/2018 | <b>Kentucky Spinal Cord and Head Injury Research Trust Symposium</b><br>Member of Symposium Planning Committee |
| 10/2022-05/2023 | <b>Kentucky Spinal Cord and Head Injury Research Trust Symposium</b><br>Member of Symposium Planning Committee |

### **University**

**University of Kentucky**  
Lexington, KY

### **Education & Research**

|         |  |
|---------|--|
| 02/2023 | Igniting Research Collaborations (IRC) Workshop  |
| 06/2023 | Panelist, "From Postdoc to a Real Job in Academia"<br>UK Society of Postdoctoral Scholars Workshop |
| 09/2023 | Pilot Project Reviewer, CNS-MET COBRE  |
| 08/2024 | Pilot Project Reviewer, Bioelectronics and Nanomedicine Research Center                            |

03/2025 Commonwealth Undergraduate Research Experience (CURE) Fellowship  
Reviewer

## **College**

**University of Kentucky**  
Lexington, KY

### **Education & Research**

10/2016-01/2020 Member, College of Medicine Society of Postdoctoral Scholars  
01/2020-present Faculty Mentor & Interviewer, MD/PhD Program  
01/2020-present Moderator/Organizer, UK Mitochondria Journal Club  
12/2020-06/2022 Member, Brain and Epilepsy Alliance for Metabolism (BEAM) Alliance  
04/2021- Poster Judge, UK College of Medicine Annual Trainee Research Day  
Poster Session  
08/2021- Poster Judge, UK Cardiovascular Research Day  
08/2022- Faculty Mentor & Interviewer, Integrated Biomedical Sciences (IBS)  
Program  
11/2023- Poster Judge, UK Sanders-Brown Markesbery Symposium  
10/2024 Convocation Awards Committee, Outstanding Graduate Student Award

## **Medical Center**

**Lexington VA Medical Center**  
Lexington, KY

### **Education & Research**

07/2021-present Member, Lexington VA IACUC  
09/2023-07/2025 Vice Chair, Lexington VA IACUC  
08/2024-07/2025 IACUC Liaison, Lexington VA Subcommittee on Research Safety (SRS)  
08/2025-present Chair, Lexington VA IACUC  
08/2025-present Member, Lexington VA R&D Committee

## **Department**

**VT Biomedical Engineering and Sciences Student Chapter**  
08/2014-08/2015 Vice-President and Member of Symposium Planning Committee  
08/2015-08/2016 President and Chair of Annual Symposium

**UNC Biomedical Engineering and Sciences Student Chapter**  
08/2011-05/2012 Secretary and Member of Symposium Planning Committee

**University of Kentucky**  
Department of Physiology  
Lexington, KY

**Education & Research**

11/2017-11/2019 Postdoctoral Representative  
10/2021- Poster Judge, Physiology Retreat  
08/2023- Graduate Studies Committee Member

**University of Kentucky**

Spinal Cord and Brain Injury Research Center  
Lexington, KY

**Education & Research**

10/2017-05/2018 Member, Kentucky Spinal Cord & Head Injury Research Trust Annual Symposium Planning Committee  
08/2020-present Moderator/Organizer, SCoBIRC Works-In-Progress  
03/2022-03/2024 Committee Member, SCoBIRC Behavioral Core  
10/2022-05/2023 Member, Kentucky Spinal Cord & Head Injury Research Trust Annual Symposium Planning Committee  
03/2023-present Committee Member, All Access Research Training Scholars Program  
10/2025-present Committee Member, SCoBIRC Faculty Search Committee

**X. ADMINISTRATION**

N/A

**XI. PROFESSIONAL MEMBERSHIP AND DEVELOPMENT**

**Memberships**

12/2012-10/2016 Member, VT Biomedical Engineering and Sciences Student Chapter  
12/2013-10/2016 Member, Biomedical Engineering and Sciences Society  
12/2014-10/2016 Member, Society for Neuroscience  
05/2017-present National Neurotrauma Society (NNS)  
05/2018-05/2020 Bluegrass Chapter of Society for Neuroscience  
05/2019-present TEAM (Training, Education and Mentoring) Member of NNS  
11/2022-12/2023 American Society of Neurochemistry  
10/2024-present Member, International Society for Cerebral Blood Flow & Metabolism

**Training Activities**

**U.S. Department of Veterans Affairs**  
02/2020-12/2024 BLR&D Career Development Program

**VA HSR&D Cyberseminar Series**  
02/2020-present Virtual Seminar

**Current Topics in TBI Webinar Series**

|                 |  |
|-----------------|--|
| 04/2020-07/2021 | Virtual Seminar Series   |
|                 | <b>National Workshop on Experimental Models of Post-Traumatic Epilepsy</b> |
| 03/2023         | American Epilepsy Society, Texas A&M (virtual)                             |
| 01/2024-present | <b>DoD Virtual Post-Traumatic Epilepsy Research Center (ViPTERC)</b>       |
| 09/2024         | <b>VA NAVREF CDA Symposium</b>   |
| 02/2025-        | <b>Basic Science Committee in Epilepsy Centers of Excellence (ECoE)</b>    |

## **XII. HONORS & AWARDS**

|         |  |
|---------|--|
| 09/2013 | Biomedical Engineering Society Annual Meeting Travel Award, Virginia Tech  |
| 04/2014 | Anthony Sances, Jr. Award of Merit, Rocky Mountain Bioengineering Symposium in Denver, Colorado  |
| 10/2014 | Biomedical Engineering Society Annual Meeting Travel Award, Virginia Tech  |
| 05/2015 | Margaret H. Hines Award for Best Oral Presentation, Injury Biomechanics Symposium at the Ohio State University                                 |
| 05/2016 | Doctoral Presentation Award, 3rd Place at School of Biomedical Engineering and Sciences Symposium, Wake Forest University                      |
| 08/2016 | Outstanding Student Chapter of the Year while President, 2016 Biomedical Engineering Society Annual Meeting                                    |
| 07/2017 | National Neurotrauma Society Travel Award  |
| 03/2018 | International Conference on Brain Energy Metabolism Travel Award, Valdivia, Chile  |
| 04/2018 | Postdoctoral Poster Award, Center for Clinical and Translational Science Spring Conference, 34th Annual Bluegrass Society for Neuroscience Day |
| 08/2018 | Trainee Poster Competition Finalist (Top 20), Joint Symposium of National and International Neurotrauma Societies in Toronto, Canada           |
| 03/2019 | 3rd Place Postdoctoral Award, University of Kentucky College of Medicine Postdoctoral Poster Session   |
| 01/2020 | Veterans Affairs BLR&D Career Development Award-2  |
| 04/2023 | UK Office of Undergraduate Research Excellent Research Mentor Award Nominee  |
| 04/2024 | UK Office of Undergraduate Research Excellent Research Mentor Award Nominee  |
| 07/2024 | 2024 College of Medicine Research Award  |
| 04/2025 | Rising Star Award, 2025 Mitochondrial Transplantation and Next Generation Therapeutics Conference  |
| 04/2025 | UK Office of Undergraduate Research Excellent Research Mentor Award Nominee  |
| 07/2025 | Selection of Cover Image for Experimental Neurology Issue 392  |

09/2025

2025 College of Medicine Research Award

### **XIII. SPEAKING ENGAGEMENTS**

#### **Local**

##### **School of Biomedical Engineering and Sciences Symposium**

Wake Forest, NC

05/2016 “Investigation of Blast Polytrauma and Therapeutic Intervention of Hemostatic Nanoparticles”

##### **University of Kentucky**

Lexington, KY

06/2016 “Investigation of Blast-Induced Trauma and Therapeutic Intervention of Hemostatic Nanoparticles after Blast Exposure”

09/2017 “Acute Mitochondrial Dysfunction after Mild Traumatic Brain Injury” at Neuroscience Clinical-Translational Research Symposium

10/2018 “Acute mitochondrial impairment underlies prolonged cellular dysfunction after repeated mild traumatic brain injuries” at Neuroscience Clinical-Translational Research Symposium

02/2019 “Experimental Modeling of Blast-Induced Neurotrauma: Insights and Approaches” at UK Biomedical Engineering Seminar Series

05/2019 “Acute Mitochondrial Dysfunction after Mild Traumatic Brain Injury (mTBI) and Implications for Repeated mTBIs” College of Medicine. *Dean’s Distinguished Lecture Series Invited Talk.*

10/2019 “Mitochondrial Uncoupling Prodrug as a Translational Therapy for TBI” at Neuroscience Clinical-Translational Research Symposium

10/2020 “Preclinical model of blast-induced traumatic brain injury” at Neuroscience Clinical-Translational Research Symposium

10/2021 “Blast injury modeling” at Physiology SCORE

11/2021 “Targeting neurovascular dysfunction and mitochondrial mechanisms to treat mild traumatic brain injury” at Physiology Seminar Series

05/2022 “Neurovascular unit metabolism dysfunction after mild blast traumatic brain injury” at the Brain Energy and Metabolism (BEAM) Seminar Series

11/2022 “Creating a repeated blast mild traumatic brain injury model for studying neurovascular changes” at SCoBIRC Works-In-Progress Series

05/2023 “Measuring mitochondrial-related changes from isolated brain capillaries” at PGY Research Day 2023

11/2023 “Currency transfer of the brain: Evidence of cell-to-cell mitochondrial transport?” at SCoBIRC Works-In-Progress Series

10/2024 “Repurposing PDE5 inhibitors to treat mild blast-induced traumatic brain injury” at SCoBIRC Works-In-Progress Series

04/2025 “Boom! There it is... The importance of animal care and DLAR for blast TBI research” at UK DLAR Monthly Meeting

06/2025 “Brain Under Pressure: Vascular and Mitochondrial Disruption after Blast-induced Traumatic Brain Injury” at PGY Seminar Series

#### **State/Regional**

- KY Spinal Cord & Head Injury Research Trust Symposium**  
Lexington, KY  
05/2018 “Acute mitochondrial impairment underlies prolonged cellular dysfunction after repeated mild TBI”
- National Capital Area TBI Symposium**  
Bethesda, MD  
03/2019 “Platelet Function as a Potential Biomarker in Two Distinct Models of Traumatic Brain Injury”
- Virtual Clotters Club Presentation**  
04/2022 “Mechanisms of thrombin generation following experimental traumatic brain injury”
- KY Spinal Cord & Head Injury Research Trust Symposium**  
Lexington, KY  
05/2023 “Examination of brain metabolism in synapses and capillaries after mild traumatic brain injury”
- SCoBIRC Seminar Series**  
Lexington, KY  
05/2023 “Mild blast TBI: Insights from Blood-Brain Barrier and Mitochondrial Mechanisms”
- CNS Metabolism Symposium**  
Lexington, KY  
12/2024 “Using PDE5 inhibition to target brain capillary mitochondrial dysfunction after mild traumatic brain injury”

**National/International**

- Rocky Mountain Bioengineering Symposium**  
Denver, CO  
04/2014 “Examining lethality risk for rodent studies of primary blast lung injury”
- BMES Annual Meeting**  
San Antonio, TX  
10/2014 “Steroid-loaded Hemostatic Nanoparticles Improve Behavioral Outcomes Following Blast Trauma”
- Injury Biomechanics Symposium - Ohio State University**  
Columbus, OH  
05/2015 “Amygdala Pathology Inhibited by Steroid-loaded Hemostatic Nanoparticles after Blast Trauma”

- BMES Annual Meeting**  
Tampa, FL  
10/2015 “Characterizing the Role of HIF-1 $\alpha$  in Blast Polytrauma: Link with the Blood-Brain Barrier Disruption”
- BMES Annual Meeting**  
Minneapolis, Minnesota  
10/2016 “BMES Outstanding Chapter Best Practices”
- Neurotrauma Annual Meeting**  
Toronto, Canada  
08/2018 “Acute mitochondrial impairment underlies prolonged cellular dysfunction after repeated mild traumatic brain injuries”
- Traumatic Brain Injury & Protection Research Symposium  
Temple University**  
Philadelphia, PA  
10/2018 “State-Of-The-Art Techniques to Evaluate Mitochondrial Bioenergetic Dysfunction after Repeated Mild TBI”
- VA Field-based Meeting on Thrombosis and Inflammation**  
Houston, TX  
07/2019 “Experimental Models of TBI: Pathophysiologic Implications and Relevance to Veterans”
- Current Topics in TBI Online Seminar Series**  
Virtual  
05/2020 “Are mitochondrial deficits the driving force behind progression of mild TBI?”
- Center for Translational Research on Inflammatory Diseases  
(CTRID) Research Seminar Series; Baylor College of Medicine**  
Virtual  
10/2020 “Early mechanisms of thromboinflammation following traumatic brain injury” at
- Research and Practice in Thrombosis and Haemostasis Research  
Recap**  
Virtual  
06/2022 “Tissue Factor Release following Traumatic Brain Injury drives Thrombin Generation”
- Military Health System Research Symposium (MHSRS)**  
Kissimmee, FL

- 08/2022 “Mitochondrial Uncoupling Prodrug to Treat Repeated Mild Blast Traumatic Brain Injury”
- UAB Cell, Developmental Integrative Biology Seminar Series**  
Birmingham, AL (virtual)
- 10/2022 “Neurovascular unit dysfunction following mild traumatic brain injury: Pathological and mitochondrial underpinnings”
- Center for Translational Research on Inflammatory Diseases (CTRID) Research Seminar Series; Baylor College of Medicine**  
Houston, TX (virtual)
- 10/2023 “Neurovascular and blood-brain barrier alterations following mild blast TBI”
- 9th National IDeA Symposium of Biomedical Research Excellence (NISBRE)**  
Washington DC
- 06/2024 “Examining brain capillary-specific mitochondrial dysfunction following mild TBI.”
- 4<sup>th</sup> Annual Mitochondrial Dysfunction Drug Development Summit**  
Boston, MA
- 11/2024 “Mild Mitochondrial Uncoupling Attenuates Cerebral Mitochondrial Dysfunction After Traumatic Brain Injury”
- DoD Post-traumatic Epilepsy Research Center 2025 Annual Meeting**  
University of Pennsylvania Philadelphia, PA
- 03/2025 “Non-invasive seizure detection for preclinical model of repeated blast-induced traumatic brain injury”
- 2025 Mitochondrial Transplantation and Next Generation Therapeutics Conference**  
Long Island, NY
- 04/2025 “Astrocytic mitochondrial transfer to brain capillaries in aging: implications for mitochondrial transplantation to the brain”
- 2025 BRAIN & BRAIN PET Flash Presentation**  
Seoul, South Korea
- 06/2025 "Mitochondrial (dys)function of Brain Capillaries in Aging and Oxidative Stress: Role of Mitochondrial Transfer."
- Epilepsy Centers of Excellence PTE Meeting**  
Los Angeles, CA (UCLA)
- 07/2025 “Experimental models of TBI and development of a model of blast TBI-induced epilepsy”

|         |   |
|---------|---|
| 03/2026 | <b>TBI Conference</b><br>Philadelphia, PA<br>TBD            |
| 04/2026 | <b>Tulane University</b><br>New Orleans, LA<br>TBD          |
| 06/2026 | <b>National Neurotrauma Society</b><br>Milwaukee, WI<br>TBD |

#### **XIV. CONSULTING ACTIVITIES**

|      |  |
|------|--|
| 2023 | External Consultant for Bullard Personal Protective Equipment (PPE) Manufacturer |
|------|--|

#### **XIV. OTHER ACTIVITIES [oldest at top, newest at bottom; writing board examinations, curricular design committees]**

University of North Carolina – Chapel Hill Assistive Technologies Course  
11/2011-05/2012 The Final Stretch, Rehabilitation Project, Design and manufacture device for clinical use in The North Carolina Jaycee Burn Center to stretch skin and aid in eliminating post-burn scar tissue

Virginia Tech  
04/2014-07/2015 Kids Tech University; C-Tech2 and Imagination Camps. Scientific Exhibitor promoting scientific interest through hands-on experiments in students ages 9-17

2023- Faculty Volunteer, Research and Creative Expo in the UK Gatton Student Center. Representative for SCoBIRC and Neuroscience program

2024- Judge, Distinguished Young Women program of Louisville and Bullitt County

High School Group Leader, Southland Christian Church, Nicholasville, KY

Elementary School Mentor, Warner Elementary, Nicholasville, KY

Volunteer U6 Soccer Coach, Jessamine Youth Soccer Association

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