**Curriculum Vitae**

**Allyson Laura Alexander**

**Née Allyson Laura Howard**

**ADDRESS:** Children’s Hospital of Colorado Division of Pediatric Neurosurgery

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**EMPLOYMENT:**

August 2017 – Assistant Professor

Present Department of Neurosurgery

University of Colorado Denver School of Medicine

**EDUCATION AND MEDICAL TRAINING:**

July 2016- Pediatric Neurosurgery Fellow

June 2017 Barrow Neurological Institute at Phoenix Children’s

Phoenix, Arizona

June 2008- Resident Physician

June 2015 Department of Neurosurgery

Stanford University

Stanford, California

September 1999 - Doctor of Medicine

June 2008 University of California

Irvine, California

June 2001- Ph.D. in Anatomy and Neurobiology

June 2006 University of California, Irvine

Advisor: Ivan Soltesz, Ph.D.

Thesis Title: Mossy Cell Physiology and Homeostasis

September 1998 - Masters of Science in Biological Sciences

June 1999 Stanford University

Stanford, California

September 1995 - Bachelor of Science in Biological Sciences,

June 1999 Minor in Computer Science

Stanford University

Stanford, California

**EXPERIENCE:**

July 2015- Instructor (Research)

June 2016 Department of Neurosurgery

Stanford University

Stanford, California

July 2015- Part-time Attending Physician

June 2016 Department of Neurosurgery

Santa Clara Valley Medical Center

San Jose, California

July 2011 - Postdoctoral Fellow (within Neurosurgery Residency)

June 2013Laboratory of Dr. John Huguenard

Department of Neurology

Stanford University

Stanford, California

June 1998 - Research Assistant

June 1999 Stanford Stroke Center

Stanford University Medical Center

Palo Alto, California, USA

Advisora: Dr. Greg Albers and Dr. David Tong

Subject: Diffusion-weighted imaging in the evaluation of acute ischemic stroke

Jun-Sept 1996 Research Assistant

Jun-Sept 1997 Section on Preclinical Neuroscience

NIMH Neuroscience Center, St. Elizabeth’s

Washington, DC, USA

Advisor: Dr. Bill Freed

Subject: Alterations in the levels of membrane-bound and secreted N-CAM in the prefrontal cortex and hippocampus of schizophrenic patients

**NIH-FUNDED GRANTS**

* R25 grant R25NS065741-04S1 for July 2012-June 2013
  + “Effect of Levetiracetam on an in vitro Model of Absence Seizures”
  + Mentor: Dr. John Huguenard
  + Sponsoring R25 grant to Stanford Department of Neurosurgery under the direction of Dr. Griffith Harsh
* R25 grant R25NS065741-04S1 renewal for July 2015-June 2016
  + “Testing the “transporter hypothesis” of pharmacoresistant temporal lobe epilepsy in a novel model using human tissue”
  + Mentor: Dr. Ivan Soltesz
  + Sponsoring R25 grant to Stanford Department of Neurosurgery under the direction of Dr. Griffith Harsh

**SCHOLARSHIPS, FELLOWSHIPS, and AWARDS:**

* “Best Poster Award”, Phoenix Children’s Hospital Research Day, Fellow Category. May 2017
* Western Neurosurgical Society Resident Research Award, September, 2013
* Stanford University School of Medicine Neuroscience Forum, June 8, 2012. Winner of “Best Poster” award.
* Research Award, UC Irvine College of Medicine, 2008
* Sigma Xi Scientific Research Society, Full Membership, 2007
* Sigma Xi Scientific Research Society, Associate Membership, 2005
* Dean's Service Award, UC Irvine College of Medicine, 2005
* Achievement Rewards for College Scientists Foundation Scholarship, 2003 and 2004
* Stanford University Computer Science Department Programming Methodology

Graphics Contest Winner, 1998

* NIH Intramural Research Training Award, 1996-1997
* Stanford University Scholar Athlete, 1995-1997
* Valedictorian, Annapolis Senior High School, Annapolis, MD, 1995
* National Merit Semifinalist, 1995
* AP Scholar with Distinction, 1995
* National Honor Society Member, 1992-1995

**PROFESSIONAL SOCIETIES:**

* American Epilepsy Society (2013)
* American Medical Association (1999-2003)
* American Physiological Society (2003-2005)
* Society for Neuroscience (2002-2005, 2011, 2013)
* Congress of Neurological Surgeons (2008-present)
* American Academy of Neurological Surgeons (2008-present)

**FULL-LENGTH PUBLICATIONS:**

1. Kim H, **Alexander A**, and Soltesz I. Optogenetics: Lighting a path from the laboratory to the clinic. Neuromethods: Optogenetics. 2016. In press.
2. **Alexander A**, Maroso M, and Soltesz I. Organization and control of epileptic circuits in temporal lobe epilepsy. Progress in Brain Research: Neurobiology of Epilepsy — From Genes to Networks. 2016; 226:127-54
3. **Alexander A** and Soltesz I. Hippogate: a break-in from entorhinal cortex. Nature Neuroscience. 2016 Apr;19(4):530-2.
4. Maroso M, Szabo G, Kim H, **Alexander A,** Bui A, Lee S, Lutz B, and Soltesz I. Cannabinoid control of learning and memory through HCN channels. Neuron. 2016 Mar 2;89(5):1059-73
5. Zhang M, **Alexander A,** Li G, Most S, and Harris O. Intracranial Dislocation of the Mandibular Condyle: A Case Report and Literature Review. World Neurosurgery. 2016 Feb;86:514.e1-11.
6. Bui A\*, **Alexander A**\*, and Soltesz I. Seizing Control: From Current Treatments to Optogenetic Interventions in Epilepsy. Neuroscientist. 2015 Dec 23 (Epub ahead of print). \*shared first authorship
7. Weissberg I, Wood L, Kamintsky L, Vazquez O, Milikovsky DZ, **Alexander A**, Oppenheim H, Ardizzone C, Becker A, Frigerio F, Vezzani A, Buckwalter MS, Huguenard JR, Friedman A, Kaufer D. Albumin induces excitatory synaptogenesis through astrocytic TGF-β/ALK5 signaling in a model of acquired epilepsy following blood-brain barrier dysfunction. Neurobiol Dis. 2015 Jun;78:115-25.
8. Yeom KW, Lober RM, **Alexander A**, Cheshier SH, Edwards MS. Am J Neuroradiol. Hydrocephalus Decreases Arterial Spin-Labeled Cerebral Perfusion. 2014 Mar 20.
9. Patil C, **Alexander A**, Hayden M, Lad S, Arrigo R, Boakye M. 2010. A Population Based Study of Inpatient Outcomes after Operative Management of Non-traumatic Intracerebral Hemorrhage in the United States. *World Neurosurgery.* 2011 Nov 24.
10. Owen CM, **Howard A**, Binder DK. 2009. Hippocampus minor, calcar avis, and the Huxley-Owen debate. *Neurosurgery.* 65(6):1098-104; discussion 1104-5.
11. Frey LC, Hellier J, Unkart C, Lepkin A, **Howard A**, Hasebroock K, Serkova N, Liang L, Patel M, Soltesz I, Staley K. 2009. A novel apparatus for lateral fluid percussion injury in the rat. *J Neurosci Methods*. 177(2):267-72.
12. Chen, K., A. Neu, **A. L. Howard**, C. Foldy, J. Echegoyen, L. Hilgenberg, M. Smith, K. Mackie, and I. Soltesz. 2007. Prevention of plasticity of endocannabinoid signaling inhibits persistent limbic hyperexcitability caused by developmental seizures. *Journal of Neuroscience*. 27(1):46-58.
13. **Howard A. L.**, A. Neu, R. J. Morgan, J. C. Echegoyen, and I.Soltesz. 2007. Opposing modifications in intrinsic currents and synaptic inputs in post-traumatic mossy cells: Evidence for single-cell homeostasis in a hyperexcitable network. *Journal of Neurophysiology*. 97(3):2394-409
14. **Howard, A.**, G. Tamas, and I.Soltesz. 2005. Lighting the chandelier: New vistas for axo-axonic cells. *Trends in Neurosciences*. 28(6):310-6.
15. Ratzliff A. H., **A. L. Howard**, V. Santhakumar, I. Osapay, and I.Soltesz. 2004. Rapid deletion of mossy cells does not result in a hyperexcitable dentate gyrus: Implications for epileptogenesis. *Journal of Neuroscience*. 24(9):2259-69.
16. Földy, C., I. Aradi, **A. Howard**, and I.Soltesz. 2004. Diversity beyond variance: Modulation of firing rates and network coherence by GABAergic subpopulations. *European Journal of Neuroscience*. 19(1):119-30.
17. Ratzliff, A. H., V. Santhakumar, **A. Howard**, and I.Soltesz. 2002. Mossy cells in epilepsy: Rigor mortis or vigor mortis? *Trends in Neurosciences* 25: 140-144.
18. Vawter, M. P., **A. L. Howard**, T. M. Hyde, J. E. Kleinman, and W. J. Freed. 1999. Alterations of hippocampal secreted N-CAM in bipolar disorder and synaptophysin in schizophrenia. *Molecular Psychiatry.* 4(5):467-75.
19. Vawter, M. P., J. J. Hemperly, T. M. Hyde, S. E. Bachus, D. M. VanderPutten, **A. L. Howard**, H. E. Cannon-Spoor, M. T. McCoy, M. J. Webster, J. E. Kleinman, and W. J. Freed. 1998. VASE-containing N-CAM isoforms are increased in the hippocampus in bipolar disorder but not schizophrenia. *Experimental Neurology*. 154(1):1-11.

**PENDING PUBLICATIONS:**

1. Lee SH, Dudok B, Parihar V, Jung KM, Zöldi M, Kang Y, Maroso M, Alexander A, Nelson G, Piomelli D, Katona I, Limoli C and Soltesz I. Neurophysiology of space travel: Energetic solar particles cause cell type-specific plasticity of neurotransmission. Under review by Brain Structure and Function
2. Alexander A, Cole C, Zhang M, Veeravagu A, Grant G and Ratliff J. National Trends in Pediatric Epilepsy Surgery Reveal a Decrease in Inpatient Hospitalizations for Surgical Treatment and Socioeconomic Disparities in the Children Receiving Surgery. Being re-written for submission to JNS Peds.
3. Alexander A, Paz J, Huguenard J. A Novel Mechanism for Network Hyperexcitability in the Stargazer Mouse. Undergoing final manuscript preparation for submission to Journal of Neuroscience.

**ABSTRACTS:**

1. **Alexander AL,**  Allyson, Cheshier S, Edwards ME, Fisher P, Grant G. Pediatric Glioblastoma: A Retrospective Review of 41 cases. Platform Presentation. Talk given at The AANS/CNS Pediatric Section meeting in Amelia Island, December 2014.
2. **Alexander AL,** Cheshier S, Edwards ME, Fisher P, Grant G.Pediatric Glioblastoma: A Retrospective Review of 41 cases. Platform Presentation. Poster given at the 2014 Stanford University School of Medicine Neuroscience Forum, June, 2014.
3. **Alexander AL** and Huguenard, JR. Lamotrigine suppresses thalamic epileptiform oscillations via a blockade of the persistent sodium current. Poster presented at the 2014 AANS Annual Scientific Meeting, San Francisco, CA in April 2014
4. **Alexander AL** and Huguenard, JR. Lamotrigine suppresses thalamic epileptiform oscillations via a blockade of the persistent sodium current. Poster presented at the 2013 American Epilepsy Society Meeting in Washington, DC on December 7, 2013.
5. **Alexander AL** and Huguenard, JR. Perturbations of glutamatergic signaling in the neocortex of stargazer mice. Poster presented at the 2012 Society for Neuroscience meeting on October 13, 2012 in New Orleans, LA.
6. **Alexander AL** and Huguenard, JR. Perturbations of glutamatergic signaling in the neocortex of stargazer mice. Poster given at the 2012 Stanford University School of Medicine Neuroscience Forum, June 8, 2012. Winner of “Best Poster” award.
7. **Alexander A**, Lober R, Edwards M, Yeom K. Arterial Spin Labeling Cerebral Blood Flow as a Correlate of Clinically Significant Hydrocephalus in Children with Brain Tumors. Platform given at the 2012 Stanford University School of Medicine Neuroscience Forum, June 8, 2012.
8. **Alexander A**, Veeravagu A, Do H, Marks M, Steinberg S, Edwards M, Cheshier S. Ruptured cerebral aneurysms in infants up to one year of age: case reports and literature review. Poster presented at the 2012 AANS Annual Scientific Meeting, Miami Beach, FL, April 2012
9. **Alexander A**, Lober R, Edwards M, Yeom K. Arterial Spin Labeling Cerebral Blood Flow as a Correlate of Clinically Significant Hydrocephalus in Children with Brain Tumors. Platform Presentation given at the 2012 AANS Annual Scientific Meeting, Miami Beach, FL, April 16, 2012
10. **Alexander A**, Veeravagu A, Do H, Marks M, Steinberg S, Edwards M, Cheshier S. Ruptured cerebral aneurysms in infants up to one year of age: case reports and literature review. Poster presented at Stanford University School of Medicine Neuroscience Forum, May 13, 2011.
11. **Alexander A**, Chen T, Arrigo R, Boakye M. 2011.X-Stop Versus Laminectomy for the Treatment of Lumbar Stenosis: a Propensity Score Model Matched Comparison.Abstract presented at the annual meeting of the American Association of Neurological Surgeons, April 9-13 in Denver, Colorado.
12. Khan N, **Howard A**, Bober B and G K Seinberg. 2010. Intracranial Aneurysms, Moyamoya Disease and Atypical Intracranial Angiopathy as Cause Of Subarachnoid Hemmorhage or Stroke in MajewskiOsteodysplatic Primordial Dwarfism, Type II. Abstract presented at the annual meeting of the Congress of Neurological Surgeons, October 16-21 in San Francisco, CA.
13. **Howard, A.**, A. Neu, and I.Soltesz. 2005. Homeostatic regulation of mossy cell firing by Ih and a potassium current. Abstract presented at the annual meeting of the Society for Neuroscience, November 12-16, in Washington, D. C.
14. **Howard, A. L.**, A. Ratzliff, and I.Soltesz. 2004. Long-lasting changes in intrinsic properties of surviving mossy cells after head injury. Abstract presented at the annual meeting of the American Epilepsy Society, December 3-7, 2004, in New Orleans, LA.
15. **Howard, A. L.**, A. Ratzliff, and I.Soltesz. 2004. Long-lasting changes in intrinsic properties of surviving mossy cells after head injury. Abstract presented at the annual meeting of the Society for Neuroscience, October 23-27, in San Diego, CA.
16. Ratzliff, A., **A. L. Howard**, and I.Soltesz. 2003. Mossy cell deletion does not cause hyperexcitability in the dentate gyrus: Implications for epilepsy. Abstract presented at the annual meeting of the American Epilepsy Society, December 5-10, in Boston, MA.
17. Ratzliff, A., **A. L. Howard**, and I.Soltesz. 2003. Acute loss of hilar mossy cells does not cause granule cell hyperexctitability in the dentate gyrus: Implications for limbic epileptogenesis. Abstract presented at the annual meeting of the Society for Neuroscience, November 7-12, in New Orleans, LA.
18. **Howard, A. L.**, A. Ratzliff, and I.Soltesz. 2003. Exploring endocannabinoid signaling in the dentate gyrus. Abstract presented at the annual meeting of the Society for Neuroscience, November 7-12, in New Orleans, LA.
19. Vawter, M. P., **A. L. Howard**, T. M. Hyde, J. E. Kleinman, and W. J. Freed. 1998. Secreted N-CAM proteins are altered in the hippocampus of bipolar disorder but not in Schizophrenia. Abstract presented at the annual meeting of the Society for Neuroscience, November 7-12, in Los Angeles, CA.

**BOOK CHAPTER:**

1. **Alexander, AL**, Edwards, M. Pediatric Aneurysms. In: Cohen, AR, ed. Pediatric Neurosurgery: Tricks of the Trade. New York NY: Thieme; 2016. Chapter 92: 759-767.

*CV Last updated: August 9, 2017*