

CURRICULUM VITAE
The Johns Hopkins University School of Medicine

Robert D. Stevens, MD, FCCM

October 10, 2017

DEMOGRAPHIC AND PERSONAL INFORMATION

Current Appointments

University Appointments

- 2009-Present Associate Professor, Department of Anesthesiology and Critical Care Medicine, Johns Hopkins University School of Medicine
- 2009-Present Associate Professor, Department of Neurology, Johns Hopkins University School of Medicine
- 2009-Present Associate Professor, Department of Radiology-Radiological Sciences, Johns Hopkins University School of Medicine
- 2009-Present Assistant Professor, Department of Neurological Surgery, Johns Hopkins University School of Medicine

Hospital Appointments

- 2003-Present Attending Physician, Neurosciences Critical Care Unit, Johns Hopkins Hospital
- 2003-Present Attending Physician, Neurosciences Critical Care Unit, Johns Hopkins Bayview Medical Center
- 2003-Present Attending Physician, Anesthesiology, Johns Hopkins Hospital
- 2007-Present Attending Physician, Kennedy Krieger Institute, Baltimore, MD
- 2007-Present Attending Physician, Surgical Intensive Care Units, Johns Hopkins Hospital
- 2010-Present Attending Physician, Central Intensivist Physician Program

Scientific Appointments

- 2007-Present Faculty, F.M. Kirby Center for Functional Brain Imaging, Kennedy Krieger Institute
- 2015-Present Affiliate Faculty, Johns Hopkins Institute for Cell Engineering, Johns Hopkins University School of Medicine
- 2016-Present Affiliate Faculty, Johns Hopkins Institute for Computational Medicine

Contact Information

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Education and Training

Doctoral/graduate

- 1993 M.D., Faculty of Medicine, University of Geneva, Geneva, Switzerland
- 2000 Thesis in Clinical Science. Faculty of Medicine, University of Geneva, Geneva, Switzerland

Postdoctoral

- 1994-1995 Intern, Surgery, University Hospital of Lausanne (CHUV), Lausanne, Switzerland
- 1995-1999 Resident, Anesthesiology and Critical Care Medicine, Geneva University Hospitals, Department of Anesthesiology, Pharmacology, Surgical Intensive Care, Geneva, Switzerland
- 1998-2000 Research Fellow in Cellular Neuroscience, Department of Neuroscience, Faculty of Medicine, University of Geneva, Geneva Switzerland (Mentor: Dr Dominique Muller)
- 1999-2000 Clinical Fellow, Critical Care Medicine, Geneva University Hospitals, Department of Anesthesiology, Pharmacology, Surgical Intensive Care, Geneva, Switzerland
- 2001-2003 Clinical Fellow, Neuroscience Critical Care Medicine, Johns Hopkins University School of Medicine, Baltimore, MD
- 2001-2003 Clinical Fellow, Adult Critical Care Medicine, Johns Hopkins University School of Medicine, Baltimore, MD
- 2001-2003 Research Fellow, Department of Anesthesiology Critical Care Medicine, Johns Hopkins University School of Medicine, Baltimore, MD. (Mentor: Dr Anish Bhardwaj)
- 2004-2005 Winter and Summer Institutes in Epidemiology and Biostatistics, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD
- 2007-2009 Research Fellow, Department of Radiology-Radiological Sciences, Johns Hopkins University School of Medicine, Baltimore, MD (Mentor: Dr Peter van Zijl)

Professional Experience

- 2003-2009 Assistant Professor, Department of Anesthesiology and Critical Care Medicine, Johns Hopkins University School of Medicine, Baltimore, MD
- 2004-2009 Assistant Professor, Department of Neurology, Johns Hopkins University School of Medicine, Baltimore, MD
- 2004-Present Assistant Professor, Department of Neurological Surgery, Johns Hopkins University School of Medicine, Baltimore, MD
- 2007-2009 Assistant Professor, Kennedy Krieger Institute, Baltimore, MD
- 2009-Present Associate Professor, Department of Anesthesiology and Critical Care Medicine, Johns Hopkins University School of Medicine, Baltimore, MD
- 2009-Present Associate Professor, Department of Neurology, Johns Hopkins University School of Medicine, Baltimore, MD
- 2009-Present Associate Professor, Department of Radiology-Radiological Sciences, Johns Hopkins University School of Medicine, Baltimore, MD
- 2009-Present Associate Professor, Kennedy Krieger Institute, Baltimore, MD
- 2015-Present Faculty, Johns Hopkins Institute for Cell Engineering, Johns Hopkins University School of Medicine
- 2016-Present Faculty, Johns Hopkins Institute for Computational Medicine

PUBLICATIONS (Google Scholar h-index: 36)

Original Research [OR]

1. **Stevens RD**, Gersbach P, Ruchat P, Hurni M, Stumpe F, Fischer A, Sadeghi H. Cardiac Surgery in Octogenarians. *Schweiz Med Wochenschr* 1995;125:2084-91
2. Gersbach P, Hasdemir MG, **Stevens RD**, Nachbur B, Mahler F. Discriminative microcirculatory screening of patients with refractory limb ischemia for dorsal column stimulation. *Eur J Vasc Endovasc Surg* 1997; 13:464-71
Role: data analysis, drafting of manuscript
3. **Stevens RD**, Van Gessel E, Flory N, Fournier R, Gamulin Z. Lumbar plexus block reduces pain and blood loss associated with total hip arthroplasty. *Anesthesiology* 2000; 93:115-21
Note: Randomized clinical trial designed and carried as a resident project
4. **Stevens RD**, Burri H, Tramer M. Pharmacologic strategies for perioperative myocardial protection. A quantitative systematic review. *Anesth Analg* 2003;97:623-633
Editorial comment: Butterworth J, Furberg CD. Improving cardiac outcomes after noncardiac surgery. Anesthesia and Analgesia 2003;97(3):613-5.
5. Koenig MA, Puttgen HA, Prabhakaran V, Reich D, **Stevens RD**. B-type natriuretic peptide as a marker for heart failure in patients with acute cerebrovascular disease. *Intensive Care Med* 2007;33:1587-93

6. Gottschalk A, Berkow LC, **Stevens RD**, Mirski MA, Erdek M, Thompson RE, White ED, Weingart JD, Long DM, Yaster M. Prospective evaluation of pain and analgesic use following major elective intracranial surgery. *J Neurosurg* 2007; 106:210–216;
Role: data analysis, drafting of manuscript.
Editorial comment: Durieux ME, Himmelseber S. Pain control after craniotomy: off balance on the tightrope? Journal of neurosurgery 2007;106(2):207-9.
7. **Stevens RD**, Dowdy DW, Michaels RK, Mendez-Tellez PA, Pronovost PJ, Needham DM. Neuromuscular Dysfunction Acquired in Critical Illness. A Systematic Review. *Intensive Care Med* 2007;33:1876-91
Note: 355 citations (Google Scholar, June 2016)
8. Koenig MA, Bryan M, Mirski MA, Geocadin RG, **Stevens RD**. Reversal of brain herniation with 23.4% saline. *Neurology* 2008; 70:1023-1029
Editorial comment: Qureshi AI, Suarez JI. More evidence supporting a "brain code" protocol for reversal of transtentorial herniation. Neurology 2008;70(13):990-1.
9. Donahue MJ, **Stevens RD**, de Boorder M, van Zijl PC. Hemodynamic changes after visual stimulation and breath holding provide evidence for an uncoupling of cerebral blood flow and volume from oxygen metabolism. *J Cereb Blood Flow Metab* 2009;29:176-85
Role: study design, data acquisition, data analysis, drafting of manuscript.
10. Donahue MJ, Jan van Laar P, van Zijl PC, **Stevens RD**, Hendrikse J. Vascular space occupancy (VASO) cerebral blood volume-weighted MRI identifies hemodynamic impairment in patients with carotid artery disease. *J Magn Reson Imaging*. 2009;29:718-724.
Role: study design, data analysis, drafting of manuscript.
11. Morad AH, Winters BD, Yaster M, **Stevens RD**, White ED, Thompson RE, Weingart JD, Gottschalk A. Efficacy of intravenous patient-controlled analgesia after supratentorial intracranial surgery: a prospective randomized controlled trial: Clinical article. *J Neurosurg*. 2009;111:343-50. *J Neurosurg*. 2009;111:343-50
Role: data analysis, drafting of manuscript
Editorial comment: Vorenkamp KE, Durieux ME. Patient-controlled analgesia. J Neurosurg 2009;111:340-2; discussion 41-2.
12. **Stevens RD**, Naval NS, Mirski MA, Citerio G, Andrews PA. Intensive care of aneurysmal subarachnoid hemorrhage: an international survey. *Intensive Care Med* 2009;35:1556-66
13. Sharshar T, Bastuji-Garin S, **Stevens RD**, Durand M, Malissin I, Rodriguez P, Cerf C, Outin H, De Jonghe B. Presence and severity of ICU-acquired paresis at the time of awakening are associated with increased ICU and hospital mortality. *Critical Care Med* 2009; 37:3047-3053
Editorial comment: Ali NA. How strong is weakness? Critical care medicine 2009;37(12):3173-4.
Role: data analysis, drafting of manuscript.
14. Sharshar T, Bastuji-Garin S, De Jonghe B, **Stevens RD**, Polito A, Maxime V, Rodriguez P, Cerf, C, Outin H, MD3, Touraine P, MD, Laborde K, Hormonal status and ICU-acquired paresis in critically ill patients. *Intensive Care Med* 2010;36:1318-26.
Role: data analysis, drafting of manuscript.
15. Sharshar T, Bastuji-Garin S, Polito A, De Jonghe B, **Stevens RD**, Maxime V, Rodriguez P, Cerf C, Outin H, Touraine P, Laborde K, Groupe de Reflexion Et Detude des Neuromyopathies En Reanimation. Hormonal status in protracted critically illness and in-hospital mortality. *Crit Care*. 2011;15(1):R47
Role: data analysis, drafting of manuscript.
16. Hua J, **Stevens RD**, Huang AJ, Pekar JJ, van Zijl PC. Physiological origin for the BOLD poststimulus undershoot in human brain: vascular compliance versus oxygen metabolism. *J Cereb Blood Flow Metab* 2011; 31(7):1599-611
Role: study design, data analysis, drafting of manuscript.
17. Karanjia N, Nordquist D, **Stevens RD**, Nyquist P. A Clinical Description of Extubation Failure in Patients with Primary Brain Injury. *Neurocrit Care* 2011; 15(1):4-12
Role: data analysis, drafting of manuscript.
18. Polito A, Brouland JP, Porcher R, Sonnevile R, Siami S, **Stevens RD**, Guidoux C, Maxime V, Lorin de la Grandmaison G, Chretien F, Gray F, Annane D, Sharshar T. Hyperglycaemia and apoptosis of microglial cells in human septic shock. *Crit Care*. 2011;15(3):R131.
Role: data analysis, drafting of manuscript.
19. Hoesch RE, Lin E, Young M, Gottesman RF, Altaweel L, Nyquist PA, **Stevens RD**. Acute Lung Injury in Critical Neurological Illness. *Crit Care Med* 2012;40:587-93.

- Editorial comment: Ware LB, Girard TD. Acute lung injury: surprisingly common in the neurologic intensive care unit. Crit Care Med. 2012;40(2):694-5.*
20. Morad AH, Winters BD, **Stevens RD**, White ED, Weingart JD, Yaster M, Gottschalk A. The Efficacy of Intravenous Patient-Controlled Analgesia After Intracranial Surgery of the Posterior Fossa: A Prospective, Randomized Controlled Trial. *Anesthesia Analgesia* 2012; 114:416–23
Role: Data analysis, drafting of manuscript.
 21. Zheng Y, Villamayor AJ, Merritt W, Pustavoitau A, Latif A, Bhambhani R, Frank S, Gurakar A, Singer A, Cameron A, **Stevens RD**, Hogue CW. Continuous Cerebral Blood Flow Autoregulation Monitoring in Patients Undergoing Liver Transplantation. *Neurocrit Care*. 2012;17:77-84.
Role: data analysis, drafting of manuscript.
 22. Luyt CE, Galanaud D, Perlberg V, Vanhauzenhuysse A, **Stevens RD**, Gupta R, Besancenot H, Krainik A, Audibert G, Combes A, Chastre J, Benali H, Laureys S and Puybasset L. Diffusion tensor imaging to predict long-term outcome following cardiac arrest. *Anesthesiology* 2012; 117:1311–1321
Role: data analysis, drafting of manuscript
 23. Galanaud D, Perlberg V, Gupta R, **Stevens RD**, Sanchez P, Veber B, Tollard E, Faivre S, Soto-Ares G, Cottenceau V, Tourdias T, André E, Menjot de Champfleury E, Audibert G, Bracard S, Dailler F, Ibarrola D, Payen JF, Le Bas JF, Bruder N, Girard N, Vanhauzenhuysse A, Tshibanda L, Laureys S, Benali H, Puybasset L for the NICER (Neuro Imaging in Coma Emergence and Recovery). Assessment of White Matter Injury and Outcome in Severe Brain Trauma: a Prospective Multi-center Cohort. *Anesthesiol.* 2012; 117:1300–131
Role: data analysis, drafting of manuscript
 24. Sutter R, **Stevens RD**, Kaplan PW. Clinical and imaging correlates of EEG patterns in hospitalized patients with encephalopathy. *J Neurol* 2012;260:1087-98.
Role: study design, data analysis, drafting of manuscript
 25. Sutter R, **Stevens RD**, Kaplan PW. Significance of triphasic waves in patients with acute encephalopathy: A nine-year cohort study. *Clin Neurophysiol* 2013;124:1952-8.
Role: study design, data analysis, drafting of manuscript
Editorial comment: Bragatti JA. The role of triphasic waves in the care of critically ill patients. Clinical neurophysiology: official journal of International Federation of Clinical Neurophysiology 2013;124(10):1924.
 26. Dinkel J, Drier A, Khalilzadeh O, Perlberg V, Czernecki V, Gupta R, Gomas F, Sanchez P, Dormont D, Galanaud D, **Stevens RD**, Puybasset L. Long-Term White Matter Changes after Severe Traumatic Brain Injury: A 5-Year Prospective Cohort. *AJNR Am J Neuroradiol* 2013;35:23-9
Role: data analysis, drafting of manuscript
 27. Polito A, Eischwald F, Le Maho AL, Polito A, Azabou E, Annane D, Chrétien F, **Stevens RD**, Carlier R, Sharshar T. Pattern of brain injury in the acute setting of human septic shock. *Crit Care* 2013;17(5):R204.
Role: data analysis, drafting of manuscript
 28. Van der Eerden AW, Khalilzadeh O, Perlberg V, Dinkel J, Sanchez P, Vos PE, Luyt CE, **Stevens RD**, Menjot de Champfleury N, Delmaire C, Tollard T, Gupta R, Dormont D, Laureys S, Benali H, Vanhauzenhuysse A, Galanaud D, Puybasset L. White Matter Changes in Comatose Survivors of Anoxic Ischemic Encephalopathy and Traumatic Brain Injury: Comparative Diffusion-Tensor Imaging Study. *Radiology*. 2014;270:506-16
Role: data analysis, drafting of manuscript
 29. Schneider EB, Sur S, Raymond V, Duckworth J, Kowalski R, Efron DT, Hui X, Selvarajah S, Hambridge HL, **Stevens RD**. Functional recovery after moderate/severe traumatic brain injury: a role for cognitive reserve? *Neurology* 2014; 82:1636-42.
Editorial comment: Bigler ED. Importance of cognitive reserve in traumatic brain injury. Neurol. 2014;82 (18):1641.
 30. Qin Q, Huang AJ, Hua J, Desmond JE, **Stevens RD**, van Zijl PC. Three-dimensional whole-brain perfusion quantification using pseudo-continuous arterial spin labeling MRI at multiple post-labeling delays: accounting for both arterial transit time and impulse response function. *NMR Biomed*. 2014;27:116-28.
Role: data analysis, drafting of manuscript
 31. CENTER-TBI Participants and Investigators. Collaborative European NeuroTrauma Effectiveness Research in Traumatic Brain Injury (CENTER-TBI): a prospective longitudinal observational study. *Neurosurgery* 2015; 76:67-80
Role: drafting of manuscript
 32. Hannawi Y, Lindquist MA, Caffo BS, Sair HI, and **Stevens RD**. Resting brain activity in humans with consciousness disorders: Systematic review and meta-analysis. *Neurology* 2015;84:1272-1280

33. Kowalski RG, Buitrago MM, Duckworth J, Chonka ZD, Puttgen A, **Stevens RD**, Geocadin RG. Neuroanatomical Predictors of Awakening in Acutely Comatose Patients. *Ann Neurol*. 2015;77:804-16
Role: data analysis, drafting of manuscript
34. Hinson H, Puybasset L, Weiss N, Perlberg V, Benali H, Galanaud D, Lasarev M, **Stevens RD**, for the Neuro Imaging for Coma Emergence and Recovery (NICER) Consortium. Neuroanatomical basis of paroxysmal sympathetic hyperactivity: a diffusion tensor imaging analysis. *Brain Injury* 2015;29:455-61.
35. Sutter R, Chalela JA, Kaplan PW, Leigh R, Yenokyan G, Sharshar T, **Stevens RD**. Significance of parenchymal brain injury in critically ill patients. *Neurocritical Care* 2015;23:243-52.
36. Salluh JIF, Wang H, Schneider E, Nagarajan N, Yenokyan G, Damluji A, Serafim RB, **Stevens RD**. The Outcome of Delirium in Critically Ill Patients: A Systematic Review and Meta-analysis. *Br Med J*. 2015;350:h2538.
37. Xu X, Yadav NN, Knutsson L, Hua J, Kalyani R, Hall E, Laterra J, Blakeley J, Strowd R, Pomper M, Barker P, Chan K, Liu G, McMahon MT, **Stevens RD**, van Zijl PC. Dynamic Glucose-Enhanced (DGE) MRI: Translation to Human Scanning and First Results in Glioma Patients. *Tomography*. 2015;1(2):105-114.
Role: data analysis, drafting of manuscript
38. Niranjana-Azadi AM, Araz F, Patel YA, Alachkar N, Alqahtani S, Cameron AM, **Stevens RD**, Gurakar A. Ammonia Level and Mortality in Acute Liver Failure: A Single-Center Experience. *Ann Transplant*. 2016;21:479-83.
39. Peters ME, Rao V, Bechtold KT, Roy D, Sair HI, Leoutsakos JM, Diaz-Arrastia R, **Stevens RD**, Batty DS Jr, Falk H, Fernandez C, Ofoche U, Vassila A, Hall AJ, Anderson B, Bessman E, Lyketsos CG, Everett AD, Eyk JV, Korley FK. Head injury serum markers for assessing response to trauma: Design of the HeadSMART study. *Brain Inj*. 2017 Jan 31:1-9. doi: 10.1080/02699052.2016.1231344
40. Sair HI, Hannawi Y, Li S, Kornbluth J, Vanhauzenhuysse A, Laureys S, Chabanne R, Jean B, Benali H, Perlberg V, Luyt CE, Galanaud D, Velly L, Puybasset L, Pekar J, Caffo B, **Stevens RD**. Early functional connectome integrity and one-year recovery in comatose survivors of cardiac arrest. *Radiology* 2017 (in press)

Review Articles [RA]

1. **Stevens RD**. Neuromuscular disorders and anaesthesia. *Curr Opin Anaesthesiology* 2001;14:693-8
2. **Stevens RD**, Bhardwaj A, Kirsch JR, Mirski MA. Critical care and perioperative management in traumatic spinal cord injury. *J Neurosurg Anesthesiol* 2003;15:215-29
3. **Stevens RD**, Fleisher LA. Strategies in the high risk cardiac patient undergoing noncardiac surgery. *Best Pract Res Clin Anaesthesiol* 2004; 18 549–56
4. Gomes J, **Stevens RD**, Mirski MA, Bhardwaj A. Glucocorticoid therapy in neurologic critical care. *Crit Care Med* 2005;33:1214-1224
Role: article concept, drafting of manuscript
5. **Stevens RD**, Bhardwaj A. Approach to the comatose patient. *Crit Care Med* 2006; 34:31-41.
6. Naval N, **Stevens RD**, Mirski MA, Bhardwaj A. Controversies in the management of aneurysmal subarachnoid hemorrhage. *Crit Care Med* 2006; 34:511–524
Role: article concept, drafting of manuscript
Editorial comment: Bleck TP, Chang CW. Ten things we hate about subarachnoid hemorrhage (or, the taming of the aneurysm). Crit Care Med 2006;34(2):571-4.
7. **Stevens RD**, Pronovost PJ. The spectrum of encephalopathy in critical illness. *Semin Neurol* 2006;26:440-51
8. **Stevens RD**, Nyquist PA. Coma, delirium and cognitive dysfunction in critical illness. *Crit Care Clin* 2006;22:787–804
9. Geocadin RG, MD, Koenig MA, **Stevens RD**, Peberdy MA. Intensive care for brain injury after cardiac arrest: therapeutic hypothermia and related neuroprotective strategies. *Crit Care Clin* 2006;22:619-36
Role: article concept, drafting of manuscript
10. **Stevens RD**, Nyquist PA. The systemic implications of aneurysmal subarachnoid hemorrhage. *J Neurol Sci* 2007;261:143-156.
11. Pustavoitau A, **Stevens RD**. Mechanisms of neurological failure in critical illness. *Crit Care Clin* 2008;24:1-24
12. **Stevens RD**, Lazaridis C, Chalela J, The role of mechanical ventilation in acute brain injury. *Neurol Clin* 2008;26:543–56
13. Geocadin RG, Koenig MA, **Stevens RD**, Peberdy MA. Management of brain injury after resuscitation from cardiac arrest. *Neurol Clin* 2008;26:487-506
Role: article concept, drafting of manuscript
14. **Stevens RD**, Nyquist PA. Types of brain dysfunction in critical illness. *Neurol Clin* 2008; 26:469–486

15. Nyquist PA, **Stevens RD**, Mirski MA. Neurologic injury and mechanical ventilation. *Neurocritical Care* 2008;9:400-8.
Role: article concept, drafting of manuscript
16. **Stevens RD**, Pustavoitau A, Chalela JA. Brain imaging in intensive care medicine. *Seminars in Neurology* 2008;28:631-44.
17. Papangelou A, Mirski MA, **Stevens RD**. Pharmacologic management of brain edema. *Curr Treat Options Neurol* 2009;11:64-73
18. Iacobone E, Bailly-Salin J, Polito, A, Friedman, D, **Stevens, RD**, Sharshar T. Sepsis-associated encephalopathy and its differential diagnosis. *Critical Care Med* 2009;37[Suppl.]: S331-S336
Role: article concept, drafting of manuscript
19. Duckworth J, **Stevens RD**. Imaging brain trauma. *Current Opinion in Critical Care* 2010;16:92-97
20. Torres DM, **Stevens RD**, Gurakar A. Acute Liver Failure: A Management Challenge for the Practicing Gastroenterologist. *Gastroenterology & Hepatology* 2010; 6, 444-50
Role: article concept, drafting of manuscript
21. Pustavoitau A, Bhardwaj A, **Stevens RD**. Neurological complications of transplantation. *J Intens Care Med* 2011; 26: 209-222
22. **Stevens RD**, Huff JS, Duckworth J, Papangelou A, Weingart SD, Smith WS. Emergency neurological life support: intracranial hypertension and herniation. *Neurocrit Care*. 2012;17 Suppl 1:S60-5.
23. Huff JS, **Stevens RD**, Weingart SD, Smith WS. Emergency neurological life support: approach to the patient with coma. *Neurocrit Care*. 2012;17 Suppl 1:S54-9.
Role: article concept, drafting of manuscript
24. Sutter R, **Stevens RD**, Kaplan PW. Continuous Electroencephalographic Monitoring in Critically Ill Patients: Indications, Limitations, and Strategies. *Crit Care Med* 2013; 41:1104-23.
Editorial comment: Adam N, Magalhaes E, Sharsbar T. Continuous electroencephalogram monitoring in the ICU or how to bring the inflation under control. Crit Care Med 2013;41(4):1162-3.
Role: article concept, drafting of manuscript
25. **Stevens RD**, Sutter R. Prognosis in severe brain injury. *Crit Care Med* 2013;41:1104-23.
26. **Stevens RD**, Hannawi Y, Puybasset L. MRI for coma emergence and recovery. *Current Opinion in Critical Care* 2014;20:168-73
27. **Stevens RD**, Shoykhet M, Cadena R. Emergency Neurological Life Support: Intracranial Hypertension and Herniation. *Neurocrit Care*. 2015;23 Suppl 2:76-82
28. **Stevens RD**, Cadena R, Pineda J. Emergency Neurological Life Support: Approach to the Patient with Coma. *Neurocrit Care*. 2015; 23 Suppl 2:69-75.
29. Werner K, **Stevens RD**. Traumatic brain injury: Recent Advances in Plasticity and Regeneration. *Current Opinion in Neurology* 2015;28:565-73
30. Hannawi Y, **Stevens RD**. Mapping the Connectome Following Traumatic Brain Injury. *Current Neurology and Neuroscience Reports* 2016;16:44-72
31. Sharma K, **Stevens RD**. Determinants of prognosis in acute neuro-catastrophies. *Handbook of Clinical Neurology* *Handb Clin Neurol*. 2017;140:379-395
32. **Stevens RD**, Janowski M, Walczak P. Regenerative therapy for neurologic trauma. *Nature Reviews Neurology* 2017 (commissioned, in preparation)

Case Reports [CR]

1. Lele A, Mirski MA, **Stevens RD**. Spurious hypoxemia. *Crit Care Med* 2005;33:1854-6
2. Lyons JL, Gireesh ED, Trivedi JB, Bell WR, Cettomai D, Smith BR, Karram S, Chang T, Tochen L, Zhang SX, McCall CM, Pearce DT, Carroll KC, Chen L, Ratchford JN, Harrison DM, Ostrow LW, **Stevens RD**. Fatal Exserohilum Meningitis and Central Nervous System Vasculitis After Cervical Epidural Methylprednisolone Injection. *Ann Intern Med*. 2012;157:835-836
3. Bell WR, Dalton JB, McCall CM, Karram S, Pearce DT, Memon W, Lee R, Carroll KC, Lyons JL, Gireesh ED, Trivedi JB, Cettomai D, Smith BR, Chang T, Tochen L, Ratchford JN, Harrison DM, Ostrow LW, **Stevens RD**, Chen L, Zhang SX. Iatrogenic Exserohilum infection of the central nervous system: mycological identification and histopathological findings. *Mod Pathol*. 2012 Iatrogenic Exserohilum infection of central nervous system: mycological identification and histopathological findings. *Mod Pathol*. 2013;26:166-70
Role: Data collection and verification, drafting of manuscript

4. Kumble S, Zink EK, Burch M, Deluzio S, **Stevens RD**, Bahouth MN. Physiological Effects of Early Incremental Mobilization of a Patient with Acute Intracerebral and Intraventricular Hemorrhage Requiring Dual External Ventricular Drainage. *Neurocrit Care* 2017 doi:10.1007/s12028-017-0376-9
Role: drafting of manuscript

Book Chapters, Monographs [BC]

1. **Stevens RD**. Postoperative care. In: Bhardwaj A, Mirski MA, Ulatowski JA (eds). *Handbook of Neurocritical Care*. Totowa, NJ: Humana Press; 2004:91-122
2. **Stevens RD**. Spinal cord injury. In: Bhardwaj A, Mirski MA, Ulatowski JA (eds). *Handbook of Neurocritical Care*. Totowa, NJ: Humana Press; 2004:165-181
3. **Stevens RD**, Mirski M. Should spinal anesthesia be performed in patients with multiple sclerosis? In: Fleischer L (ed). *Evidence-based practice of anesthesia*. Philadelphia, PA: WB Saunders; 2004:170-6
4. Chung D, **Stevens RD**, Timing of surgery after stroke. In: Fleischer L (ed). *Evidence-based practice of anesthesia*. Philadelphia, PA: WB Saunders; 2004:379-388
5. Mirski MA, **Stevens RD** et al. Coma and Intensive Care Neurology. In Rosenberg, RN (ed.). *Atlas of Clinical Neurology*. New York, NY :Springer ; 2009
6. **Stevens RD**, Pustavoitau A, Van Zijl PC. The role of imaging in acute brain injury. *Yearbook of Intensive Care and Emergency Medicine* 2009. New York, NY :Springer 2009
7. **Stevens RD**, Pustavoitau A, Sharshar T. Encephalopathy. In: Bhardwaj A, Mirski MA, Ulatowski JA (eds). *Handbook of Neurocritical Care*. Totowa, NJ: Humana Press; 2010
8. Xiong W, **Stevens RD**. Encephalopathy and Delirium. *Encyclopedia of Intensive Care Medicine*. New York, NY: Springer, 2012
9. Huff JS, **Stevens RD**. Coma and Altered Mental Status. In: Yealy and Callaway (eds). *Emergency Department Critical Care*. New York, NY: Oxford University Press, 2012
10. Sutter R, **Stevens RD**. The epidemiology of critical illness brain dysfunction. In: Stevens RD, Ely EW, Sharshar T (eds): *Brain Disorders in Critical Illness. Mechanisms, Diagnosis and Treatment*. Cambridge: Cambridge University Press, 2013
11. Sutter R, Sharshar T, **Stevens RD**. Clinical neurological assessment of the critically ill patient. In: **Stevens RD**, Ely EW, Sharshar T (eds): *Brain Disorders in Critical Illness. Mechanisms, Diagnosis and Treatment*. Cambridge: Cambridge University Press, 2013
12. Lackamp A, **Stevens RD**. Neurological implications of critical illness and organ dysfunction. In: Layon AJ, Gabrielli A, Friedman WA (eds): *Textbook of Neurointensive Care*. London: Springer, 2013
13. Harvey V, **Stevens RD**. Cognitive reserve. In: **Stevens RD**, Hart N, Herridge MS, Editors. *The legacy of intensive care. A textbook of post-ICU medicine*. Oxford: Oxford University Press, 2014
14. Kornbluth J, **Stevens RD**. Management of the unconscious patient. *Oxford Textbook of Critical Care*. Oxford: Oxford University Press, 2014
15. **Stevens RD**, Kornbluth J. The unconscious patient, causes and diagnosis. *Oxford Textbook of Critical Care*. Oxford: Oxford University Press, 2014
33. Sharma K, **Stevens RD**. Determinants of prognosis in acute neuro-catastrophies. *Handbook of Clinical Neurology*. 2017;140:379-395

Books, Textbooks [BK]

1. **Stevens RD**, Geocadin RG, Guest Editors, *Critical Care Clinics 2006: Neurological Critical Care*. Philadelphia: Elsevier 2006
2. **Stevens RD**, Guest Editor, *Critical Care Clinics 2008: Neurological Complications in Critical Illness: A focus on mechanisms*. Philadelphia: Elsevier 2008
3. **Stevens RD**, Geocadin RG, Guest Editors, *Neurologic Clinics 2008: Critical Care Neurology*. Philadelphia: Elsevier 2008
4. **Stevens RD**, Ely EW, Sharshar T (eds). *Brain Disorders in Critical Illness. Mechanisms, Diagnosis and Treatment*. Cambridge: Cambridge University Press 2013
Role: Convened an international interdisciplinary group of leading experts in critical care brain dysfunction. Led annual meetings and monthly conference calls with co-editors to facilitate content alignment and integration.
Book was "Highly Commended" by the British Medical Association Medical Book Awards 2014
Sales as of June 2016 estimated at 350 copies
Review of this book:

- *Waechter J. Can J Anaesth 2014;61:893-4*
5. **Stevens RD**, Hart N, Herridge MS, Editors. A textbook of post-ICU medicine. The legacy of critical care. Oxford: Oxford University Press 2014
Role: Convened an international interdisciplinary group of leading experts in the field of post-ICU recovery and rehabilitation in developing thematic content and organization. Led monthly conference calls with co-editors to facilitate integration and ensure task completion.
Sales as of June 2016 estimated at 400 copies.
Korean edition is in preparation.
Reviews of this book:
- *Martin AD. Crit Care Med 2015;43:268*
 - *Beed M. Brit J Anaesth 2015;114:535;*

Other Publications

Guidelines/Protocols, Consensus Statement, Expert Opinion, Consortium Articles [GL, CS]

1. **Stevens RD**, Marshall S, Cornblath DC, De Johghe B, Ali N, Needham DM, Sharshar T. A Framework for Diagnosing and Classifying Intensive Care Unit Acquired Weakness. *Critical Care Med* 2009;37[Suppl.]:S299 – S308
Role: Convened an international task force to establish a nosological and diagnostic framework for intensive care acquired weakness
2. Sharshar T, Citerio G, Andrews PJ, Chierigato A, Latronico N, Menon DK, Puybasset L, Sandroni C, **Stevens RD**. Neurological examination of critically ill patients: a pragmatic approach. Report of an ESICM expert panel. *Intensive Care Med* 2014;40:484-95
Role: Convened an interdisciplinary expert panel to evaluate evidence and make collective recommendations on neurologic assessment in the intensive care unit.
3. Stocchetti N, Roux PL, Vespa P, Oddo M, Citerio G, Andrews PJ, **Stevens RD**, Sharshar T, Taccone FS, Vincent JL. Clinical review: Neuromonitoring - an update. *Crit Care*. 2013;17(1):201.
Role: Member of Expert Round Table held in Brussels, Belgium; drafting of manuscript
4. Talke PO, Sharma D, Heyer EJ, Bergese SD, Blackham KA, **Stevens RD**. Society for Neuroscience in Anesthesiology and Critical Care Expert Consensus Statement: Anesthetic Management of Endovascular Treatment for Acute Ischemic Stroke*: Endorsed by the Society of NeuroInterventional Surgery and the Neurocritical Care Society. *J Neurosurg Anesthesiol*. 2014;26:95-108.
5. Talke PO, Sharma D, Heyer EJ, Bergese SD, Blackham KA, **Stevens RD**. Society for neuroscience in anesthesiology and critical care expert consensus statement: anesthetic management of endovascular treatment for acute ischemic stroke. *Stroke*. 2014; 45:e138-50
6. Fan E, Cheek F, Chlan L, Gosselink R, Hart N, Herridge MS, Hopkins RO, Hough CL, Kress JP, Latronico N, Moss M, Needham DM, Rich MM, **Stevens RD**, Wilson KC, Winkelman C, Zochodne DW, Ali NA. An Official American Thoracic Society Clinical Practice Guideline: The Diagnosis of Intensive Care Unit-acquired Weakness in Adults. ATS Committee on ICU-acquired Weakness in Adults. *Am J Respir Crit Care Med*. 2014;190:1437-46
Role: Member of expert panel, drafting of manuscript
7. Stocchetti N, Taccone FS, Citerio G, Pepe PE, Le Roux PD, Oddo M, Polderman KH, **Stevens RD**, Barsan W, Maas AI, Meyfroidt G, Bell MJ, Silbergleit R, Vespa PM, Faden AI, Helbok R, Tisherman S, Zanier ER, Valenzuela T, Wendon J, Menon DK, Vincent JL. Neuroprotection in acute brain injury: an up-to-date review. *Crit Care*. 2015;19:186-92.
Role: Member of Expert Round Table held in Brussels, Belgium; drafting of manuscript

Editorials [ED]

1. **Stevens RD**, Bhardwaj A. Evolving paradigms in the management of traumatic brain injury. *Crit Care Med* 2005;33:2415-7
2. **Stevens RD**, Wu C. Strengths and limitations of meta-analysis. *J Cardiothorac Vasc Anesth*. 2007;21:1-2
3. **Stevens RD**, Merritt WT. Rescuing the brain in acute liver failure. *Crit Care Med* 2008;36:2212-3
4. **Stevens RD**, Bhardwaj A. Erythropoietin and the promise of ischemic multi-organ protection. *Crit Care Med* 2008;36:2446-2447
5. **Stevens RD**, Bhardwaj A. Improving the assessment score in spontaneous intracerebral hemorrhage. *Crit Care Med* 2009;37:1152-3
6. **Stevens RD**, Hart N, Sharshar T, de Jonghe B. Weakness in the ICU – a call for action. *Critical Care*

- 2009;13:1002
7. Sharshar T, Polito A, Checinski A and **Stevens RD**. Septic associated encephalopathy – everything starts at a microlevel. Crit Care. 2010;14:199
 8. **Stevens RD**, Neufeld K, Sharshar T. Delirium in the ICU – time to probe the hard questions, Critical Care 2011;15(1):118.
 9. Frattalone A, **Stevens RD**. Intracranial pressure and its surrogates. Intensive Care Med 2011; 37(7):1051-3
 10. **Stevens RD**, Puybasset L. The brain-lung-brain axis. Intensive Care Medicine 2011; 37(7):1054-6
 11. **Stevens RD**, Sutter R. Coma emergence and recovery: the new and the old. Crit Care Med 2012;40(4):1352-3
 12. Puybasset L, **Stevens RD**. 35th Congress of the French association of neuro-anesthesiology and critical care. Ann Fr Anesth Reanim. 2014;33:63-4
 13. **Stevens RD**, Hannawi Y, Sair Y. Small vessel disease and the resting architecture of the brain. J Cerebral Blood Flow Metabolism 2014;34:1089-90.
 14. **Stevens RD**, Hannawi Y. Network signatures of age-related cognitive decline. Neurology. 2015;85(1):16-7.
 15. **Stevens RD**, Sharma K. Predictive modeling in aneurysmal subarachnoid hemorrhage. Crit Care Med 2016;44:1613-4
 16. **Stevens RD**, Hannawi Y. Coma Prognostication: Looks That Count. Crit Care Med 2016;44:2292-2293.
 17. **Stevens RD**, Zink E. Inflammatory Signatures in ICU-Acquired Weakness. Crit Care Med 2017;45:1098-1100

White Papers

1. Stevens, RD, An G, Alverdy JC, Angus DC, Bihorac A, Buchman TG, Cairns CB, Callcut RA, Cobb JP, Cohen MJ, Garcia JGN, Kosorok M, Pinsky MR, Tompkins RG, Wong HR, Yaffe MB, Zingarelli B, Murugan R, on behalf of the SCCM Working Group: Precision Medicine for the Critically Ill Patient: Report of a SCCM Expert Panel (in preparation)
Note: With support of the Society of Critical Care Medicine Council, convened an interdisciplinary group of thought leaders to draft a white paper on precision medicine research as it applies to critical care.

Letters, Correspondence [LT]

1. Salluh JI, Stevens RD. Increasing the awareness of delirium in critically ill patients. Rev Bras Ter Intensiva 2013;25:75-6
2. Salluh JI, Stevens RD. Patient-centered endpoints in trials of ICU sedation. Crit Care 2014;18:536

Media Releases or Interviews [MR]

- 6/08 Featured in “Neurology Today,” for article on reversal of transtentorial herniation with hypertonic saline
- 10/09 Featured in Science Daily article: “Muscle Weakness A Common Side Effect Of Long Stays In Intensive Care Units” in reference to systematic review on ICU acquired weakness
<https://www.sciencedaily.com/releases/2009/10/091027162011.htm>
- 11/09 Featured on United Press International release, in reference to systematic review on ICU acquired weakness
<http://www.medscape.com/viewarticle/711688>
- 11/09 Featured in Medscape article: “Long Stays in Intensive Care Result in Muscle Weakness and Atrophy” in reference to systematic review on ICU acquired weakness, <http://www.medscape.com/viewarticle/711688>
- 12/09 Featured on Baltimore WJZ-TV: commented on ICU acquired weakness.
- 12/09 Featured on Washington Post Live, Comcast Sportsnet, provided commentary on sports-related concussions
- 5/10 Featured in the journal NEUROLOGIC: article focusing on traumatic brain injury research.
- 5/10 Featured in CNN.com: article on intracranial hemorrhage
<http://www.cnn.com/2010/HEALTH/05/28/coleman.kidney.tribbles/index.html>
- 6/10 Featured in Science: commented on JHM-NFL conference on sports-related concussions
<http://news.sciencemag.org/scienceinsider/2010/06/concussions-the-tip-of-an-iceber.html>
- 9/10 Featured in The Baltimore Sun: commented on concussions in football http://articles.baltimoresun.com/2010-09-05/sports/bs-sp-terps-football-concussions-20100905_1_concussions-sports-leagues-devonte-campbell/2
- 1/11 Cited in The Baltimore Sun: commented on recovery after traumatic brain injury.
http://articles.baltimoresun.com/2011-01-21/health/bs-hs-giffords-brain-rehab-20110121_1_brain-injury-giffords-moves-doctors
- 2/11 Cited in CNN.com: commented on chronic traumatic encephalopathy.
<http://pagingdrgupta.blogs.cnn.com/2011/02/21/anxiety-about-brain-damage-pervades-football/>
- 6/12 Featured in 41st Critical Care Congress Review, <http://www.sccm.org/SiteCollectionDocuments/CC-Stevens->

June-2012.pdf

- 8/13 Featured in Chicago Sun-Times: commented on football- related traumatic brain injury
<http://www.suntimes.com/news/21998702-418/hazards-of-football-get-closer-look.html>
- 8/13 Interviewed on “Brain Talk,” WYPR: commented on traumatic brain injury and on-going research in field
http://www.brainscienceinstitute.org/brain_talk/the_hidden_epidemic_of_traumatic_brain_injury
- 1/14 Featured in USA Today: commented on disorders of consciousness.
<http://www.usatoday.com/story/news/nation/2014/01/09/brain-death-states-of-consciousness/4397515/>
- 1/14 Featured on National Geographic online: commented on disorders of consciousness.
<http://news.nationalgeographic.com/news/2014/01/140110-brain-dead-jahi-mcmath-marlise-munoz/>
- 5/14 Featured on Maryland Morning with Sheilah Kast: to comment on a research article published by my group in the journal *Neurology* <http://wypr.org/programs/maryland-morning-sheilah-kast>
- 7/14 Featured in journal The Guardian: commented on brain death determination
<http://www.theguardian.com/world/2014/jul/25/death-penalty-drug-combinations-experts-failed-experiment>
- 12/14 Featured in US News and World Report health article: “High School Football Tied to Brain Changes, Even Without Concussion” <http://health.usnews.com/health-news/articles/2014/12/01/high-school-football-tied-to-brain-changes-even-without-concussion>
- 6/15 Featured in US New and World Report health article: “ICU Delirium Tied to Higher Death Risk, Study Says” in reference to meta-analysis published in British Medical Journal <http://health.usnews.com/health-news/articles/2015/05/31/icu-delirium-tied-to-higher-death-risk-study-says>
- 6/15 Featured in MedScape article: “Delirium in ICU Patients Linked to Mortality, Longer Stays” in reference to meta-analysis published in British Medical Journal <http://www.medscape.com/viewarticle/845901>
- 6/15 Featured in Psych Central article: “Delirium in ICU Ups Risk of Dying in Hospital” in reference to meta-analysis published in British Medical Journal <http://psychcentral.com/news/2015/06/06/delirium-in-icu-ups-risk-of-dying-in-hospital/85421.html>
- 6/16 Interviewed by Univision article on the link between traumatic brain injury and movement disorders
<http://www.univision.com/noticias/parkinson/fue-el-boxeo-culpable-del-parkinson-de-muhammad-ali>
- 10/16 Interviewed on Baltimore WJZ-TV: commented on advances in concussion diagnosis and treatment
- 12/16 Featured in Johns Hopkins Health Review, commented on concussions in women
<http://www.johnshopkinshealthreview.com/issues/fall-winter-2016/articles/family>

Other Media [OM]

- Podcast: “The Hidden Epidemic of Traumatic Brain Injury”, interview given for Brain Talk, Johns Hopkins Brain Science Institute:
http://www.brainscienceinstitute.org/brain_talk/the_hidden_epidemic_of_traumatic_brain_injury
- LinkedIn: <https://www.linkedin.com/in/robertdstevensmd>
- ResearchGate: https://www.researchgate.net/profile/Robert_Stevens
- Amazon: http://www.amazon.com/Robert-D.-Stevens/e/B00LV9OQNG/ref=ntt_dp_epwbk_0

FUNDING

EXTRAMURAL Funding

Research Extramural Funding

Current

- 7/1/13 Demyelination as a target for cell-based therapy of blast-induced traumatic brain injury
TBIRA PT120368/PT120368P1
Department of Defense
\$600,000
Role: Co-Investigator, 10%; This proposal evaluates the role of demyelination as a feature of white matter injury following blast traumatic brain injury, with the goal of testing human glial restricted progenitors (hGRPs) as a therapeutic strategy for demyelination.
- 10/1/14 Collaborative European Neurotrauma effectiveness research in TBI (WP15 – Prediction of recovery from coma and outcome)
European Commission
€29,000,000

Role: Co-Investigator without salary support; This project focuses on 1) predicting recovery of consciousness at one year after coma, based on models integrating quantitative MRI and clinical variables 2) predicting functional and cognitive outcome after TBI in patients who have recovered consciousness, 3) assessing the influence of an expert system predicting recovery from coma on clinical practice and overall cost of care.

7/1/15

Indo-US Center for Clinical and Translational Neuroscience
Indo-US Science and Technology Forum
\$100,000

Role: Principal Investigator, 10%; The overarching aim of the Indo-US CCTN is to establish a multi-disciplinary scientific consortium that will leverage the outstanding clinical, research and technological capabilities of each of the partnering institutions (Johns Hopkins Medicine, National Institute for Mental Health and Neurosciences) to address fundamental questions in neuroscience. The CCTN creates opportunities for collaborative research via shared use of clinical and neuroimaging data, multisite observational studies and clinical trials, tissue banks and technology platforms.

07/01/2017

Induction of immunological tolerance to enhance central nervous system transplantation of glial progenitor cells

Maryland Stem Cell Research Fund
\$1,000,000

Principal Investigator: Piotr Walczak

Role: Co-Investigator, 10%. The overall goal is to evaluate the efficacy and safety of prevailing immunosuppression protocols for cell-based therapy in the central nervous system, and to validate new clinically relevant immune tolerance-induction strategies to maximize graft function and survival

07/01/2017

Multimodal MRI in Aneurysmal Subarachnoid Hemorrhage Patients.

Stimulating and Advancing ACCM Research (StAAR) Mentored Training Award
\$30,000

Role: Mentor

Our preliminary observations indicate that multimodal MRI is feasible and safe in the setting of acute aneurysmal subarachnoid hemorrhage, and that it can yield critical insights into the pathophysiology of this disease. We hypothesize that MRI-based structural and functional measures represent discriminative biomarkers of neurologic severity and can help to predict outcome in patients with subarachnoid hemorrhage.

Pending

09/01/2017

Establishing epileptic seizure susceptibility markers using deep learning and large-scale clinical data

National Institutes of Health

Role: Principal Investigator

In this project, we will use deep learning algorithms applied to electrocorticographic and surface electroencephalography time series data to model and predict critical transitions in patients with epilepsy.

09/01/2017

Development of Novel Functional Markers for TBI Using Molecular MRI

National Institutes of Health

Role: Co- Investigator

The overall goal of this application is to demonstrate the feasibility and reproducibility of protein-based amide proton transfer (APT) MRI signals as functional markers for TBI using animal models of mild, moderate, or severe TBI. We hypothesize that molecular imaging using APT-MRI can sensitively and non-invasively visualize ischemic damage, inflammatory responses, and other key pathological processes in TBI.

10/01/2017 Electroencephalography and Multimodal MRI in Subarachnoid Hemorrhage
American Academy of Neurology Clinical Research Training Scholarship
Role: Mentor
The overall objective is to test whether features of multimodality MRI and high-resolution/quantitative EEG may be used interchangeably as non-invasive markers of injury occurring in aneurysmal subarachnoid hemorrhage, and to investigate whether findings from these modalities could contribute to improved outcome prediction in this population.

Previous
4/1/06-6/31/09 Quantitation of the BOLD effect in Functional MRI
5R01EB004130-08
National Institutes of Health, NIBIB
\$373,675
Principal Investigator: Peter van Zijl
Role: Co-Investigator, 10%; This project uses novel fMRI paradigms to assess changes in cerebral metabolism, blood flow, and cerebral blood volume, with the goal of elucidating the relationship between neuronal activation and vascular changes in healthy volunteers.

3/18/10-5/30/13 Understanding the biomechanical, biochemical, physiological and functional consequences of explosive blast injury to the human brain – PREVENT Phase II
BAA 09-31
Defense Advanced Research Projects Agency
\$1,650,304
Role: Principal Investigator, 15%; The aim of this study is to evaluate structural, neurovascular, and metabolic consequences of experimental TBI using high-resolution (7.0 Tesla) MRI and magnetic resonance spectroscopic imaging.

INTRAMURAL Funding
Research Intramural Funding

Current:
3/1/16 Klotho in Severe Sepsis and Septic Shock: Pilot Study
Neuroscience Critical Care Division Fund
\$5000
PI: Peter Abdelmalik
Role: Mentor; this pilot project aims to measure serum levels of klotho, a protein linked to aging and cognitive decline, in a retrospective cohort of patients with severe sepsis and septic shock.

6/1/16 Role of the Gut Microbiome in a Murine Model of Ischemic Stroke
Neuroscience Critical Care Division Fund
\$5000
PI: Riad Ramadan
Role: Mentor; Specific aims are (1) To study the effect of an acute stroke on gut bacterial subpopulations in a murine stroke model (MCA occlusion [MCAO] via collagen injection), and (2) to investigate behavioral and histological effects (size of infarct and peri-infarct edema) of eradicating the bacterial flora using cefoxitin.

Pending

07/01/2017 Individualized Sensor-Based Analysis and Classification of Motor Activity: A Novel Physiologic Variable in the Intensive Care Unit?
JHU Provost Discovery Awards
\$100,000

- Role: Principal Investigator
The goal of the current proposal is to develop and validate computational approaches and hardware solutions to assess and classify motor outputs in unconscious patients admitted to the ICU. We predict that **specific patterns of motor activity represent neurophysiologic biomarkers** which can enhance the precision of individualized outcome prediction and treatment selection in critically ill patients.
- 10/15/2017
Multisegmental motor output classification in the ICU using a wearable sensor array
Johns Hopkins Provost's Undergraduate Research Award.
Role: Mentor
The central goal of this proposal is to develop and validate both computational and hardware solutions to quantify motor outputs of unconscious patients in the ICU. Our prediction is that specific, quantifiable patterns of motor activity serve as neurophysiologic biomarkers using which we can enhance the clinical precision of individualized outcome prediction and treatment selection for critically ill patients
- Previous
1/1/01-12/31/01
Fellowship Award
University of Geneva Faculty of Medicine
\$45,000
Role: Principal Investigator; 75%; This competitive award recognizes exceptional achievement and ability in a University of Geneva medical resident or fellow and provides funding for training overseas.
- 1/1/13-12/31/15
Wake up and walk out: Predicting and tracking recovery from traumatic brain injury?
Johns Hopkins Brain Science Institute
\$350,000
Role: Principal Investigator, 10%; The longitudinal study of traumatic brain injury patients aims to generate a stringent predictive model of the recovery trajectory from coma to functional independence, and to gain biologic insight into how the brain accomplishes good recovery. The central assumption is that knowledge gained on how good recovery is achieved will lead to methods to enhance recovery in patients with less favorable prognosis. In addition to model-free prediction and model-based testing of mechanistic hypotheses, we test a smartphone/tablet game application that will allow daily testing of multiple selected cognitive factors over the time-course of recovery. Funding cycle ends in 2015 however analysis of data continues on a no-cost basis.
- 1/1/13-12/31/15
The center for quantitative neuroscience: A core for population neuroanalytics and translational systems neuroscience
Johns Hopkins Brain Science Institute
\$100,000
Principal Investigator: Brian Caffo, Ph.D.
Role: Co-Investigator, 10% without salary support; this is a companion grant to "Wake up and walk out" which establishes a core of biostatisticians and computational neuroscientists to develop and test models of disease and recovery relevant to the clinical grant. Funding cycle ends in 2015 however analysis of data continues on a no-cost basis.

CLINICAL ACTIVITIES

Clinical Focus

My goal is to provide the highest level of patient- and family-centered intensive care to patients with critical neurological illness and injury. Activities include triage, diagnostic evaluation, resuscitation, prognostication, and therapeutic management of patients with ischemic stroke, intracerebral hemorrhage, aneurysmal subarachnoid hemorrhage, traumatic brain injury, encephalopathy, seizures, status epilepticus, spinal cord disorders, peripheral nerve and muscle disorders, and postoperative neurosurgical care. Core principles of quality and safety, efficiency and cost-containment, and innovation. I

have established institutional guidelines for brain death determination and more recently multimodality brain monitoring. I have also established an early rehabilitation program for critically ill neuroscience patients.

Medical, other state/government licensure

- 2003-Present Maryland Board of Physicians
- 2003-Present United States Drug Enforcement Administration, Controlled Substance Registration
- 2003-Present Maryland Controlled and Dangerous Substances

Boards, other specialty certification

- 2000 Board Certified, Anesthesiology and Critical Care Medicine, Foederatio Medicorum Helveticorum (FMH) and Société Suisse d'Anesthésie et de Réanimation (SSAR)
- 2000 Educational Commission for Foreign Medical Graduates
- 1994 United States Medical License Examination part II
- 1999 United States Medical License Examination parts I
- 2002 United States Medical License Examination part III
- 2002 Advanced Trauma Life Support – Provider
- 2003 Transcranial Doppler Certification
- 2007 Advance Cardiac Life Support - Instructor
- 2012 Board Certified, American Board of Anesthesiology, Diplomate in Anesthesiology Subspecialty
- 2013 Certification in Critical Care Medicine, American Board of Anesthesiology
- 2014 Subspecialty Certification in Neurocritical Care United Council of Neurological Specialties, Certification in Neurocritical Care
- 2015 Subspecialty Certification in Neurocritical Care, The Society of Neurological Surgeons, Certification in Neurocritical Care

Clinical (Service) Responsibilities

- 2003-Present Attending Physician, Neurosciences Critical Care Unit, Johns Hopkins Hospital, 12-14 weeks/year
- 2003-Present Attending Physician, Neurosciences Critical Care Unit, Johns Hopkins Bayview Medical Center, 1-5 weeks/year
- 2007-2012 Attending Physician, Surgical Intensive Care Units, Johns Hopkins Hospital, 1-6 weeks/year
- 2010-Present Attending Physician, Central Intensivist Physician Program, 1-4 days/month
- 2003-Present Attending Physician, Anesthesiology, Johns Hopkins Hospital, 3-5 days/month

Clinical Program Building / Leadership

- 2009-Present Organizer, 3-5%, Johns Hopkins Neurocritical Care Consult Program: Development of a subspecialty consultation program for patients requiring Neurocritical care (Emergency Department, Surgical or Medical ICUs)
- 2009-Present Co-organizer, 3-5%, Multidisciplinary Acute Liver Failure Program: Development and implementation of a multidisciplinary service to evaluate and manage patients with acute liver failure/acute on chronic liver failure
- 2014-2015 Steering Committee Member, 3-5%, Johns Hopkins Center for Traumatic Brain Injury, Johns Hopkins University School of Medicine. Multi-disciplinary effort to establish a dedicated facility to advance the science and care of traumatic brain injury. Business plan presented to Dean's Office.
- 2014-Present Leader, 5-10%, Early Rehabilitation in the Neuroscience Critical Care Unit. Multiprofessional/interdisciplinary program to enhance the safety and outcomes in Neuroscience Critical Care Unit patients via the step-wise introduction of structured early physical mobility and other rehabilitative programs. Developed in conjunction with Nursing, Physical Medicine and Rehabilitation, Neurology. Preliminary data presented as abstracts at national meetings. Extramural grant applications submitted.
- 2015-Present Leader, 3-5%, Interdisciplinary Multimodality Monitoring Program in Patients with Severe Brain Injury. Developed in collaboration with faculty from Neurology and Neurosurgery, this program establishes evidence-based recommendations and a patient selection/management algorithm for use of invasive neuromonitoring in critically ill neurologic and neurosurgical patients.

EDUCATIONAL ACTIVITIES

Educational Focus

The major focus has been to generate learning opportunities centered on clinical and translational research. This has included:

- Directing the Neurocritical Care Seminar, a weekly CME-accredited course devoted to education of residents, fellows and faculty in neuroscience critical care (2005-Present)
- Directing Johns Hopkins Traumatic Brain Injury: A National Conference, held annually in Baltimore (2010-2015)
- Directing the Grand Rounds/Visiting Professor Program for the Department of Anesthesiology and Critical Care Medicine (2015-Present)
- Directing Discovery Rounds (departmental research forum) for the Department of Anesthesiology and Critical Care Medicine (2016-Present)
- Directing Neurosciences in Intensive Care International Symposium (NICIS), held annually in Paris (2011-Present) and in Washington DC (starting in 2017)
- Directing an annual Translational Science Topics in Interdisciplinary Medicine (TIME) course on Regenerative Medicine as part of the JHU School of Medicine Genes to Society curriculum (2012-Present)

Teaching

Classroom instruction

JHMI/Regional

- 2003-Present Lecturer, Anesthesiology Resident Lecture Series; lecture titles: “Trauma”, “Liver Failure”, “Acute Respiratory Failure,” “Mechanical Ventilation”, “Endocrine Failure”, “Hospital Acquired Infections”, “Circulatory Shock”, “Autonomic Nervous System Physiology and Pharmacology”, “Neurophysiology”, Johns Hopkins University School of Medicine, Department of Anesthesiology Critical Care Medicine, 1-3/year,
- 2003-Present Lecturer, Neurology Resident Lecture Series; lecture titles: “Evaluation of Coma and Disorders of Consciousness”, “Stress Cardiomyopathy”, “Management of Traumatic Brain Injury”, “Management of Aneurysmal Subarachnoid Hemorrhage”, “Neurologic Prognostication after Cardiac Arrest”, Johns Hopkins University School of Medicine, Department of Neurology; 1-3/year;
- 2003-Present Lecturer, Neuroscience Critical Care Resident Lecture Series; lecture titles: “Circulatory Shock”, “Stress Cardiomyopathy”, “Acute Respiratory Failure”, “Mechanical Ventilation”, “Evaluation of Coma and Disorders of Consciousness”, “Management of Traumatic Brain Injury”, “Management of Aneurysmal Subarachnoid Hemorrhage” Johns Hopkins University School of Medicine, Department of Anesthesiology Critical Care Medicine; 6-8/year
- 2003-Present Lecturer, Neuroscience Critical Care Fellowship Lecture Series; lecture titles: “Liver Failure”, “Management of Traumatic Brain Injury”, “Management of Acute Respiratory Failure”, “Stress Cardiomyopathy”, Johns Hopkins University School of Medicine, Department of Anesthesiology Critical Care Medicine, 2-4/year;
- 2007-2012 Lecturer, Surgical Intensive Care Resident Lecture Series; lecture titles: “Neurological Evaluation in the Intensive Care Unit”, “Delirium and Encephalopathy”, “Neuromuscular Weakness Acquired in the Intensive Care Unit”, “Determination of Death by Neurological Criteria”, Johns Hopkins University School of Medicine, Department of Anesthesiology Critical Care Medicine, 1-3 /year;
- 2010-Present Lecturer, Division of Pulmonary and Critical Care Medicine Fellowship Lecture Series; lecture titles: “Stress Cardiomyopathy”, “Neurologic Prognostication after Cardiac Arrest”, “Determination of Death by Neurological Criteria”
- 2012-Present Course Director, 3rd and 4th year medical students, Course title: “Introduction to Regenerative Medicine”; Johns Hopkins University School of Medicine Genes to Society Translational Science Topics in Interdisciplinary Medicine (TIME)
Note: This course, given annually, is the first to introduce stem cell biology, cell and tissue engineering, and regenerative approaches to disease in the medical school curriculum. Instructors are an interdisciplinary group of Johns Hopkins faculty from multiple departments and schools who are active researchers in the field of regenerative biology and medicine.

Clinical instruction

JHMI/Regional

- 2003-Present Attending Physician, 3rd year medical students, Neuroscience Critical Care Units, Johns Hopkins University School of Medicine, 4-6 weeks/year

- 2003-Present Attending Physician, 4th year medical students, Neuroscience Critical Care Units, Johns Hopkins University School of Medicine, 4-6 weeks/year
- 2003-Present Attending Physician, residents and fellows, Neuroscience Critical Care Unit, Johns Hopkins University School of Medicine, 12-15 weeks/year

CME instruction

- JHMI/Regional* See Invited Talks
- National* See Invited Talks
- International* See Invited Talks

Workshops /seminars

JHMI/Regional

- 9/08 Speaker; residents, fellows, faculty; lecture title: “Mechanisms of Critical Illness Brain Dysfunction - the Role of Structural Brain Injury”, Johns Hopkins Delirium Summit, Johns Hopkins Hospital, Baltimore, MD
- 4/13 Speaker; students, residents, fellows, faculty; lecture title: “Recovery from traumatic brain injury”, Department of Psychiatry and Behavioral Sciences Research Seminar, Johns Hopkins University School of Medicine, Baltimore, MD
- 2/15 Course Director; students, residents, clinical faculty, basic science faculty; Indo-US Translational Neuroscience Symposium, Baltimore, MD
- 3/15 Speaker; students, residents, fellows, faculty; lecture title: “Brain dysfunction acquired in critical illness: New biologic paradigms”, Department of Psychiatry and Behavioral Sciences Research Seminar, Johns Hopkins University School of Medicine, Baltimore, MD
- 3/15 Speaker; students, residents, fellows, faculty; lecture title: “Mapping recovery following severe neurological injury”, Quarterly Interdisciplinary Research Meeting, University of Maryland Rehabilitation and Orthopedic Institute, Baltimore, MD
- 04/17 Speaker, Neuroscience nursing, lecture title: “Autoimmune Encephalitis”, Johns Hopkins Neuroscience Nursing Advanced Curriculum, Johns Hopkins University School of Medicine, Baltimore, MD

National

- 6/09 Speaker, residents, nurse practitioners, fellows, faculty; lecture title: “Medical Complications in the Post-Subarachnoid Hemorrhage Patient”, Department of Medicine Seminar, Jewish Hospital Rudd Heart and Lung Center, Louisville, Kentucky
- 4/12 Speaker; residents, fellows, faculty; lecture title: “Quantitative mapping in severe brain injury”, Neurosciences Intensive Care Unit Seminar, Department of Neurology, Massachusetts General Hospital, Boston, MA
- 9/12 Speaker; residents, fellows, faculty; lecture title: “Mapping the brain in unconscious patients”, Department of Anesthesia, Perioperative and Pain Medicine, Research Seminar, Stanford University School of Medicine, Stanford, CA
- 9/12 Speaker; residents, fellows, faculty; lecture title: “Mapping the brain in unconscious patients”, Division of Neurocritical Care Seminar, Department of Neurology, Columbia University Medical Center, New York, NY
- 12/12 Speaker; residents, fellows, faculty; lecture title: “Neuroimaging for Coma Emergence and Recovery”, Department of Neurology and Neurosurgery Seminar, University of Texas Southwestern Medical Center, Dallas, TX
- 4/13 Speaker; students, residents, fellows, faculty; lecture title: “Mapping the unconscious brain”; Department of Critical Care Medicine, University of Pittsburgh, Pittsburgh, PA
- 4/13 Panelist and Speaker, leaders from academia and industry, “Sequelae of traumatic brain injury”, Expert Panel on Traumatic Brain Injury, BIO International Convention, Chicago, IL

International

- 3/97 Speaker; residents, faculty; lecture title: “Pregnancy induced hypertensive disorders”; Department of Anesthesiology Seminar, University of Geneva, Switzerland
- 10/98 Speaker; residents, faculty; lecture title: “Seizure disorders and anesthesia”; Department of Anesthesiology Seminar, University of Geneva, Switzerland

- 4/99 Speaker; residents, faculty; lecture title: “Perioperative and critical care implications of apoptosis”; Department of Anesthesiology Seminar, University of Geneva, Switzerland
- 5/00 Speaker; residents, faculty; lecture title: “Rapid opioid detoxification”; Department of Anesthesiology Seminar, University of Geneva, Switzerland
- 5/08 Speaker, faculty; lecture title: “ICU acquired weakness”, International Seminar on Neurological Complications of Critical Care, Guy’s and St Thomas’ Hospital, London, United Kingdom
- 10/09 Speaker; residents, faculty; lecture title: “Hypertonic saline therapy in brain resuscitation”, Department of Intensive Care Seminar, Kings College Hospital, London, United Kingdom
- 10/10 Speaker, residents, faculty; lecture title: “Neuroimaging for prognosis in severe brain injury”, Department of Neurology Research Seminar, University Hospital (CHUV), University of Lausanne, Lausanne, Switzerland
- 3/12 Speaker, residents, faculty; lecture title: “Quantitative brain mapping in severe brain injury”, Department of Neurology, University of Zurich, Zurich, Switzerland
- 6/12 Speaker, residents, faculty; lecture title: “Quantitative mapping in anoxic brain injury”, Institut du Cerveau et de la Moelle Epinière (ICM) Special Seminar, Groupe Hospitalier Pitié Salpêtrière, Paris, France
- 7/13 Speaker, students, residents, fellows, faculty, “Neuroscience Resources at Johns Hopkins University”, National Institute for Mental Health and Neurosciences, Bangalore, India
- 9/14 Speaker; residents, faculty; lecture title: “Strategic priorities in neurocritical care”, Interdepartmental Division of Critical Care, Special Seminar, University of Toronto, Toronto, Canada
- 10/14 Speaker; students, residents, clinical faculty, basic science faculty; lecture title: “Need for Regenerative Approaches in Traumatic Brain injury,” Workshop on International Biomedical Research Cooperation, The University of Warmia and Mazury, Olsztyn, Poland

Mentoring

Pre-doctoral Advisees /Mentees

- 2016-Present Yadel Okorie, currently undergraduate student in Mechanical Engineering, Johns Hopkins Whiting School of Engineering
- 2016-Present Matthew Johnson, currently undergraduate student in Mechanical Engineering, Johns Hopkins Whiting School of Engineering
- 2016-Present John Rattray, currently graduate student/PhD candidate in Electrical and Computer Engineering, Johns Hopkins Whiting School of Engineering

Post-doctoral Advisees /Mentees

- 2004-2005 Joao Gomes, MD, fellow, currently assistant professor, Neurology, Cleveland Clinic Foundation, Cleveland, OH. Supervised the mentee in a research project which was presented in abstract form in 3 international meetings. Co-authored article RA4
- 2005-2007 Matthew Koenig, MD, fellow, currently associate clinical professor and co-director of Neurocritical Care, Medicine and Surgery, The John A. Burns School of Medicine, University of Hawaii, HI. Supervised the mentee in research projects which resulted in abstracts presented at 4 international meetings. Co-authored articles OR5 and 8; RA 9 and 13
- 2006-2007 Aliaksei Pustavoitau, MD, fellow, currently assistant professor, Anesthesiology Critical Care Medicine, Johns Hopkins University School of Medicine. Supervised the mentee in writing 3 published peer reviewed articles and in a grant application. Co-authored articles OR21, RA11 and 21, BC6 and 7.
- 2007-2010 Robert E Hoesch, MD, PhD, fellow, currently attending physician, Neurology, Intermountain Medical Group, Idaho. Supervised mentee in design and analysis of clinical research projects. Co-authored article OR19
- 2009-2011 Josh Duckworth, MD, fellow, currently assistant professor, Neurology, Uniformed Services University of the Health Sciences, Bethesda, MD. Supervised mentee in a research projects results of which were presented at national meetings. Co-authored articles OR29 and 33; RA19 and 22
- 2009-2011 Holly Hinson, MD, fellow, currently assistant professor, Neurology, Oregon Health Science University, Portland, OR. Supervised mentee in research project which was presented at an international meeting and has been published as a peer reviewed original report. Co-authored article OR34
- 2010-2012 Scott Marshall, MD, fellow, currently assistant professor of Neurology at the Uniformed Services University and an Adjunct Assistant Professor with the Neurocritical Care Division of the Department of

- Neurology at the University of Utah, Salt Lake City, UT. Supervised mentee in design and writing of peer reviewed publication. Co-authored article GL1
- 2010-2012 Qin Qin, PhD, research associate, currently assistant professor, Radiology and Radiological Sciences, Johns Hopkins University School of Medicine, Baltimore, MD. Supervised mentee in a research project which was presented at national meetings. Coauthored article OR30
- 2011-2013 Raoul Sutter, MD, fellow, currently assistant professor, Neurology and Intensive Care Medicine, University of Basel, Basel, Switzerland. Supervised mentee in designing and implementing several research projects. Data presented at national meetings and published as peer reviewed manuscripts. Co-authored articles OR24, 25, and 35; RA 24 and 25; BC 10 and 11, ED11
- 2011-2013 Joshua Kornbluth, MD, fellow, currently assistant professor and director of Neurocritical Care, Neurology, Tufts University, Boston, MA. Supervised mentee in research. Data presented at national meetings. Co-authored BC14 and 15
- 2013-Present Yousef Hannawi, MD, fellow, appointed assistant professor, Neurology, Ohio State University (7/15). Supervised mentee in research projects, grant applications, and in peer reviewed published articles. Co-authored articles OR32, RA26 and 30, ED13,14, 15 and 17
- 2014-Present Kartavya Sharma, MD, currently postdoctoral fellow, Department of Neurology, Johns Hopkins University School of Medicine. Supervised mentee in design and implementation of 2 ongoing research projects.
- 2015-Present John Werner, MD PhD, currently resident, Department of Neurology, Johns Hopkins University School of Medicine. Ongoing supervision of mentee research project. Mentor on one grant application.
- 2015-Present Peter Abdelmalik, MD, PhD, currently postdoctoral fellow, Department of Neurology, Johns Hopkins University School of Medicine. Ongoing supervision of mentee on intramurally-funded research project. Mentor on two pending grant applications.
- 2015-Present Riad Ramadan, MD, currently postdoctoral fellow, Department of Neurology, Johns Hopkins University School of Medicine. Ongoing supervision of mentee on intramurally-funded research project.
- 2015-Present Pouya Fahadan, MD, PhD, currently postdoctoral fellow, Department of Neurology, Johns Hopkins University School of Medicine. Ongoing supervision of mentee research project.
- 2016-Present Lucido Ponce, MD, currently postdoctoral fellow, Department of Neurology, Johns Hopkins University School of Medicine. Ongoing supervision of mentee research project.

Thesis committees

- 2015 Johan Stender, MD PhD; Thesis title: “The energetic requirements of consciousness after brain injury An investigation with FDG-PET in the resting state”; Department of Neuroscience and Pharmacology, University of Copenhagen; Role: International Reviewer
Note: drafted a detailed critique of the thesis; participated as reviewer in a day-long cross-examination as part of candidate’s defense held in Copenhagen, October 2015

Educational Program Building / Leadership

- 2003-Present Course Director, 2%, Neurocritical Care Seminar, Department of Anesthesiology Critical Care Medicine, Johns Hopkins University School of Medicine.
Note: I organize and moderate this weekly CME-accredited research conference devoted to the pathophysiology and management of acute neurological disorders. Speakers include nationally and internationally recognized experts in the field.
- 2015-Present Course Director, 2%, Grand Rounds, Department of Anesthesiology Critical Care Medicine, Johns Hopkins University School of Medicine
- 2010-2015 Course Director, 2-5%, Johns Hopkins Traumatic Brain Injury: A National Conference
Note: I have led planning and organization of this multidisciplinary CME accredited conference highlighting the translational neuroscience and clinical management of traumatic brain injury.
- 2011-Present Course Director, 5%, Neurosciences in Intensive Care International Symposium (NICIS)
Note: I co-founded and lead this annual conference which aims to connect neuroscience and intensive care. I assembled scientific leaders in specific domains (delirium, neuronal repair, consciousness, neurobiology of stress, regeneration/ repair, neuroimmunology) to discuss groundbreaking translational research.
- 2016-Present Course Director, 5%, Neurosciences in Intensive Care International Symposium-America (NICIS-America). *Established planning committee and engaged with endorsers and sponsors to hold the inaugural NICIS in the US.*
- 2016 Organizer, 1-2%, 6th Annual Traumatic Brain Injury Conference, Washington DC
Note: Serve on Planning Committee for this international conference assembling leading clinicians scientists from universities,

industry, National Institutes of Health and Department of Defense to discuss groundbreaking advances in traumatic brain injury

RESEARCH ACTIVITIES (in chronological order, earliest first by start date under each subcategory)

Research Focus

As an anesthesiologist and critical care physician, my research focuses on modeling brain dysfunction, neurological injury and post-injury recovery. I approach this modeling on different scales from the population-based to the pathophysiological to the cellular. I am fortunate to have received advanced training in cellular neuroscience (during residency) and post-fellowship I had additional training in epidemiology, neuroimaging and brain mapping. Building on this experience, I have engaged in two distinct, but linked, lines of investigation: the epidemiology and pathophysiology of neurological dysfunction in the ICU, and data-driven models and techniques to improve recovery following traumatic and non-traumatic brain injury.

[Please also see attached NIH Biosketch, starting on page 29 of this CV.]

Research Program Building / Leadership

- 6/11- Present Investigator, Neuroimaging for Coma Recovery Emergence (NICER)
Note: Neuroimaging for Coma Recovery Emergence (NICER), a multicenter research consortium dedicated to modeling recovery in a cohort of adults with neurological injury. Aims are to characterize and validate imaging biomarkers related to the severity and prognosis of acute brain injury. Ongoing enrollment of patients in in US and France. Several published reports (Luyt CE et al. Anesthesiology. 2012; Galanaud D et al. Anesthesiology. 2012; Dinkel J et al. AJNR Am J Neuroradiol. 2014; Stevens RD et al. Current opinion in critical care; Van der Eerden AW et al. Radiology. 2014; Hinson HE et al. Brain Inj. 2015). Several other manuscripts are submitted or in preparation.
- 2015-Present Director, Indo-US Center for Clinical and Translational Neuroscience
Note: Leading a team of clinicians and scientists in an academic partnership between Johns Hopkins University, the Lieber Institute for Brain Development, Kennedy Krieger Institute, and the National Institute for Mental Health and Neurosciences (NIMHANS), the largest neuroscience institute of India located in Bangalore. Aim is to accelerate the pace of discovery in biomarkers and treatments for neurodegenerative diseases, autism and traumatic brain injury. Deliverables to date include: signing of MOU between JHU and NIMHANS; successful application for funding from the Indo-US Science and Technology Fund, and organization of an international neuroscience symposium held in Baltimore in 2015.
- 2015-Present Lead, Rehabilitation in Neuroscience Critical Care Research Group, Johns Hopkins Medicine
- 2015-Present Lead, Neuromonitoring in Neuroscience Critical Care Research Group, Johns Hopkins Medicine
- 2016-Present Lead, Precision Medicine in Critical Care Research Group, Johns Hopkins Medicine

SYSTEM INNOVATION AND QUALITY IMPROVEMENT ACTIVITIES

System Innovation Focus

Emphasis has been in two areas: (a) early mobility and rehabilitation in critically ill neuroscience patients, and (b) strategies for enhancing throughput and eliminating delays in the delivery of perioperative and critical care

System Innovation and Quality Improvement efforts within JHMI:

- 2010-Present Leader and Principal Author, Johns Hopkins Brain Death Policy: Engaged multidisciplinary team from neurology, anesthesiology critical care, pulmonary critical care pediatrics, pediatric critical care, and pediatric neurology to write the institutional guideline on brain death determination
- 2012 Leader and Principal Author, Johns Hopkins Interdisciplinary Guideline for Brain Tissue Oxygen Monitoring: Assembled team to evaluate literature and produce evidence-based guideline for brain tissue oxygen monitoring
- 2014-2015 Coordinator, Patient flow and capacity optimization for clinical neurosciences. In partnership with faculty from the Johns Hopkins Engineering and Business Schools, development of a systems engineering model to reduce delays and inefficiencies in care for perioperative and critically ill neurosurgical/neurological patients within the Johns Hopkins system.
- 2014-Present Leader, Early rehabilitation in the neuroscience critical care unit. The overarching aim is to enhance the safety and outcomes in Neuroscience Critical Care patients via the step-wise introduction of structured rehabilitative programs. The premise is that early rehabilitation will reduce hospital acquired conditions,

decrease cost, and improve functional outcomes. The first phase consists in an Early Mobility Program; subsequent phases will target emergence from coma, enhancement of communication and cognition, and neurologic recovery.

ORGANIZATIONAL ACTIVITIES

Institutional Administrative Appointments

2005-2009	Member, Educational Committee, Department of Anesthesiology and Critical Care Medicine
2005-2010	Member, Johns Hopkins Organ Donor Council
2006-Present	Member, Johns Hopkins Critical Care Committee
2011-Present	Member and Team Leader, Johns Hopkins Hospital Ethics Committee <i>Note: Active engagement in numerous hospital Ethics Consultations</i>
2012-Present	Member, Johns Hopkins Emergency Mass Casualty Committee
2012-2015	Member, Executive Committee of the Education Policy and Curriculum Committee, Johns Hopkins University School of Medicine
2012-Present	Member, Junior Faculty Mentoring and Promotions Committee, Department of Anesthesiology and Critical Care Medicine
2013-Present	Member, Research Committee, Department of Anesthesiology and Critical Care Medicine <i>Note: Established several strategic departmental initiatives including:</i> <ul style="list-style-type: none">• <i>Annual Departmental Research Retreat</i>• <i>Quarterly Discovery Rounds to showcase departmental research projects and investigators</i>• <i>Competitive, peer-reviewed departmental granting process (Stimulating and Advancing ACCM Research [StAAR]) designed to allocate funds for pilot studies that have a high likelihood of being leveraged into successful extramural applications</i>
2014-2015	Member, Clinical Research Core Committee, Department of Anesthesiology Critical Care Medicine
2015-Present	Chair, Committee on Investment, Department of Anesthesiology Critical Care Medicine
2015-Present	Chair, Committee on Philanthropy, Department of Anesthesiology Critical Care Medicine
2015-Present	Chair, Committee on Integration, Department of Anesthesiology Critical Care Medicine <i>Note: Established quarterly Discovery Rounds, Departmental Event Calendar, Onboarding procedures for new faculty</i>
2016-Present	Member, Johns Hopkins Cardiopulmonary Resuscitation Advisory Committee
2017-Present	Chair, Medical Device Integration Working Group, Johns Hopkins Medicine

Editorial Activities

Editorial Board Appointments

2007 – Present	Member, Advisory Board, Faculty of 1000 Prime
2011 – Present	Member, Editorial Board, Annals of Intensive Care
2012 – Present	Member, Advisory Board, Faculty of 1000 Research
2015 – Present	Member, Advisory Editorial Board, Critical Care
2015 – Present	Member, Editorial Board, Critical Care Medicine
2015 – Present	Member, Editorial Board, Neurocritical Care
2015 – Present	Member, Editorial Board, Journal of Critical Care
2015 – Present	Member, Editorial Board, Thorax
2016—Present	Member, Editorial Board, Frontiers in Neurology

Journal peer review activities

2003-Present	Anesthesiology
2003-Present	Critical Care Medicine
2004	Anesthesia and Analgesia
2004	Canadian Medical Association Journal
2004-Present	Stroke
2004-Present	Intensive Care Medicine
2005	Behavioral Neurology
2005-Present	The Lancet
2005-Present	JAMA

2006-Present Annals of Internal Medicine
 2008 The Journal of the Royal College of Physicians of Edinburgh
 2008 Acta Anaesthesiologica Scandinavica
 2008-Present The Journal of Critical Care
 2008 The Cochrane Collaboration
 2008-Present Critical Care
 2009 European Journal of Neurology
 2009-Present Journal of Cerebral Blood Flow and Metabolism
 2010-Present Neurology
 2010-Present European Journal of Emergency Medicine
 2011-Present American Journal of Respiratory and Critical Care Medicine,
 2012-Present Annals of Neurology
 2013 PLOS Computational Biology
 2013 American Journal of Neuroradiology
 2013 Experimental Brain Research
 2013-Present PLOS ONE
 2015 The Lancet Respiratory Medicine
 2016 Brain Connectivity
 2016 Journal of Neuroscience
 2016 Neurobiology of Aging
 2016-Present Frontiers in Neurology
 2016 The British Medical Journal

Advisory Committees, Review Groups/Study Sections

2010 Grant Reviewer, European Society of Intensive Care Medicine Research Award
 2010-Present Grant Reviewer, Assistance Publique Hôpitaux de Paris
 2011-2012 Member, NIH/NINDS Moderate/severe TBI Common Data Elements Acute Working Group
 2012-Present Grant Reviewer, Institut Pasteur Paris
 2013-Present Grant Reviewer, Society of Critical Care Medicine
 2014-Present Grant Reviewer, Medical Research Council, United Kingdom
 2015-Present Grant Reviewer, StAAR grants, JHU Department of Anesthesiology and Critical Care Medicine
 2017 Grant Reviewer, Alzheimer's Disease Research Center, JHU

Professional Societies

2000-Present Member, Swiss Medical Federation (FMH)
 2000-Present Member, Société Suisse d'Anesthésie Réanimation (SSAR)
 2002-Present Society of Critical Care Medicine (SCCM)
 2002-Present Member
 2007-Present Section Member, Neurosciences Section
 2007-Present Section Member, Anesthesiology Section
 2007-2009 Committee Member, Undergraduate Education Committee
 2011-2014 Committee Member, Research Committee
 2011-2014 Member-at-Large, Neuroscience Section
 2011-2014 Committee Member, Adult Current Concepts Course in Critical Care
 2012-2015 Chair, Research Section
Note: Led an interdisciplinary group in (a) identifying fundamental research priorities in critical care medicine, and defining strategic initiatives needed to address those priorities; (b) developing a mentorship program to allow professionals to connect and work with a researcher who is established in a domain of critical care research; (c) development of scientific content for the SCCM annual congress
 2015-Present Chair, Working Group on Precision Medicine
Note: With endorsement and support of the Society of Critical Care Medicine Council, convened an interdisciplinary group of thought leaders to develop and draft a white paper on precision medicine research as it applies to critical care.
 2016-Present Member, Scientific Review Committee
 2017-Present Steering Committee, Discovery Committee
 2002-Present American Heart Association

- 2002-Present Member
- 2004-Present Member, Council on Stroke
- 2003-Present Member, American Society of Anesthesiologists
- 2003-Present Member, Johns Hopkins Medical and Surgical Association
- 2004-Present Member, Neurocritical Care Society
- 2009-Present Topic Leader, Emergency Neurologic Life Support Committee
- 2011-2014 Member, Guidelines Committee
- 2004-Present Member, Society for Neurosurgical Anesthesia and Critical Care
- 2005-Present Member, European Society of Intensive Care Medicine
- 2006-Present Member, Neurointensive Care Section
- 2008-Present Member, Ethics Section
- 2010-Present Member, Trauma and Emergency Medicine Section, European Society of
- 2010-2013 Task Force Leader, Neurological Assessment in the ICU
Note: Organized and led a multidisciplinary international task force which elaborated recommendations on the neurological assessment of patients in the intensive care unit; recommendations of this group were published as Sharsbar T... Stevens RD. Neurological examination of critically ill patients: a pragmatic approach. Report of an ESICM expert panel. Intensive Care Med 2014;40:484-95
- 2016 Elected North American Representative to the ESICM Council
- 2008-Present Member, Society for Neuroscience
- 2010-Present Member, Association of University Anesthesiologists
- 2015-Present Member, Society of Critical Care Anesthesiologists
- 2015-Present Member, Research Committee

Conference Organizer

JHMI/Regional

- 6/10 Member of Planning Committee, Traumatic Brain Injury in Professional Football: An Evidence-Based Perspective. National Football League and Johns Hopkins Medicine, Washington, D.C.
- 5/11 Course Director, Johns Hopkins Traumatic Brain Injury Conference, Baltimore, MD
- 6/12 Course Director, Second Annual Johns Hopkins Traumatic Brain Injury Conference, Baltimore, MD
- 5/13 Course Director, Third Annual Johns Hopkins Traumatic Brain Injury Conference, Baltimore, MD
- 5/14 Course Director, Fourth Annual Johns Hopkins Traumatic Brain Injury Conference, Baltimore, MD
- 5/15 Member of Planning Committee, Fifth Annual Johns Hopkins Traumatic Brain Injury Conference, Baltimore, MD

National

- 5/09 Conference organizer, Consensus conference on "Acquired Weakness in Critical Illness: Diagnosis and Classification," American Thoracic Society, San Diego, CA
- 2/14 Session organizer, Society of Critical Care Medicine Annual Congress, San Francisco, CA
- 2/15 Session organizer, Society of Critical Care Medicine Annual Congress, Phoenix, AZ
- 2/16 Session organizer, Society of Critical Care Medicine Annual Congress, Orlando, FL
- 5/16 Member of Planning Committee, Sixth Traumatic Brain Injury Conference, Washington DC
- 5/17 Member of Planning Committee, Seventh Traumatic Brain Injury Conference, Washington DC

International

- 6/11 Course Director, Versailles Neurointensive Care Symposium, Versailles, France
- 6/12 Course Director, Versailles Neurointensive Care Symposium, Versailles, France
- 6/13 Course Director, Versailles Neurointensive Care Symposium, Versailles, France
- 6/14 Course Director, Neurosciences in Intensive Care International Symposium, Paris, France
- 2/15 Course Director, Indo-US Translational Neuroscience Symposium, Baltimore, MD
- 6/15 Course Director, Neurosciences in Intensive Care International Symposium, Paris France
- 6/16 Course Director, Neurosciences in Intensive Care International Symposium, Paris France
- 3/17 Course Director, Neurosciences in Intensive Care International Symposium-America, Washington DC
- 6/17 Course Director, Neurosciences in Intensive Care International Symposium, Paris France

Session Chair

JHMI/Regional

- 5/11 Session Chair, Johns Hopkins Traumatic Brain Injury Conference, Baltimore, MD
- 6/12 Session Chair, Second Annual Johns Hopkins Traumatic Brain Injury Conference, Baltimore, MD
- 5/13 Session Chair, Third Annual Johns Hopkins Traumatic Brain Injury Conference, Baltimore, MD
- 5/14 Session Chair, Fourth Annual Johns Hopkins Traumatic Brain Injury Conference, Baltimore, MD
- 5/15 Session Chair, Fifth Annual Johns Hopkins Traumatic Brain Injury Conference, Baltimore, MD

National

- 2/07 Session Chair, Society of Critical Care Medicine Annual Congress, Orlando, FL
- 1/11 Session Chair, Society of Critical Care Medicine Annual Meeting, San Diego, CA.
- 1/13 Session Chair, Society of Critical Care Medicine Annual Congress, San Juan, PR
- 1/14 Session Chair, Society of Critical Care Medicine Annual Congress, San Francisco, CA
- 1/15 Session Chair, Society of Critical Care Medicine Annual Congress, Phoenix, AZ
- 2/16 Session Chair, Society of Critical Care Medicine Annual Congress, Orlando, FL
- 5/16 Session Chair, Traumatic Brain Injury Conference, Washington DC
- 1/17 Session Chair, Society of Critical Care Medicine Annual Congress, Honolulu, HI

International

- 9/06 Session Chair, European Society of Intensive Care Medicine Annual Meeting, Barcelona, Spain
- 9/07 Session Chair, European Society of Intensive Care Medicine Annual Meeting, Berlin, Germany
- 3/09 Session Chair, International Symposium on Intensive Care and Emergency Medicine, Brussels, Belgium
- 3/10 Session Chair, International Symposium on Intensive Care and Emergency Medicine, Brussels, Belgium
- 10/10 Session Chair, European Society of Intensive Care Medicine, Barcelona, Spain
- 3/11 Session Chair, International Symposium on Intensive Care and Emergency Medicine, Brussels, Belgium
- 6/11 Session Chair, Neurosciences in Intensive Care International Symposium, Paris France
- 3/12 Session Chair, International Symposium on Intensive Care and Emergency Medicine, Brussels, Belgium
- 6/12 Session Chair, Neurosciences in Intensive Care International Symposium, Paris France
- 3/13 Session Chair, International Symposium on Intensive Care and Emergency Medicine, Brussels, Belgium
- 6/13 Session Chair, Neurosciences in Intensive Care International Symposium, Paris France
- 6/14 Session Chair, Neurosciences in Intensive Care International Symposium, Paris France
- 3/15 Session Chair, International Symposium on Intensive Care and Emergency Medicine, Brussels, Belgium
- 6/15 Session Chair, Neurosciences in Intensive Care International Symposium, Paris France
- 6/16 Session Chair, Neurosciences in Intensive Care International Symposium, Paris France

RECOGNITION *(in chronological order, earliest first by start date under each subcategory)*

Awards, Honors

- 1993 Mention très bien (summa cum laude), Faculty of Medicine, University of Geneva, Geneva, Switzerland
- 2001-2002 Fellowship Award, Faculty of Medicine, University of Geneva, Geneva, Switzerland
- 2007 Educational Scholarship Award, Society of Critical Care Medicine
- 2007 Elected to Faculty 1000 Medicine
- 2011 Nominated to Leadership Development Program, Johns Hopkins Medicine
Note: This program engages JHM leaders to (a) use principles of management and leadership to create structures and procedures that support staff development linking individual performance to organizational performance. (b) work cooperatively (across functional and organizational divisions) to achieve shared institutional goals and promote productive change.
- 2014 “Highly Commended” by the British Medical Association in 2014 for Stevens RD et al. Brain Disorders in Critical Illness: Mechanisms, Diagnosis, and Treatment, Cambridge University Press, 2013.
- 2017 Nominated to the American College of Critical Care Medicine (FCCM)

Invited Talks

JHMI/Regional

- 10/06 Speaker, Anesthesiology Critical Care Medicine Grand Rounds, “Aneurysmal subarachnoid hemorrhage: medical complications”, Johns Hopkins University School of Medicine, Baltimore, MD

- 5/07 Speaker, Anesthesiology Critical Care Medicine Grand Rounds, “Neurological complications of critical illness”, Johns Hopkins University School of Medicine, Baltimore, MD
- 3/09 Speaker, Neurocritical Care for the General Medical and Surgical Intensivist: “Coma and consciousness disorders,” Tysons Corner, VA.
- 4/09 Speaker, Anesthesiology Critical Care Medicine Grand Rounds, “Physiological paradigms in traumatic brain injury”, Johns Hopkins University School of Medicine, Baltimore, MD
- 3/10 Speaker, Neurocritical Care for the General Medical and Surgical Intensivist, “Outcome prediction models in traumatic and nontraumatic brain injury,” Tysons Corner, VA.
- 3/11 Speaker, Johns Hopkins Neurocritical Care for the General Medical and Surgical Intensivist: “Prognosis after severe brain injury,” Tysons Corner, VA.
- 5/11 Speaker, Johns Hopkins Traumatic Brain Injury Conference, “Window on the brain: Insights from Imaging”, Baltimore, MD
- 3/12 Speaker, Johns Hopkins Neurocritical Care for the General Medical and Surgical Intensivist, “New paradigms in prognosis after severe brain injury,” Tysons Corner, VA
- 5/12 Speaker, Johns Hopkins Traumatic Brain Injury Conference, “White matter injury and functional coherence”, Baltimore, MD
- 5/12 Speaker, Medicine Grand Rounds, “Traumatic brain injury – biological markers”, St Joseph Medical Center, Towson, MD
- 5/12 Speaker, Medicine Grand Rounds, “Sport head injury”, Frederick Memorial Hospital, Frederick, MD
- 6/12 Speaker, Johns Hopkins Traumatic Brain Injury Conference, “White Matter Injury and Functional Coherence,” Baltimore, MD
- 10/12 Speaker, Medicine Grand Rounds, “Recovery from traumatic brain injury”, Suburban Hospital, Bethesda, MD
- 3/13 Speaker, Johns Hopkins Neurocritical Care for the General Medical and Surgical Intensivist. “Recovery from traumatic brain injury,” Tysons Corner, VA
- 4/13 Speaker, Medicine Grand Rounds, Recovery from traumatic brain injury, Greater Baltimore Medical Center, Towson, MD
- 5/13 Speaker, Johns Hopkins Traumatic Brain Injury Conference, “Prognosis in Moderate and Severe Traumatic Brain injury”, Baltimore, MD
- 11/13 Speaker, Anesthesiology Critical Care Medicine Grand Rounds, “Recovery from severe brain injury”, Johns Hopkins University School of Medicine, Baltimore, MD
- 3/14 Speaker, Johns Hopkins Neurocritical Care for the General Medical and Surgical Intensivist, “Recovery from severe brain injury,” Tysons Corner, VA
- 3/14 Speaker, Department of Medicine Grand Rounds, “Mild traumatic brain injury”, Howard Country General Hospital, Columbia, MD
- 4/14 Speaker, Neurology Grand Rounds. “Mapping the unconscious brain”, Johns Hopkins University School of Medicine, Baltimore, MD
- 5/14 Speaker, Anesthesiology Grand Rounds, “Recovery from traumatic brain injury”, University of Maryland, Baltimore, MD
- 5/14 Speaker, Medicine Grand Rounds, “Intracerebral Hemorrhage”, St Joseph Medical Center, Towson, Maryland
- 10/14 Speaker, Medicine Grand Rounds, “Disorders of Consciousness”, St Joseph Medical Center, Towson, Maryland
- 10/15 Speaker, Anesthesiology and Critical Care Medicine Grand Rounds, “Precision medicine for the perioperative and critically ill patient”, Johns Hopkins University School of Medicine
- 10/15 Speaker, Neurology Grand Rounds, “Precision medicine for traumatic brain injury”, Johns Hopkins University School of Medicine, Baltimore, MD
- 3/16 Speaker, Johns Hopkins Neurocritical Care for the General Medical and Surgical Intensivist, “Precision Medicine for Cerebrovascular Disease and Neurotrauma,” Tysons Corner, VA
- 9/16 Speaker, Berman Institute Ethics for Lunch Seminar, “Ethics and the Unresponsive Patient”, Johns Hopkins University School of Medicine, Baltimore, MD
- 11/16 Speaker, Johns Hopkins A Woman’s Journey, “A New Era in Treating Concussions”

National

- 9/05 Speaker, American Society of Anesthesiologists Annual Meeting, “Meta-analysis in perioperative medicine.” Atlanta, GA
- 6/06 Speaker, Medicine Grand Rounds, Flushing Hospital Medical Center, “Hypertensive emergencies in intracerebral hemorrhage: pathophysiology and management,” Flushing, NY

- 8/06 Speaker, Medicine Grand Rounds, Integris Baptist Medical Center, "Hypertensive emergencies in surgery: pathophysiology and perioperative management," Oklahoma City, OK
- 11/06 Speaker, Medicine Grand Rounds, Mercer University/Medical Center of Central Georgia, "Hypertensive emergencies in ischemic stroke: pathophysiology and management," Macon, GA
- 2/07 Speaker, Society for Critical Care Medicine Annual Congress, "Neuroanatomy of consciousness and structural causes of coma," Orlando, FL
- 7/07 Speaker, Medicine Grand Rounds, Integris Baptist Medical Center, "Hypertensive emergencies in ischemic stroke: pathophysiology and management," Oklahoma City, OK
- 10/07 Speaker, Neurology/Neurosurgery Grand Rounds, Medical University of South Carolina, "Blood pressure management in stroke," Charleston, SC
- 11/07 Speaker, "Blood pressure management in stroke", Regional Stroke Conference, Spartanburg, SC
- 5/09 Speaker, American Thoracic Society International Conference, "Post subarachnoid hemorrhage heart and lung injury", San Diego, CA
- 5/09 Speaker, American Thoracic Society International Conference, "Acquired Weakness in Critical Illness: Diagnosis and Classification" San Diego, CA
- 5/09 Speaker, Second International Meeting of Physical Medicine & Rehabilitation in the Critically Ill, "ICU acquired weakness. A need for definition." University of California San Diego, San Diego, CA.
- 5/10 Speaker, American Thoracic Society International Conference, "Acquired Weakness in Critical Illness," New Orleans, LA
- 6/10 Speaker, Traumatic Brain Injury in Professional Football: An Evidence-Based Perspective jointly sponsored by the National Football League and by Johns Hopkins Medicine, "Structural, Metabolic, and Functional Brain Imaging", Washington, DC
- 12/10 Speaker, 7th Annual Blast Injury Conference, "Overview of imaging in TBI." Tampa, FL
- 4/11 Speaker, 61st Annual Postgraduate Symposium on Anesthesiology, "Understanding Prognosis in Traumatic Brain Injury," Department of Anesthesiology, University of Kansas, Kansas City, MO
- 1/12 Speaker, Society of Critical Care Medicine Annual Congress, "The Biology of Consciousness and Consciousness Disorders," Houston, TX
- 1/13 Speaker, Society of Critical Care Medicine Annual Congress, "Sepsis and the brain," San Juan, Puerto Rico
- 6/13 Speaker, 37th Johns Hopkins Biennial Meeting, "Structural and functional mapping in severe brain injury"; Johns Hopkins University School of Medicine, Baltimore, MD
- 1/14 Speaker, Society for Critical Care Medicine Annual Congress, "Delirium workup and treatment," San Francisco, CA
- 1/14 Speaker, Society for Critical Care Medicine Annual Congress, "Monitoring of cerebral blood flow," San Francisco, CA
- 4/14 Speaker, American Academy of Neurology Annual Meeting, "Recovery from Traumatic Brain Injury," Philadelphia, PA
- 4/14 Speaker, Neurology Grand Rounds, "Intracerebral and subarachnoid hemorrhage", Virginia Commonwealth University, Richmond, Virginia
- 6/14 Speaker, American Delirium Society Annual Meeting, "Neural basis of delirium: insights from imaging," Baltimore, MD
- 1/15 Speaker, Society for Critical Care Medicine Annual Congress, "Translational Science. Year in Review.", Phoenix, AZ
- 1/15 Speaker, Society for Critical Care Medicine Annual Congress, "How to Write a Compelling Proposal That Sells," Phoenix, AZ
- 1/15 Speaker, Society for Critical Care Medicine Annual Congress, "The Brain in Sepsis: Prevention and Treatment," Phoenix, AZ
- 4/15 Speaker, Arrowhead TBI Conference, "Recovery from Traumatic Brain Injury: Models and Modulation," Washington DC
- 10/15 Speaker, Society for Neuroscience in Anesthesia and Critical Care Annual Meeting, "Neuroimaging and Unconsciousness", San Diego, CA
- 2/16 Speaker, Society for Critical Care Medicine Annual Congress, "Hemodynamic augmentation in traumatic brain injury," Orlando, FL
- 2/16 Speaker, Society for Critical Care Medicine Annual Congress, "Genomic and Proteomic Analysis in Ischemic Stroke," Orlando, FL

- 4/16 Speaker, 66th Annual Postgraduate Symposium on Anesthesiology, “Precision Medicine for the Perioperative Patient”, Department of Anesthesiology, University of Kansas, Kansas City, MO
- 4/16 Speaker, 66th Annual Postgraduate Symposium on Anesthesiology, “Modeling Recovery from Stroke and Traumatic Brain Injury” Department of Anesthesiology, University of Kansas, Kansas City, MS
- 4/16 Plenary Speaker, National Capital Area Traumatic Brain Injury Research Symposium, “Precision Medicine for Neurotrauma”, Bethesda, MD
- 5/16 Speaker, 6th Annual Traumatic Brain Injury Conference, “Precision Medicine for Neurotrauma”, Arlington, VA
- 1/17 Speaker, Society for Critical Care Medicine Annual Congress, “Reducing the Burden of Delirium—Physiologic Interventions,” Honolulu, HI
- 1/17 Speaker, Society for Critical Care Medicine Annual Congress, “Post-Stroke Neural Plasticity,” Honolulu, HI

International

- 9/06 Speaker, European Society of Intensive Care Medicine Annual Meeting, “Pathophysiology of traumatic brain injury,” Barcelona, Spain
- 9/06 Speaker, European Society of Intensive Care Medicine Annual Meeting, “Medical complications of aneurysmal subarachnoid hemorrhage,” Barcelona, Spain
- 9/06 Speaker, European Society of Intensive Care Medicine Annual Meeting, “Initial management of traumatic brain injury.” Barcelona, Spain
- 9/07 Speaker, European Society of Intensive Care Medicine Annual Meeting, “Impaired consciousness states.” Berlin, Germany
- 9/07 Speaker, European Society of Intensive Care Medicine Annual Meeting, “What are the causes of respiratory failure after TBI and SAH?” Berlin, Germany
- 9/08 Speaker, European Society of Intensive Care Medicine Annual Meeting, “Intensive care management in aneurysmal subarachnoid hemorrhage.” Lisbon, Portugal
- 3/09 Speaker, Anesthesiology Grand Rounds, “Imaging traumatic brain injury”, Department of Anesthesiology, Pharmacology, and Intensive Care Medicine, University of Geneva, Geneva, Switzerland
- 3/09 Speaker, Round Table on ICU Acquired Weakness, International Symposium on Intensive Care and Emergency Medicine, “ICU-Acquired Weakness”, Brussels, Belgium
- 3/09 Speaker, International Symposium on Intensive Care and Emergency Medicine, “Why is this patient unconscious?” Brussels, Belgium
- 3/09 Speaker, International Symposium on Intensive Care and Emergency Medicine, “Mechanical ventilation in acute brain injury,” Brussels, Belgium
- 3/09 Speaker, International Symposium on Intensive Care and Emergency Medicine, “Liberation from mechanical ventilation in acute brain injury,” Brussels, Belgium
- 3/09 Speaker, International Symposium on Intensive Care and Emergency Medicine, “Role of imaging in severe head injury,” Brussels, Belgium
- 3/10 Speaker, International Symposium on Intensive Care and Emergency Medicine, “Head CT or Brain MRI,” Brussels, Belgium
- 3/10 Speaker, International Symposium on Intensive Care and Emergency Medicine, “Delirium epidemiology and outcomes,” Brussels, Belgium
- 3/10 Speaker, International Symposium on Intensive Care and Emergency Medicine, “Neurologic crises: Coma,” Brussels, Belgium
- 3/10 Speaker, International Symposium on Intensive Care and Emergency Medicine, “Managing the brain in acute liver failure,” Brussels, Belgium
- 3/10 Speaker, International Symposium on Intensive Care and Emergency Medicine, “Blast traumatic brain injury,” Brussels, Belgium
- 3/10 Speaker, International Symposium on Intensive Care and Emergency Medicine, “Prognostic models in traumatic brain injury,” Brussels, Belgium
- 10/10 Speaker, European Society of Intensive Care Medicine Annual Meeting, “Coma outcome prediction.” Barcelona, Spain
- 10/10 Speaker. European Society of Intensive Care Medicine Annual Meeting, “Venous sinus thrombosis,” Barcelona, Spain
- 10/10 Speaker, European Society of Intensive Care Medicine Annual Meeting, “Cardiac arrest prognosis.” Barcelona, Spain

- 10/10 Speaker, European Society of Intensive Care Medicine Annual Meeting, “Endocrine failure after acute brain injury,” Barcelona, Spain
- 11/10 Speaker, Seventh Regional Critical Care Congress, “Establishing prognosis in acute brain injury,” Medellin, Colombia.
- 11/10 Speaker, Seventh Regional Critical Care Congress, “Critical illness neuromyopathy,” Medellin, Colombia.
- 3/11 Speaker, International Symposium on Intensive Care and Emergency Medicine, “Genetic factors in acute brain injury,” Brussels, Belgium
- 3/11 Speaker, International Symposium on Intensive Care and Emergency Medicine, “Cross-talk between brain and heart,” Brussels, Belgium
- 3/11 Speaker, International Symposium on Intensive Care and Emergency Medicine, “Coma: who will wake up?,” Brussels, Belgium
- 3/11 Speaker, International Symposium on Intensive Care and Emergency Medicine, “Long term cognitive function after critical illness,” Brussels, Belgium
- 3/11 Speaker, International Symposium on Intensive Care and Emergency Medicine, “Neuromuscular weakness: role of drugs,” Brussels, Belgium
- 9/11 Speaker, Neurocritical Care Society Annual Meeting, “Encephalopathy of critical illness,” Montreal, Canada
- 10/11 Speaker, Consensus Conference on Neuromonitoring, “Promise of cerebral microdialysis,” Rome, Italy
- 12/11 Speaker, Consensus Conference on Neuromonitoring, “Brain specific biomarkers,” Rome, Italy
- 12/11 Speaker, Consensus Conference on Neuromonitoring, “MRI in traumatic brain injury,” Rome, Italy
- 12/11 Speaker, Consensus Conference on Neuromonitoring, “Prognosis in neurotrauma,” Rome, Italy
- 3/12 Speaker, International Symposium on Intensive Care and Emergency Medicine, “Neuroprotection: Focus on white matter,” Brussels, Belgium
- 3/12 Speaker, International Symposium on Intensive Care and Emergency Medicine, “Thrombolysis for ischemic stroke,” Brussels, Belgium
- 3/12 Speaker, International Symposium on Intensive Care and Emergency Medicine, “Coma: Strategies to promote awakening,” Brussels, Belgium
- 3/12 Speaker, International Symposium on Intensive Care and Emergency Medicine, “Neuromonitoring: structural neuroimaging,” Brussels, Belgium
- 3/12 Speaker, International Symposium on Intensive Care and Emergency Medicine, “Neuromuscular weakness: role of drugs,” Brussels, Belgium
- 6/12 Speaker, Versailles International Neurointensive Care Symposium, “Brain mapping in post-anoxic encephalopathy,” Versailles, France
- 10/12 Speaker, Indian Academy of Neurology Annual Conference, “Imaging markers of acute brain injury,” Ahmedabad, India
- 10/12 Speaker, Indian Academy of Neurology Annual Conference, “The Biology of Consciousness,” Ahmedabad, India
- 10/12 Speaker, Indian Academy of Neurology Annual Conference, “ICU acquired weakness – biological mechanisms and treatment,” Ahmedabad, India
- 3/13 Speaker, International Symposium on Intensive Care and Emergency Medicine, “Management of ARDS in severe brain injury,” Brussels, Belgium
- 3/13 Speaker, International Symposium on Intensive Care and Emergency Medicine, “Biology of coma and emergence,” Brussels, Belgium
- 3/13 Speaker, International Symposium on Intensive Care and Emergency Medicine, “Reperfusion strategies in stroke: Thrombolysis or clot removal?,” Brussels, Belgium
- 3/13 Speaker, International Symposium on Intensive Care and Emergency Medicine, “Neuroimaging to predict outcome after cardiac arrest,” Brussels, Belgium
- 3/13 Speaker, Round Table on Neuroprotection, International Symposium on Intensive Care and Emergency Medicine, “Reperfusion strategies for stroke,” Brussels, Belgium
- 6/13 Speaker, Versailles International Neurointensive Care Symposium, “Mapping of the brain in unconscious patients: Quantitative MRI” Versailles, France
- 11/13 Speaker, Association de neuro anesthésie et réanimation de langue française “Functional brain mapping following severe brain injury” Université Pierre et Marie Curie, Paris
- 6/14 Speaker, Neurosciences in Intensive Care International Symposium, “Brain perfusion in sepsis,” Paris, France
- 6/14 Speaker, Neurosciences in Intensive Care International Symposium, “Mapping neural adaptation following TBI,” Paris, France

- 3/15 Speaker, International Symposium on Intensive Care and Emergency Medicine, “New paradigms in stroke recovery,” Brussels, Belgium
- 3/15 Speaker, International Symposium on Intensive Care and Emergency Medicine, “The brain in the ICU: Long term effects of sepsis,” Brussels, Belgium
- 3/15 Speaker, International Symposium on Intensive Care and Emergency Medicine, “Traumatic brain injury: neuroimaging to predict outcome,” Brussels, Belgium
- 3/15 Speaker, International Symposium on Intensive Care and Emergency Medicine, “Blood pressure management in acute neurological disorders,” Brussels, Belgium
- 6/15 Speaker, European Society of Anesthesiology Annual Meeting, “Functional neuroimaging of the brain during coma emergence and recovery,” Berlin, Germany
- 6/15 Speaker, Neurosciences in Intensive Care International Symposium, “Modeling Recovery After Brain Injury,” Paris, France
- 8/15 Speaker, Conference of the Neurotrauma Society of India, “Precision Medicine for Traumatic Brain Injury,” National Institute for Mental Health and Neurosciences, Bangalore, India
- 6/16 Speaker, Neurosciences in Intensive Care International Symposium, “Immunologic Signatures of Traumatic Brain Injury,” Paris, France

Visiting Professorships

- 3/09 University of Geneva, Department of Anesthesiology, University of Geneva, “Imaging traumatic brain injury,” Geneva, Switzerland
- 5/09 University of Pennsylvania, Department of Anesthesiology and Critical Care Medicine, “Imaging traumatic brain injury”, Philadelphia, PA
- 10/10 University of Lausanne University Hospital (CHUV), Department of Intensive Care Medicine, “Neurologic assessment of the critically ill patient”; Lausanne, Switzerland
- 3/12 University of Basel, “Quantitative brain mapping in severe brain injury”, Department of Intensive Care Medicine, University Hospital Basel, Switzerland
- 4/13 University of Pittsburgh Medical Center, Department of Critical Care Medicine, “Modeling Recovery from Severe Brain Injury”, Pittsburgh, PA
- 7/13 National Institute for Mental Health and Neurosciences, “Collaborative opportunities in neuroscience: JHU-NIMHANS”, Bangalore, India
- 1/14 University of California Los Angeles, Department of Neurology, “ Mapping the unconscious brain”, Department of Neurology, , CA
- 5/14 University of Toronto, Interdepartmental Division of Critical Care, “Recovery from traumatic brain injury”, Toronto, Canada
- 5/14 University of Maryland, Department of Anesthesiology, “Recovery from traumatic brain injury”, Baltimore, MD
- 4/15 Harvard University-Massachusetts General Hospital, Department of Anesthesia, Critical Care and Pain, “Personalized medicine for traumatic brain injury”, Boston, MA
- 10/15 University of Copenhagen, Department of Neuroscience and Pharmacology, “Mapping the Unconscious Brain,” Copenhagen, Denmark
- 3/16 University of Cincinnati, Department of Anesthesiology, “A Vision for Anesthesiology in the 21st Century,” Cincinnati, OH
- 11/16 Oregon Health Sciences University, Department of Anesthesiology and Perioperative Medicine, “Precision Critical Care Medicine”, Portland, Oregon
- 01/17 University of Virginia, Department of Anesthesiology, “Precision Medicine for the Critically Ill Patient”, Charlottesville, VA
- 05/17 Ohio State University, Department of Neurology, “Discriminative Mapping for Coma Recovery Prediction”, Columbus, OH

OTHER PROFESSIONAL ACCOMPLISHMENTS *(Optional)*

International Round Table/Expert Panels

- 3/09 Panelist, Round Table Conference on ICU-Acquired Weakness. International Symposium on Intensive Care and Emergency Medicine, Brussels.

- 5/09 Panelist, ATS Committee on ICU-acquired Weakness in Adults, American Thoracic Society, San Diego, CA
- 5/10 Panelist, ATS Committee on ICU-acquired Weakness in Adults, American Thoracic Society, New Orleans, LA
- 10/10 Leader, International Task Force on Neurological Assessment in the Intensive Care Unit. European Society of Intensive Care Medicine Annual Meeting, Barcelona, Spain
- 12/11 Panelist, International Consensus Conference on Neuromonitoring. Rome, Italy.
- 3/13 Panelist, Round Table Conference on Neuroprotection. International Symposium on Intensive Care and Emergency Medicine, Brussels, Belgium.
- 2/16 Chairman, Working Group on Precision Medicine Meeting, Society for Critical Care Medicine Annual Congress, Orlando, FL
- 3/16 Panelist, European Delirium Association/American Delirium Society Task Force on Defining Delirium and Encephalopathy
- 4/16 Panelist, American Thoracic Society Committee on Determining Outcome Measures for Assessment after Critical Illness”

Clinical Trials Steering Committees

- 2007-2014 Steering Committee Member, Simvastatin in Aneurysmal Subarachnoid Hemorrhage (STASH) – a multicenter randomized controlled clinical phase III trial
- 2009-2013 Steering Committee Member, Peroneal Nerve Electroneurography to Diagnose Critical illness Neuropathy and Myopathy: A Validation Study – The Italian Multicenter CRIMYNE-2 study