

Stephen M. Pirris, MD
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- Certification: American Board of Neurologic Surgery
(March 2007) Board eligible after passing the written boards exam
(May 2012) Board certified after passing the oral boards exam
United States Medical Licensing Exam (USMLE)
(2000) USMLE Step 1
(2002) USMLE Step 2
(2003) USMLE Step 3
- Employment: (July 2009 – May 2015) Mayo Clinic Florida
(2009- 2015) Assistant Professor of Neurosurgery
(2015-present) Adjunct Assistant Professor of
Neurosurgery
(June 2015-present) Ascension Medical Group (formerly St.
Vincent’s Spine and Brain Institute)
(June 2015-present) Staff Neurosurgeon
- Committees: Mayo Clinic Florida
(2010) Mayo Clinic Florida Spinal Fusion DRG Best Practice
Analysis
(2011) Mayo Enterprise Spinal Implant Strategy
(2012) Mayo Enterprise Bone and Tissue Contracting Initiative
(2012 – 2015) Mayo Clinic Florida Clinical Practice Committee
(2013 – 2015) Mayo Clinic Florida Neuroscience Focussed
Research Team
Vice Chairman (2014-2015)
(2013 - 2014) Mayo Enterprise Spine Surgery Manage to
Reimbursement Project
(2014 - 2015) Mayo Enterprise Spinal Fusion Manage to
Reimbursement Project
(2014) Mayo Clinic Florida Radiology Chair Search Committee
(2014 - 2015) Mayo Foundation Neurosurgical Equipment
Committee
- Southern Neurosurgery Society
(March 2012 – present) Executive Committee
(March 2016 – 2019) Chair of Exhibits
(March 2019 – present) Treasurer

Florida Neurosurgery Society

(August 2013 – present) Board of Directors
(August 2013 – August 2014) Treasurer
(August 2014 – August 2015) Scientific Program chairman
(August 2015 – August 2016) Vice President
(August 2016 – August 2017) President

North American Spine Society

(November 2014 – present) Section on Robotics and Navigation – committee member

Ascension

(2016-present) Spine Surgery Affinity Group
(2017-present) Multispecialty Affinity Group

Ascension-St. Vincent's Healthcare (Jacksonville Ministry)

(2017-present) Specialty Care Council
(2017-present) Neuroscience Executive Committee
(2018-2019) Chairman

Neurosurgery Outreach Foundation (NOF)

2021 - Board of Directors

Education:

(June 2002- June 2009) University of Pittsburgh Medical Center
Department of Neurological Surgery

Internship and Residency

(August 1998- May 2002) University of Pittsburgh School of
Medicine

MD, USMLE Steps 1, 2 and 3

(August 1994- May 1998) University of North Carolina at Chapel
Hill

BS with Honors, Biology

Fellowship:

(2007-8) North American Spine Society (NASS) Clinical
Traveling Fellowship Award

Membership:

Congress of Neurological Surgeons
American Association of Neurological Surgeons
North American Spine Society
Southern Neurosurgery Society
Neurosurgery Society of America
AO Spine Society

Honors and Awards:

Vitals.com Patients' Choice Award (2019)
The Best Doctors in America (2017-2018)

Jacksonville Magazine – Top Doctors (2015-2019)
North American Spine Society (NASS) Clinical Traveling Fellowship Award (2007-2008)
Alpha Omega Alpha Medical Honor Society (2002)
Theodore Kurze Senior Prize in Clinical Neuroscience (2002)
Medical Student Award for Excellence of the ACMS (2002)
Phi Beta Kappa national honor fraternity (1997)
Graduate with Honors in Biology (1998)
Gamma Sigma Alpha honor society (1997)
WPIAL Scholar-Athlete of the Year Scholarship (1994)

Mentoring: (2008) Campbell, K., B. Schmidt, S. Burton and A. McCarty.
““Design of an Anatomical Polyaxial Vertebral Hook” Winner of \$500 stipend awarded by the National Collegiate Inventors and Innovators Alliance for the Biomedical Engineering Idea competition. May 2008.

(2013-2014) Gazanfar Rahmathulla, MBBS
Mayo Clinic Spine Surgery Fellow
Current employment – Faculty neurosurgeon at University of Florida Health System - Jacksonville

(2014-2015) Kamran Parsa, DO
Mayo Clinic Spine Surgery Fellow
Current Employment – Founding Partner NeuroSpine Institute – Palmdale, CA

Ad hoc Reviewer: CMES: Computer Modeling in Engineering & Sciences
Mayo Clinic Proceedings
BMJ Case Reports
British Journal of Medicine and Medical Research
Clinical Biomechanics
The Spine Journal
Neurosurgery
The International Journal of Medical Robotics and Computer Assisted Surgery

Invited Lectures: Pirris, S.M. "Pediatric Neurosurgical Trauma Emergencies"
invited lecture given at the Children's Hospital of Pittsburgh
Department of Surgery Grand Rounds. Pittsburgh, PA; October 26, 2005.

Pirris, S.M. “Basic spinal biomechanics in adult deformity.”
Jacksonville Neurosurgery Journal Club Quarterly Meeting.
Jacksonville, FL; February 8, 2010.

Pirris, S.M. "Lumbar spine decompression and instrumented fusion." From Cranial to Spine: A Comprehensive Overview of Neurosurgical Topics for the Mid-Level Practitioner – an American Association of Neurological Surgeons sponsored course. Las Vegas, NV; September 24, 2010.

Pirris, S.M. "Lumbar surgery tips for neurosurgical extenders." Association of Neurosurgical Physician Assistants 2nd Annual Spring CME Meeting. New Orleans, LA; April 27, 2013.

Pirris, S.M. "The Posterior Approach to Multilevel Cervical Spondylosis." Florida Neurosurgical Society 2014 Annual Meeting. Palm Beach, FL; August 23, 2014.

Pirris, S.M. "Facet Bone Dowels." 2014 Pittsburgh Spine Summit. Farmington, PA; September 12, 2014.

Pirris, S.M. "Benefits of Spinal Image Guidance in Deformity Surgery of the Thoracic and Lumbar Spine." North American Spine Society 29th Annual Meeting, Instructional Course: Fundamentals of Image-Guided Spinal Surgery, San Francisco, CA; November 11, 2014.

8) Pirris, S.M. "The past, present and (possible) future of spinal interbody fusion implants." Mayo Clinic Neuroscience-Neurosurgery Lecture Series. Jacksonville, FL; July 31, 2017.

9) Pirris, S.M. "Technological Advances in Neurologic Surgery." St. Vincent's Southside Ambassadors Council. Jacksonville, FL; October 24, 2017.

Course Directorship: "Young Guns Surgical Tract" at the 3rd Annual Pittsburgh Spine Summit. Pittsburgh, PA. September 2012.

Course Instructor: "Spinal Image Guidance and Advanced Intraoperative Imaging Techniques." 81st AANS Annual Scientific Meeting. New Orleans, LA; April 28, 2013.

"Hands-On Live Surgical Skills Lab - Techniques and Principles of Dural Repair." 9th Annual Mayo Clinic Spine Center: Medical and Surgical Spine Course; Scottsdale, AZ; January 15, 2015.

Presentations:

Jawahar, Ajay MD, LD Lunsford MD FACS, S Pirris BS, C Baker, D Kondziolka MD FACS FRCS. "Shifting Sands of Gamma Knife Radiosurgery: The Evolution of Indications and Insurance Carriers Over the Past Five Years" abstract presented at the 10th International Meeting of the Leksell Gamma Knife Society. Squaw Valley, CA; April 15, 2000.

Kondziolka, D.S., S.M. Pirris, L.D. Lunsford. "Improving the consent process for surgery." AANS annual meeting. San Francisco, CA; April 25, 2006.

Pirris, S.M., R.L. Hamilton, B. Omalu, S. Finkelstein, J.T. King Jr., and J.Y.K. Lee. "Loss of Heterozygosity Analysis of Specific Loci Predicts Survival in Patients with Meningioma." AANS Section on Tumors. San Francisco, CA; April 26, 2006

Pirris, S.M. "Wallis Spinal Spacer." Pennsylvania Neurosurgical Society Annual Scientific Meeting. Hershey, PA; July 14, 2006

Pirris, S.M., B.C. Cheng, J.L. Spehar, M.C. Sharts, and W.C. Welch. "Biomechanical analysis of a cervical motion preservation device in an ovine model." 2nd Annual Stuart Rowe Society Lectureship. Pittsburgh, PA; December 6, 2006

Pirris, S.M., I.F. Pollack, C.H. Snyderman, R.M. Spiro, E.C. Tyler-Kabara, A.B. Kassam.. "Endoscopic Endonasal Approach to a Tumor Extending into the Posterior Foramen Magnum." Winning Presentation - Pittsburgh Surgical Society's 'Most Interesting Case of 2006.' Pittsburgh, PA; January 22, 2007

Spehar, J.L., R.L. Hamilton, S.M. Pirris, P.G. Gerszten, P. Karausky, W.C. Welch, and B.C. Cheng. "Preliminary Histological Evaluation of the Chronic Tissue Response to a Cervical Disc." SAS7 – the 7th Annual Meeting of the Spinal Arthroplasty Society; Berlin, Germany; May 2007

Pirris, S.M., B.C. Cheng, J.L. Spehar, and W.C. Welch. "Comparative biomechanical results of a polymer plate versus conventional instrumentation for anterior cervical discectomy." 3rd Annual Stuart Rowe Society Lectureship. Pittsburgh, PA; December 5, 2007.

Clendenen, S.R., C.B. Robards, B.J. Leone, S.M. Pirris, E.W. Nottmeier. "Symptomatic post-laminectomy cerebrospinal fluid leak treat with high resolution ultrasound-guided blood patch." American Society of Regional Anesthesia and Pain Medicine 35th

Annual Regional Anesthesia Meeting and Workshops. Toronto, Ontario, Canada; April 22-25, 2010

Pirris, S.M., E.W. Nottmeier and D.S. Fenton. "Image-guided placement of S2 sacro-iliac screws as distal fixation in spinal deformity surgery." European Association of Neurosurgical Societies Young Neurosurgeons Meeting. Innsbrook, Austria; February 11-14, 2011.

Pirris, S.M. and E.W. Nottmeier. "Image-guided S2 sacro-iliac screws as distal fixation in spinal deformity surgery: early lessons learned." 2nd Annual Pittsburgh Spine Summit. Pittsburgh, PA; September 9-10, 2011.

Pirris, S.M. "Cervical decompression and instrumentation for treatment of spondylotic myelopathy." Mayo Clinic Alumni Association 67th Meeting. Ponte Vedra Beach, FL; September 21-24, 2011.

Pirris, S.M. and E.W. Nottmeier. "Image-guided S2 sacro-iliac screws as distal fixation in spinal deformity surgery: early lessons learned." The Winter Clinics for Cranial and Spine Surgery. Snowmass, CO; February 20, 2012

Pirris, S.M. and E.W. Nottmeier. "Image-Guided Applications to Minimally Invasive and Deformity Surgery." 7th Annual Mayo Clinic Spine Symposium. Naples, FL; March 26, 2012

Pirris, S.M. and E.W. Nottmeier. "Placement of Thoracic Transvertebral Pedicle Screws: A Novel Adjunct to Fixation in Complex Spine Surgery." 65th Annual Neurosurgical Society of America Meeting. Park City, UT; June 13, 2012.

Nottmeier EW, Pirris S, Bowman C, Kimes S, Edwards S, Nelson K. "Operating Room Radiation Exposure in cbCT-based, Image-guided Spinal Surgery." In Program and Abstracts of the 65th Annual Meeting of the Neurosurgical Society of America. Park City, Utah; June 2012.

Nottmeier EW, Fenton DS, Leibowitz T, Pirris S. "The Use of Three-Dimensional Image-guidance for Redirecting Pedicle Screws in Revision Spinal Fusion." In Program and Abstracts of the 65th Annual Meeting of the Neurosurgical Society of America. Park City, Utah; June 2012.

Pirris, S.M. "Pearls for Spine Surgical Trainees in Preparing for the Next Phase of Your Career." 3rd Annual Pittsburgh Spine Summit, Pittsburgh, PA; September 2012.

Pirris, S.M. "Image-Guided Applications to Thoracolumbar Revision and Deformity Surgery." North American Spine Society Annual Meeting; Fundamentals of Image-Guided Spinal Surgery Course. Dallas, TX; October 24, 2012.

Pirris, S.M. "Fixation Options in Multilevel Spinal Fusion Procedures." 64th Annual Southern Neurosurgery Society Meeting Sarasota, FL; February 21, 2013.

Pirris, S.M. "Pearls for Neurosurgical Trainees in Preparing for the Next Phase of Your Career." Resident Program at the 64th Annual Southern Neurosurgical Society Meeting. Sarasota, FL; February 21, 2013.

Pirris, S.M. "Image-Guided Applications to Thoracolumbar Revision and Minimally Invasive Fixation." Spinal Navigation Symposium at the 64th Annual Southern Neurosurgery Society Meeting. Sarasota, FL; February 22, 2013.

H.G. Deen, S. Clendenen, J.A. Cartwright, B. Leone, S.M. Pirris, M. Pichelmann, and E.W. Nottmeier. "Ultrasound Guided Blood Patch for Post-operative CSF Leaks." The Winter Clinics for Cranial & Spine Surgery. Snowmass, CO; February 25, 2013.

Pirris, S.M. "Lessons Learned from Select Minimally Invasive Approaches and Implants." 4th Annual Pittsburgh Spine Summit, Pittsburgh, PA; September 14, 2013.

Pirris, S.M. "Benefits of Spinal Image Guidance in Deformity Surgery of the Thoracic and Lumbar Spine." North American Spine Society Annual Meeting; Instructional Course: Fundamentals of Image-Guided Spinal Surgery. New Orleans, LA; October 9, 2013.

Pirris, S.M., EW Nottmeier, HG Deen, R Reimer, and RE Wharen. "Radiographic fusion rate after implantation of facet bone dowels." Congress of Neurological Surgeons Annual Meeting, San Francisco, CA; October 22, 2013.

Pirris, S.M. "Medtronic cervical arthroplasty devices: Prestige and Bryan artificial discs." 65th Southern Neurosurgery Society

Annual Meeting – Cervical arthroplasty symposium, San Juan, PR; February 21, 2014.

Pirris, S.M., Z. Gokaslan, J. Sheehan. “Debate III: Management of spinal metastasis: radiosurgery versus complex spine surgery.” 65th Southern Neurosurgery Society Annual Meeting, San Juan, PR; February 22, 2014.

Pirris, S.M. “Do Patients Even Know Which Iliac Crest was Harvested? A Retrospective Study of Iliac Crest Bone Grafting Techniques with Allograft Reconstruction.” The 11th Annual Jacksonville Neurosurgical Forum at Ponte Vedra, Ponte Vedra, FL; March 21, 2014.

Pirris, S.M. “Image guidance for cervical fusion procedures.” 2014 American Association of Neurologic Surgeons Annual Meeting; Instructional course: Spinal image guidance and advanced intraoperative imaging techniques course. San Francisco, CA; April 5, 2014.

Pirris, S.M., E.W. Nottmeier, S. Kimes, M. O’Brien, G. Rahmathulla. “Do Patients Even Know Which Iliac Crest was Harvested? A Retrospective Study of Iliac Crest Bone Grafting Techniques with Allograft Reconstruction” 2014 Annual Meeting of the Neurosurgical Society of America. St. Andrews by the Sea, New Brunswick, Canada; June 11, 2014.

Yoon, J. and S.M Pirris. “Redirection of misplaced pedicle screws utilizing 3-dimensional intraoperative navigation.” Florida Neurosurgical Society 2014 Annual Meeting. Palm Beach, FL; August 24, 2014.

Parsa, K, S. Grewal, and S.M. Pirris. “Minimally invasive iliac crest autograft harvesting with the novel Quickdraw™ bone harvester.” Florida Neurosurgical Society 2014 Annual Meeting. Palm Beach, FL; August 24, 2014.

Pirris, S.M. “Posterior approach to surgical treatment of cervical spondylotic myelopathy.” 2014 Florida Neurosurgical Society Annual Meeting, Palm Beach, FL; August 23, 2014.

Pirris, S.M. “Diagnosis, management and outcome of intradural spinal malignancy.” 9th Annual Mayo Clinic Spine Center: Medical and Surgical Spine Course; Scottsdale, AZ; January 16, 2015.

Pirris, S.M. "Case presentations and session moderator." Spine surgical track: Trauma at the 9th Annual Mayo Clinic Spine Center: Medical and Surgical Spine Course; Scottsdale, AZ; January 16, 2015

Pirris, S.M., H.G. Deen and E.W. Nottmeier. "Use of Navigation in Anterior and Lateral Spine Surgery: Complication Avoidance and Revision Strategies." 2015 Winter Clinics for Cranial and Spinal Surgery, Snowmass, CO; February 23, 2015.

Grewal, SS and Pirris SM. "Superior Facet Violation and Adjacent Segment Disease in Patients with Spinal Instrumentation with Neuronavigation." 66th Southern Neurosurgery Society Annual Meeting; Naples, FL; March 26, 2015

Pirris, SM, Nottmeier, EW, Clifton W and Parsa K. "The Use of Intra-operative 3Dimensional Image Guidance for Revision of Failed Minimally-Invasive Sacro-Iliac Fusion." 66th Southern Neurosurgery Society Annual Meeting; Naples, FL; March 28, 2015

Pirris, SM. "A Novel Minimally-invasive Technique for Harvesting Iliac Crest Bone Graft." 2015 Annual Meeting of the Neurosurgical Society of America; Newport Beach, CA; April 15, 2015.

Pirris, SM. "Complications of the Cervicothoracic Junction." 6th Annual Pittsburgh Spine Summit; Farmington, PA; September 11, 2015

Pirris, SM. "Caveats and Pitfalls Associated with Spinal Navigation." North American Spine Society 2015 Annual Meeting - Robotics and Navigation Symposium; Chicago, IL; October 15, 2015

Yoon, JW and Pirris, SM. "Head-Up Display-Assisted Spine Instrumentation Using a Novel Video Streaming System: A New Use for Wearable Computing in the Operating Room." 67th Annual Southern Neurosurgery Meeting; San Antonio, TX; March 5, 2016.

Pirris, S.M. , Yoon, J.W., R.E. Chen, P.K. Han, P. Si. "Technical Feasibility and Safety of an Intraoperative Head-up display-Device

During Spine Instrumentation.” Neurosurgical Society of America 2016 Annual Meeting, Dublin, Ireland; June 22, 2016.

Yoon, J.W. and Pirris, S.M. “Utilization of Head-Up Displays in Neurosurgical Procedures and Their Future Promises.” Florida Neurosurgical Society 2016 Annual Meeting, Palm Beach, FL; August 21, 2016

Pirris, S.M. “Complex cases in spine surgery.” Lecture, case presentation and session moderation. Neurosurgery Society of America 2017 Annual Meeting, Ponte Vedra Beach, FL; April 4, 2017.

Pirris, S.M. “The past, present and (possible) future of spinal interbody fusion implants.” Presidential Address Florida Neurosurgical Society 2017 Annual Meeting, Palm Beach, FL; August 19, 2017.

Pirris, S.M., Nottmeier, E.W. “Economic Considerations of Robotic, Navigated and Computer Assisted Spine Surgery.” North American Spine Society Annual Meeting, Orlando, FL; October 26, 2017.

Pirris, S.M. “The past, present and (possible) future of spinal interbody fusion implants.” Mayo Clinic Multidisciplinary Spine Care Conference, Fernandina Beach, FL; November 10, 2017.

Pirris, S.M. “Cage Match: Benefits of intervertebral implants – debate and discussion.” Organizer and moderation of multiple lectures. 74th Annual Southern Neurosurgery Society Meeting, Marco Island, FL; March 2, 2018.

“What is in your pack? Bring the right hardware for better outcomes.” Lecture and Spine Session Moderation. Neurosurgery Society of America 2018 Annual Meeting, Jackson, WY; June 12, 2018.

Pirris, S.M. “The past, present and (possible) future of spinal interbody fusion implants.” Mayo Clinic Multidisciplinary Spine Care Conference, Fernandina Beach, FL; November 16, 2018.

Pirris, S.M. “Innovations in Neurosurgery.” Organizer and moderation of multiple lectures. 75th Annual Southern Neurosurgery Society Meeting, Key Largo, FL; February 22, 2019.

Pirris, S.M. "The past, present and (possible) future of spinal interbody fusion implants." Georgia Neurosurgery Society Annual Spring Meeting, Sea Island, GA; May 25, 2019.

Pirris, S.M. "Spine Surgery Complications." 10th Anniversary Pittsburgh Spine Summit, Pittsburgh, PA; August 23, 2019

57) Pirris, S.M. "Commercially Available Interbody Cage Designs." 10th Anniversary Pittsburgh Spine Summit, Pittsburgh, PA; August 24, 2019

58) Pirris, S.M. "Epidural Abscess with L5 Vertebral Body Resorption." 11th Annual Pittsburgh Spine Summit, (virtual) Pittsburgh, PA; November 3, 2020

59) Pirris, S.M. "Setup and Workflow Using the MazorX Robot for Spinal Surgery." Maximizing Efficiency in Robotic Spine Surgery, North American Spine Society Live Webinar; March 1, 2021

Poster Presentations: Faught RW, Pirris S, Welch WC, Cheng BC, "Comparison Between In Vivo and In Vitro Sheep Lumbar Spine," Digital poster presentation at the 23rd Annual Meeting of the AANS/CNS Section on Disorders of the Spine and Peripheral Nerves, Phoenix, AZ, March, 2007.

Pirris, S.M. and D.S. Kondziolka. "Head Injury in the American Civil War." Digital Poster Presentation. Congress of Neurological Surgeons Annual Meeting; San Diego, CA; September 2007.

Tyler-Kabara, E.C. and S.M. Pirris. "Telemedicine: The Use Of Cell Phone Pictures In Pediatric Neurosurgery." Digital Poster Presentation. AANS/CNS Section on Pediatric Neurological Surgery Annual Meeting; Miami, FL; November 2007

Cheng BC, Pirris SM, Cook D, Kanter AS, and Welch WC. "Comparison of Test Methods for Posterior Cervical Implant Characterization: Bench Top and Biomechanical Human Cadaveric Flexibility Protocols." Digital Poster Presentation. CNS 2008 Annual Meeting, Orlando, FL; September, 2008.

Cheng, B.C., D. Cook, S.M. Pirris, W.C. Welch. "A Hybrid Test Protocol for the Evaluation of Single and Adjacent Level Effects from an Anterior Cervical Disc." Poster Presentation. Orthopedic Research Society Annual Meeting. Las Vegas, NV; February 2009.

Cheng, B.C., D.J. Cook, M. Cuchanski, S.M. Pirris, D.M. Whiting, W.C. Welch. "Additional testing for Posterior Cervical Implant Characterization: Biomechanical Human Cadaveric Flexibility Protocols." ASTM Symposium on Static and Dynamic Spinal Implants: Are We Evaluating Them Appropriately. San Antonio, TX; November 16, 2010.

Pirris, S.M. and E.W. Nottmeier. "Symptomatic pneumocephalus associated with lumbar dural tear and reverse Trendelenburg positioning: Case report and review of the literature" European Association of Neurosurgical Societies Young Neurosurgeons Meeting. Innsbrook, Austria; February 11-14, 2011.

Nottmeier, E.W. and S.M. Pirris. "The Use of Three-Dimensional Image Guidance in Subaxial Anterior Cervical Surgery: Technical Note." 28th Annual Meeting of the AANS/CNS Section of Disorders of the Spine and Peripheral Nerves. Orlando, FL; March 7-10, 2012.

Nottmeier, E.W., D.S. Fenton, T. Leibowitz and S.M. Pirris. "The Use of Three-dimensional Image-guidance for Redirecting Pedicle Screws in Revision Spinal Fusion." 28th Annual Meeting of the AANS/CNS Section of Disorders of the Spine and Peripheral Nerves. Orlando, FL; March 7-10, 2012.

Nottmeier EW, Pirris S. "Placement of Thoracic Transvertebral Pedicle Screws Using Three-Dimensional Image Guidance." In Program and Abstracts of the 28th Annual Meeting of the AANS/CNS Section on Disorders of the Spine and Peripheral Nerves. Orlando, FL. March 2012.

Clendenen, SR, SM Pirris, CB Robards, R Reimer, HG Deen. "Symptomatic Postsurgical Cerebrospinal Fluid Leak Treated with Ultrasound Guided Aspiration and Epidural Blood Patch." Congress of Neurological Surgeons 2013 Annual Meeting. San Francisco, CA; October 19-23, 2013.

12) Grewal, SS, K Parsa, SM Pirris. "A Novel Minimally-invasive Technique for Harvesting Iliac Crest Bone Graft." Poster Presentation at the 66th Southern Neurosurgery Society Annual Meeting; Naples, FL; March 26-28, 2015.

Peer-reviewed
Publications:

1. Maesawa S, Salame C, Flickinger JC, **Pirris SM**, Konziolka D, Lunsford LD. Clinical outcomes after stereotactic radiosurgery for idiopathic trigeminal neuralgia. *J Neurosurg*. 2001 Jan; 94:14-20.
2. Kondziolka DS, **Pirris SM**, Lunsford LD. Improving the consent process for surgery. *Neurosurgery*. 2006 Jun; 58(6):1184-9.
3. **Pirris SM**, Pollack IF, Snyderman CH, Spiro RM, Tyler-Kabara EC, Kassam AB. Corridor surgery: The current paradigm for skull base surgery. *Childs Nerv Syst*. 2007 Apr; 23:377-84.
4. **Pirris SM**. Head injury in the American Civil War. *CNS News*. 4/2008; Volume 10, number 4(Neurology).
5. **Pirris SM**, Dhall S, Mummmaneni PV, Kanter, AS. Minimally invasive approach to extraforaminal disc herniations at the lumbosacral junction using an operating microscope: case series and review of the literature. *Neurosurg Focus*. 2008 Aug; 25(2).
6. Nakaya K, Niranjana A, Kondziolka D, Nettel B, Koebbe C, **Pirris SM**, Flickinger JC, Lunsford LD. Effects of Gamma Knife Radiosurgery on Brainstem Compression from Skull Base Tumors. *Journal of Radiation Oncology Biology Physics*. 2009; 77(4):988-995.
7. Cheng BC, Burns P, **Pirris SM**, Welch WC. Load Sharing and Stabilization Effects of Anterior Cervical Instrumentation. *J Spinal Disord Tech*. 2009 Dec; 22(8):571-7.
8. **Pirris SM**, Monaco EA 3rd, Tyler-Kabara EC. Telemedicine through the use of digital cell phone technology in pediatric neurosurgery: a case series. *Neurosurgery*. 2010 May; 66(5):999-1004. PMID:20404707. DOI:10.1227/01.NEU.0000368443.43565.2A.
9. Nottmeier EW, **Pirris SM**, Balseiro S, Fenton D. Three-dimensional image-guided placement of S2 alar screws to adjunct or salvage lumbosacral fixation. *Spine J*. 2010 Jul; 10(7):595-601. PMID:20434406. DOI:10.1016/j.spinee.2010.03.023.
10. Cheng BC, Cook DJ, Cuchanski M, **Pirris SM**, Welch, WC. Biomechanical Cyclical Loading on Cadaveric Cervical Spines in a Corpectomy Model. *Journal of ASTM International*. 7/2011; Volume 8(Issue 7).

11. Rahmlow MR, **Pirris S.M.**, Rubin DI. A rare anterior spinal epidural cyst mimicking Hirayama disease. *Muscle Nerve*. 2012 Mar; 45(3):445-8. PMID:22334184. DOI:10.1002/mus.22316.
12. Clendenen SR, **Pirris S.M.**, Robards CB, Leone B, Nottmeier EW. Symptomatic postlaminectomy cerebrospinal fluid leak treated with 4-dimensional ultrasound-guided epidural blood patch. *J Neurosurg Anesthesiol*. 2012 Jul; 24(3):222-5. PMID:22614041. DOI:10.1097/ANA.0b013e31825749ee.
13. R Grandhi, CP Deibert, **SM Pirris**, B Lembersky, AH Mintz. Simultaneous Muir-Torre and Turcot's Syndrome: A case report and review of the literature. *Surgical Neurology International*. 1/2013; 4(1):3 Epub 2013.
14. Nottmeier EW, **Pirris SM**. Placement of thoracic transvertebral pedicle screws using 3D image guidance. *J Neurosurg Spine*. 2013 May; 18(5):479-83. Epub 2013 Mar 08. PMID:23473471. DOI:10.3171/2013.2.SPINE12819.
15. Nottmeier EW, **Pirris SM**, Edwards S, Kimes S, Bowman C, Nelson KL. Operating room radiation exposure in cone beam computed tomography-based, image-guided spinal surgery: clinical article. *J Neurosurg Spine*. 2013 Aug; 19(2):226-31. Epub 2013 May 31. PMID:23725398. DOI:10.3171/2013.4.SPINE12719.
16. Yoon J, **Pirris S.M.** Tumor haze caused a missed shave: facial shaving hemineglect. *Neurohospitalist*. 2013 Oct; 3(4):228. PMID:24198905. PMCID:3810830. DOI:10.1177/1941874413482131.
17. **Pirris SM**, Nottmeier EW. Symptomatic pneumocephalus associated with lumbar dural tear and reverse trendelenburg positioning: a case report and review of the literature. *Case Rep Neurol Med*. 2013; 2013:792168. Epub 2013 Dec 22. PMID:24455345. PMCID:3881439. DOI:10.1155/2013/792168.
18. **Pirris SM**, Nottmeier EW, Rahmathulla G, Deen HG, Reimer R, Wharen RE. The Implantation of facet bone dowels may not provide adequate fixation for fusion. *Spine J*. 2014 Jan 18. PMID:24448193. DOI:10.1016/j.spinee.2013.12.027.
19. **Pirris SM**, Nottmeier EW. A case series on the technical use of three-dimensional image guidance in subaxial anterior cervical surgery. *Int J Med Robot*. 2014 Feb 13. PMID:24523103. DOI:10.1002/rcs.1571.

20. Hoover, J. and **S.M. Pirris**. "Synovial cyst mimicking an intraspinal sacral mass." *Case Rep Neurol Med*. 2014. Article ID 953579, 4 pages, 2014. doi:10.1155/2014/953579.
21. Rahmathulla G, Nottmeier EW, **Pirris SM**, Deen HG, Pichelmann MA. Intraoperative image-guided spinal navigation: technical pitfalls and their avoidance. *Neurosurg Focus*. 2014 Mar; 36(3):E3.
22. **Pirris SM**, Kimes S. Compression fracture in the middle of a chronic instrumented fusion that developed into pseudarthrosis after balloon kyphoplasty. *J Neurosurg Spine*. Epub 2014 Mar 30. DOI: 10.3171/2014.2.SPINE13799
23. **Pirris, S.M.**, E.W. Nottmeier, S. Kimes, M. O'Brien and G. Rahmathulla. Do patients know which iliac crest was harvested?: A retrospective study of iliac crest bone grafting techniques with allograft reconstruction. *J Neurosurg Spine*. Epub 2014 Jul 11. DOI: 10.3171/2014.6.SPINE13902.
24. Rahmathulla G, Deen HG, Dokken JA, **Pirris SM**, Pichelmann MA, Nottmeier EW, et al. Migration to the ICD-10 coding system: A primer for spine surgeons (Part 1). *Surg Neurol Int* 2014;5:S185-91.
25. Rahmathulla G, Deen HG, Dokken JA, **Pirris SM**, Pichelmann MA, Nottmeier EW, et al. Implementation and impact of ICD-10 (Part II). *Surg Neurol Int* 2014;5:S192-8.
26. Navarro, R., **Pirris SM**, Hanel RA. Endovascular Treatment and Selective Image Guided Partial Resection of Epidural Spinal Vascular Malformation in Klippel-Trenaunay Syndrome: Case Report. *Open Journal of Modern Neurosurgery* Vol.4 No.4, October 24, 2014. DOI: 10.4236/ojmn.2014.44035.
27. Grewal S, **Pirris SM**, Gupta V. Identification of Arachnoid Web with a relatively novel MRI technique. *The Spine Journal*. Vol 14. Epub 2014 Nov 7. DOI: 10.1016/j.spinee.2014.10.023.
28. **Pirris SM**, Nottmeier EW, O'Brien M, Rahmathulla G, Pichelmann M. Radiographic comparison of cross-sectional lumbar pedicle fill when placing screws with navigation versus free-hand technique. *Int J Med Robot*. 2015 May 04.
29. Yoon, JW, EW Nottmeier, G Rahmathulla, DS Fenton, **SM Pirris**. Redirecting Pedicle Screws: A Revision Spinal Fusion Strategy

using Three-dimensional Image guidance. *Int J Med Robot* . 2016 Jan 12. doi: 10.1002/rcs.1721. [Epub ahead of print]

30. Rodriguez-Martinez NG, Savardekar A, Nottmeier EW, **Pirris SM**, Reyes PM, Newcomb AG, Mendes GA, Kalb S, Theodore N, Crawford NR. "Biomechanics of transvertebral screw fixation in the thoracic spine. In vitro study," *J Neurosurg Spine*. 2016 Apr 1:1-6. [Epub ahead of print]
31. Yoon JW, Chen RE, Han PK, Si P, Freeman WD, and **Pirris SM**. Technical feasibility and safety of an intraoperative head-up display device during spine instrumentation. *Int J Med Robot*. 2016 Aug 29. doi: 10.1002/rcs.1770. [Epub ahead of print]
32. Lopez-Chiriboga AS, Yoon JW, Siegel JL, Harriott AM, **Pirris SM**, Eidelman BH, Freeman WD. "Granulomatous Angiitis of the Central Nervous System Associated with Hodgkin's Lymphoma: Case Report and Literature Review." *J Stroke Cerebrovasc Dis*. 2017 Sep 21. pii: S1052-3057(17)30450-0. doi: 10.1016/j.jstrokecerebrovasdis.2017.08.029. [Epub ahead of print]
33. Yoon JW, Chen RE, Kim EJ, Akinduro OO, Kerezoudis P, Han PK, Si P, Freeman WD, Diaz RJ, Komotar RJ, **Pirris SM**, Brown BL, Bydon M, Wang MY, Wharen RE Jr, Quinones-Hinojosa A. Augmented reality for the surgeon: Systematic review. *Int J Med Robot*. 2018 Aug;14(4):e1914. doi: 10.1002/rcs.1914. Epub 2018 Apr 30. PMID: 29708640.

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Cheng, B.C., A. Oza, M.C. Sharts, S.M. Pirris, A.S. Kanter, R. Vanderby, Jr., W.C. Welch. "Biomechanical Performance of an

Early Stage Motion Preservation Device for the Cervical Spine: Part One of a Two Part Validation Study” – submitted to *Journal of Spinal Disorders and Techniques*

Pirris, S.M., B.C. Cheng, M.C. Sharts, A.S. Kanter, W.C. Welch. “*in vivo* Radiographic and Histologic Results of a Prototype Motion Preservation Device for the Cervical Spine: Part Two of a Two Part Validation Study” – submitted to *Journal of Spinal Disorders and Techniques*

“Symptomatic Postsurgical Cerebrospinal Fluid Leak Treated with Ultrasound-Guided Aspiration and Epidural Blood Patch: A Technical Update to a Retrospective Case Series” – submitted to *Pain Medicine*

Samay Bhushan, S., Muneer, M.S., Ritchie, C.A., Todnem, N., Tawk, R.G., Miller, D.A, Pirris, S.M., Gupta, V. “Myelopathy Due to Posttraumatic Lumbar Spinal Epidural Arteriovenous Fistula Successfully Treated with Transvenous Embolization” – **submitted to World Neurosurgery**