

# Sushmita Purkayastha, Ph.D.

(updated April 2019)

## Address:

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Southern Methodist University

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Website: <https://sushmitap.com>

## EDUCATION & TRAINING

### Undergraduate

1992-1995 Bachelor of Science (B.Sc)- Physiology Honors  
Department of Physiology  
RNLK Women's College, Vidyasagar University, India 721102

### Graduate

1995-1997 Master of Science (M.Sc.) –Physiology  
Department of Physiology,  
University of Calcutta, India 700009  
Emphasis: Ergonomics & Work Physiology  
Mentor: A.M. Chanda, Ph.D.

2003-2005 Master of Science (M.S.)- Exercise Physiology  
Department of Kinesiology,  
University of Texas at Arlington, TX 76019  
Emphasis: Neuromuscular Physiology  
Mentor: Joel T. Cramer, Ph.D.

2006-2010 Doctor of Philosophy (Ph.D.)- Biomedical Sciences  
Department of Integrative Physiology,  
University of North Texas Health Science Center at Fort Worth, TX 76107  
Emphasis: Cardiovascular & Exercise Physiology  
Mentor: Peter B. Raven, Ph.D.

## **Post-doctoral**

2011-2014 NIH-T32 Post-doctoral Research Fellow  
Institute For Aging Research, Hebrew Senior Life  
Harvard Medical School  
Boston, MA 02131

Post-doctoral Research Fellow in Medicine  
Beth Israel Deaconess Medical Center  
Harvard Medical School  
Boston, MA 02215  
Emphasis: Cerebrovascular Physiology in Aging  
Mentors: Lewis A. Lipsitz, M.D. & Farzaneh Sorond, M.D., Ph.D.

## **HONORS**

1995 Silver Medalist for ranking second in B.Sc., Physiology Honors, Vidyasagar University, India

1997 National Merit Scholarship, Ministry of Human Resource Development, Government of India

2006 Second position in the Masters category, Texas Chapter of the American College of Sports Medicine

2011 President's Award for Scholarly Excellence, University of North Texas Health Science Center at Fort Worth, TX

2011 Dean's Award for Scholarly Excellence, University of North Texas Health Science Center at Fort Worth, TX

2012 American Autonomic Society Travel Fellowship, 23rd International Symposium on the Autonomic Nervous System

2014 Research Article selected for Virtual Issue of 'Women authors in Experimental Physiology today' containing highly downloaded or cited articles from women (first authors) in Experimental Physiology 2013-2014

## **ACADEMIC POSITIONS**

2017-Present Adjunct Assistant Professor  
Department of Physical Medicine & Rehabilitation  
University of Texas Southwestern Medical Center  
Dallas TX 75390

2014-Present Assistant Professor  
Department of Applied Physiology & Wellness  
Annette Caldwell Simmons School of Education & Human Development  
Southern Methodist University,  
Dallas TX 75205

2014-2014 Post-doctoral Research Fellow  
Athinoula Martinos Center for Biomedical Imaging  
Massachusetts General Hospital  
Boston MA 02129

2011-2013 Post-doctoral Research Fellow  
Institute For Aging Research  
Harvard Medical School  
Boston MA 02131

2011-2013 Post-doctoral Research Fellow in Medicine  
Beth Israel Deaconess Medical Center  
Harvard Medical School  
Boston MA 02215

2006-2010 Graduate Research Assistant  
Department of Integrative Physiology  
UNT Health Science  
Fort Worth TX 76107

2005-2006 Senior Research Assistant  
Department of Integrative Physiology  
UNT Health Science Center  
Fort Worth TX 76107

2004-2005 Research Assistant  
Department of Kinesiology  
University of Texas at Arlington  
Arlington TX 76019

2003-2004 Teaching Assistant,  
Department of Kinesiology  
University of Texas at Arlington  
Arlington TX 76019

## **GRANTS**

2016-2018 Pilot project grant from the Texas Institute for Brain Injury and Repair at UT Southwestern Medical Center to examine the association between cerebrovascular hemodynamics and clinical symptoms in sports related concussion.  
Site PI: Sushmita Purkayastha  
Total Budget: \$222,801 (SMU subcontract: \$186,285)

2015-2016 University Research Council Grant at Southern Methodist University to

examine cerebral blood flow regulation in sports related traumatic brain injury.

PI: Sushmita Purkayastha

Budget: \$ 3,892

2011-2013 NIH T32 Grant (5 T32 AG 23480-7) for translational research in aging to examine physical activity and cerebral blood flow regulation in healthy elderly people.

Role: Post-doctoral Research Fellow

Budget: \$ 52,428 (annually)

## PUBLICATIONS

### Manuscripts published in Peer-Reviewed Journals

1. **Purkayastha S.**, Adair H, Woodruff A, Ryan LJ, Williams B, James E, and Bell KR. Balance Testing Following Concussion: Postural Sway versus Complexity Index. *Physical Medicine & Rehabilitation Journal*, 2019. Accepted for Publication.  
<https://doi.org/10.1002/pmrj.12129>
2. **Purkayastha S**, Sorond FA, Lyng S, Frantz J, Murphy MN, Hynan LS, Sabo T, and Bell KR. Impaired Cerebral Vasoreactivity Despite Symptom Resolution in Sports-Related Concussion. *Journal of Neurotrauma*, 2018. DOI:  
<https://doi.org/10.1089/neu.2018.5861>
3. Huang M, Frantz J, Moralez G, Sabo T, Davis, PF, Davis SL, Bell KR, **Purkayastha S**. Reduced Resting and Increased Elevation of Heart Rate Variability with Cognitive Task Performance in Concussed Athletes. *Journal of Head Trauma & Rehabilitation*, 2018. 34(1);45-51.
4. **Purkayastha S** Maffuid K, Xiaojie Z, Zhang R, and Raven PB. The Influence of Carotid Baroreflex on Dynamic Regulation of Cerebral Blood Flow and Cerebral Tissue Oxygenation in Humans at Rest and During Exercise. *European Journal of Applied Physiology*. 2018; 118(5), 959-969.
5. Sabo T, Supnet C and **Purkayastha S\***. Secondary intracranial hypertension (pseudotumor cerebri) presenting as post-traumatic headache in mild traumatic brain injury: a case series. *Child's Nervous System*. 2018, 34: 681-690.
6. **Purkayastha S** and Sorond FA. Cerebral Hemodynamics and the Aging Brain. *International Journal of Clinical Neurosciences and Mental Health*. 2014; (Suppl.1): S07.

7. Fadar O, Mink S, Tan OT, Puri A, Zamani A, Mehregan A, Chou SH, Orzell S, **Purkayastha S**, Du R, Sorond FA. Impaired Cerebral Autoregulation is Associated with Vasospasm and Delayed Cerebral Ischemia in Subarachnoid Hemorrhage. *Stroke*, 2014; 45:677-682.
8. **Purkayastha S**, Fadar O, Mehregan A, Salat DH, Guttmann CRG, Fisher NDL, Lipsitz LA, Sorond FA. Impaired cerebrovascular hemodynamics are associated with cerebral white matter damage. *Journal of Cerebral Blood Flow and Metabolism*. 2014; 34, 228-234.
9. **Purkayastha S** and Sorond FA. Transcranial Doppler Ultrasound: Technique and Application. *Seminars in Neurology*, 2012; 32(04): 411-420.
10. **Purkayastha S**, Saxena A, Eubank WL, Hoxha B, and Raven PB. Alpha Adrenergic receptor control of the cerebral vasculature in humans at rest and during exercise. *Experimental Physiology*, 2013; 98(2), 451-61.
11. **Purkayastha S** and Raven, PB. The functional role of the alpha-1 adrenergic receptors in cerebral blood flow regulation. *Indian Journal of Pharmacology*. 2011 Sep-Oct; 43(5): 502-506.
12. Hawkins MN, Barnes Q, **Purkayastha S**, Eubank W, Ogoh S, Raven PB. The effects of aerobic fitness and beta1-adrenergic receptor blockade on cardiac work during dynamic exercise. *Journal of Applied Physiology*. 2009 Feb; 106 (2): 486-93.
13. Ogoh S, Fisher JP, **Purkayastha S**, Dawson EA, Fadel PJ, White MJ, Zhang R, Secher NH, Raven PB. Regulation of middle cerebral artery blood velocity during recovery from dynamic exercise in humans. *Journal of Applied Physiology*. 2007 Feb; 102(2): 713-21.
14. Cramer JT, Beck TW, Housh TJ, Massey LL, Marek SM, Danglemeier S, **Purkayastha S**, Culbertson JY, Fitz KA, Egan AD. Acute effects of static stretching on characteristics of the isokinetic angle - torque relationship, surface electromyography, and mechanomyography. *Journal of Sports Science*. 2007 Apr 25(6): 687-98.
15. Ogoh, S, Brothers RM, Barnes Q, Eubank WL, Hawkins MN, **Purkayastha S**, O-Yurvati A, Raven PB. Cardiopulmonary baroreflex is reset during dynamic exercise. *Journal of Applied Physiology*. 2006 Jan; 100(1): 51-9.
16. Ogoh S, Brothers RM, Barnes Q, Eubank WL, Hawkins MN, **Purkayastha S**, O-Yurvati A, Raven PB. Effects of changes in central blood volume on carotid-vasomotor baroreflex sensitivity at rest and during exercise. *Journal of Applied Physiology*. 2006 Jul; 101(1): 68-75.
17. **Purkayastha S**, Cramer JT, Trowbridge CA, Fincher AL, Marek SM. Surface electromyographic amplitude-to-work ratios during isokinetic and isotonic muscle actions. *Journal of Athletic Training*. 2006 Jul-Sep; 41(3): 314-20.

18. Ogoh S, Brothers RM, Barnes Q, Eubank WL, Hawkins MN, **Purkayastha S**, O-Yurvati A, Raven PB. The effect of changes in cardiac output on middle cerebral artery mean blood velocity at rest and during exercise. *Journal of Physiology*. 2005 Dec 1; 569(Pt 2):697-704.
19. Marek SM, Cramer JT, Fincher AL, Massey LL, Dangelmaier SM, **Purkayastha S**, Fitz KA, Culbertson JY. Acute Effects of Static and Proprioceptive Neuromuscular Facilitation Stretching on Muscle Strength and Power Output. *Journal of Athletic Training*. 2005 Jun; 40(2): 94-103.

\*Authors contributed equally

#### Manuscripts in Review

1. **Purkayastha S**, Williams B, Murphy MN, Lyng S, Wainman M, Bell KR. Lower Heart Rate Variability is Associated with Reduced Cerebral Blood Flow and Cognition Following Concussion. Submitted to *Autonomic Neuroscience: Basic and Clinical Journal*.
2. **Purkayastha S**, Stokes M, & Bell KR. Autonomic Nervous System Dysfunction in Mild Traumatic Brain Injury: A Review of Related Pathophysiology and Symptoms. Submitted to *Brain Injury*.

#### Manuscripts in Preparation

1. **Purkayastha S**, Ryan L, Lyng S, Wainman M, Sabo T, and Bell K. Dynamic Cerebral Autoregulation Impairment at Rest and During Physical Stress Persists Despite Symptom Resolution in Collegiate Athletes Following Concussion. To be submitted to *Journal of Cerebral Blood Flow & Metabolism*.
2. **Purkayastha S**, Lyng S, Brown E, Sabo T, Bell KR. Dysregulation in Neurovascular Coupling Persists During Sub-Acute Phase Following a Sports-Related Concussion. To be submitted to *Journal of Cerebral Blood Flow & Metabolism*.
3. **Purkayastha S**, Stokes M, Sabo T. Pathophysiology of cerebral edema in mild traumatic brain injury- A Review of Literature. To be submitted to *Journal of Neuroinflammation*.

#### Published Abstracts (Oral & Poster Presentation)

1. **Purkayastha S**, Lyng S, Brown EK, Sabo T, and Bell KR. Dysregulation in Neurovascular Coupling Persists During Sub-Acute Phase Following a Sports-Related Concussion. *13th World Congress on Brain Injury 2019*, Toronto, Canada, March 15th (Poster Presentation).

2. Brown EK, Lyng S, Ryan L, Bell K and **Purkayastha S**. Despite Symptom Resolution Dynamic Cerebral Autoregulation is Impaired in Collegiate Athletes Following Concussion. *Texas chapter of American College of Sports Medicine Annual Conference*, 2019, February 28th (Student Poster Presentation).
3. Lyng S, Brown EK, Sabo T, Bell KR and **Purkayastha S**. Persistent Neurovascular Coupling Dysregulation During Subacute Recovery Phase Following Concussion. *Texas chapter of American College of Sports Medicine Annual Conference*, 2019, February 28th (Student Poster Presentation).
4. **Purkayastha S**, Frantz J, Hynan H, Sabo T, Sorond FA, Bell KR. Cerebral Vasoreactivity is Impaired Three Month Following Sports Related Concussion in Collegiate Athletes. *4th Federal Interagency Conference on Traumatic Brain Injury*, Washington DC, June 12<sup>th</sup> 2018 (Oral presentation).
5. **Purkayastha S**, Frantz J, Sedaghat S, Ryan L, Lyng S, Wainman M, Sabo T, and Bell K. Dynamic Cerebral Autoregulation Impairment at rest and During Physical Stress Persists Despite Symptom Resolution in Collegiate Athletes Following Concussion. *North America Brain Injury Society Annual Meeting*, Houston, TX, March 17<sup>th</sup> 2018 (Oral Presentation).
6. Frantz J, Sedaghat S, Ryan L, Wainman M, Lyng S, Sabo T, Bell KR, **Purkayastha S**. Dynamic Cerebral Autoregulation Impairment Persists Past Resolution of Symptoms in Collegiate Athletes Following Concussion. *Experimental Biology*, April 21<sup>st</sup>, 2018, San Diego, CA (Student Oral presentation).
7. Woodruff A, Frantz J, Ryan Laurence, Davis PF, **Purkayastha S**. Physiological Complexity of Postural Control is Impaired Despite Resolution of Postural Sway Following Sport-Related Concussion. *Texas chapter of American College of Sports Medicine Annual Conference*, March 1<sup>st</sup>, 2018 (Student Poster Presentation).
8. Wainman M, Frantz J, Williams B, Lyng S, Sabo T, Bell KR, **Purkayastha S**. Cardiac Vagal Tone Impairment is Associated with Reduced Cerebral Blood Flow in Collegiate Athletes Following Concussion. *Texas chapter of American College of Sports Medicine Annual Conference*, March 1<sup>st</sup> 2018, Austin, TX (Student Poster Presentation).
9. Lyng S, Frantz J, Wainman M, Sabo T, Bell KR, **Purkayastha S**. Persistent Impairment in Cerebral Vasoreactivity in Subacute Phase Following Concussion. *Texas chapter of American College of Sports Medicine*, March 1<sup>st</sup> 2018, Austin, Texas (Student Poster Presentation).
10. Frantz J, Ryan LJ, Davis PF, Sabo T, Bell KR, **Purkayastha S**. Physiological Complexity of Postural Control Is Impaired Despite Resolution of Postural Sway Following Sport-Related Concussion. *2017 Sports Concussion Conference*. (Student Poster Presentation).

11. Ferraro Madison S, Huang Mu, Frantz J M, Sabo T, Bell KR, and **Purkayastha S**. Improvement in Heart Rate Variability during Mild Cognitive Task Following Concussion. *Texas chapter of American College of Sports Medicine, 2017, Waco, Texas* (Student Poster Presentation).
12. **Purkayastha S**, Frantz J, Sabo T, Bell K. Impaired Cerebral Vasoreactivity Persists Beyond Symptom Resolution Following Concussion in Collegiate Athletes. *12th World Congress on Brain Injury 2017, New Orleans, Louisiana* (Oral Presentation).
13. Sabo T.M, Supnet C, **Purkayastha S**. Post traumatic intracranial hypertension (Pseudotumor cerebri) in mild traumatic brain injury: a specific post-traumatic headache subtype; the importance of recognition, evaluation and management. *12th World Congress on Brain Injury 2017, New Orleans, Louisiana. Brain Injury 2017; 31 (6-7), 736-73* (Poster presentation)
14. **Purkayastha S**, Maffuid K, Murphy M, Sorond F, Tan CO. Cerebral Autoregulation is Impaired during the Acute and Sub-Acute Phase Following Concussion: A Pilot Study. *16th International Symposium on Intracranial Pressure and Neuromonitoring in conjunction with 6th Annual Meeting of the Cerebral Autoregulation Network, 2016.* (Poster Presentation).
15. Maffuid K, Murphy MN, Davis PF, **Purkayastha S**. Cerebral Vasoreactivity During Acute and Recovery Phase Post-Concussion: A Pilot Study. *Texas chapter of American College of Sports Medicine, 2016.* (Student Poster Presentation).
16. Maffuid K, Ryan L, Murphy MN, Davis PF, **Purkayastha S**. Improvement in Cerebral Autoregulation During Recovery Phase Following Concussion is Associated with Reduced Postural Sway: A Pilot Study. *Experimental Biology, 2016* (Control # 7015, Student Poster Presentation).
17. **Purkayastha S**, Sorond FA, Tan CO. Effect of Desferroxamine Infusion on Cerebral Autoregulation in Elderly Individuals: A Randomized Placebo Controlled Trial. *Experimental Biology, 2015* (Control # 6770, Poster Presentation).
18. Sorond FA, **Purkayastha S**, Lipsitz LA, Leveille SG. Impaired Cerebral Autoregulation is associated with a Greater 7-year Decline in Gait Speed in an Elderly Population: The MOBILIZE Boston Study. *American Academy of Neurology, 2014* (S58.007, Oral Presentation).
19. **Purkayastha S**, Fadar O, Mehregan A, Lipsitz LA, Sorond FA. Association between Cerebral tissue Structural Integrity and Dynamic Cerebral Autoregulation in Elderly Individuals. *Experimental Biology, 2013.* (Oral and Poster presentation).
20. Paccha B, **Purkayastha S**, Sorond FA, Lipsitz LA. Dynamic Cerebral Autoregulation, cognition and physical function in advanced age. *The New England Science Symposium,* (Student Poster Presentation).



21. **Sushmita Purkayastha**, Blanca Paccha, Ikechukwu Iloputaife, Dan K. Kiely, Farzaneh A. Sorond, Lewis A. Lipsitz. Association between Cerebral Autoregulation and White Matter Hyperintensities in Elderly Individuals. *23rd International Symposium on the Autonomic Nervous System, October 2012* (Oral Presentation).
22. **Purkayastha S**, Saxena, A., Raven, P.B. Functional Role of Alpha-1 Adrenergic Receptors in regulating Cerebral Vascular tone in Healthy Humans during Exercise. *Experimental Biology, 2011*. Poster # D553, 1054.6. (Poster Presentation).
23. A. Saxena, **S. Purkayastha**, P.B. Raven, and X.Shi. Effect of cycling exercise on dynamic cerebral autoregulation in humans. *Experimental Biology, 2011*. Poster # D577, 1056.14. (Poster Presentation).
24. **Sushmita Purkayastha**, Ashwini Saxena, Peter B. Raven. Carotid baroreflex regulation of the cerebral vasculature in humans during rest and dynamic exercise. *American College of Sports Medicine Annual Meeting, 2011*. 2656, Board # 264. (Poster Presentation).
25. **Purkayastha, S**, Zhang, R. Levine, B., Raven, PB. The Influence of Autonomic Neural Control on Human Cerebral Vessels 'in vivo'. *21st International Symposium on the Autonomic Nervous System, 2010*. Board# 16 (Poster presentation).
26. **Sushmita Purkayastha**, R. Mathew Brothers, Peter B. Raven & Shigehiko Ogoh. Effect of angiotensin (AT1) receptor blockade on cerebral autoregulation in healthy human subjects at rest. *Texas chapter of American College of Sports Medicine, 2008*. (Poster Presentation).
27. **Sushmita Purkayastha**, Shigehiko Ogoh, David M. Keller, and Peter B. Raven. Modulation of vascular impedance in the femoral artery of humans with neck pressure and neck suction with KATP channel blockade. *Texas chapter of American College of Sports Medicine 2006*. (Poster Presentation).
28. **Sushmita Purkayastha**, Joel T. Cramer, PhD. Department of Kinesiology, University of Texas at Arlington. Electromyographic amplitude-to-work (EMG:WK) ratios during isotonic and isokinetic leg extension exercises. *Texas chapter of American College of Sports Medicine 2005*. (Poster Presentation).

## **PRESENTATIONS**

### Invited Presentations

1. Cerebral Blood Flow Regulation Following a Sports-Related Concussion. *BrainHealth Frontiers scientific lecture series sponsored by Center for BrainHealth, Dallas, Tx. October 12<sup>th</sup>, 2018*.

2. Heads Up: Diagnosing and Treating Concussion. *Simmons Research Brown Bag Series. SMU Simmons School of Education & Human Development*. September 20<sup>th</sup>, 2017.
3. Cerebral Blood Flow Regulation and Clinical Symptoms in Sports Related Concussion. *Grand Rounds Presentation at the Department of Physical medicine & Rehabilitation at UT Southwestern Medical Center*, December 2<sup>nd</sup>, 2016.
4. Aging and Brain Health: The Link Between Brain Structure and Function. *Research on Exercise and Wellness Colloquium Series Department of Applied Physiology & Wellness*, October 2014.
5. Aging and Brain Health: Association between Cerebral Tissue Integrity and Vascular Function. *Department of Applied Physiology, Southern Methodist University, April 2014*.
6. Healthy Aging. *Senior Living Facilities*, 2013, Boston.
7. Association Between Cerebral Tissue Structural Integrity and Cerebral Hemodynamics in Elderly Individuals. *Division of Gerontology Meeting, Harvard Medical School, Boston*, May 2013.

#### National & International Presentations

1. Cerebral Vasoreactivity is Impaired Three Month Following Sports Related Concussion in Collegiate Athletes. *4<sup>th</sup> Federal Interagency Conference on TBI*, June 12<sup>th</sup>, 2018, Washington D.C.
2. Dynamic Cerebral Autoregulation Impairment at Rest and During Physical Stress Persists Despite Symptom Resolution in Collegiate Athletes Following Concussion. *North America Brain Injury Society Annual Conference*, March 17<sup>th</sup>, 2018, Houston, Texas.
3. Impaired Cerebral Vasoreactivity Persists Beyond Symptom Resolution Following Concussion in Collegiate Athletes. *International Brain Injury Association Conference*, March 31<sup>st</sup>, 2017
4. Association between Cerebral tissue Structural Integrity and Dynamic Cerebral Autoregulation in Elderly Individuals. *Experimental Biology*, 2013.
5. Association between Cerebral Autoregulation and White Matter Hyperintensities in Elderly Individuals. *23rd International Symposium on the Autonomic Nervous System*, October 2012.

#### **TEACHING RESPONSIBILITIES**

##### Academic Course Development

2014	APSM 5300	Senior Project – A Research Methods course	Southern Methodist University
2015	APSM 4312	Advanced Exercise Physiology	Southern Methodist University
2015	APSM 5361	Research Practicum	Southern Methodist University
2017	EDU 7300	Independent Study	Southern Methodist University

#### Academic Course Instruction

2014	APSM 5300	Senior Project – A Research Methods course	Southern Methodist University
2015	APSM 4412	Advanced Exercise Physiology	Southern Methodist University
2015	APSM 5361	Research Practicum	Southern Methodist University
2012	Summer internship	Cerebrovascular Physiology	Institute For Aging Research, Harvard Medical School
2003	KINE 3315	Physiology of Exercise Laboratory	University of Texas at Arlington
2004	KINE 3301	Biomechanics of Human Movement Laboratory	University of Texas at Arlington

### **PROFESSIONAL AND PUBLIC SERVICE**

#### **Department Services**

Phd Committee Member: Mu Huang in Applied Physiology & Wellness Department  
 Dustin Allen PhD Applied Physiology & Wellness Department

Member: Department Distinctions and Honors Committee

#### **Simmons School of Education Services**

2014-2017	Ph.D. Program Committee
2016-2018	Faculty Advisor Simmons Graduate Council School of Education & Human Development
2018-Present	Simmons Library Committee

#### **Public Services**

Invited Speaker Participation in Research Development site visit in the Department of Physical Medicine & Rehabilitation UT Southwestern Medical Center, December 2016

Journal Referee

The Journal of Physiology  
Experimental Physiology  
Journal of Applied Physiology  
The Indian Journal of Pharmacology  
Journal of Neurological Sciences  
American Journal of Physiology: Regulatory, Integrative and  
Comparative Physiology  
Journal of Cerebral Blood Flow & Metabolism  
Frontiers in Human Neuroscience

Grant Referee

Natural Sciences and Engineering Research Council of Canada,  
Discovery Grant Application

Scholarship Oversight  
Committee Member

Danyal Thaver, Critical Care Medicine Fellow, Department of  
Pediatrics, UT Southwestern Medical Center.

Research Advisor

Mathew Stokes, Headache Medicine Fellow, Department of  
Pediatrics, UT Southwestern Medical Center

Professional Affiliations

2004- Present	Member	Texas Chapter of American College of Sports Medicine
2009-Present	Regular Member	American Physiological Society
2012- Present	Member	American Autonomic Society
2012- Present	Early Career Member	American Heart Association
2015-Present	Member	Cerebral Autoregulation Network
2016-Present	Member	International Brain Injury Association
2018-Present	Member	North America Brain Injury Society