

**Alan Thomas Villavicencio, M.D.**

Business Address: Boulder Neurosurgical Associates  
4743 Arapahoe Avenue, Suite 202  
Boulder, CO 80303

Business Telephone: 303-938-5700  
Business Fax: 303-998-0007

**PROFESSIONAL EXPERIENCE**

- 2011 – present North American Spine Society (NASS)  
Education Council Committee
- 2011 – present North American Spine Society (NASS)  
CME Committee
- 2009 – present Director, Spine Fellowship Program  
Justin Parker Neurological Institute and  
Boulder Neurosurgical Associates
- 2009 - present Joint Sponsorship Council Member  
American Association of Neurological Surgeons
- 2005 - present Founder and Chairman of the Board  
Justin Parker Neurological Institute (fully accredited 501(3)(c))
- 2006 - present Director of Surgery  
Minimally Invasive Spine Institute
- 2002 - present Managing Partner  
Director of Minimally Invasive Spine Surgery Program  
Director of Research and Development  
Boulder Neurosurgical Associates
- 2002 - present Director of Neurosurgery, Foothills Hospital
- 2003 - present Chief of Neurosurgery, Longmont United Hospital
- 2005 - present Founder and Director, Trigeminal Neuralgia Program  
Boulder Neurosurgical Associates

## **EDUCATION**

- 2001 - 2002 Fellowship, Orthopaedic Spine Surgery  
Institute of Spinal Disorders at Cedars-Sinai Medical Center  
Advisors: John J. Regan, MD & Patrick Johnson, MD
- 1996 - 2001 Residency, Neurological Surgery  
Duke University Medical Center  
Durham, North Carolina
- 1995 - 1996 Internship, General Surgery  
Duke University Medical Center  
Durham, North Carolina
- 1991 - 1995 Doctor of Medicine  
Harvard Medical School  
Boston, Massachusetts
- 1986 - 1991 Bachelor of Arts  
Biochemistry and Cell Biology  
Minor: History  
Minor: Psychology  
University of California at San Diego  
San Diego, California

## **ACADEMIC HONORS AND AWARDS**

- 2004 - 2014 Program Chairman  
Advanced Symposium on Cranial and Spinal Surgery  
Current Techniques in the Treatment of Cranial and Spinal Disorders  
Broomfield, CO
- 2010 Finalist, Mario Boni Award, Cervical Spine Research Society,  
European Section, 26<sup>th</sup> CSRS Annual Meeting, Corfu, Greece
- 2010 Highest ratings (#1 Neurosurgery Program) in the Denver Metro  
Area for the services provided at Boulder Community Hospital
- 2009 Best Paper Award  
Correlation of Clinical Outcomes and Cervical Sagittal  
Alignment: A Prospective Randomized Clinical Study.  
24<sup>th</sup> Annual NASS Meeting, November 10 – 14, 2009,  
San Francisco, California.

- 2008 BrainLab Award for Best Community Neurosurgeon Paper  
Patterns of CyberKnife Treatment Failure for Primary and Recurrent  
Glioblastoma Multiforme. American Association of Neurological Surgeons  
Annual meeting, Chicago
- 2006 Research support grant from CyberKnife Society.  
CyberKnife Radiosurgery for Trigeminal Neuralgia Treatment
- 2006 Research support grant from CyberKnife Society.  
Survival Comparison of Newly Diagnosed and Recurrent Glioblastoma  
Multiforme Treated with CyberKnife Radiosurgery: A Multicenter Study
- 2006 1<sup>st</sup> Place Award for the Best Intracranial Research Topic  
CyberKnife Radiosurgery for Idiopathic Trigeminal Neuralgia  
International CyberKnife Users Meeting  
LaCosta Resort, California
- 2005 Colorado Traumatic Brain Injury Foundation Research Grant – Clinical  
Outcome Correlation with Serum, CSF, Brain Extracellular Magnesium  
and other Biochemical Markers Concentrations Following  
Traumatic Brain Injury
- 2005 Board Certification  
American Association of Neurological Surgeons
- 2004 Distinguished Visiting Professor  
The University of Missouri School of Medicine Division of Neurosurgery  
Columbia, Missouri.
- 2002 Mayfield Award in Clinical Science (co-author)  
Unraveling the Enigma of the Filum Terminale: Basic Science and  
Clinical Evidence  
American Association of Neurological Surgeons
- 1995 Cum Laude  
Harvard Medical School  
Thesis: Surgery Followed by Radiosurgery in the Treatment of Skull Base  
Meningiomas
- 1992 - 1993 Research Training Grant, The Beth Israel Hospital and The National  
Institute of Health,  
Harvard Medical School
- 1992 - 1993 Research Training Grant, Mass. General Hospital and McLean Hospital,  
Harvard Medical School
- 1991 Cum Laude

University of California at San Diego

1990 Earl Warren College Academic Multicultural Enrichment Scholarship,  
University of California at San Diego

1989 Academic Scholar of the Year, UCSD Alumni Association,  
University of California at San Diego

1988 Academic Excellence and Student Research Scholarship,  
National Science Foundation  
University of California at San Diego

1986 - 1990 Provosts Honor List  
University of California at San Diego

### **RESEARCH AND TEACHING EXPERIENCE**

2014 – present Principle Investigator  
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.

2013 – present Sub-Investigator  
A Multicenter, Prospective, Randomized Clinical Trial Using  
Dehydrated Human Amnion/Chorion Membrane (DHACM) in  
Decompressive Craniectomy Patients to Reduce Postoperative  
Scarring. Sponsor – MiMedx.

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

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

2012 – present Principle 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 – 2014 Principle Investigator  
A Phase 3, Randomized, Single-Blind, Controlled Trial of Topical Fibrocaps™ in Intraoperative Surgical Hemostasis. Sponsor – ProFibrix Inc.
- 2011 – present Principle Investigator  
DuraSeal™ Spine System Post-Approval Study. Sponsor - Covidien.
- 2011 – present Principle Investigator  
Prospective Randomized Clinical Trial Comparing PEEK and Allograft Spacers in Patients Undergoing Spinal Intervertebral Fusion Surgeries. Sponsor – Justin Parker Neurological Institute.
- 2010 - 2011 Principle 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.,
- 2009 – 2014 Principle 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 – 2012 Principle Investigator  
Evaluation of safety and Effectiveness of the OsseoFix™ Spinal Fracture Reduction System in Treating Spinal Compression Fracture. Sponsor – Alphatec Spine.
- 2009 – 2012 Sub-Investigator  
Clinical Evaluation of the O-ARM Imaging System. Prospective Clinical Study. Sponsor – Medtronic.
- 2008 – 2009 Principle 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 – 2012 Principle Investigator  
Clinical Trial Comparing the Advent Cervical Disc to Anterior Cervical Discectomy and Fusion (ACDF) for the Treatment of One Level Degenerative Disc Disease System, Sponsor – Blackstone Medical

- 2007 – 2012      Principle 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, Inc.
- 2006 - 2008      Principle Investigator  
A Multicenter, Prospective, randomized Controlled Study to Compare Balloon Kyphoplasty to Non-Surgical Fracture Management in the Treatment of Painful, Vertebral Body Compression Fractures in Cancer Patient
- 2005 – 2007      Principle Investigator  
A Prospective, Randomized Clinical Study: Clinical Outcome Correlation with Serum, CSF, Brain Extracellular Magnesium and other Biochemical Markers Following Traumatic Brain Injury, Sponsor - Colorado Traumatic Brain Injury Foundation
- 2005 - 2012      Principle Investigator  
Pivotal IDE Study of the Wallis Mechanical Normalization System. Sponsor – Abbott Spine, Inc
- 2005 – 2008      Principal Investigator  
Normal Pressure Hydrocephalus (NPH) Registry, Sponsor - Codman & Shurtleff, Inc.
- 2004 - 2011      Principle Investigator  
Multi-center FDA IDE Clinical Trial Evaluating the MAVERICK™ Artificial [Lumbar] Disc, Sponsor - Medtronic
- 2003 - 2011      Principle Investigator  
Multicenter Trial Evaluating Parallel versus Lordotic Bone Grafts For Single and Multi-level Anterior Cervical Discectomy and Arthrodesis
- 1997 - 2000      Resident Director  
Fresh Tissue Cadaveric Dissection Laboratory  
Duke University Medical Center  
Advisor: Allan H. Friedman, MD
- 1998 - 1999      Laboratory Research  
Generation and Efficacy of Peripheral Blood-derived Dendritic Cells Pulsed with Tumor-specific Protein Against Intracerebral Gliomas  
Advisors: Darell D. Bigner, MD, PhD and John H. Sampson, M.D., Ph.D.
- 1994 - 1995      Clinical Research  
Surgery and Radiosurgery for Skull Base Meningiomas  
Brigham and Women's Hospital and Harvard Medical School  
Advisors: Peter McL. Black, MD, PhD and Jay S. Loeffler, MD

- 1993 - 1994            Laboratory Research  
Behavioral Anatomy of the Rat Nucleus Accumbens Septi. McLean Hospital and Harvard Medical School  
Advisor: Ross J Baldessarini, MD
- 1992 - 1994            Laboratory Research  
Behavior and Spinal Cord Physiology of Pain  
Beth Israel Hospital and Charles A. Dana Research Laboratories and Harvard Medical School  
Advisor: David D. Dubuisson, MD, PhD
- 1990                    Undergraduate Laboratory Research  
Self-Administration of Cocaine in Rats and Bilateral Accumbens D2 Antagonist Injections  
University of Ca. at San Diego and Scripps Research Institute  
Advisor: George F. Koob, PhD
- 1989                    Undergraduate Teaching Assistant (Biology)  
University of Ca. at San Diego  
Advisor: Paul Saltman, PhD
- 1988 - 1990            Undergraduate Laboratory Research  
Receptor Mechanisms of Sporulation in *S.cerevisiae*  
University of Ca. at San Diego  
Advisor: Ramon Pinon, PhD

#### **OTHER EDUCATIONAL OR PROFESSIONAL EXPERIENCE AND TRAINING**

- 1987 - 1988            Helicopter Rescue Emergency Medical Technician and Forest Ranger/Fire-fighter  
Sequoia National Park, California (seasonal)
- 1987 - 1991            Emergency Medical Technician, Cruz Rojo de Mexico [Red Cross] Tijuana, Mexico
- 1/1994 - 4/1994        Clinical Clerkship, Medicine and Surgery in Rural Latin America Columbia, South America

#### **SCIENTIFIC PRESENTATIONS**

1. 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. 13<sup>th</sup> Annual Baltic Neurosurgery Association Meeting, Vilnius, Lithuania, September 11-12, 2015.

2. **Villavicencio AT**, Burneikiene S. RhBMP-2 Induced Radiculitis in Transforaminal Lumbar Fusion Patients: Relationship to Dose. EuroSpine 2015, Copenhagen, Denmark, September 2 – 4, 2015
3. 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
4. **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
5. **Villavicencio AT**, Burneikiene S, Faes N. RhBMP-2-Induced Radiculitis in Transforaminal Lumbar Fusion Patients: Relationship to Dose. CNS Annual Meeting, Boston MA, October 18 – 22, 2014.
6. **Villavicencio AT**, Serxner BJ, Mason A, Rajpal S, Burneikiene 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.
7. **Villavicencio AT**. The Argument Against SI Joint Fusions. 11<sup>th</sup> Annual Symposium Current Techniques in the Treatment of Cranial and Spinal Disorders. Broomfield, Colorado, October 18, 2014.
8. **Villavicencio AT**, Burneikiene S, Faes N. RhBMP-2-Induced Radiculitis in Transforaminal Lumbar Interbody Fusion patients: Relationship to Dose. 15<sup>th</sup> European Congress of Neurosurgery – EANS 2014, Prague, Czech Republic, October 12-17, 2014.
9. **Villavicencio AT**. Transthoracic Discectomy Complicated by CSF Leak and Cranial Subdural Hematoma. Amelia Island, FL, July 23-26, 2014.
10. **Villavicencio AT**. Durotomies and Pseudomeningoceles. NASS Summer Spine Meeting, Amelia Island, FL, July 23-26, 2014.
11. **Villavicencio AT**. RhBMP-2-Induced Radiculitis in Transforaminal Lumbar Fusion Patients: Relationship to Dose. 2014 Annual Meeting of the Neurosurgical Society of America, St. Andrews by the Sea, New Brunswick, Canada, June 8 – 11, 2014.
12. **Villavicencio A**. Current Trends and Controversies in Biologics. 10th Annual Symposium Current Techniques in the Treatment of Cranial and Spinal Disorders. Broomfield, Colorado, October 26, 2013.
13. 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.
14. **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.
15. **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.
16. **Villavicencio AT**. Perioperative Spine Care: Futility. NASS Summer Spine Meeting, Naples, FL, July 31 – August 3, 2013.



17. 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.
18. 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.
19. **Villavicencio AT**, Babuska J, Ashton A, Busch E, Burneikiene S. Prospective Randomized Double Blinded Clinical Study Evaluating the Correlation of Clinical Outcomes and Cervical Sagittal Alignment. 2013 Annual Meeting of the Neurosurgical Society of America, Sea Island, GA, April 7 – 10, 2013.
20. **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.
21. **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, Arizona, March 6 – 9, 2013.
22. 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, Arizona, March 6 – 9, 2013.
23. **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, October 24 – 27, 2012, Dallas, TX.
24. **Villavicencio AT**. Why Surgery Fails; restoring Sagittal Balance. 9th Annual Symposium Current Techniques in the Treatment of Cranial and Spinal Disorders. Broomfield, Colorado, October 20, 2012.
25. **Villavicencio AT**. Artificial Discs: The Argument for Not Using Them. 9th Annual Symposium Current Techniques in the Treatment of Cranial and Spinal Disorders. Broomfield, Colorado, October 20, 2012.
26. 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, October 6 – 10, 2012, Chicago, IL.
27. 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, October 6 – 10, 2012, Chicago, IL.
28. **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.
29. **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.
  30. 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. 80<sup>th</sup> AANS Annual Meeting, Miami, FL, April 14 -18, 2012.
  31. Burneikiene S, Carr F, Nelson EL, Rajpal S, **Villavicencio AT**. Higher Patient Expectations Before Surgery May Be Related to Improved Clinical Outcomes. NASS 26<sup>th</sup> Annual Meeting November 1-5, 2011, Chicago, Illinois.
  32. **Villavicencio AT**. Cervical Sagittal Alignment in the Treatment of Neck Pain and Radiculopathy. 8<sup>th</sup> Annual Symposium Current Techniques in the Treatment of Cranial and Spinal Disorders. Broomfield, Colorado, October 29, 2011.
  33. 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, October 1–6, 2011, Washington, DC.
  34. **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.
  35. **Villavicencio AT**, Nelson EL, Mason A, Babuska J, Carr FA, Rajpal S, Burneikiene S. CO<sub>2</sub> Laser-Assisted Lumbar Fusions: Safety, Clinical Outcomes and Technical Considerations. 79th AANS Annual Meeting, Denver, CO, April 9-13, 2011.
  36. **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.
  37. **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.
  38. **Villavicencio AT**, Nelson EL, Mason A, Babuska J, Burneikiene S. The Safety of Transforaminal Lumbar Interbody Fusion for Deformity Correction in Degenerative Scoliosis with Spinal Stenosis. AANS/CNS Section on Disorders of the Spine and Peripheral Nerves Annual Meeting, Phoenix, AZ, March 9-12, 2011.
  39. **Villavicencio AT** Carr FA, Hernández T, Healy KM, Nelson EL, Mason A, Burneikiene S. Effect of Patient Pain Expectations and Preoperative SF-36 Mental Component Scores on Clinical Outcomes Following Anterior Cervical Discectomy and Fusion. AANS/CNS Section on Disorders of the Spine and Peripheral Nerves Annual Meeting, Phoenix, AZ, March 9-12, 2011.
  40. **Villavicencio AT**, Nelson EL, Mason A, Babuska J, Burneikiene S. Efficacy of CO<sub>2</sub> Laser-Assisted Lumbar Fusions: Preliminary Clinical Results. CNS Annual Meeting, San Francisco, CA October 16 – 21, 2010.

41. 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. CNS Annual Meeting, San Francisco, CA October 16 – 21, 2010.
42. **Villavicencio AT**, Nelson EL, Mason A, Babuska J, Burneikiene S. The Safety of Instrumented Lumbar Interbody Fusions Performed as an Outpatient Procedure. CNS Annual Meeting, San Francisco, CA October 16 – 21, 2010.
43. **Villavicencio AT**, Nelson EL, Mason M, Babuska J, Carr F, Burneikiene S. Selective Transforaminal Lumbar Interbody Fusion for Degenerative Adult Scoliosis Correction. CNS Annual Meeting, San Francisco, CA October 16 – 21, 2010.
44. **Villavicencio AT**, Nelson EL, Mason A, Carr F, Burneikiene S. Outpatient Instrumented Lumbar Interbody Fusion – Changing the Standard of Care. NASS 25<sup>th</sup> Annual Meeting October 5-9 2010, Orlando, Florida.
45. **Villavicencio AT**. Spinal Deformity: The Good, the Bad, the Ugly. 7<sup>th</sup> Annual Symposium Current Techniques in the Treatment of Cranial and Spinal Disorders. Broomfield, Colorado, September 11, 2010.
46. **Villavicencio AT**. Neurosurgery in the 21<sup>st</sup> Century. 24<sup>th</sup> HAPS Conference, Denver, CO, May 29 – June 3, 2010.
47. 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. 26<sup>th</sup> Annual Meeting of the European Section of the Cervical Spine Research Society, 26 – 29 May, 2010, Corfu Island, Greece.
48. **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.
49. **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.
50. Burneikiene S, **Villavicencio AT**, Nelson L, Mason A. Outpatient Instrument Lumbar Interbody Fusion. Preliminary Results on Safety and Efficacy. 7<sup>th</sup> Annual Mazama Spine Summit, Winthrop, WA, March 3-5, 2010.
51. Burneikiene S, **Villavicencio AT**, Nelson L, Mason A, McNeely L. CyberKnife Radiosurgery for Spine Tumors. Spinal Cord and Volume Analysis. 7<sup>th</sup> Annual Mazama Spine Summit, Winthrop, WA, March 3-5, 2010.
52. 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.
53. **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.
54. Nelson EL, **Villavicencio AT**, Mason A, Burneikiene S. Early Clinical Results of Complex Spinal Instrumentation using Multidimensional Surgical Imaging Systems. 2nd International Spinal Imaging and Navigation Symposium (SINS), November 21, 2009, Seoul, Korea.

55. **Villavicencio AT**, Burneikiene S, Babuska MJ, Ashton A, Busch E, Mason A. Correlation of Clinical Outcomes and Cervical Sagittal Alignment: A Prospective Randomized Clinical Study. 24<sup>th</sup> Annual NASS Meeting, November 10 – 14, 2009, San Francisco, California.
56. **Villavicencio AT**, Burneikiene S, Babuska JM, Ashton A, Busch E. 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.
57. **Villavicencio AT**, 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.
58. **Villavicencio AT**. Laser Spine Surgery. Current Techniques in the Treatment of Cranial and Spinal Disorders, Broomfield, Colorado, October 17, 2009.
59. **Villavicencio AT**. Is Motion Preservation Better Than Fusion? Current Techniques in the Treatment of Cranial and Spinal Disorders, Broomfield, Colorado, October 17, 2009.
60. **Villavicencio AT**, Burneikiene S, Babuska JM, Mason A. Aspen Spinous Process System: Preliminary Clinical Experience. XIV World Congress of Neurological Surgery (AANS), August 30 - September 4, 2009 Boston, Massachusetts.
61. 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.
62. **Villavicencio AT**, Burneikiene S, Mason A. 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.
63. **Villavicencio AT**, Babuska JM, Burneikiene S, Ashton A, Busch E, Mason A. 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.
64. 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.
65. 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.
66. **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.
67. **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.

68. **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.
69. 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.
70. **Villavicencio AT**. Outpatient Spinal Fixation and Arthrodesis: Changing the Standard of Care. Current Techniques in the Treatment of Cranial and Spinal Disorders, Broomfield, Colorado, November 15, 2008.
71. Nelson EL, **Villavicencio AT**, Burneikiene S, Roeca C. Correction of Degenerative Adult Scoliosis in Patients Undergoing Selective Transforaminal Lumbar Interbody Fusion. NASS 23<sup>rd</sup> Annual Meeting, October 14 – 18, Toronto, Canada.
72. 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.
73. 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.
74. **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.
75. **Villavicencio AT**, Burneikiene S, Nelson EL. The Incidence of Discogenic Cervical Pain in Multisport Athletes. Spineweek 2008, May 26 -31, 2008, Geneva, Switzerland.
76. Burneikiene S, **Villavicencio AT**, Roeca CM, Nelson EL. Selective Transforaminal Lumbar Interbody Fusion for Degenerative Adult Scoliosis. SpineWeek 2008, May 26 - 31, 2008, Geneva, Switzerland.
77. Burneikiene S, Nelson EL, Roeca CM, **Villavicencio AT**. Minimally Invasive vs, Open Transforaminal Lumbar Interbody Fusion. SpineWeek 2008, May 26 – 31, 2008, Geneva, Switzerland.
78. **Villavicencio AT**, Burneikiene S, McNeely L, Nelson EL. Patterns of CyberKnife Treatment Failure for Primary and Recurrent Glioblastoma Multiforme. Winner of the BrainLab National Award for Best Community Neurosurgeon Paper. AANS 76<sup>th</sup> Annual Meeting. Chicago, Illinois. April 26-May 1, 2008.
79. **Villavicencio AT**, Roeca CM, Burneikiene S, Nelson EL. Adult Scoliosis Correction with Selective Transforaminal Lumbar Interbody Fusion. AANS 76<sup>th</sup> Annual Meeting. Chicago, Illinois. April 26-May 1, 2008.
80. **Villavicencio AT**, Burneikiene S, Hernandez TD, Nelson EL. Low Back and Neck Pain in Triathletes. AANS 76<sup>th</sup> Annual Meeting. Chicago, Illinois. April 26-May 1, 2008.
81. **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.
82. **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.
83. **Villavicencio AT**, Burneikiene S, Arends G. Nerve Root Stimulation for Neuropathic Pain. A Preliminary Report on Outcomes. AANS/CNS Section on Disorders of the Spine and Peripheral Nerves, Orlando, Florida, February 27 – March 1, 2008.
  84. **Villavicencio AT**, Burneikiene S, McNeely L, McIntyre M. CyberKnife Radiosurgery for Spine Tumors. Spinal Cord Radiation Dose and Volume Analysis. AANS/CNS Section on Disorders of the Spine and Peripheral Nerves, Orlando, Florida, February 27 – March 1, 2008.
  85. **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.
  86. **Villavicencio AT**, Burneikiene S, Hernandez T. Epidemiological Study on Neck Pain in Multisport Athletes. 21th Annual Neurosurgery in the Rockies Meeting, Beaver Creek, CO, February 23-27, 2008.
  87. **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.
  88. **Villavicencio AT**. Dynamic Motion Stabilization and Adjacent Level Degeneration. Current Techniques in the Treatment of Cranial and Spinal Disorders – Westminster, Colorado. Nov 10, 2007.
  89. **Villavicencio AT**, Roeca CM, Burneikiene S, Thramann JJ. Degenerative Adult Scoliosis Treated with Selective Transforaminal Lumbar Interbody Fusion. CNS 2007 Annual Meeting “*Navigating Change. Integrating Discovery and Innovation into Practice*”, San Diego, California, September 15 – 20, 2007.
  90. **Villavicencio AT**, Hernandez TD, Burneikiene S, Thramann JJ. Neck Pain Evaluation in Multi-sport athletes. CNS 2007 Annual Meeting “*Navigating Change. Integrating Discovery and Innovation into Practice*”, San Diego, California, September 15 – 20, 2007.
  91. **Villavicencio AT**, Burneikiene S, Lim M, McNeely L, Romanelli P, Chang SD, McIntyre M, Laura Fariselli, Giovanni Broggi, Thramann JJ, Adler JR. Assessment of Optimal Treatment Parameters for CyberKnife Radiosurgery in Trigeminal Neuralgia Patients. CNS 2007 Annual Meeting “*Navigating Change. Integrating Discovery and Innovation into Practice*”, San Diego, California, September 15 – 20, 2007.
  92. **Villavicencio AT**, Burneikiene S, Roeca C, Thramann JJ. Evaluation of Minimally Invasive and Open Approaches for Transforaminal Lumbar Interbody Fusion. CNS 2007 Annual Meeting “*Navigating Change. Integrating Discovery and Innovation into Practice*”, San Diego, California, September 15 – 20, 2007.
  93. **Villavicencio AT**, Hernandez TD, Burneikiene S, Thramann JJ. Evaluation of Neck Pain in Triathletes. World Spine IV, Istanbul, Turkey. July 29 – August 1, 2007.
  94. **Villavicencio AT**, Burneikiene S, Roeca C, Thramann JJ. Assessment of Safety and Efficacy in Minimally Invasive vs. Open Transforaminal Interbody Fusion. World Spine IV, Istanbul, Turkey. July 29 – August 1, 2007.
  95. **Villavicencio AT**, Burneikiene S, Thramann JJ. Clinical Outcomes in Patients Undergoing Anterior Cervical Discectomy and Fusion with Plating. World Spine IV, Istanbul, Turkey. July 29 – August 1, 2007.

96. **Villavicencio AT**, Burneikiene S, Humphries S, McNeely L, McIntyre M, Thramann JJ. CyberKnife Radiosurgery for Spine Tumors. World Spine IV, Istanbul, Turkey. July 29 – August 1, 2007.
97. **Villavicencio AT**, Burneikiene S. Nerve Root Stimulation for Neuropathic Pain. A Preliminary Report on Outcomes. IMAST 14<sup>th</sup> International Meeting, Paradise Island, Bahamas, July 11-14, 2007.
98. **Villavicencio AT**, Roeca C, Burneikiene S, Thramann JJ. Selective Transforaminal Lumbar Interbody Fusion for Degenerative Adult Scoliosis. IMAST 14<sup>th</sup> International Meeting, Paradise Island, Bahamas, July 11-14, 2007.
99. **Villavicencio AT**, McNeely L, Burneikiene S, Humphries S, McIntyre M, Thramann JJ. Evaluation of CyberKnife Radiosurgery for Treatment of Spine Tumors. IMAST 14<sup>th</sup> International Meeting, Paradise Island, Bahamas, July 11-14, 2007.
100. Burneikiene S, **Villavicencio AT**, Lim M, McNeely L, Romanelli P, Chang SD, McIntyre M, Laura Fariselli, Giovanni Broggi, Thramann JJ, Adler JR. Clinical Evaluation of Idiopathic Trigeminal Neuralgia Patients Treated with CyberKnife Radiosurgery. 8<sup>th</sup> Bi-annual Congress of the International Stereotactic Radiosurgery Society, San Francisco, California, June 23 – 27, 2007.
101. Burneikiene S, **Villavicencio AT**, Lipani JD, Romanelli P, McNeely L, Fariselli L, McIntyre M, Pushchak EM, Broggi G, Chang SD, Adler JR, Thramann JJ. Patterns of CyberKnife Treatment Failure for Primary and Recurrent Glioblastoma Multiforme. Multicenter Experience. 8<sup>th</sup> Bi-annual Congress of the International Stereotactic Radiosurgery Society, San Francisco, California, June 23 – 27, 2007.
102. Burneikiene S, **Villavicencio AT**, Lim M, McNeely L, Romanelli P, Chang SD, McIntyre M, Laura Fariselli, Giovanni Broggi, Thramann JJ, Adler JR. Analysis of Treatment Parameters in Recurrent Trigeminal Neuralgia Patients Treated with CyberKnife Radiosurgery. 8<sup>th</sup> Bi-annual Congress of the International Stereotactic Radiosurgery Society, San Francisco, California, June 23 – 27, 2007.
103. **Villavicencio AT**, Hernandez TD, Burneikiene S, Thramann JJ. Neck Pain in Triathletes. AANS/CNS Section on Disorders of the Spine and Peripheral Nerves – 23<sup>rd</sup> Annual Meeting “*Neurosurgery and Spine – A Vital Synergy*”, March 7 – 10, 2007, Phoenix, Arizona.
104. **Villavicencio AT**, Burneikiene S, Roeca C, Thramann JJ. Assessment of Minimally Invasive and Open Approaches for Transforaminal Lumbar Interbody Fusion. AANS/CNS Section on Disorders of the Spine and Peripheral Nerves – 23<sup>rd</sup> Annual Meeting “*Neurosurgery and Spine – A Vital Synergy*”, March 7 – 10, 2007, Phoenix, Arizona.
105. McNeely L, **Villavicencio AT**, Burneikiene S, Lim M, Romanelli P, Chang SD, McIntyre M, Laura Fariselli, Giovanni Broggi, Thramann JJ, Adler JR. Clinical Evaluation of Idiopathic Trigeminal Neuralgia Patients Treated with CyberKnife Radiosurgery. 20th Annual Neurosurgery in the Rockies Meeting, Vail, CO, February 24-28, 2007.
106. **Villavicencio AT**, Burneikiene S, Lipani JD, Romanelli P, McNeely L, Fariselli L, McIntyre M, Pushchak EM, Broggi G, Chang SD, Adler JR, Thramann JJ. Patterns of CyberKnife Treatment Failure for Primary and Recurrent Glioblastoma Multiforme. Multicenter Experience. 6th Annual CyberKnife Users' Meeting, Palm Springs, California, January 24-28, 2007.
107. **Villavicencio AT**, Burneikiene S, Lim M, McNeely L, Romanelli P, Chang SD, McIntyre M, Laura Fariselli, Giovanni Broggi, Thramann JJ, Adler JR. Clinical Evaluation of

- Idiopathic Trigeminal Neuralgia Patients Treated with CyberKnife Radiosurgery. 6th Annual CyberKnife Users' Meeting, Palm Springs, California, January 24-28, 2007.
108. **Villavicencio AT**, Burneikiene S, Lim M, McNeely L, Romanelli P, Chang SD, McIntyre M, Laura Fariselli, Giovanni Broggi, Thramann JJ, Adler JR. Analysis of Treatment Parameters in Recurrent Trigeminal Neuralgia Patients Treated with CyberKnife Radiosurgery. 6th Annual CyberKnife Users' Meeting, Palm Springs, California, January 24-28, 2007.
  109. **Villavicencio AT**, Burneikiene S, Lim M, McNeely L, Romanelli P, Chang SD, McIntyre M, Laura Fariselli, Giovanni Broggi, Thramann JJ, Adler JR. Atypical Trigeminal Neuralgia Pain Treated with CyberKnife Radiosurgery. 6th Annual CyberKnife Users' Meeting, Palm Springs, California, January 24-28, 2007.
  110. **Villavicencio AT**, Burneikiene S, Humphries S, McNeely L, McIntyre M, Thramann JJ. CyberKnife Radiosurgery for Spine Tumors. Radiation Dose and Volume Analysis. 6th Annual CyberKnife Users' Meeting, Palm Springs, California, January 24-28, 2007.
  111. **Villavicencio AT**. Neck and Back Pain in Multi-sport Athletes. Current Techniques in the Treatment of Cranial and Spinal Disorders – Westminster, Colorado. Nov 11, 2006.
  112. **Villavicencio AT**, Burneikiene S, Lipani JD, Romanelli P, McNeely L, Fariselli L, McIntyre M, Pushchak EM, Broggi G, Adler JR, Thramann JJ. Survival Comparison of Newly Diagnosed and Recurrent Glioblastoma Multiforme Treated with CyberKnife Radiosurgery. CNS 2006 Annual Meeting, Chicago, IL, October 7 – 12, 2006.
  113. **Villavicencio AT**, Burneikiene S, Lim M, McNeely L, Romanelli P, Chang SD, McIntyre M, Laura Fariselli, Giovanni Broggi, Thramann JJ, Adler JR. CyberKnife Radiosurgery for Atypical Trigeminal Neuralgia Treatment. CNS 2006 Annual Meeting, Chicago, IL, October 7 – 12, 2006.
  114. **Villavicencio AT**, Lim M, Burneikiene S, McNeely L, Romanelli P, Chang SD, McIntyre M, Laura Fariselli, Giovanni Broggi, Adler JR, Thramann JJ. Recurrent Trigeminal Neuralgia in Patients Treated with CyberKnife Radiosurgery. CNS 2006 Annual Meeting, Chicago, IL, October 7 – 12, 2006.
  115. Lim M, **Villavicencio AT**, Burneikiene S, McNeely L, Romanelli P, Chang SD, McIntyre M, Fariselli L, Broggi G, Thramann JJ, Adler J. A Multicenter Experience of Idiopathic Trigeminal Neuralgia Patients Treated with CyberKnife Radiosurgery. CNS 2006 Annual Meeting, Chicago, IL, October 7 – 12, 2006
  116. McLean JS, **Villavicencio AT**, Burneikiene S, Thramann JJ. Prospective Evaluation of Clinical Outcomes in Patients Undergoing Anterior Cervical Discectomy and Fusion with Plating. CNS 2006 Annual Meeting, Chicago, IL, October 7 – 12, 2006
  117. Burneikiene S, **Villavicencio AT**, Bulsara KR, Thramann JJ. Radiation Dose Reduction Using Isocentric 3-D Fluoroscopic Navigation for Percutaneous Kyphoplasty. North American Spine Society 21<sup>st</sup> Annual Meeting, Seattle, Washington, September 26-30, 2006
  118. **Villavicencio AT**, Burneikiene S, Roeca C, McLean J, Thramann JJ. Percutaneous versus Open Transforaminal Lumbar Interbody Fusion. Safety and Efficacy. North American Spine Society 21<sup>st</sup> Annual Meeting, Seattle, Washington, September 26-30, 2006
  119. **Villavicencio AT**, Burneikiene S, Pushchak E, Thramann JJ. The Safety of Outpatient Anterior Cervical Discectomy and Fusion. AANS 74<sup>th</sup> Annual Meeting "Meeting the Challenges of Neurosurgery: Expanding Resources for a Growing Population", San Francisco, California. April 22-27, 2006



120. **Villavicencio AT**, Burneikiene S, Bulsara KR, Thramann JJ. Perioperative Complications in Transforaminal Lumbar Interbody Fusion versus Anterior - Posterior Reconstruction for Lumbar Disc Degeneration and Instability. AANS 74<sup>th</sup> Annual Meeting *"Meeting the Challenges of Neurosurgery: Expanding Resources for a Growing Population"*, San Francisco, California. April 22-27, 2006
121. **Villavicencio AT**, Lim M, Burneikiene S, Chang SD, Romanelli P, McNeely L, Thramann JJ, Adler JR. CyberKnife Radiosurgery for Trigeminal Neuralgia Treatment. AANS 74<sup>th</sup> Annual Meeting *"Meeting the Challenges of Neurosurgery: Expanding Resources for a Growing Population"*, San Francisco, California. April 22-27, 2006
122. **Villavicencio AT**, Burneikiene S, Pushchak E, Thramann JJ. Clinical Outcome in Patients Undergoing Anterior Cervical Discectomy and Fusion Using Anterior Plating System. AANS/CNS Section on Disorders of the Spine and Peripheral Nerves 22<sup>nd</sup> Annual Meeting, Wyndham Palace Resort & Spa, Orlando, Florida. March 15-18, 2006
123. **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 22<sup>nd</sup> Annual Meeting, Wyndham Palace Resort & Spa, Orlando, Florida. March 15-18, 2006
124. **Villavicencio AT**, Burneikiene S, Bulsara KR, Thramann JJ. Three-dimensional Fluoro-based CT Guidance for Complex Spinal Surgery. AANS/CNS Section on Disorders of the Spine and Peripheral Nerves 22<sup>nd</sup> Annual Meeting, Wyndham Palace Resort & Spa, Orlando, Florida. March 15-18, 2006
125. Burneikiene S, **Villavicencio AT**, Bulsara KR, Thramann JJ. Potential for Radiation Dose Reduction by Performing Percutaneous Kyphoplasty under Intraoperative Fluoro-based CT Guidance. AANS/CNS Section on Disorders of the Spine and Peripheral Nerves 22<sup>nd</sup> Annual Meeting, Wyndham Palace Resort & Spa, Orlando, Florida. March 15-18, 2006
126. **Villavicencio AT**, Burneikiene S. Maverick Artificial Disc Removal Due to Metal Allergy. AANS/CNS Section on Disorders of the Spine and Peripheral Nerves 22<sup>nd</sup> Annual Meeting, Wyndham Palace Resort & Spa, Orlando, Florida. March 15-18, 2006
127. **Villavicencio AT**, Lim M, Burneikiene S, Chang SD, Romanelli P, McNeely L, McIntyre M, Thramann JJ, Adler JR. Evaluation of CyberKnife Radiosurgery for Idiopathic Trigeminal Neuralgia. Multicenter Clinical Study. 5th Annual CyberKnife Users' Meeting, Carlsbad, CA, Jan 25 - 28 2006.
128. **Villavicencio AT**, Burneikiene S, Bulsara KR, Thramann JJ. Acute Intracranial Hemorrhage after CyberKnife Radiosurgery Treatment of Metastatic Melanoma. 5th Annual CyberKnife Users' Meeting, Carlsbad, CA, Jan 25 - 28 2006.
129. **Villavicencio AT**, Burneikiene S, McNeely L, Pushchak EM, McIntyre M, Thramann JJ. Patterns of CyberKnife Treatment Failure for Primary and Recurrent Glioblastoma Multiforme. 5th Annual CyberKnife Users' Meeting, Carlsbad, CA, Jan 25 - 28 2006.
130. **Villavicencio AT**. Total Disc Arthroplasty in the Spine – Techniques and Indications. Current Techniques in the Treatment of Cranial and Spinal Disorders – Broomfield, Colorado. Nov 11, 2006.
131. **Villavicencio AT**. Contemporary Neurosurgical Management of Cranial and Spinal Trauma. Current Techniques in the Treatment of Cranial and Spinal Disorders – Broomfield, Colorado. Nov 11, 2006.

132. **Villavicencio AT**, Burneikiene S, Bulsara KR, Thramann JJ. Intraoperative Three-dimensional Fluoro-based CT Guidance for Percutaneous Kyphoplasty. 55<sup>th</sup> Annual Meeting Congress of Neurological Surgeons, Boston, MA, October 8 – 13, 2005.
133. Lim M, **Villavicencio AT**, Burneikiene S, Chang SD, Romanelli P, McNeely L, Thramann JJ, Adler JR. Multicenter Clinical Evaluation of CyberKnife Radiosurgery for Idiopathic Trigeminal Neuralgia. 55<sup>th</sup> Annual Meeting Congress of Neurological Surgeons, Boston, MA, October 8 – 13, 2005.
134. **Villavicencio AT**, Burneikiene S, Finer R, Sherrier R, Bulsara KR, Thramann JJ. Restoration of Segmental Lordosis in Anterior Cervical Discectomy and Fusion Patients. 55<sup>th</sup> Annual Meeting Congress of Neurological Surgeons, Boston, MA, October 8 – 13, 2005.
135. **Villavicencio AT**, Burneikiene S, Bulsara KR, Thramann JJ. Posterior Pedicle Fixation versus Anterior-Posterior Reconstruction for Lumbar Disc Degeneration and Instability. 55<sup>th</sup> Annual Meeting Congress of Neurological Surgeons, Boston, MA, October 8 – 13, 2005.
136. **Villavicencio AT**, Burneikiene S, Bulsara KR, Thramann JJ. Transforaminal Lumbar Interbody Fusion versus Anterior-Posterior Reconstruction for Lumbar Disc Degeneration and Instability. 20th Annual North American Spine Society Meeting, Philadelphia, Pennsylvania. September 27 – October 1, 2005.
137. **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
138. **Villavicencio AT**, Burneikiene S, Bulsara KR, Thramann J. Intraoperative Three-dimensional Fluoro-based CT Guidance. World Spine III – Rio de Janeiro, Brazil. July 31- August 3, 2005
139. **Villavicencio AT**, Burneikiene S, Thramann J. Transforaminal Lumbar Interbody Fusion versus Anterior Reconstruction for Lumbar Disc Degeneration and Instability. AANS/CNS Section for Spine and Peripheral Nerves – Phoenix, Arizona. March 9-12, 2005.
140. **Villavicencio AT**, Burneikiene S, Thramann J. Intraoperative Image Guidance for Complex Spinal Surgery. Rocky Mountain Neurosurgical Society 39<sup>th</sup> Annual Meeting – Squaw Valley, California. June 12-16<sup>th</sup>, 2004.
141. **Villavicencio AT**. Pediatric and Adult Spinal Deformity: Principles of Treatment and Operative Management. Current Techniques in the Management of Spinal Disorders Symposium – Boulder, Colorado. May 22, 2004.
142. **Villavicencio AT**, Johnson, JP. Reconstructive Surgery for Spinal Metastases. Current Techniques in the Management of Spinal Disorders Symposium – Boulder, Colorado. May 22, 2004.
143. **Villavicencio AT**. Endoscopic Transthoracic Discectomy and Sympathectomy. Current Techniques in the Management of Spinal Disorders Symposium – Boulder, Colorado. May 22, 2004.
144. **Villavicencio AT**, Burneikiene S, Thramann J. Isocentric 3-D Fluoroscopic Navigation for Spinal Surgery. The Winter Clinics, Cranial and Spinal Surgery (jointly sponsored by The Mayfield Clinic, The Cleveland Clinic and the Mayo Clinic Dept. of Neurological Surgery – Snowmass, Colorado. Feb. 25-March 2, 2004.

145. **Villavicencio AT**, Stokes J, Liu P, Anand N, Regan JJ. Endoscopic Lateral Transpoas Approach to the Lumbar Spine: Preliminary Results. AANS/CNS Section for Spine and Peripheral Nerves – Orlando, Florida. Feb. 27-March 2, 2002.
146. Bulsara KR, Cummings T, **Villavicencio AT**, George TM. Unraveling the Enigma of the Filum Terminale: Basic Science and Clinical Evidence. AANS/CNS Section for Spine and Peripheral Nerves – Orlando, Florida 2002.
147. **Villavicencio AT**, Stokes J, Liu P, Johnson JP. Reconstructive Thoracolumbar Vertebrectomy for Metastatic Spinal. AANS/CNS Section for Spine and Peripheral Nerves – Orlando, Florida. Feb. 27-March 2, 2002.
148. **Villavicencio AT**, Stokes J, Liu P, Pashman R. Induction and Maintenance of Lordosis in Multilevel ACDF Using Allograft. Annual Meeting of the American Association of Neurological Surgeons – Orlando, Florida. Feb. 27-March 2, 2002.
149. Bulsara KR, McGirt M, Liao L, **Villavicencio AT**, Borel C, Alexander M, Friedman A. Troponin Trend Can Differentiate “Stunned” Myocardium in Patients Following Aneurysmal Subarachnoid Hemorrhage. 51<sup>st</sup> Annual Meeting of the Congress of Neurological Surgeons– San Diego, California. Sept 29-Oct 4, 2001.
150. Little KM, McGirt M, **Villavicencio AT**, Gorecki JP. Comparison of Thorascopic Sympathectomy and Dorsal Column Stimulation for the Treatment of Complex Regional Pain Syndrome. 51<sup>st</sup> Annual Meeting of the Congress of Neurological Surgeons– San Diego, California. Sept 29-Oct 4, 2001.
151. **Villavicencio AT**, Hussain A, Dimitrov D, Little K, Gorecki J. Intraoperative Somatosensory Evoked Potentials for Nucleus Caudalis DREZ Lesioning. Annual Meeting of the American Association of Neurological Surgeons – Toronto, Canada. April 20-26, 2001.
152. **Villavicencio AT**, Leveque JC, Gray L, Friedman AH. 3-Dimensional CT Analysis of the Relationship Between the Arcuate Eminence and the Superior Semicircular Canal. Southern Neurosurgical Society – Austin, Texas. March 14-18, 2001.
153. **Villavicencio AT**, Dimitrov D, Haglund M, Lewis D, Radtke R, Morse R, Bulsara K, George TM. Hemispherectomy in Older Children with Rasmussen's Disease. Annual Meeting of The Section on Pediatric Neurological Surgery of The American Association of Neurological Surgeons – San Diego, California, December 8-10, 2000.
154. **Villavicencio AT**, New K, Leveque JC, Fuchs H, George T. Relative Risk of Shunt Failure as a Function of Time Following Placement. Annual Meeting of the Congress of Neurological Surgeons – San Antonio, Texas, September 23-28, 2000.
155. **Villavicencio AT**, New K, Bulsara K, Kim J, Gorecki J. Standard Percutaneous Cordotomy Compared with a Novel MRI-guided Stereotactic Frameless Technique. Annual Meeting of the Congress of Neurological Surgeons – San Antonio, Texas, September 23-28, 2000.
156. **Villavicencio AT**, Leveque JC, Haglund M. Real-time Functional Brain Mapping as an Aid to Preoperative Planning in Pediatric Patients. Annual Meeting of the Congress of Neurological Surgeons – San Antonio, Texas, September 23-28, 2000.
157. **Villavicencio AT**, Leveque JC, Fuchs H, George T. Comparison of Revision Rates Following Endoscopically versus Non-endoscopically Placed Ventriculoperitoneal Shunt Catheters. Southern Neurosurgical Society – Jacksonville, Florida. June 20-24, 2000.
158. Bulsara K, **Villavicencio AT**, George T. Clinical Outcome Differences for Lipomelomeningoceles, Intra-spinal Lipomas and Lipomas of the Filum Terminale – Southern Neurosurgical Society – Jacksonville, Florida. June 20-24, 2000.

159. **Villavicencio AT**, Leveque JC, Gray L, Kureshi S, Kim J, Fukushima T, Friedman AH. 3-D CT Angiography Measurements for Improving Surgical Approaches to the Skull Base. Southern Neurosurgical Society – Jacksonville, Florida. June 20-24, 2000.
160. Leveque JC, **Villavicencio AT**, Haglund M. Real-time Functional Brain Mapping as an Aid to Preoperative Planning in Pediatric Patients. Southern Neurosurgical Society – Jacksonville, Florida. June 20-24, 2000.
161. **Villavicencio AT**, Leveque JC, Fuchs H, George T. Comparison of Revision Rates Following Endoscopically versus Non-endoscopically Placed Ventriculoperitoneal Shunt Catheters. Annual Meeting of the American Association of Neurological Surgeons – San Francisco, California, April 8-13, 2000.
162. Kim JW, Smith-Hammond, C, **Villavicencio AT**, Bolser D, Chilampath D, Turner D. Aspiration and Reduced Cough Strength in Cervical Surgery Patients. Annual Meeting of The Joint Section on Disorders of the Spine and Peripheral Nerves, American Association of Neurological Surgeons and Congress of Neurological Surgeons – Palm Springs, California, Feb. 23-26 2000.
163. **Villavicencio AT**, Archer GE, McLendon RE, Friedman AH, Bishop WR, Bigner DD, Friedman HS, Sampson JH. Treatment of Neoplastic Meningitis with Intrathecal Temozolomide. Annual Meeting of The Congress of Neurological Surgeons – Boston, Massachusetts, Oct. 28-Nov. 3, 1999.
164. Heimberger A, Archer GE, **Villavicencio AT**, Friedman AH, Bigner DD, Sampson JH. Functionally Active Dendritic Cells (DC) Generated from Patients with Malignant Glioma. Annual Meeting of the Congress of Neurological Surgeons – Boston, Massachusetts, Oct. 28-Nov. 3, 1999.
165. **Villavicencio AT**, Pracyk J, Rubin L, Dimitrov D, Bulsara K, Chambers J, Gorecki J. A Prospective, Randomized, Controlled Clinical Trial of Intrathecal Narcotic Analgesia for Chronic Intractable Pain of Non-Malignant Origin. Annual Meeting of the Congress of Neurological Surgeons – Boston, Massachusetts, Oct. 28-Nov. 3, 1999.
166. Pracyk J, **Villavicencio AT**, Hussain A, Gorecki J. Intraoperative Somatosensory Evoked Potentials for Nucleus Caudalis DREZ Lesioning, Technical Modifications and Results. Annual Meeting of the Congress of Neurological Surgeons – Boston, Massachusetts, Oct. 28-Nov. 3, 1999.
167. **Villavicencio AT**, Kim J, Gorecki J. A Comparison of Standard Medical Management versus Intrathecal Morphine in the Long-term Treatment of Nonmalignant Pain. North Carolina Spine Society, April 30-May 2 – Winston Salem, North Carolina, 1999.
168. Leveque JC, **Villavicencio AT**, Gorecki J. Laminectomy versus Percutaneous Lead Placement for Spinal Cord Stimulation. North Carolina Spine Society, April 30-May 2 – Winston Salem, North Carolina, 1999.
169. **Villavicencio AT**, Gray L, Leveque JC, Kureshi S, Friedman A. 3-Dimensional CT Angiography for Planning Skull Base Approaches to Vertebrobasilar Aneurysms: a Radiographic and Cadaveric Study. 10<sup>th</sup> Annual Meeting of the North American Skull Base Society, May 27-31 – Chicago, Illinois 1999.
170. **Villavicencio AT**, Gray L, Leveque JC, Kureshi S, Friedman A. Three-Dimensional CT Angiography for Evaluating Anatomic Variations of the Skull Base in the Region of the Intrapetrous Carotid. 10<sup>th</sup> Annual Meeting of The North American Skull Base Society, May 27-31 – Chicago, Illinois 1999.
171. **Villavicencio A**, Leveque JC, Bulsara K, Kureshi S, Gorecki JP. Results Following Laminectomy versus Percutaneous Lead Placement in 48 Patients Undergoing Spinal

- Cord Stimulation for Intractable Pain. Annual Meeting of the American Association of Neurological Surgeons – New Orleans, Louisiana 1999.
172. **Villavicencio A**, Bulsara K, Kureshi S, Gorecki JP. Spinal Cord Stimulation for Failed Back Syndrome. Annual Meeting of The Joint Section on Disorders of the Spine and Peripheral Nerves, American Association of Neurological Surgeons and Congress of Neurological Surgeons – Orlando, Florida, Feb. 10-13, 1999.
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## BOOK CHAPTERS

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5. **Villavicencio AT**, Friedman AH. Surgery for Spasmodic Torticollis. In: Lozano AM (ed): Movement Disorder Surgery. Progress in Neurological Surgery. Basel, Karger, 2000, vol. 15, pp. 296-330.
6. **Villavicencio AT**, Madison RD, Friedman AH. Peripheral Nerve Injury and Regeneration. In Gilman S, Goldstein GW, Waxman SG. Neurobase. San Diego: Arbor Publishing, 2000 ed.

7. **Villavicencio AT**, Friedman AH. Surgical Management of Brachial Plexus Injuries and Thoracic Outlet Syndrome. In: Grossman RG, Loftus CM. Principles of Neurosurgery. Lippincott-Raven 1999, Chapter 36, pp. 679-705.
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9. **Villavicencio AT**, Perry M, Bulsara K. Peripheral Nerve Injury and Regeneration. In Gilman S, Goldstein GW, Waxman SG. Neurobase. San Diego: Arbor Publishing, 2005 ed.

## SCIENTIFIC PUBLICATIONS

1. **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 May 2016.)
2. 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)
3. **Villavicencio AT**, Burneikiene S. RhBMP-2 Induced Radiculitis in Transforaminal Lumbar Interbody Fusion Patients: Relations to Dose. (Submitted to Spine J – September 25, 2015; Revision Jan 22, 2016)
4. Matz P, Meagher RJ, Lamer T, Tontz, W, Annaswamy TM, Cassidy RC, Cho CH, Dougherty P, Easa JE, Enix DE, Gunnoe BA, Jallo J, Julien TD, Maserati MD, Nucci RC, O’Toole JE, Sembrano JN, **Villavicencio AT**, Witt JP. An Evidence Based Clinical Guideline for the Diagnosis and Treatment of Degenerative Lumbar Spondylolisthesis (Submitted Spine J Feb 24, 2015)
5. **Villavicencio AT**, Nelson EL, 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. (Submitted J Neurosurg Spine Feb 27, 2015; submitted JSJT aka Clinical Spine Surgery accepted December 15, 2015.)
6. **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. (Submitted J Neurosurg Spine Feb 27, 2015; Submitted JSJT aka Clinical Spine Surgery May 12, 2015) Accepted December 15, 2015
7. **Villavicencio AT**, Nelson EL, Rajpal S, Otorora F, Burneikiene S. Case Series of Anterior Intervertebral Graft Extrusions in Transforaminal Lumbar Interbody Fusion Surgeries. World Neurosurgery (Submitted)
8. Matz P, Meagher RJ, Lamer T, Tontz, W, Annaswamy TM, Cassidy RC, Cho CH, Dougherty P, Easa JE, Enix DE, Gunnoe BA, Jallo J, Julien TD, Maserati MB, Nucci RC, O’Toole JE, Sembrano JN, **Villavicencio AT**, Witt JP. An Evidence-Based Clinical Guideline for the Diagnosis and Treatment of Degenerative Lumbar Spondylolisthesis Spine J. 2016 Mar;16(3):439-48.
9. **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.

10. **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)*
11. Burneikiene S, Nelson EL, Mason A, Rajpal S, Beasley K, **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.
12. 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.
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71. **Villavicencio AT**, Gray L, Kureshi S, Friedman AH. Three-Dimensional CT Angiography for Planning Skull Base Approaches to Vertebrobasilar Aneurysms: A Radiographic and Cadaveric Study. *Skull Base Surgery [Abstract]* 9(Supp 1):34, 1999.
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75. **Villavicencio AT**. Hey LA. Patel D. Bressler P. Acute Cardiac and Pulmonary Arrest After Infusion of Vancomycin with Subsequent Desensitization. *Journal of Allergy & Clinical Immunology*. 100(6):853-4, 1997.
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77. Friedman AH, **Villavicencio AT**. Ablative Spinal Cord Surgery for Treatment of Chronic Pain. *Current Review of Pain* 1(3):223-237, 1997.

### PROFESSIONAL AFFILIATIONS

1999-present	American Association of Neurological Surgeons (AANS)
2005-present	AANS/CNS Section on Disorders of the Spine and Peripheral Nerves
2007-present	AANS/CNS Section on Tumors
2002-present	Colorado Medical Society (CMS)
2006-present	Colorado Neurosurgical Society
1997-present	Congress of Neurological Surgeons (CNS)
2006-present	North American Spine Society (NASS)
1996-2001	Massachusetts Medical Society (MMS)

### PERSONAL INTERESTS

Amateur Sport Racing (Cycling, Marathons, Ultra-marathons, Triathlons), Martial Arts (Tae Kwon Do, Gracie Jiu Jitsu), SCUBA-diving, Spanish, Elementary school soccer and wrestling coach

### Amateur Races

May 10, 1998	Clemson Triathlon (1K Swim – 20K Bike – 5K Run)
May 16, 1998	Carolina Beach Triathlon (1.5K Swim – 40K Bike – 10k Run)
May 31, 1998	Escape From Alcatraz Triathlon (1.5 mi. Swim – 18 mi. Bike – 8 mi. Run)
May 12, 2001	White Lake Half Ironman (1.2 mi. Swim – 56 mi. Bike – 13.2 mi. Run)

June 9, 2001 Camp Lejeune Semper Fi Triathlon (1.5K Swim – 40K Bike – 10k Run)  
 Aug. 11, 2001 Camp Pendleton Muddy Buddy (10 K)  
 Sept. 9, 2001 City of Los Angeles Jamba Juice Triathlon (1.5K Swim – 40K Bike – 10k Run)  
 Sept. 16, 2001 Malibu Nautica Triathlon (1/2 mi. Swim – 18 mi. Bike – 4 mi. Run)  
 Oct. 6, 2001 Death Valley to Mount Whitney Race (138 mi. Bike – 22 mi. Hike [14,497.61 ft. elevation])  
 Nov. 11, 2001 Long Beach Marathon (26.2 mi.)  
 Jan. 20, 2002 San Diego Marathon (26.2 mi.)  
 Feb. 9, 2002 Birmingham Marathon (26.2 mi.)  
 March 16, 2002 Catalina Island Marathon (26.2 mi.)  
 April 27, 2003 Nashville Marathon (26.2 mi.)  
 May 5, 2002 Wild Wild West Marathon, Lone Pine, CA (26.2 mi.)  
 May 18, 2002 Half Ironman, Oceanside, CA (1.2 mi. Swim – 66 mi. Bike – 13.1 mi. Run)  
 June 9, 2002 Ironman Utah Triathlon, Provo, UT (Terminated swim & resulting shortened duathlon – 70 mi. Bike – 13.1 mi. Run)  
 Aug. 25, 2002 5430 Ironman Length Triathlon, Boulder, CO (2.4 mi. Swim – 112 mi. Bike – 26.2 mi. Run)  
 Sep. 1, 2002 Breckenridge Crest Mountain Marathon (26.2 miles [12,500 ft. elevation])  
 Sep. 29, 2002 Boulder Backroads Marathon (26.2 mi.)  
 Oct. 19, 2002 World Championship Ironman Triathlon, Kailua-Kona, Hawaii (2.4 mi. Swim – 112 mi. Bike – 26.2 mi. Run)  
 March 15, 2003 Catalina Island Marathon (26.2 mi.)  
 April 5, 2003 Half Ironman, Oceanside, CA (Terminated swim – 70 mi. Bike – 13.1 mi. Run)  
 April 26, 2003 Nashville Marathon (26.2 mi.)  
 May 4, 2003 Wild Wild West Ultramarathon, Lone Pine, CA (50K)  
 May 24, 2003 Ironman Brazil, Florianopolis (2.4 mi. Swim – 112 mi. Bike – 26.2 mi. Run)  
 June 1, 2003 Steamboat Marathon (26.2 mi.)  
 June 29, 2003 Ironman Coeur d'Alene (2.4 mi. Swim – 112 mi. Bike – 26.2 mi. Run)  
 July 12, 2003 Mike Horgan Hill Climb bicycle race (22 miles, 4,000 ft. vertical gain)  
 Aug. 16, 2003 Pikes Peak Ascent (13.1 miles [7,815 ft. elevation gain to 14,110 ft])  
 Aug. 17, 2003 Pikes Peak Marathon (26.2 miles [7,815 ft. elevation gain to 14,110 ft])  
 Sept. 28, 2003 Boulder Backroads Marathon. 3<sup>rd</sup> place, male 35-39 age group  
 Oct. 4, 2003 Big Sur Trail Marathon (26.2 mi.)  
 Oct. 12, 2003 Chicago Marathon (26.2 mi.)  
 March 6, 2004 Ironman New Zealand (2.4 mi. Swim – 112 mi. Bike – 26.2 mi. Run)  
 April 16, 2004 World's Toughest Half Ironman (1.2 mi. Swim – 66 mi. Bike – 13.1 mi. Run). 1<sup>st</sup> place male, age 35-39  
 June 27, 2004 Ironman Coeur d'Alene (2.4 mi. Swim – 112 mi. Bike – 26.2 mi. Run)  
 July 18, 2004 5430 Half Ironman Relay (1.2mi. Swim – 56 mi. Bike – 13.1 mi. Run). 1<sup>st</sup> place overall  
 July 25, 2004 Ironman Lake Placid (2.4 mi. Swim – 112 mi. Bike – 26.2 mi. Run). 7th place male, age 35-39.  
 Aug. 22, 2004 Pikes Peak Marathon (26.2 miles [7,815 ft. elevation gain to 14,110 ft]). 1<sup>st</sup> place, male 35-39 age group  
 Sep. 5, 2004 Breckenridge Crest Mountain Marathon (26.2 miles [12,500 ft. elevation])

Sep. 26, 2004 Boulder Backroads Marathon (26.2 mi.)  
 Oct. 16, 2004 World Championship Ironman Triathlon, Kailua-Kona, Hawaii (2.4 mi. Swim – 112 mi. Bike – 26.2 mi. Run)

April 18, 2005 Boston Marathon (26.2 mi.)  
 July 24, 2005 Ironman Lake Placid (2.4 mi. Swim – 112 mi. Bike – 26.2 mi. Run). 9 hrs 56 min. 4th place male, age 35-39. 18th place overall.

Aug. 7, 2005 5430 Boulder Half Ironman (1.2 mi. Swim – 56 mi. Bike – 13.1 mi. Run). 2nd place relay team.

Sep. 25, 2005 Boulder Backroads Marathon  
 Oct. 16, 2005 World Championship Ironman Triathlon, Kailua-Kona, Hawaii (2.4 mi. Swim – 112 mi. Bike – 26.2 mi. Run). 9 hrs 58 min

May 28, 2006 Ironman Japan (2.4 mi. Swim – 112 mi. Bike – 26.2 mi. Run). 10th place male, age 35-39.

July 23, 2006 Boulder Peak Triathlon (1.5K Swim – 40K Bike – 10k Run)  
 Aug. 12, 2007 5430 ½ Ironman (1.2 mi. Swim – 56 mi. Bike – 13.1 mi. Run)  
 Oct. 5, 2008 Longhorn Half Ironman, Austin, Texas (1.2 mi. Swim – 56 mi. Bike – 13.1 mi. Run). 1st place male, age 40-44.

Nov. 23, 2008 Ironman Arizona (2.4 mi. Swim – 112 mi. Bike – 26.2 mi. Run). 9 hrs 56 min.

Jan 25, 2009 Carlsbad Marathon (26.2 mi), 31<sup>st</sup> overall, 5<sup>th</sup> in age division  
 May 23, 2009 Ironman Lanzarote (2.4 mi. Swim – 112 mi. Bike – 26.2 mi. Run)  
 August 9, 2009 5430 Boulder Half Ironman (1.2 mi. Swim – 56 mi. Bike – 13.1 mi. Run)  
 September 20, 2009 Boulder Marathon (26.2 mi.), 10th overall, 1st place age group, male, age 40-44

March XX, 2010 Lake Havasu Triathlon (1.5K Swim – 40K Bike – 10k Run)  
 April 11, 2010 Superfrog Triathlon, Coronado Island (1.2 mi. Swim – 56 mi. Bike – 13.1 mi. Run). 2nd place male, age 40-49.

May 1, 2010 Ironman St George, Utah (2.4 mi. Swim – 112 mi. Bike – 26.2 mi. Run) 12<sup>th</sup> Place, male 40-44

June 26, 2010 Climb to Kaiser (155 mi bike race with 15,500 ft of climbing). 1<sup>st</sup> place overall at mile 120 and missed turn going off course and was disqualified!

July 11, 2010 Boulder Peak Triathlon (1.2 mi. Swim – 56 mi. Bike – 13.1 mi. Run) 2nd place male, age 40-45.

August 8, 2010 Boulder 70.3 series ½ Ironman (1.2 mi. Swim – 56 mi. Bike – 13.1 mi. Run) 3rd place male, age 40-45

June 19, 2011 Boulder Sprint Triathlon (0.5 mi swim – 17.2 mi bike – 3.1 mi run)  
 July 10, 2011 Boulder Peak Triathlon (1.2 mi. Swim – 56 mi. Bike – 13.1 mi. Run)  
 June 30, 2012 Climb to Kaiser (155 mi bike race with 15,500 ft of climbing). 3rd place overall

July 8, 2012 Boulder Peak Triathlon (1.2 mi. Swim – 56 mi. Bike – 13.1 mi. Run)  
 July 14, 2013 Boulder Peak Triathlon (1.2 mi. Swim – 56 mi. Bike – 13.1 mi. Run)  
 August 4, 2013 Boulder 5430 Half Ironman (1.2 mi. Swim – 56 mi. Bike – 13.1 mi. Run)  
 September 22, 2013 Ironman Tahoe (2.4 mi. Swim – 112 mi. Bike – 26.2 mi. Run)  
 August 3, 2014 Ironman Boulder (2.4 mi. Swim – 112 mi. Bike – 26.2 mi. Run)

**BIOGRAPHY**

Dr. Villavicencio received his medical degree from Harvard with honors in 1995 and went on to complete a neurosurgical residency at Duke University Medical Center in 2001. He then finished an orthopedic spine surgery fellowship at Cedars-Sinai Medical Center in Los Angeles in 2002 and is one of only a handful of surgeons in the country with dual neurosurgery and orthopedic spine training. He is board certified and the senior practicing partner in Boulder Neurosurgical Associates, a group of private practice neurosurgeons in Colorado. He specializes in complex spinal reconstructive surgery including scoliosis and other types of deformity as well as minimally invasive spine surgery. He treats almost all types of brain and spinal disorders, performing approximately 500 operative cases annually.

Dr. Villavicencio is the Founder and current Program Chairman for an annual regional neurosurgical symposium entitled Current Techniques in the Treatment of Cranial and Spinal Disorders. This symposium is currently in its 8<sup>th</sup> year and draws over 200 physicians and allied health care providers each year. Dr. Villavicencio is also the Founder and Chairman of the Board for the Justin Parker Neurological Institute, a tax-exempt 501 (c)(3) nonprofit organization with an approximate annual budget of \$400,000 whose principle purpose is to conduct clinical research and to disseminate this and other information to patients and the medical community. He is also the Founder and Director of the BNA Complex Spine Surgery Fellowship Program.

Dr. Villavicencio is Director of Research and Development for Boulder Neurosurgical Associates in addition to being the senior managing partner. He is also Director of Neurosurgery at Boulder Community and Longmont United Hospitals and Director of Surgery at the Minimally Invasive Spine Institute in Colorado. Dr. Villavicencio has presented hundreds of abstracts at national and international neurosurgical meetings and has published more than 60 peer-reviewed articles and book chapters in leading neurosurgical journals and textbooks. He is also principle investigator for several ongoing FDA IDE (investigational device exemption) prospective randomized trials.

Dr. Villavicencio's goal as a neurosurgeon is not just to stay at the forefront of neurosurgical care but to actually advance the field through the continued development and application of new and innovative surgical and non-surgical treatment options. He is one of the few neurosurgeons in the country dedicated to improving clinical outcomes and patient safety by promoting and implementing evidence-based medicine into clinical practice.

Dr. Villavicencio is a member of the American Association of Neurological Surgeons (AANS), The Congress of Neurological Surgeons (CNS), The North American Spine Society (NASS), The Colorado Neurosurgical Society (CNS), The Colorado Medical Society (CMS) and the AANS/CNS Section on Disorders of the Spine and Peripheral Nerves and the Section on Tumors. He is also a Joint Sponsorship Council Member of the AANS.

In addition to his impeccable reputation as a surgeon, Dr. Villavicencio has been involved in several very successful start-up businesses that have developed into multi-million dollar companies. Dr. Villavicencio was a co-founder of Boulder Intraoperative Monitoring in 2003 which was then sold to ProNerve, LLC in 2007 for \$1.3 million. He is a co-founder and the current Director of Surgery for the Minimally Invasive Spine Institute in 2006 which now has an annual income of approximately \$10 million. He was also a co-founder of ProNerve, which has current annual gross revenue of approximately \$20 million. Rocky Mountain CyberKnife was co-founded by Dr. Villavicencio in 2002 and was sold to US Radiosurgery in 2005 for approximately \$10.5 million. As an initial founding surgeon and the largest surgeon shareholder for Lanx, LLC in 2003, a biotechnology company specializing in spinal implant

devices and systems, Dr. Villavicencio has been instrumental in bringing Lanx to its current gross annual revenue of approximately \$95 million.

Dr. Villavicencio is the lead surgeon for a combined neurosurgery-orthopedic spine team that has traveled to Inner Mongolia on several occasions in order to perform charity surgery on children with spinal severe spinal deformities. This team includes another orthopedic surgeon, surgical assistant, neuromonitoring technician, scrub technician and anesthesiologist.

Dr. Villavicencio is a devoted husband and father of two children, including a 7 year-old boy and a 6 year-old girl. He also operates a small organic farm in his free time with about 70 head of cattle, 50 chickens, 5 pigs and 3 horses. He is an avid athlete and runs a sub 3-hour marathon. He has competed in approximately 35 marathons, 50 triathlons and 20 full Ironman events, including the Ironman World Championships in Kona, Hawaii on several occasions. As such, he has a particular interest in treating athletes and all other patients with the goal of utilizing less invasive techniques for a faster recovery back to peak physical condition.