

# Emily Payne Sieg, M.D., M.S. Curriculum Vitae

Frazier Rehab and Neuroscience Center  
220 Abraham Flexner Way, 12<sup>th</sup> Floor  
Louisville, KY 40202

## Education

Fellowship Training CAST, June 2018  
Neuro-Intensive Care  
*Penn State Milton S. Hershey Medical Center*  
Hershey, PA

Fellowship Training CAST, June 2018  
Spine Surgery  
*Penn State Milton S. Hershey Medical Center*  
Hershey, PA

Residency Training (Chief Year 2016-2017)  
Neurological Surgery  
*Penn State Milton S. Hershey Medical Center*  
Hershey, PA

Doctor of Medicine, June 2011  
*Penn State College of Medicine*  
Hershey, PA

Master of Science, August 2006  
*Georgetown University, Washington, DC*  
Major: Physiology and Biophysics, GPA 3.9

Bachelor of Science with University Honors, May 2005  
*Carnegie Mellon University, Pittsburgh, PA*  
Major: Psychology, GPA: 4.0  
Minor: Chemistry

## Academic Appointments

August 2018- Present                      Assistant Professor  
Department of Neurological Surgery  
University of Louisville  
Louisville, KY

August 2018- Present                      Director of Neurotrauma  
Department of Neurological Surgery  
University of Louisville  
Louisville, KY

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## Certification and Licensure

July 2018- Present

Kentucky Medical License

## Scholarly Activity, Leadership and Awards

### *Publications*

1. Payne RA, **Sieg EP**, Patrick N, Darowish M, Rizk E, Langan S, Harbaugh K. Fracture related ulnar and sciatic nerve transections: a report of two cases and literature review. Childs Nerv Syst. 2018 Nov;34(11):2187-2194. doi: 10.1007/s00381-018-3961-0. Epub 2018 Sep 5. PubMed PMID: 30187183.
2. **Sieg, E**, Payne, R., Hazard, SW. Fluid Management in the Neuro-Intensive Care Unit: Is it so Different? Neuro Critical Care (In Review).
3. **Sieg EP**, Schlauderaff AC, Payne RA, Glantz MJ, Simon SD. Impact of an External Ventricular Drain Placement and Handling Protocol on Infection Rates: A Meta-Analysis and Single Institution Experience. World Neurosurg. 2018 Apr 2.;pii: S1878-8750(18)30642-9. doi: 10.1016/j.wneu.2018.03.160. PubMed PMID: 29621608.
4. Payne R, Seaman S, **Sieg E**, Langan S, Harbaugh K, Rizk E. Evaluating the Evidence: Is Neurolysis or Neurectomy a Better Treatment for Meralgia Paresthetica? Acta Neurochir (Wien). 2017 May;159(5):931-936. doi: 10.1007/s00701-017-3136-x. Epub 2017 Mar 10. Review. PubMed PMID: 28283866.
5. **Sieg EP**, Zacko JC, Hudson TR. Spinal fusion and antibiotic treatment illustrating lumbar osteomyelitis and spinal instability as a previously unrecognized and surgically treatable cause of autonomic dysreflexia. Spinal Cord Ser Cases. 2016 Jul 21;2:16013. doi: 10.1038/scsandc.2016.13. PubMed PMID: 28053757; PubMed Central PMCID: PMC5129392.
6. **Sieg EP**, Stepanyan H, Payne R, Frauenhoffer E, Specht CS, Langan S, Rizk E. Intraventricular Undifferentiated Pleomorphic Sarcoma: A Case Report. Cureus. 2016 Nov 14;8(11):e876. doi: 10.7759/cureus.876. PubMed PMID: 28003940; PubMed Central PMCID: PMC5156626.
7. **Sieg EP**, Payne R, Langan S, Specht CS. Case Report: A Rosette-forming Glioneuronal Tumor in the Tectal Plate in a Patient with Neurofibromatosis Type I. Cureus. 2016 Nov 1;8(11):e857. PubMed PMID: 27917325; PubMed Central PMCID: PMC5133136.
8. Payne R, **Sieg EP**, Choudhary A, Iantosca M. Pneumorrhachis Resulting in Transient Paresis after PICC Line Insertion into the Ascending Lumbar Vein. Cureus. 2016 Oct 17;8(10):e833. PubMed PMID: 27904815; PubMed Central PMCID: PMC5117705.

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9. **Sieg EP**, Stepanyan H, Payne R, Ouyang T, Zacharia BE. Vanishing Pituitary Macroadenoma: A Case Report. *Cureus*. 2016 Oct 20;8(10):e838. PubMed PMID:27900232; PubMed Central PMCID: PMC5115844.
10. Davanzo J, Lane J, Daggubati L, Savaliya S, Anderson B, Payne R, **Sieg E**, Church E, Rohatgi P, Brandmeir N, Bogason E, Hussain N. Journal Club: Outpatient Cervical and Lumbar Spine Surgery Is Feasible and Safe: A Consecutive Single Center Series of 1449 Patients. *Neurosurgery*. 2016 Nov;79(5):765-767. PubMed PMID: 27759682.
11. Payne R, **Sieg E**, Fox E, Harbaugh K, Rizk E. Management of nerve compression in multiple hereditary exostoses: a report of two cases and review of the literature. *Childs Nerv Syst*. 2016 Dec;32(12):2453-2458. PubMed PMID: 27444292.
12. Payne R, Nasrallah Z, **Sieg E**, Rizk EB, Glantz M, Harbaugh K. The angular course of the median nerve in the distal forearm and its anatomical importance in preventing nerve injury in a modern era of carpal tunnel release. *J Neurosurg*. 2016 Jun 10:1-6. PubMed PMID: 27285545.
13. **Sieg EP**, Payne RA, Hazard S, Rizk E. Evaluating the evidence: is phrenic nerve stimulation a safe and effective tool for decreasing ventilator dependence in patients with high cervical spinal cord injuries and central hypoventilation *Childs Nerv Syst*. 2016 Jun;32(6):1033-8. doi: 10.1007/s00381-016-3086-2. Review. PubMed PMID: 27083568.
14. Church EW, **Sieg EP**, Zalatimo O, Hussain NS, Glantz M, Harbaugh RE. Systematic Review and Meta-analysis of Chiropractic Care and Cervical Artery Dissection: No Evidence for Causation. *Cureus*. 2016 Feb 16;8(2):e498. doi: 10.7759/cureus.498. PubMed PMID: 27014532; PubMed Central PMCID: PMC4794386.
15. Church EW, Anderson BL, Bogason ET, Brandmeir NJ, Daggubati LC, Davanzo JR, Hussain NS, Lane JR, McDermott D, Payne R, Rohatgi P, Savaliya S, **Sieg EP**, Ziu E. Journal Club: Neurosurgical Practice Liability: Relative Risk by Procedure Type. *Neurosurgery*. 2016 Feb;78(2):306-8. doi: 10.1227/NEU.0000000000001121. Review. PubMed PMID: 26779786.
16. Payne R, Bogason E, Anderson B, Brandmeir N, Church E, Cooke J, Davies G, Hussain N, Patel A, Rohatgi P, **Sieg E**, Zalatimo O, Ziu E, Davanzo J. Journal club: the impact of body mass index on hospital stay and complications after spinal fusion. *Neurosurgery*. 2014 Nov;75(5):599-601. doi: 10.1227/NEU.0000000000000521. PubMed PMID: 25121794.
17. Anderson BL, Bogason E, Brandmeir N, Church E, Cooke J, Davanzo J, Davies G, Hussain N, Patel A, Payne R, Rohatgi P, **Sieg E**, Zalatimo O. Journal club: national variability in intracranial pressure monitoring and craniotomy for children with moderate to severe traumatic brain injury. *Neurosurgery*. 2014 Aug;75(2):191-3. doi: 10.1227/NEU.0000000000000407. PubMed PMID: 25033351.

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18. Rohatgi P, Anderson B, Bogason E, Brandmeir N, Church E, Cooke J, Davanzo J, Davies G, Hussain N, Patel A, Payne R, **Sieg E**, Zalatimo O, Ziu E. Journal club: Magnetic resonance imaging-guided focused laser interstitial thermal therapy for intracranial lesions: single-institution series. *Neurosurgery*. 2014 May;74(5):562-4. doi: 10.1227/NEU.0000000000000313. PubMed PMID: 24739320.
19. Bogason ET, Anderson B, Brandmeir NJ, Church EW, Cooke J, Davies GM, Hussain N, Patel AS, Payne R, Rohatgi P, **Sieg E**, Zalatimo O, Ziu E. The epidemiology of admissions of non-traumatic subarachnoid hemorrhage in the United States. *Neurosurgery*. 2014 Feb;74(2):227-9. doi: 10.1227/NEU.0000000000000240. PubMed PMID: 24435139.
20. Church EW, Anderson B, Bogason E, Brandmeir NJ, Cooke J, Davies GM, Kainth K, Kelleher J, Patel AS, Payne R, Rohatgi P, **Sieg E**, Zalatimo O. Journal club: the impact of provider volume on the outcomes after surgery for lumbar spinal stenosis. *Neurosurgery*. 2013 Feb;72(2):E314-7. doi: 10.1227/NEU.0b013e31827bc38b. PubMed PMID: 23328651.

### *Book Chapters*

1. **Sieg EP**, Davanzo JR and Kelleher JP. "Cauda Equina Syndrome." *Spinal Neurosurgery*. Oxford University Press. November 2018. 175-182.
2. Davanzo JR, **Sieg EP**, Zacko JC and Timmons SD. "Use of Multimodality Neuromonitoring in the Management of Traumatic Brain Injury." *Controversies in Severe Traumatic Brain Injury Management*. Springer International Publishing. September 2018. 17-28. doi: 10.1007/978-3-319-89477-5
3. **Sieg EP** and Timmons SD. "Comorbidities and Positioning: Morbid Obesity and Multiple Trauma." *Perioperative Positioning and Consideration for Neurosurgical Procedures*. Springer International Publishing. 2018. 213-222. Print. doi: 10.1007/978-3-319-72679-3
4. Davanzo JR, **Sieg EP**, Timmons SD. Management of Traumatic Brain Injury. *Surg Clin North Am*. 2017 Dec;97(6):1237-1253. doi: 10.1016/j.suc.2017.08.001. Review. PubMed PMID: 29132507.

### *Peer Reviewed Posters and Presentations*

1. April 28-May 2, 2018. 86<sup>th</sup> AANS Annual Scientific Meeting New Orleans, Louisiana: A Randomized Trial of Complications Rates of Peripherally Inserted Central Lines and Centrally Inserted Central Lines in the Neuro-Intensive Care Unit: Results of the NSPVC Trial (presented by Justin Davanzo).
2. July 14-15, 2017. 104th Annual Scientific Meeting of the Pennsylvania Neurosurgical Society Hershey, PA: A Randomized Trial of Complications Rates

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- of Peripherally Inserted Central Lines and Centrally Inserted Central Lines in the Neuro-Intensive Care Unit: Preliminary Results of the NSPVC Trial.
3. July 14-15, 2017. 104th Annual Scientific Meeting of the Pennsylvania Neurosurgical Society Hershey, PA: Complete Nerve Transection due to Fracture: A Report of Two Cases and Literature Review.
  4. July 9-12, 2017. 35<sup>th</sup> Annual National Neurotrauma Symposium Snowbird, Utah. Complete Nerve Transection due to Fracture: A Report of Two Cases and Literature Review. AANS/CNS Poster Finalist.
  5. July 22-23, 2016. 103rd Annual Scientific Meeting of the Pennsylvania Neurosurgical Society Hershey, PA: Impact of External Ventricular Drain Placement and Handling Protocol On Infection Rates: A Meta-Analysis and Single Institution Review.
  6. July 22-23, 2016. 103rd Annual Scientific Meeting of the Pennsylvania Neurosurgical Society Hershey, PA: Intracranial Schwannomas Not associated with Cranial Nerves: A Presentation of Two Cases Mimicking Other Intracranial Pathologies in Pediatric Patients (presented by Russell Payne).
  7. July 22-23, 2016. 103rd Annual Scientific Meeting of the Pennsylvania Neurosurgical Society Hershey, PA: Pneumorrhachis Resulting in Transient Paresis After PICC Line Insertion into the Ascending Lumbar Vein (presented by Russell Payne).
  8. July 22-23, 2016. 103rd Annual Scientific Meeting of the Pennsylvania Neurosurgical Society Hershey, PA: Evaluating the Evidence: Is Nerve Decompression or Nerve Transection a Better Treatment for Meralgia Paresthetica? (presented by Russell Payne).
  9. July 22-23, 2016. 103rd Annual Scientific Meeting of the Pennsylvania Neurosurgical Society Hershey, PA: Surgical Technique for Double Nerve Transfer for Restoration of Pinch Grasp and Finger and Thumb Extension in a Patient with Spinal Cord Injury (presented by Russell Payne).
  10. May 2016. Poster at the American Association of Neurological Surgeons Annual Meeting, Chicago, IL. – Third Place Poster: Management of Nerve Compression in Multiple Hereditary Exostoses: A Report of Two Cases and Review of the Literature (presented by Russell Payne).
  11. July 10-11, 2015. 102nd Annual Scientific Meeting of the Pennsylvania Neurosurgical Society Hershey, PA: A Rosette-forming Glioneuronal Tumor in the Tectal Plate in a patient with Neurofibromatosis Type I.
  12. July 11, 2015. 102nd Annual Scientific Meeting of the Pennsylvania Neurosurgical Society Hershey, PA: Sticking Your Neck Out or Evaluating the Evidence: A Systematic Review and Meta-Analysis of the Association between Cervical Manipulation and Cervical Artery Dissection (presented by Ephraim Church).
  13. July 12, 2014. 101st Annual Scientific Meeting of the Pennsylvania Neurosurgical Society Hershey, PA: The Angular Approach of the Median Nerve to the Carpal

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- Tunnel and Its Anatomic Importance in Preventing Nerve Injury in A Modern Era of Carpal Tunnel Release (presented by Russell Payne).
14. February 11-14. 2014 International Leksell Gamma Knife Meeting in New York, NY: Factors Predicting Local Failure of Gamma Knife After Treatment of Metastatic Brain Lesions.
  15. October 2012. CNS Annual Meeting in San Francisco, CA: Deep Brain Stimulation in Patients Over Seventy (presented by Nick Brandmeir).

### *Leadership Positions and Committees*

1. CNS Nexus Editor: Trauma. February 2019 to present.
2. Reviewer for World Neurosurgery. December 2018 to present.
3. Member of University Task Force to Review Disclosure Policies Surrounding Adverse Events. 2018 to Present.
4. Trauma Quality Improvement Neurosurgery Liaison. 2018 to Present.
5. Advanced Trauma Life Support Clinical Instructor. June 2016 to present.
6. Medical Student Neurosurgery Interest Group Liaison. 2011 to 2018.
7. Collaborative Task force to improve RN and MD Communication at Penn State Children's Hospital Liaison and Board Member. 2014 to 2018.
8. Bridging the Gap: Neurosurgery Liaison and Committee Member. 2014 to 2018.
9. Neurosurgery Curriculum Review Committee Resident Representative. 2012 to 2018.
10. Resident Hospital Quality Council. 2016 to 2018.

### *Lectures*

1. February 20, 2019 Trauma Multidisciplinary Conference: Controversies in Traumatic Brain Injury Management in Louisville, Kentucky.
2. December 21, 2018 Neurosurgery Grand Rounds: Cervical Spinal Cord Injury Management and Protocols in Louisville, Kentucky.
3. December 13, 2018 Trauma Critical Care Grand Rounds: Advanced Neuromonitoring in TBI in Louisville, Kentucky.
4. September 29, 2018 Controversies in Hyperosmolar Therapies in Traumatic Brain Injury given at Congress of Neurological Surgeons Break out Session on Severe TBI Updates in Houston, Texas.
5. January 13, 2017 Medical Student Clerkship Lecture: Spine Anatomy, Pathology and Surgical Intervention.
6. December 16, 2016 Medical Student Clerkship Lecture: Vascular Neurosurgery.
7. August 5, 2016 Medical Student Clerkship Lecture: Hydrocephalus Pathology, Diagnosis and Treatment.
8. June 17, 2016 Medical Student Clerkship Lecture: Neurotrauma.
9. July 14, 2015 Basic Science Talk: Spinal Trauma Classification and Grading.
10. September 10, 2015 Basic Science Talk: The Autonomic Nervous System, Sympathectomies and Hyperhidrosis.
11. September 4, 2015 CV Conference: Anatomy of Spinal Angiography.

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12. September 4, 2015 Resident Faculty Talk: Adult Spinal Deformity.
13. June 18, 2015 Basic Science Talk: The Cerebellum.
14. January 16, 2015 CV Conference: Moyà Moyà Disease.
15. January 16, 2015 Resident Faculty Talk: Evidence Based Review of the use of Prophylactic AEDs.
16. December 2, 2014 Interdisciplinary Spine Conference: Adult Spinal Deformity Imaging, Measurements and Operative Indications.
17. January 10, 2014 CV Conference: Management of Dissections of the Carotid and Vertebral Arteries.
18. August 2, 2013 CV Conference: Cerebrovascular Hemodynamics and Stroke Imaging.
19. March 1, 2013 CV Conference: Vascular Malformations of the Spinal Cord.
20. February 15, 2013 Resident Faculty Talks: Sturge-Weber Syndrome.
21. October 12, 2012 Resident Faculty Talk: Vein of Galen Malformations.
22. September 7, 2012 CV Conference: Epidemiology, Screening and Risk Factors for Aneurysmal Subarachnoid Hemorrhage.
23. February 9, 2012 Resident Faculty Talk: Electrical Signaling by Neurons.
24. September 8, 2011 Resident Faculty Talk: Cervical Spine and Upper Extremity Nerve Roots.

### *Courses Attended*

1. AONA Neuro Trauma and Neuro Critical Care. Hershey, Pennsylvania. Jan 27 and 28, 2018.
2. AONA Neuro Trauma Course. Philadelphia, Pennsylvania. October 1 and 2, 2016.
3. SNS Research Update in Neuroscience for Neurosurgeons (RUNN) Course. Woods Hole, Massachusetts. October 24-31, 2015.

### *Honors and Awards*

Alpha Omega Alpha Medical Honor Society  
2017 AANS/CNS Neurotrauma Section Research Abstract Finalist  
Association of Pathology Chairs Honor Society  
Dean's List and Dean's List with Honors  
National Society of Collegiate Scholars  
Mortar Board National Honor Society  
Psi Chi, National Honor Society in Psychology  
Order of Omega, National Greek Honor Society  
Rho Lambda, National Panhellenic Honor Society