

Robert Emerson Ayer, MD, FAANS

Board Certified Neurosurgeon

Polaris Spine and Neurosurgery Center
1150 Hammond Drive Suites 400, 600, 650

(e): neurosurgery@robertayermd.com

(p): 404-256-2633

(w): www.polarisspine.com

(w): www.robertayermd.com

PROFESSIONAL CLINICAL EXPERIENCE

Polaris Spine and Neurosurgery Center

Neurosurgeon

•GA TopDocs 2021

Atlanta, GA

August 2021 – Present

Apex Spine and Neurosurgery

Neurosurgeon

•GA TopDocs 2020

Atlanta, GA

July 2020 – August 2021

Neurosurgery and Spine Associates

Attending Neurosurgeon, Gwinnett Medical Center; Northside Hospital

Lawrenceville, GA

August 2014 – July 2020

University of California Irvine Medical Center

Clinical Instructor, Department of Neurological Surgery

Orange, CA

July 2013–July 2014

GRADUATE MEDICAL EDUCATION

FELLOWSHIP

University of California Irvine Medical Center

Skull Base Neurosurgery

Clinical Advisor: Frank P.K. Hsu, MD, PhD

Irvine, CA

July 2013–June 2014

RESIDENCY

Loma Linda University Medical Center

Chief Resident of the Neurological Surgery Residency Program

Loma Linda, CA

July 2012–June 2013

Swedish Neuroscience Institute

Complex and Minimally Invasive Spinal Surgery Enfolded Fellowship

Seattle, WA

July 2011–June 2012

Loma Linda University Medical Center

Neurological Surgery Residency Program

Loma Linda, CA

July 2008–June 2011

NEUROSCIENCE RESEARCH FELLOWSHIP

Loma Linda University School of Medicine

Department of Physiology and Pharmacology

Primary Investigator: John H. Zhang, MD, PhD

•PHL 694: Cerebral Pathophysiology Course Instructor

Loma Linda, CA

August 2006–June 2008

INTERNSHIP

Loma Linda University Medical Center

General Surgery Residency Program

Loma Linda, CA

November 2005–June 2006

Ochsner Clinic Foundation

General Surgery Residency Program

New Orleans, LA

July 2005–October 2005

MEDICAL EDUCATION

BOSTON UNIVERSITY SCHOOL OF MEDICINE

Doctor of Medicine

Boston, MA

May 2005

SCHOLARSHIPS

Summer Research Scholar

Boston University School of Medicine Cancer Research Center
Primary Investigator: Remco Spanjaard, PhD

Boston, MA

June 2002–September 2002

UNDERGRADUATE EDUCATION

BOSTON UNIVERSITY

Bachelor of Arts in Biology

Boston, MA

January 1999

AWARDS AND RECOGNITION

•GA TopDocs

Atlanta, GA

2020, 2021

•Alpha Omega Alpha Medical Honor Society

Loma Linda University

2011

•Awarded for Excellence in Basic Science Research

Loma Linda University

2010

•Recognition for Exceptional Patient Care

Loma Linda University

2009

•Magna Cum Laude

Boston University

1999

PROFESSIONAL MEMBERSHIP

•Fellow of the American Association of Neurological Surgeons

May 2017 - Present

•Gwinnett Medical Center Multidisciplinary Peer Review Committee

November 2016 – July 2020

•Georgia Neurosurgical Society

June 2016 – Present

•Congress of Neurological Surgeons

July 2008 – Present

•American Association of Neurological Surgeons

July 2008 – Present

CERTIFICATION/LICENSURE

BOARD CERTIFICATION

The American Association of Neurological Surgeons

May 2017 - Current

MEDICAL LICENSE

Georgia

2014 – Current

Colorado

2021 – Current

Nebraska

2020 – 2021

California

2007 – 2017

Washington

2011 – 2014

ADDITIONAL PROFESSIONAL EXPERIENCE

NuVasive

Restorative Therapies Group, Faculty Consultant

San Diego, CA

January 2020 – Present

•Instructor/Consultant for Lateral Position Minimally Invasive Surgery

•Consultant for the use of navigation in spinal surgery

Robert Emerson Ayer MD, FAANS

Board Certified Neurosurgeon

e): ayer@polarisspine.com

(p): 404-256-2633

MEDTRONIC

Restorative Therapies Group, Faculty Consultant

- Provide clinical seminars/didactic lectures on surgical techniques

Memphis, TN

October 2017 – January 2018

CORNING INCORPORATED

Division of Advanced Life Sciences

- Conducted experiments in the field of DNA micro-array development

Corning, NY

March 1999–August 2001

PUBLICATIONS

ORIGINAL ARTICLES

Gill AS, Gill, R, Kaloostian P, Elias D, Roufail JS, Cruz AS, Pelargos PE, Hsu FPK, Kim RC, **Ayer RE**, Ghostine S. Intracranial myeloid sarcoma metastasis mimicking acute subdural hematoma. *Case Rep Surg.* 2017.

Ayer RE, Jafarian N, Chen W, Applegate II R.L., Colohan AR, Zhang JH. Pre-operative mucosal tolerance to brain antigens and a neuroprotective immune response following surgical brain injury. *J Neurosurg.* 2012 Jan;116(1):246-53

Ayer RE, Zouros A. Encephalocraniocutaneous lipomatosis: A review of its clinical pathology and neurosurgical indications. *Case Report. J Neurosurg Pediatr.* 2011 Sep; 8(3):316-20.

Jafarian N, Neumann M, Applegate II R.L., **Ayer RE**. Successful labor epidural anesthesia ten days after epidural blood patch. *Int J Obstet Anesth.* 2011 Apr;20(2):194-5.

Lekic T, Hartman R, Rojas H, Manaenko A, Chen W, **Ayer RE**, Tang J, Zhang JH. Protective effect of melatonin upon neuropathology, striatal function and memory ability after intracerebral hemorrhage in rats. *J Neurotrauma* 2010 Mar; 27(3):627-37.

Ayer RE, Chen W, Sugawara T, Suzuki H, Zhang JH. Role of gap junctions in early brain injury following subarachnoid hemorrhage. *Brain Research* 2010 Feb 22; 1315:150-8.

Suzuki H, **Ayer RE**, Sugawara T, Chen W, Sozen T, Hasegawa Y, Kanamaru K, Zhang JH. Protective effects of recombinant osteopontin on early brain injury after subarachnoid hemorrhage in rats. *Critical Care Medicine* 2010 Feb; 38(2):612-8.

Chen W, Hartman R, **Ayer RE**, Marcantonio S, Kamper J, Tang J, Zhang JH. Matrix metalloproteinases inhibition provides neuroprotection against hypoxia-ischemia in the developing brain. *J Neurochem.* 2009 Nov; 111(3):726-36.

Sugawara T, Jadhav V, **Ayer RE**, Chen W, Suzuki H, Zhang JH. Thrombin inhibition by argatroban ameliorates early brain injury and improves neurological outcomes after experimental subarachnoid hemorrhage in rats. *Stroke.* 2009 Apr; 40(4):1530-2.

Lee S, Jadhav V, **Ayer RE**, Rojas H, Hyong A, Lekic T, Tang J, Zhang JH. Dual effects of melatonin on oxidative stress after surgical brain injury in rats. *J Pineal Res.* 2009 Jan; 46(1):43-8.

Sugawara T, **Ayer RE**, Jadhav V, Chen W, Tsubokawa T, Zhang JH. Simvastatin attenuation of cerebral vasospasm after subarachnoid hemorrhage in rats via increased phosphorylation of Akt and endothelial nitric oxide synthase. *J Neurosci Res.* 2008 Dec; 86(16):3635-43.

Ayer RE, Sugawara T, Chen W, Tong W, Zhang JH. Melatonin decreases mortality following severe subarachnoid hemorrhage. *J Pineal Res.* 2008 Mar; 44(2):197-204.

Sugawara T, **Ayer RE**, Jadhav V, Zhang JH. A new grading system evaluating bleeding scale in filament perforation subarachnoid hemorrhage rat model. *J Neurosci Methods.* 2008 Jan 30; 167(2):327-34.

Zhao X, **Ayer RE**, Davis SL, Ames SJ, Florence B, Torchinsky C, Liou JS, Shen L, Spanjaard RA. Apoptosis factor EI24/PIG8 is a novel endoplasmic reticulum-localized Bcl-2-binding protein which is associated with suppression of breast cancer invasiveness. *Cancer Res.* 2005 Mar 15; 65(6):2125-9.

JOURNAL SUPPLEMENTS

Ayer RE, Sugawara T, Ostrowski R, Ma Q, Jafarian N, Tang J, Zhang JH. Statin induced T-lymphocyte modulation and neuroprotection following experimental subarachnoid hemorrhage. *Acta Neurochir Suppl.* 2013;115:259-66

Ayer RE, Jadhav V, Sugawara T, Zhang JH. The neuroprotective effects of cyclooxygenase-2 inhibition in a mouse model of aneurysmal subarachnoid hemorrhage. *Acta Neurochir Suppl.* 2011;111:145-9.

Suzuki H, Hasegawa Y, **Ayer R**, Sugawara T, Chen W, Sozen T, Kanamaru K, Taki W, and Zhang J.H. Effects of recombinant osteopontin on blood-brain barrier disruption after subarachnoid hemorrhage in rats. *Acta Neurochir Suppl.* 2011;111:231-6.

Jafarian N, **Ayer RE**, Eckermann J, Tong W, Jafarian N, Applegate II R.L., Stier G, Martin R, Tang J, Zhang JH. Mucosal tolerance to brain antigens preserves endogenous TGF β -1 and improves neurological outcomes following experimental craniotomy. *Acta Neurochir Suppl.* 2011;111:283-7

Suzuki H, **Ayer RE**, Sugawara T, Chen W, Sozen T, Hasegawa Y, Kanamaru K, Zhang JH. Role of osteopontin in early brain injury after subarachnoid hemorrhage in rats. *Acta Neurochir Suppl.* 2011; 110:75-9.

Hartman RE, Rojas HA, Lekic T, **Ayer RE**, Lee S, Jadhav V, Titova E, Tang J, Zhang JH. Long-term effects of melatonin after intracerebral hemorrhage in rats. *Acta Neurochir Suppl.* 2008; 105:99-100.

Sugawara T, Jadhav V, **Ayer RE**, Zhang JH. Simvastatin attenuates cerebral vasospasm and improves outcomes by upregulation of PI3K/Akt pathway in a rat model of subarachnoid hemorrhage. *Acta Neurochir Suppl.* 2008; 102:391-4.

Ayer RE, Sugawara T, Zhang JH. Effects of melatonin in early brain injury following subarachnoid hemorrhage. *Acta Neurochir Suppl.* 2008; 102:327-30.

Lee S, Jadhav V, **Ayer RE**, Rojas H, Hyong A, Lekic T, Stier G, Martin R, Zhang JH. The antioxidant effects of melatonin in surgically induced brain injury in rats. *Acta Neurochir Suppl.* 2008; 102:367-71.

REVIEWS

Sugawara T, **Ayer RE**, Jadhav V, Chen W, Tsubokawa T, Zhang JH. Mechanisms of statin treatment in cerebral vasospasm. *Acta Neurochir Suppl.* 2011; 110(2):9-11.

Ayer RE, Zhang JH. Connecting the early brain injury of aneurysmal subarachnoid hemorrhage to clinical practice. *Turkish Neurosurgery* 2010; April; 20(2):159-66.

Ayer RE, Zhang JH. The clinical significance of acute brain injury in subarachnoid hemorrhage and opportunity for intervention. *Acta Neurochir Suppl.* 2008; 105:179-84.

Robert Emerson Ayer MD, FAANS

Board Certified Neurosurgeon

e): ayer@polarisspine.com

(p): 404-256-2633

Ayer RE, Zhang JH. Oxidative stress in SAH: significance in acute brain injury and vasospasm. *Acta Neurochir Suppl.* 2008; 104:33-41

Sugawara T, **Ayer RE**, Zhang JH. Role of statins in cerebral vasospasm. *Acta Neurochir Suppl.* 2008; 104:287-90.

BOOK CHAPTERS

Ayer RE, Sugawara T, Zhang JH. Aneurysmal subarachnoid hemorrhage grading in animal models. *Animal Models of Acute Neurological Injuries II: Injury and Mechanistic Assessments.* Ed: J. Chen, X. Xu, J. Xu, J. Zhang. Humana 2012.

Ayer RE, Cahill J, Sugawara T, Jadhav V, Zhang JH. Rodent surgical procedures and tissue collection. *Animal Models of Acute Neurological Injury.* Ed: J. Chen, X. Xu, J. Xu, J. Zhang. Humana 2008.

EDITORIALS

Ayer RE, Azgarzadie F. The Incomplete Picture of Incomplete Spinal Cord Injury. *Transl. Stroke Res.* 2011 Dec 2 (4):430-32.

Ayer RE, Zhang JH. Comment on: Neural stem cell markers, nestin and musashi proteins, in progression of human glioma: Correlation of nestin with prognosis of patient survival. *Surgical Neurology* 2007 Aug;68(2): 143-4.

ABSTRACTS

Ayer RE, Zouros A. 39th Annual Meeting of the International Society for Pediatric Neurosurgery, Goa, India, October 16 -20, 2011: The neurosurgical treatment of an infant with encephalocraniocutaneous lipomatosis and extensive spinal cord lipomas. *Child's Nervous System.* 2011 Oct;10:1751-1850.

ACKNOWLEDGMENTS

Sugawara T, Aoyagi M, Ogishima T, Kawano Y, Tamaki M, Yano T, Tsunoda A, Ohno K, Maehara T, Kishimoto S. Extended orbital exenteration for sinonasal malignancy with orbital apex extension: surgical technique and clinical analysis. *Journal of Neurosurgery.* 2015; Mar 27:1-7

Sugawara T, Aoyagi M, Tanaka Y, Tamaki M, Kobayashi D, Ohno K. Chronic encapsulated expanding hematoma in non-functioning pituitary adenoma. *Neurosurgical Review.* 2013; Jul;36(3):395-402

PRESENTATIONS/DIDACTIC LECTURES

Ayer RE. Oral Presentation: Single Position Lateral Surgery and Best Practices. Nuvasive Southeastern Sales Meeting. Grand Hyatt Hotel, Atlanta, GA. February 26, 2020.

Ayer RE. Oral Presentation: Fractures of the Spine: Indications for Surgery: Stable vs Unstable. Center for Trauma Rounds. Gwinnett Medical Center, Lawrenceville, GA. June 6, 2019.

Ayer RE. Oral Presentation: Stability of Spinal Fractures. "Neuro-talks." Center for Neuroscience and Spine. Gwinnett Medical Center, Lawrenceville, GA. June 4, 2017.

Ayer RE. Oral Presentation: Minimally Invasive Techniques for Uncomplicated Low Back Pain. Sequent Health Physician Partners Bi-Annual Membership Meeting. GHS Resource Center, Lawrenceville, GA. May17, 2018.

Robert Emerson Ayer MD, FAANS

Board Certified Neurosurgeon

e): ayer@polarisspine.com

(p): 404-256-2633

Ayer RE. Panel Discussion: Want to Learn About Back Pain? Chateau Elan, 100 Rue Charlemagne Drive, Braselton, GA. May 17, 2018

Ayer RE. Didactic Lecture: Intracranial Pressure Measurement, Assessment, and Management. Continuing Medical Education Conference. Gwinnett Medical Center, Lawrenceville, GA. March 7, 2018.

Ayer RE. Didactic Lecture: Oblique Lateral Interbody Fusion Techniques. Medtronic Faculty Consultant at Congress of Neurological Surgeons Annual Meeting 2017. Boston, MA. October, 2017.

Ayer RE. Oral Presentation: Complex Skull Fractures. Gwinnett Medical Center's 13th Annual Advances in Neurosciences and Stroke 2016. Lawrenceville, GA. November 4, 2016.

Ayer RE. Didactic Lecture: Spinal Cord Injury Controversy and Management: The Incomplete Picture of Incomplete Spinal Cord Injury. Continuing Medical Education Conference, Gwinnett Medical Center, Lawrenceville, GA. May 7, 2015.

Keen J, **Ayer RE**, Asgarzadie F, Zouros A. Oral Presentation: Pediatric Survivors of Traumatic Atlanto-occipital Dislocation and their Neurosurgical Management: The Loma Linda University Children's Hospital Experience. AANS Annual Scientific Meeting, San Francisco, CA. April 2014.

Ayer RE. Oral Presentation: Grand Rounds Conference. Vasospasm in Aneurysmal Subarachnoid Hemorrhage: Should We Really Care? Department of Neurosurgery. University of California Irvine Medical Center, Orange, CA. March 2014.

Ayer RE. Didactic Lecture: Subarachnoid Hemorrhage and Clipping versus Coiling Strategies. Intensive Care Unit Nursing Continuing Education Lecture Series. University of California Irvine Medical Center, Orange, CA. March 2013.

Keen J, **Ayer R**, Asgarzadie F, and Zouros A. Poster Presentation: Management of Traumatic Atlanto-Occipital Dislocation in Children: The Loma Linda University Children's Hospital Experience. California Association of Neurological Surgeon Annual Meeting, Monterey Bay Resort, January 17-19, 2014, Monterey, CA

Ayer RE, Oral Presentation: Immune Modulation in Brain Injury and Aneurysmal Subarachnoid Hemorrhage. Grand Rounds Conference. Department of Neurosurgery. University of California Irvine Medical Center, Orange, CA. August 2013.

Ayer RE, Didactic Lecture: Spinal Stenosis and Spondylolisthesis: Indications for Decompression and/or Fusion. Academy of Chiropractic Arts and Science: Continuing Education Lecture Series. Radisson Hotel, Buena Park, CA. June, 2013.

Ayer RE, Oral Presentation: Basic Adult Spinal Deformity Radiographic Evaluation. Grand Rounds Conference. Department of Neurosurgery, Loma Linda University Medical Center. Loma Linda, CA. March, 2013.

Ayer RE, Oral Presentation: Basics of Peripheral Nerve Injury Surgical Management. Grand Rounds Conference. Department of Neurosurgery, Loma Linda University Medical Center. Loma Linda, CA. November, 2012.

Ayer RE, Zouros A. Abstract: The neurosurgical treatment of an infant with encephalocraniocutaneous lipomatosis and extensive spinal cord lipomas. 39th Annual meeting of the International Society for Pediatric Neurosurgery, Goa, India. October 16-20, 2011

Ayer RE, Jafarian N, Wanqiu C, Applegate RL, Zhang JH. Abstract: Pre-operative mucosal tolerance to brain antigens provides a neuroprotective immune response following surgical brain injury. Congress of Neurological Surgeons Annual Meeting, Washington, DC. October 1-6, 2011

Robert Emerson Ayer MD, FAANS

Board Certified Neurosurgeon

e): ayer@polarisspine.com

(p): 404-256-2633

Ayer RE, Ostrowski R, Sugawara T, Ma Q, Jafarian N, Tang J, Zhang JH. Oral Presentation: Statin induced T-lymphocyte modulation and neuroprotection following experimental subarachnoid hemorrhage. 11th International Conference on Neurovascular Events after Subarachnoid Hemorrhage. Cincinnati, Ohio. July 21-23, 2011

Ayer RE. Medical Student Didactic Lecture: Crash Course in Neurosurgery. Presented on behalf the Department of Surgical Education, Loma Linda University School of Medicine, Loma Linda, CA. April 8, 2011

Ayer RE. Oral Presentation: The pleotrophic effects of statins and their therapeutic utility in aneurysmal subarachnoid hemorrhage. Grand Rounds Conference. Department of Neurosurgery, Loma Linda University Medical Center. Loma Linda, CA. September 8, 2010

Ayer RE. Junior Medical Student Didactic Lecture: Introduction to Neurosurgery. Presented on behalf the Department of Surgical Education, Loma Linda University School of Medicine, Loma Linda, CA. August 27, 2010

Jafarian N, **Ayer RE**, Eckermann J, Tong W, Jafarian N, Stier G, Martin R, Zhang JH. Abstract: Localized immune suppression provides neuroprotection in a mouse model of surgical brain injury. International Anesthesia Research Society Annual Meeting, Honolulu, HI. March 20-23, 2010

Jafarian N, **Ayer RE**, Eckermann J, Tong W, Jafarian N, Applegate II R.L., Stier G, Martin R, Tang J, Zhang JH. Abstract: Mucosal tolerance to brain antigens preserves CNS immune privilege and provides neuroprotection in experimental craniotomy. 3rd International Conference on Intracerebral Hemorrhage, Rancho Mirage, CA. March 7-9, 2010

Ayer RE, Jadhav V, Sugawara T, Zhang JH. Abstract: The neuroprotective effects of cyclooxygenase-2 inhibition in a mouse model of aneurysmal subarachnoid hemorrhage. 3rd International Conference on Intracerebral Hemorrhage, Rancho Mirage, CA. March 7-9, 2010

Ayer RE, Jafarian N, Eckermann J, Tong W, Jafarian N, Applegate II R.L., Stier G, Martin R, Tang J, Zhang JH. Poster Presentation: Preservation of CNS immune privilege provides neuroprotection in experimental craniotomy. Loma Linda University Annual Postgraduate Convention, Loma Linda, CA. March 7-8, 2010

Ayer RE, Jadhav V, Sugawara T, Zhang JH. Poster Presentation: The neuroprotective effects of cyclooxygenase-2 inhibition in a mouse model of aneurysmal subarachnoid hemorrhage. Loma Linda University Annual Postgraduate Convention, Loma Linda, CA. March 7-8, 2010

Ayer RE, Chen W, Sugawara T, Suzuki H, Zhang JH. Poster Presentation: Role of gap junctions in early brain injury following subarachnoid hemorrhage. Loma Linda University Annual Postgraduate Convention, Loma Linda, CA. March 7-8, 2010

Adewumi DA, Eckermann JM, **Ayer RE**, Asgarzadie F, Colohan ART. Poster Presentation: The Loma Linda University Medical Center cervical spine clearance protocol. Loma Linda University Annual Postgraduate Convention, Loma Linda, CA. March 7-8, 2010

Ayer RE. Oral Presentation: Vasospasm in aneurysmal subarachnoid hemorrhage: Should we really care? Grand Rounds Conference. Department of Neurosurgery. Loma Linda University Medical Center, Loma Linda, CA. December 30, 2009.

Jafarian N, **Ayer RE**, Eckermann J, Tong W, Jafarian N, Stier G, Martin R, Zhang JH. Abstract: Immunomodulation for the prevention of surgical brain injury. Western Anesthesia Residents Conference, Rancho Mirage, CA. May 1-3, 2009.

Robert Emerson Ayer MD, FAANS

Board Certified Neurosurgeon

e): ayer@polarisspine.com

(p): 404-256-2633

Ayer RE. Oral Presentation: Immunomodulation for the prevention of surgical brain injury. Grand Rounds Conference. Department of Neurosurgery, Loma Linda University Medical Center. Loma Linda, CA. March 11, 2009.

Ayer RE. Oral Presentation: CNS drug delivery via the olfactory route. Loma Linda University Neuroscience Consortium Research Conference, Loma Linda University School of Medicine. Loma Linda, CA. August 31, 2007.

Ayer RE, Sugawara T, Chen W, Tong W, Zhang JH. Abstract: Melatonin decreases mortality following severe subarachnoid hemorrhage. 13th International Symposium on Intracranial Pressure and Brain Monitoring, San Francisco, CA. July 21-26, 2007.

Lee S, Jadhav V, **Ayer RE,** Rojas H, Hyong A, Lekic T, Stier G, Martin R, Zhang JH. Abstract: The antioxidant effects of melatonin in surgically induced brain injury in rats. 13th International Symposium on Intracranial Pressure and Brain Monitoring, San Francisco, CA. July 21-26, 2007.

Ayer RE. Oral Presentation: Advances in stroke research 2006: Emerging Therapies. Loma Linda University Neuroscience Consortium Research Conference, Loma Linda University School of Medicine. Loma Linda, CA. March 23, 2007.

Lee S, Jadhav V, **Ayer RE,** Lecik T, Hyung A, Zhang JH. Poster Presentation: Antioxidant effects of melatonin in surgically induced brain injury, Loma Linda University Annual Postgraduate Convention. Loma Linda, CA. March 5, 2007.

Rojas H, Jadhav V, Lekic T, **Ayer RE,** Titova E, Martin R, Tang J, Zhang JH. Poster Presentation: Effect of melatonin in acute brain injury after intracerebral hemorrhage, Loma Linda University Annual Postgraduate Convention. Loma Linda CA. March 5, 2007.

Ayer RE. Oral Presentation: Effect of hypothermia on brain injury. Loma Linda University Neuroscience Consortium Research Conference, Loma Linda University School of Medicine. Loma Linda, CA. November 17, 2006.

Ayer RE. Oral Presentation: Molecular mechanisms of anesthetics: Isoflorane, Ketamine, Xylazine. Loma Linda University Neuroscience Consortium Research Conference. Loma Linda University School of Medicine. Loma Linda, CA. September 15, 2006.

Zhao X, **Ayer RE,** Davis SL, Ames SJ, Florence B, Torchinsky C, Liou JS, Shen L, Spanjaard RA. Poster Presentation: Apoptosis factor EI24/PIG8 is a novel endoplasmic reticulum-localized Bcl-2-binding protein which is associated with suppression of breast cancer invasiveness. Dept. of Defense Era of Hope Conference, Philadelphia PA, 2005.

Spanjaard RA, Zhao X, **Ayer RE,** Davis SL, Ames SJ, Florence B, Torchinsky C, Liou JS, Shen L. Poster Presentation: Apoptosis factor EI24/PIG8 is a novel endoplasmic reticulum-localized Bcl-2-binding protein which is associated with suppression of breast cancer invasiveness. Boston Cancer Res Assoc: Mini-Symposium, Boston MA, 2004

Ayer RE, Zhao X, Spanjaard RA. Poster Presentation: EPIP: A Novel ei24 binding protein potentially involved in cell mediated apoptosis. Boston University School of Medicine Research Symposium, Boston, MA. January, 2003.