

Ewell Lee Nelson, M.D.

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Education and Training

University of Texas at Austin, Bachelor of Science, 1989-1994, Electrical and Computer Engineering
Baylor College of Medicine, Doctor of Medicine, 1994-1998, Medicine

Positions and Employment

1998-1999 General Surgery, Intern, Baylor College of Medicine
1999-2003 Neurological Surgery, Resident, Baylor College of Medicine
2003-2004 Neurological Surgery, Chief Resident, Baylor College of Medicine
2004-current Neurological Surgery, Staff Neurosurgeon, Boulder Neurosurgical Associates
2008-2012 Director of Neurosurgical Service, Exempla Good Samaritan Medical Center, Lafayette, Colorado
2012-current Medical Director Operating Room, Foothills Hospital, Boulder, Colorado

Other Experience and Professional Memberships

American Board of Neurological Surgery - Board Certified
Medtronic Cranial Advisory Board, 2006-2008
American Association of Neurological Surgeons
Congress of Neurological Surgeons
North American Spine Society
Colorado Neurosurgical Society
Boulder County Medical Society
Society of Lateral Access Surgery (SOLAS)
American Medical Association

Honors and Awards

1994 Bachelor of Science in Electrical Engineering with Highest Honors, University of Texas at Austin

1994 Outstanding Scholar Leader of the Class, University of Texas at Austin

1994 Recipient of an Endowed Presidential Scholarship, Fluor Daniel Scholarship, 3M Scholarship, Alcoa Scholarship

1998 Doctor of Medicine with Honors, Baylor College of Medicine

1998 Alpha Omega Alpha, Baylor College of Medicine (Medical School)

- 2003 Kinjiro Iwata Award for Exceptional Contributions to the Department of Neurosurgery, Baylor College of Medicine
- 2009 Patient's Choice Award 2008, recognizing the nation's top physicians as rated by their patients
- 2009 Best Paper Award: Correlation of Clinical Outcomes and Cervical Sagittal Alignment: A Prospective Randomized Clinical Study. 24th Annual NASS Meeting, November 10 – 14, 2009, San Francisco, California.
- 2010 Received the highest ratings in the Denver Metro Area for the services provided at Boulder Community Hospital
- 2010 Finalist, Mario Boni Award, Cervical Spine Research Society, European Section, 26th CSRS Annual Meeting, Corfu, Greece

Selected Peer Reviewed Publications

Villavicencio AT, **Nelson EL**, Kantha V, Burneikiene S. Prediction of Clinical Outcomes after Transforaminal Lumbar Interbody Fusion Based on Preoperative Opioid Use. (*Submitted to J Neurosurg Spine, Revision June 15, 2016*)

Mason A, Villavicencio AT, **Nelson EL**; Forsythe R. A Case Report of Post-treatment Gliosarcoma Extension into the Pterygomaxillary Fossa. *World Neurosurg (Submitted May 2016, Submitted Cureus June 20, 2016)*

Villavicencio AT, **Nelson EL**, Rajpaj S, Otorora F, Burneikiene S. Case Series of Anterior Intervertebral Graft Extrusions in Transforaminal Lumbar Interbody Fusion Surgeries. *World Neurosurg.* 2016 Jan;85:130-5.

Villavicencio AT, **Nelson EL**, Mason A, Rajpal S, Burneikiene S. The Timing of Surgery and Symptom Resolution in Patients Undergoing Transforaminal Lumbar Interbody Fusion for Lumbar Degenerative Disc Disease and Radiculopathy. *J Neurosurg Spine (Submitted J Neurosurg Spine Feb 27, 2015; Submitted JSJT aka Clinical Spine Surgery May 12, 2015 Accepted Dec 15, 2015)*

Villavicencio AT, Babuska J, Serxner BJ, **Nelson EL**, Mason A, Burneikiene S. A Preliminary Report on the CO2 Laser for Lumbar Fusion: Safety, Clinical Outcomes and Technical Considerations. *Cureus* 7(4):e262. Doi:10.7759/cureus.262

Villavicencio AT, Serxner BJ, Mason A, **Nelson EL**, Rajpal S, Faes N, Burneikiene S. Unilateral and Pedicle Screw Fixation in Transforaminal Lumbar Interbody Fusion: Radiographic and Clinical Analysis. *World Neurosurgery (Published ahead of print)*

Burneikiene S, **Nelson EL**, Mason A, Rajpal S, Villavicencio AT. The Duration of Symptoms and Clinical Outcomes in Patients Undergoing Anterior Cervical Discectomy and Fusion for Degenerative Disc Disease and Radiculopathy. *The Spine J* (15):427-432,2015.

Mason A, Paulsen R, Babuska J, Rajpal S, Burneikiene S, **Nelson EL**, Villavicencio AT. The accuracy of Pedicle Screw Placement Using Intraoperative Image Guidance Systems: A Meta Analysis. *J Neurosurg Spine.* 2014 Feb;20(2):196-203.

Mason, A, Ayres K, Beasley K, Burneikiene S, Villavicencio AT, **Nelson EL**. A Novel Case of Resolved Post-Herpetic Neuralgia with Subsequent Development of Trigeminal Neuralgia: Case Report and Review of the Literature. *Case Rep Med*.2013:398513.

Villavicencio AT, **Nelson EL**, Mason A, Rajpal S, Burneikiene S. Outpatient Instrumented Lumbar Interbody Fusion. *J Spinal Disord and Tech*. 2013 Aug;26(6):298-304.

Burneikiene S, **Nelson EL**, Mason A, Rajpal S, Villavicencio AT. Complications in Patients Undergoing Transforaminal Lumbar Interbody Fusion with Deformity Correction for Degenerative Scoliosis and Spinal Stenosis. *Surg Neurol Int*, 2012;3:25.

Villavicencio AT, **Nelson EL**, Burneikiene S, Arends G. Surgical treatment Strategies for the Previously Operated Lumbar Spine. *Contemporary Spine Surgery*. 13(1):1-7, January 2012.

Carr FA, Healy KM, Villavicencio AT, **Nelson EL**, Mason A, Burneikiene S, Hernandez TD. Effect of Patient Pain Expectancies and Preoperative SF-36 Mental Component Summary Scores on Clinical Outcomes Following Anterior Cervical Discectomy and Fusion. *J Neurosurg Spine*. 2011 Nov;15(5):486-490.

Villavicencio AT, Babuska JM, Ashton A, Busch E, **Nelson EL**, Mason A, Burneikiene S. Prospective Randomized Double-Blinded Clinical Study Evaluating the Correlation of Clinical Outcomes and Cervical Sagittal Alignment. *Neurosurgery* 2011; 68:1309-1316.

Villavicencio AT, Burneikiene S, Roeca CM, **Nelson EL**, Mason A. Minimally Invasive versus Open Transforaminal Lumbar Interbody Fusion. *Surg Neurol Int* 2010;1:12

Villavicencio AT, Burneikiene S, Romanelli P, McNeely L, Lipani JD, Fariselli L, McIntyre M, Chang SD, **Nelson EL**, Broggi G, Adler JR, Thramann JJ. Survival following Stereotactic Radiosurgery for Newly Diagnosed and Recurrent Glioblastoma Multiforme: A Multicenter Experience. McDermott MW (ed): *Radiosurgery*. Basel, Karger, 2010, vol 7, pp 20808–20909.

Villavicencio AT, Burneikiene S, **Nelson EL**, Bulsara KR, Favors M, Thramann JJ. Safety and Efficacy of Transforaminal Lumbar Interbody Fusion using Intervertebral rhBMP-2. *J Neurosurg* 2005 Dec; 3(6):436-43.

Grundmeyer RW, Garber JE, **Nelson EL**, Baskin, DS. Spinal spondylosis and disc disease. In: Evans RW, Baskin DS, Yatsu FM, eds. *Prognosis of neurological disorders*. 2nd edition. Oxford University Press, 2000.

Presentations

Rajpal S, Villavicencio AT, **Nelson EL**, Burneikiene S. Unilateral and Bilateral Pedicle Screw Fixation in Transforaminal Lumbar Interbody Fusion (TLIF): Radiographic and Clinical Analysis. AANS Annual Scientific Meeting, April 30 – May 4, 2016, Chicago, IL. **POSTER**

Rajpal S, Villavicencio AT, Burneikiene S, **Nelson EL**. The Timing of Surgery and Symptom Resolution in Patients Undergoing Transforaminal Lumbar Interbody Fusion for Lumbar Degenerative Disc Disease and Radiculopathy. AANS Annual Scientific Meeting, April 30 – May 4, 2016, Chicago, IL. **POSTER**

Nelson EL. The Argument for Surgical Management of C2 Fractures in the Elderly. 12th Annual Symposium Current Techniques in the Treatment of Cranial and Spinal Disorders. Broomfield, Colorado, October 10, 2015

Burneikiene S, Villavicencio AT, **Nelson EL**, Rajpal S. The Duration of Symptoms and Clinical Outcomes in Patients Undergoing Anterior Cervical Discectomy and Fusion for Degenerative Disc Disease and Radiculopathy. 13th Annual Baltic Neurosurgery Association Meeting, Vilnius, Lithuania, September 11-12, 2015.

Burneikiene S, Villavicencio AT, **Nelson EL**, Mason A, Rajpal S. The Duration of Symptoms and Clinical Outcomes in Patients Undergoing Anterior Cervical Discectomy and Fusion for Degenerative Disc Disease and Radiculopathy. EuroSpine 2015, Copenhagen, Denmark, September 2 – 4, 2015

Villavicencio AT, **Nelson EL**, Mason A, Rajpal S, Burneikiene S. The Timing of Surgery and Symptom Resolution in Patients Undergoing Transforaminal Lumbar Interbody Fusion for Lumbar Degenerative Disc Disease and Radiculopathy. NASS and JSSR/Spine Across the Sea, Kohala Coast, HI, July 26-30, 2015.

Villavicencio AT, **Nelson EL**, Otalora F, Mason A, Rajpal S, Burneikiene, S. Case Series of Anterior Intervertebral Graft Extrusions in Transforaminal Lumbar Interbody Fusion Surgeries. 83rd American Association of Neurological Surgeons Annual Scientific Meeting May 2-6, 2015.

POSTER

Villavicencio AT, Serxner BJ, Burneikiene S, Mason A, **Nelson EL**, Rajpal S. Unilateral vs. Bilateral Pedicle Screw Fixation in Transforaminal Lumbar Interbody Fusion: Radiographic and Clinical Analysis. CNS Annual Meeting, Boston MA, October 18 – 22, 2014.

Nelson EL. Using RhBMP-2 in Spine Surgery: The Good. 11th Annual Symposium Current Techniques in the Treatment of Cranial and Spinal Disorders. Broomfield, Colorado, October 18, 2014.

Nelson, EL. Intracerebral and Spinal Hematoma: What Do We Do? 10th Annual Symposium Current Techniques in the Treatment of Cranial and Spinal Disorders. Broomfield, Colorado, October 26, 2013.

Mason A, Paulsen R, Babuska J, Rajpal S, **Nelson EL**, Burneikiene S, Villavicencio AT. The Accuracy of Pedicle Screw Placement Using Intraoperative Image Guidance: A Meta Analysis. CNS Annual Meeting, San Francisco, CA, October 19 – 23, 2013.

Villavicencio AT, Serxner BJ, Mason A, Beasley KD, **Nelson EL**, Rajpal S, Faes N, Burneikiene S. Comparative Study of Unilateral and Bilateral Pedicle Screw Fixation in Transforaminal Lumbar Interbody Fusion: Radiological and Clinical Analysis. CNS Annual Meeting, San Francisco, CA, October 19 – 23, 2013.

Villavicencio AT, Burneikiene S, **Nelson EL**, Mason A. Outpatient Instrumented Transforaminal Lumbar Interbody Fusion. NASS Summer Spine Meeting, Naples, FL, July 31 – August 3, 2013.

Burneikiene S, Serxner BJ, **Nelson EL**, Mason A, Rajpal S, Villavicencio AT. Radiological Outcomes in Patients Undergoing Transforaminal Lumbar Interbody Fusion (TLIF) with Interspinous Process Fixation Plate as an Adjunct to Unilateral Pedicle Screws. 2013 American

Association of Neurological Surgeons 81st Annual Scientific Meeting, New Orleans, LA, April 27-May 1, 2013.

Burneikiene S, Villavicencio AT, **Nelson EL**, Mason A, Rajpal S, Beasley K. The Duration of Symptoms and Clinical Outcomes in Patients Undergoing Anterior Cervical Discectomy and Fusion (ACDF) for Degenerative Disc Disease and Radiculopathy. 2013 American Association of Neurological Surgeons 81st Annual Scientific Meeting, New Orleans, LA, April 27-May 1, 2013.

Villavicencio AT, Burneikiene S, **Nelson EL**, Mason A. Outpatient Lumbar Interbody Fusion – Changing the Standard of Care. 2013 Annual Meeting of the Neurosurgical Society of America, Sea Island, GA, April 7 – 10, 2013.

Villavicencio AT, Mason A, Serxner B, **Nelson EL**, Rajpal S, Beasley KD, Burneikiene S. Predictive Value of the Duration of Symptoms in Patients Undergoing Anterior Cervical Discectomy and Fusion (ACDF) for Degenerative Disc Disease and Radiculopathy. 2013 Annual Meeting of the AANS/ CNS Section on Disorders of the Spine and Peripheral Nerves, Phoenix, AZ, March 6 – 9, 2013.

Serxner B, Villavicencio AT, Mason A, **Nelson EL**, Rajpal S, Beasley KD, Burneikiene S. Transforaminal Lumbar Interbody Fusion (TLIF) with Interspinous Process Fixation Plate as an Adjunct to Unilateral Pedicle Screws: Radiological Outcomes. 2013 Annual Meeting of the AANS/ CNS Section on Disorders of the Spine and Peripheral Nerves, Phoenix, AZ, March 6 – 9, 2013.

Mason A, Beloy V, Villavicencio AT, **Nelson EL**, Beasley K, Burneikiene S, Rajpal S. Central cord syndrome with delayed abducens and hypoglossal nerve palsies, a novel triad: Case report, review of proposed mechanisms and relevant literature. 2013 Annual Meeting of the AANS/ CNS Section on Disorders of the Spine and Peripheral Nerves, Phoenix, AZ, March 6 – 9, 2013.

Villavicencio AT, Serxner BJ, **Nelson EL**, Mason A, Rajpal S, Burneikiene S. The Duration of Symptoms and Clinical Outcomes in Patients Undergoing Anterior Cervical Discectomy and Fusion (ACDF) for Degenerative Disc Disease and Radiculopathy. NASS 27th Annual Meeting, Dallas, TX, October 24 – 27, 2012.

Nelson EL. Management of Traumatic Brain Injury: A Guidelines Overview. 9th Annual Symposium Current Techniques in the Treatment of Cranial and Spinal Disorders. Broomfield, Colorado, October 20, 2012.

Burneikiene S, Serxner BJ, Rajpal S, **Nelson EL**, Mason A, Villavicencio AT. Association of Duration of Symptoms and Clinical Outcomes in Patients Undergoing Cervical Spinal Fusion for Degenerative Disc Disease and Radiculopathy. CNS Annual Meeting, Chicago IL, October 6 – 10, 2012.

Serxner BJ, Burneikiene S, **Nelson EL**, Mason A, Rajpal S, Villavicencio AT. Transforaminal Lumbar Interbody Fusion (TLIF) with Interspinous Process Fixation Plate as an Adjunct to Unilateral Pedicle Screws: Radiological Outcomes. CNS Annual Meeting, Chicago IL, October 6 – 10, 2012.

Villavicencio AT, Serxner BJ, Babuska J, **Nelson EL**, Mason A, Rajpal S, Busch E, Ashton A, Burneikiene S. The Duration of Symptoms and Clinical Outcomes in Patients Undergoing

Anterior Cervical Discectomy and Fusion (ACDF) for Degenerative Disc Disease and Radiculopathy. Spine Across the Sea, July 29 – August 2, 2012, Kauai, Hawaii.

Villavicencio AT, Serxner BJ, Burneikiene S, **Nelson EL**, Mason A, Rajpal S. Clinical Outcomes in Patients Undergoing Transforaminal Lumbar Interbody Fusion (TLIF) with Interspinous Process Plate Fixation as an Adjunct to Pedicle Screws. Spine Across the Sea, July 29 – August 2, 2012, Kauai, Hawaii.

Serxner BJ, Burneikiene S, **Nelson EL**, Mason A, Rajpal S, Villavicencio AT. Preliminary Clinical Outcomes in Patients Undergoing Transforaminal Lumbar Interbody Fusion with Interspinous Process Plate Fixation as an Adjunct to Pedicle Screws. 80th AANS Annual Meeting, Miami, FL, April 14 -18, 2012.

Burneikiene S, Carr F, **Nelson EL**, Rajpal S, Villavicencio AT. Higher Patient Expectations Before Surgery May Be Related to Improved Clinical Outcomes. NASS 26th Annual Meeting, Chicago, IL, November 1-5, 2011.

Nelson EL. Update on Spinal Trauma: Old Principles and New Treatments. 8th Annual Symposium Current Techniques in the Treatment of Cranial and Spinal Disorders. Broomfield, Colorado, October 29, 2011.

Babuska J, Villavicencio AT, Mason A, **Nelson EL**, Rajpal S, Burneikiene S. Accuracy Comparison for Intraoperative Biplanar and Volumetric Image Guidance: A Systematic review. 2011 CNS annual Meeting, Washington, DC, October 1–6, 2011.

Villavicencio AT, **Nelson EL**, Mason A, Rajpal S, Carr FA, Burneikiene S. The Safety of Transforaminal Interbody Fusion for Deformity Correction in Degenerative Scoliosis with Spinal Stenosis. 79th AANS Annual Meeting, Denver, CO, April 9-13, 2011. Villavicencio AT, Nelson EL, Mason A, Babuska J, Carr FA, Rajpal S, Burneikiene S. CO₂ Laser-Assisted Lumbar Fusions: Safety, Clinical Outcomes and Technical Considerations. 79th AANS Annual Meeting, Denver, CO, April 9-13, 2011.

Villavicencio AT, Burneikiene S, **Nelson EL**, Mason A. Outpatient Lumbar Fusions – Changing the Standard of Care. 79th AANS Annual Meeting, Denver, CO, April 9-13, 2011.

Villavicencio AT, Carr FA, Hernandez TD, Healy KM, **Nelson EL**, Mason A, Rajpal S, Burneikiene S. Effects of Preoperative SF-36 Mental Component Scores and Patient Pain Expectations on Clinical Outcomes Following Anterior Cervical Discectomy and Fusion. 79th AANS Annual Meeting, Denver, CO, April 9-13, 2011.

Villavicencio AT, **Nelson EL**, Mason A, Rajpal S, Carr F, Burneikiene S. The Safety and Efficacy of Transforaminal Lumbar Interbody Fusion for Deformity Correction in Degenerative Scoliosis with Spinal Stenosis. 27th Annual Meeting, AANS/CNS Section on Disorders of the Spine and Peripheral Nerves, Phoenix, AZ, March 9 – 12, 2011.

Villavicencio AT, Mason A, **Nelson EL**, Rajpal S, Carr F, Weeks B, Burneikiene S. A Systematic Review of Accuracy and Comparison of Intraoperative Biplanar and Volumetric Image Guidance Systems. 27th Annual Meeting, AANS/CNS Section on Disorders of the Spine and Peripheral Nerves, Phoenix, AZ, March 9 – 12, 2011.

Villavicencio AT, **Nelson EL**, Mason A, Babuska J, Carr F, Rajpal S, Burneikiene S. CO2 Laser-Assisted Lumbar Fusions: Safety, Clinical Outcomes and Technical Considerations. 27th Annual Meeting, AANS/CNS Section on Disorders of the Spine and Peripheral Nerves, Phoenix, AZ, March 9 – 12, 2011.

Carr FA, Hernández T, Healy KM, **Nelson EL**, Mason A, Burneikiene S, Villavicencio AT. Effect of Patient Pain Expectations and Preoperative SF-36 Mental Component Scores on Clinical Outcomes Following Anterior Cervical Discectomy and Fusion. 27th Annual Meeting, AANS/CNS Section on Disorders of the Spine and Peripheral Nerves, Phoenix, AZ, March 9 – 12, 2011.

Villavicencio AT, **Nelson EL**, Mason A, Babuska J, Burneikiene S. Efficacy of CO₂ Laser-Assisted Lumbar Fusions: Preliminary Clinical Results. 2010 CNS Annual Meeting, San Francisco, CA October 16 – 21, 2010.

Carr FA, Hernández T, Healy KM, **Nelson EL**, Mason A, Burneikiene S, Villavicencio AT. Effect of Patient Pain Expectations and Preoperative SF-36 Mental Component Scores on Clinical Outcomes Following Anterior Cervical Discectomy and Fusion. 2010 CNS Annual Meeting, San Francisco, CA October 16 – 21, 2010.

Villavicencio AT, **Nelson EL**, Mason A, Babuska J, Burneikiene S. The Safety of Instrumented Lumbar Interbody Fusions Performed as an Outpatient Procedure. 2010 CNS Annual Meeting, San Francisco, CA October 16 – 21, 2010.

Villavicencio AT, **Nelson EL**, Mason M, Babuska J, Carr F, Burneikiene S. Selective Transforaminal Lumbar Interbody Fusion for Degenerative Adult Scoliosis Correction. 2010 CNS Annual Meeting, San Francisco, CA October 16 – 21, 2010.

Villavicencio AT, **Nelson EL**, Mason A, Carr F, Burneikiene S. Outpatient Instrumented Lumbar Interbody Fusion – Changing the Standard of Care. NASS 25th Annual Meeting October 5-9 2010, Orlando, Florida.

Nelson EL. Extreme Lateral Approaches to the Spine. 7th Annual Symposium Current Techniques in the Treatment of Cranial and Spinal Disorders. Broomfield, Colorado, September 11, 2010.

Burneikiene S, Babuska JM, Ashton A, Busch E, **Nelson EL**, Mason A, Villavicencio AT. Prospective Randomized Double Blinded Clinical Study Evaluating the Correlation of Clinical Outcomes and Cervical Sagittal Alignment. 26th Annual Meeting of the European Section of the Cervical Spine Research Society, 26 – 29 May, 2010, Corfu Island, Greece.

Villavicencio AT, Burneikiene S, Babuska J, **Nelson L**, Mason A. Correlation of Change in Segmental Sagittal Alignment and Clinical Outcomes after Anterior Cervical Discectomy and Fusion Surgery. American Association of Neurological Surgeons Annual Meeting, Philadelphia, Pennsylvania, May 1-5, 2010.

Villavicencio AT, Burneikiene S, **Nelson L**, Mason A. Feasibility of Interbody Lumbar Fusion Performed on an Outpatient Basis. American Association of Neurological Surgeons Annual Meeting, Philadelphia, Pennsylvania, May 1-5, 2010.

Burneikiene S, Villavicencio AT, **Nelson L**, Mason A. Outpatient Instrument Lumbar Interbody Fusion. Preliminary Results on Safety and Efficacy. 7Th Annual Mazama Spine Summit, Winthrop, WA, March 3-5, 2010.

Burneikiene S, Villavicencio AT, **Nelson L**, Mason A, McNeely L. CyberKnife Radiosurgery for Spine Tumors. Spinal Cord and Volume Analysis. 7Th Annual Mazama Spine Summit, Winthrop, WA, March 3-5, 2010.

Burneikiene S, Villavicencio AT, Babuska J, **Nelson L**, Mason A. Correlation of Clinical Outcomes and Change in Segmental Sagittal Alignment after Anterior Cervical Discectomy and Fusion Surgery. AANS/CNS Section on Disorders of the Spine and Peripheral Nerves Annual Meeting, Orlando, Florida, February 17-20, 2010.

Villavicencio AT, **Nelson L**, Mason A, Burneikiene S. Feasibility of Outpatient Interbody Lumbar Fusion. AANS/CNS Section on Disorders of the Spine and Peripheral Nerves Annual Meeting, Orlando, Florida, February 17-20, 2010.

Early Clinical Results of Complex Spinal Instrumentation using Multidimensional Surgical Imaging Systems, **Nelson EL**, Villavicencio AT, Mason A, Burneikiene S. 2nd International Spinal Imaging and Navigation Symposium (SINS), November 21, 2009, Seoul, Korea.

Villavicencio AT, Burneikiene S, **Nelson EL**, Babuska MJ, Ashton A, Busch E, Mason A. Correlation of Clinical Outcomes and Cervical Sagittal Alignment: A Prospective Randomized Clinical Study. 24th Annual NASS Meeting, November 10 - 14, 2009, San Francisco, California.

Villavicencio AT, Burneikiene S, Babuska JM, Ashton A, Busch E, **Nelson EL**. Prospective Randomized Clinical Study Evaluating the Correlation of Clinical Outcomes and Cervical Sagittal Alignment. 2009 CNS Annual Meeting, October 24 - 29, 2009, New Orleans, Louisiana.

Villavicencio AT, **Nelson EL**, Babuska JM, Mason A, Burneikiene S. Preliminary Clinical Experience Using a Minimally Invasive Spinous Process Fusion Plate. 2009 CNS Annual Meeting, October 24 - 29, 2009, New Orleans, Louisiana.

Nelson EL. Early Clinical Results of Complex Spinal Instrumentation Using Multidimensional Surgical Imaging Systems. Current Techniques in the Treatment of Cranial and Spinal Disorders, Broomfield, Colorado, October 17, 2009.

Villavicencio AT, Burneikiene S, Babuska JM, Mason A, **Nelson EL**. Aspen Spinous Process System: Preliminary Clinical Experience. XIV World Congress of Neurological Surgery (AANS), August 30 - September 4, 2009 Boston, Massachusetts.

Nelson EL, Burneikiene S, Mason A, Villavicencio AT. Preliminary Clinical Experience with the O-arm for Complex Spinal Instrumentation. XIV World Congress of Neurological Surgery (AANS), August 30 - September 4, 2009 Boston, Massachusetts.

Villavicencio AT, Burneikiene S, Mason A, **Nelson EL**. Clinical Use of Osteogenic Protein (OP-1) for Instrumented Posterolateral Fusion. XIV World Congress of Neurological Surgery (AANS), August 30 - September 4, 2009 Boston, Massachusetts.

Villavicencio AT, Babuska JM, Burneikiene S, Ashton A, Busch E, Mason A, **Nelson EL**. Correlation of Clinical Outcomes and Cervical Sagittal Alignment: A Prospective Randomized

Clinical Study. XIV World Congress of Neurological Surgery (AANS), August 30 - September 4, 2009 Boston, Massachusetts.

Nelson EL. Treatment of the Aging spine: Vertebroplasty and Kyphoplasty, Western Pain Society Annual Meeting, Englewood Colorado, April 30, 2009

Burneikiene S, Villavicencio AT, **Nelson EL**, Mason A. Clinical use of Osteogenic Protein(OP-1) for Instrumented Posterolateral Fusion. NASS Spring Break, April 23 – 25, 2009, Rio Grande, Puerto Rico.

Burneikiene S, Villavicencio AT, **Nelson EL**, Burneikiene S, Babuska JM, Ashton A, Busch E, Mason A. Correlation of Clinical Outcomes and Cervical Sagittal Alignment: A Prospective Randomized Clinical Study. NASS Spring Break, April 23 – 25, 2009, Rio Grande, Puerto Rico

Villavicencio AT, **Nelson EL**, Babuska JM, Mason A, Burneikiene S. Preliminary Clinical Experience Using a Mini-Open Aspen Spinous Process System. 2009 AANS/CNS Section on Disorders of the Spine and Peripheral Nerves Annual Meeting, March 11 – 14, 2009, Phoenix, Arizona.

Villavicencio, AT, Burneikiene S, **Nelson EL**, Mason A. Clinical Evaluation of Osteogenic Protein (OP-1) for Instrumented Posterolateral Fusion. 2009 AANS/CNS Section on Disorders of the Spine and Peripheral Nerves Annual Meeting, March 11 – 14, 2009, Phoenix, Arizona.

Nelson EL, Burneikiene S, Mason A, Villavicencio AT. Preliminary Clinical Experience with the O-arm for Complex Spinal Instrumentation. 2009 AANS/CNS Section on Disorders of the Spine and Peripheral Nerves Annual Meeting, March 11 – 14, 2009, Phoenix, Arizona.

Villavicencio AT, **Nelson EL**, Burneikiene S, Babuska JM, Ashton A, Busch E. Prospective Randomized Clinical Study Evaluating the Correlation of Clinical Outcomes and Cervical Sagittal Alignment. 2009 AANS/CNS Section on Disorders of the Spine and Peripheral Nerves Annual Meeting, March 11 – 14, 2009, Phoenix, Arizona.

Mason A, **Nelson EL**, Burneikiene S, Babuska JM, Ashton A, Busch E, Villavicencio AT. Prospective Randomized Clinical Study Evaluating the Correlation of Clinical Outcomes and Cervical Sagittal Alignment. 22nd Annual Neurosurgery in the Rockies Meeting, February 21 – 25, 2009, Beaver Creek, CO.

Nelson EL. The Aging Spine: Pathophysiology and New Surgical Solutions. Current Techniques in the Treatment of Cranial and Spinal Disorders, Broomfield, Colorado, November 15, 2008.

Nelson EL, Villavicencio AT, Burneikiene S, Roeca C. Correction of Degenerative Adult Scoliosis in Patients Undergoing Selective Transforaminal Lumbar Interbody Fusion. NASS 23rd Annual Meeting, October 14 – 18, Toronto, Canada.

Nelson EL, Burneikiene S, Villavicencio AT. Clinical Use of Osteogenic Protein (OP-1) for Instrumented Posterolateral Fusion. 2008 CNS Annual Meeting, Orlando, Florida, September 20 – 25, 2008.

Nelson EL, Villavicencio AT, Burneikiene S. Preliminary Clinical Experience with the O-arm for Complex Spinal Instrumentation and Kyphoplasty Cases. 2008 CNS Annual Meeting, Orlando, Florida, September 20 – 25, 2008.

Villavicencio AT, **Nelson EL**, Burneikiene S. Pelvic Sagittal Alignment in Patients Undergoing Selective Transforaminal Lumbar Interbody Fusion for Spinal Stenosis and Scoliosis Correction. 2008 CNS Annual Meeting, Orlando, Florida, September 20 – 25, 2008.

Villavicencio AT, Burneikiene S, **Nelson EL**. The Incidence of Discogenic Cervical Pain in Multisport Athletes. Spine Week 2008, May 26 -31, 2008, Geneva, Switzerland.

Burneikiene S, Villavicencio AT, Roeca CM, **Nelson EL**. Selective Transforaminal Lumbar Interbody Fusion for Degenerative Adult Scoliosis. Spine Week 2008, May 26 -31, 2008, Geneva, Switzerland.

Burneikiene S, **Nelson EL**, Roeca CM, Villavicencio AT. Minimally Invasive vs. Open Transforaminal Interbody Fusion. Spine Week 2008, May 26 – 31, 2008, Geneva, Switzerland.

Villavicencio AT, Burneikiene S, Roeca CM, **Nelson EL**. Selective Transforaminal Lumbar Interbody Fusion for Degenerative Adult Scoliosis Correction. AANS/CNS Section on Disorders of the Spine and Peripheral Nerves, Orlando, Florida, February 27 – March 1, 2008.

Villavicencio AT, **Nelson EL**, Pushchak EM, Burneikiene S. The Risk Assessment of Outpatient Anterior Cervical Discectomy and Fusion with Instrumentation. AANS/CNS Section on Disorders of the Spine and Peripheral Nerves, Orlando, Florida, February 27 – March 1, 2008.

Villavicencio AT, Burneikiene S, Roeca CM, **Nelson EL**. Selective Transforaminal Lumbar Interbody Fusion for Degenerative Adult Scoliosis. 21th Annual Neurosurgery in the Rockies Meeting, Beaver Creek, CO, February 23-27, 2008.

Nelson EL. Management of Spontaneous Intracerebral Hemorrhages. Exempla Good Samaritan Medical Center CME Series. – Lafayette, Colorado. October 4, 2007.

Nelson EL. Non-operative Management of Traumatic Cerebral Hemorrhages. Exempla Good Samaritan Medical Center CME Series. – Lafayette, Colorado. April 12, 2007.

Nelson EL. Intraoperative Guidance: Past, Present, and Future. Current Techniques in the Management of Spinal Disorders Symposium – Westminster, Colorado. September 30, 2006.

Villavicencio AT, Burneikiene S, **Nelson EL**, Bulsara KR, Thramann JJ. Intervertebral RhBMP-2 for Transforaminal Lumbar Interbody Fusion. AANS/CNS Section on Disorders of the Spine and Peripheral Nerves 22nd Annual Meeting, Orlando, Florida. March 15-18, 2006

Nelson EL. Head Trauma Update: Guidelines for Management. Boulder Community Hospital CME Series. – Boulder, Colorado. December 8, 2005.

Nelson EL. Minimally Invasive Endoscopic Transphenoidal Surgery for Pituitary Lesions. Current Techniques in the Management of Spinal Disorders Symposium – Broomfield, Colorado. October 8, 2005.

Nelson EL. Head Injuries in the Multisystem Trauma Patient. Longmont United Hospital CME Series. – Longmont, Colorado. September 30, 2005.

Villavicencio AT, Burneikiene S, **Nelson EL**, Favors M, Bulsara KR, Thramann J. Safety and Efficacy of Transforaminal Lumbar Interbody Fusion (TLIF) Using Intervertebral rhBMP-2. World Spine III – Rio de Janeiro, Brazil. July 31- August 3, 2005

Nelson EL. Operative and Non-operative Management of Patients with Spinal Trauma. Current Techniques in the Management of Spinal Disorders Symposium – Boulder, Colorado. May 22, 2004.

Ongoing Research

A Phase 2b, Randomized, Double-Blind, Placebo-Controlled Study to Evaluate the Safety and Efficacy of *Staphylococcus Aureus* 4-Antigen Vaccine (SA4Ag) in Adults Undergoing Elective Posterior Instrumented Lumbar Spinal Fusion Procedures. Sponsor_Pfizer. PI - Villavicencio (Jan 2016 - present)

Role: Sub-Investigator

The Effectiveness of Postoperative Local Retropharyngeal Space Anesthetic to Reduce Dysphagia after Anterior Cervical Discectomy and Fusion Surgery. Sponsor – JPNI. PI – Nelson. (March 2015 – present).

A Prospective, Randomized, Double-blind, Phase II Study to Evaluate the Safety and Efficacy of Topical Thrombin (Human) Grifols as an Adjunct to Hemostasis during Vascular, Parenchymous, Soft Tissue, and Spinal Open Surgeries. Sponsor – Grifols, Inc. 2014 – present.

Role: Sub-Investigator

Prospective Randomized Feasibility Study Comparing Manual vs. Automatic Position-Adaptive Spinal Cord Stimulation with Surgical Leads. Sponsor – Medtronic, Inc. 2013 – present.

Role: Sub-Investigator

The Investigational Plan for the Evaluation of the ACADIA™ Facet Replacement System. Sponsor – Globus Medical, Inc. 2013 – present.

Role: Sub-Investigator

Prospective Randomized Clinical Trial Evaluating the Effectiveness of Lower Body Positive Pressure Treadmill Training in Patients after Lumbar Microdiscectomy and Fusion Surgeries. Sponsor – Justin Parker Neurological Institute. 2012 – present.

Role: Sub-Investigator

DuraSeal™ Spine System Post-Approval Study. Sponsor – Covidien. 2011 – present.

Role: Sub-Investigator

Prospective Randomized Clinical Trial Comparing PEEK and Allograft Spacers in Patients Undergoing Spinal Intervertebral Fusion Surgeries. Sponsor – Justin Parker Neurological Institute. 2011 – present.

Role: Sub-Investigator

A Radiographic and Clinical Study Evaluating a Novel Allogeneic, Cancellous, Bone Matrix Containing Viable Stem and Osteoprogenitor Cells (Trinity Evolution™ Viable Cryopreserved

Cellular Bone Matrix in Posterior Lumbar or Transforaminal Lumbar Interbody Fusion. Sponsor – Orthofix Spinal Implants. 2009 – present.

Role: Sub-Investigator

Completed Research

A Multicenter, Prospective, Randomized Clinical Trial Using Dehydrated Human Amnion/Chorion Membrane (DHACM) in Decompressive Craniectomy Patients to Reduce Postoperative Scarring. Sponsor – MiMedx. 2012 – 2015.

Role: Principal Investigator

Gel Assisted Photocoagulation, A. J. Welch – PI, 1993.

Role: Research Assistant

Kappa Opioid Treatment of Focal Cerebral Ischemia, D.S. Baskin – PI, 1993.

Role: Research Assistant

Transcleral Cyclophotocoagulation for the treatment of Glaucoma, A. J. Welch, - PI, 1993.

Role: Research Assistant

Body Surface Laplacian Mapping of Visual Evoked Potentials for the Early Diagnosis of Glaucoma, G.H. Rylander - PI, 1994.

Role: Research Assistant

Apoptosis and transient focal cerebral ischemia, D.S. Baskin –PI, 1997.

Role: Research Assistant

Clinical Outcome Correlation with Serum, CSF, Brain Extracellular Magnesium and other Biochemical Markers Concentrations Following Traumatic Brain Injury and Intracranial Hemorrhage. Colorado Traumatic Injury Foundation Grant. 2005 – 2007.

Role: Sub-Investigator

Normal Pressure Hydrocephalus (NPH) Registry. Managed by AANS, Sponsor - Neuro-Knowledge and Outcome. 2005 – 2008

Role: Sub-Investigator

Restoration of Segmental Lordosis and Clinical Outcome in Anterior Cervical Fusion Patients. 2004 – 2009.

Role: Sub-Investigator

An Exploratory Phase 2 Study Evaluating the Efficacy and Safety of Fibrin Sealant, Vapor Heated, Solvent/Detergent Treated (FS VH S/D) 500 S-APR for the Sealing of Dura Defect Sutures in Posterior Fossa Surgery, Sponsor – Baxter BioScience. 2008 – 2009.

Role: Sub-Investigator

Pivotal IDE Study of the Wallis Mechanical Normalization System. Sponsor – Spinal Concepts, Inc. 2005 – 2011.

Role: Sub-Investigator

A Pivotal Clinical Trial Evaluating the Safety and Effectiveness of Adherus Sealant When Used as a Dural Sealant in Cranial Procedures. Sponsor – HyperBranch Medical Technology, Inc. 2011.

Role: Sub-Investigator

Prospective, Multi-center, Randomized, Active-Controlled Study of the Wallis® System for the Treatment of Mild to Moderate Degenerative Disc Disease of the Lumbar Spine. Sponsor – Abbott Spine. 2007 – 2012.

Role: Sub-Investigator

Clinical Trial Comparing the Blackstone Advent™ Cervical Disc to Anterior Cervical Discectomy and Fusion (ACDF) for the Treatment of One Level Degenerative Disc Disease. Sponsor – Blackstone Medical. 2008 – 2012.

Role: Sub-Investigator

Clinical Evaluation of the O-ARM Imaging System. Prospective Clinical Study. Sponsor – Medtronic, 2009 – 2012.

Role: Principal Investigator

Evaluation of safety and Effectiveness of the OsseoFix™ Spinal Fracture Reduction System in Treating Spinal Compression Fracture. Sponsor – Alphatec Spine. 2009 – 2012.

Role: Sub-Investigator

A Phase 3, Randomized, Single-Blind, Controlled Trial of Topical Fibrocaps™ in Intraoperative Surgical Hemostasis. Sponsor – ProFibrix Inc. 2012 – 2014.

Role: Sub-Investigator

Study of the Safety and Effectiveness of DIAM™ Spinal Stabilization System Versus Conservative Care. Sponsor – Medtronic Spinal and Biologics. 2013 – 2014.

Role: Sub-Investigator