

CURRICULUM VITAE
The Johns Hopkins University School of Medicine

(Signature) Amit Jain
Amit Jain, MD, MBA, FAAOS

2 October 2026
Date

DEMOGRAPHIC AND PERSONAL INFORMATION

Current Appointments

University	
2024-Present	Associate Professor, by courtesy, Carey Business School, Baltimore, MD
2022-Present	Spine Fellowship Director, Orthopaedic Surgery, Johns Hopkins University, Baltimore, MD
2022-Present	Director of Business Development and Strategy, Dept of Orthopaedic Surgery, Johns Hopkins
2020-Present	Associate Professor, Orthopaedic Surgery, Johns Hopkins University, Baltimore, MD
2020-Present	Associate Professor, Neurological Surgery, Johns Hopkins University, Baltimore, MD
2020-Present	Core Faculty, Hopkins Business of Health Initiative, Johns Hopkins University, Baltimore, MD
2020-Present	Core Faculty, Center for Musculoskeletal Research, Johns Hopkins University, Baltimore, MD
2020-Present	Affiliate Faculty, Laboratory for Computational Sensing and Robotics, Whiting School of Engineering, Johns Hopkins University, Baltimore, MD
2018-Present	Director, Spine Research, Johns Hopkins University, Baltimore, MD
Health System	
2026-Present	Vice President, Care Transformation, Johns Hopkins Health System, Baltimore, MD
2024-Present	Medical Director, Value Based Care, Office of Population Health, Johns Hopkins Health System, Baltimore, MD
Hospital	
2018-Present	Chief, Minimally Invasive Spine Surgery, Johns Hopkins University, Baltimore, MD
2018-Present	Attending Physician, Johns Hopkins Hospital, Baltimore, MD
2018-Present	Attending Physician, Johns Hopkins Children's Center, Baltimore, MD

Personal Data

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Education and Training

Undergraduate	
2004-2008	BS, Bioengineering, UC Berkeley, Berkeley, CA, with High Honors
Doctoral	
2008-2012	MD, Johns Hopkins University School of Medicine, Baltimore, MD
Postdoctoral	
2012-2017	Residency in Orthopaedic Surgery, Johns Hopkins University, Baltimore, MD
2017-2018	Fellowship in Spinal Surgery, Emory University, Atlanta, GA
Graduate	
2019-2022	MBA, Johns Hopkins Carey Business School, Baltimore, MD

Professional Experience

2018-2020	Assistant Professor, Orthopaedic Surgery, Johns Hopkins University, Baltimore, MD
2025-2026	President, Maryland Orthopaedic Association, Baltimore, MD
2025-2026	Secretary for Medical Faculty Senate, Johns Hopkins School of Medicine, Baltimore, MD
2026-2027	Vice Chair for the Medical Faculty Senate, Johns Hopkins School of Medicine, Baltimore, MD

PUBLICATIONS (H-INDEX: 49)

Original Research [OR]

1. Ulrich T, **Jain A**, Tanner K, MacKay J, Kumar S. Probing cellular mechanobiology in three-dimensional culture with collagen-agarose matrices. *Biomaterials*. 2010 Mar; 31(7):1875-84.
2. Sponseller P, **Jain A**, Lenke L, Shah S, Sucato D, Emans J, Newton P. Vertebral column resection in children with neuromuscular spine deformity. *Spine*. 2012 May; 37(11):E655-E661.
3. **Jain A**, Stein B, Skolasky R, Jones L, Hungerford M. Total joint arthroplasty in patients with rheumatoid arthritis: A United States experience from 1992 through 2005. *J Arthroplasty*. 2012 Jun; 27(6):881-8.
4. Hassanzadeh H, **Jain A**, Tan E, Stein B, Van Hoy M, Stewart N, Lemma M. Postoperative incentive spirometry use. *Orthopedics*. 2012 Jun; 35(6):e927-31.
5. Tan E, **Jain A**, Hassanzadeh H, Bernard J, Lemma M. Role of hematologic laboratory studies in postoperative management of patients undergoing anterior cervical discectomy and fusion. *Orthopedics*. 2012 Jun; 35(6):e917-21.
6. **Jain A**, Erkula G, Leet A, Ain M, Sponseller P. Implant-related fractures in children: a 15-year review. *J Pediatr Orthop*. 2012 Jul; 32(5):547-52.
7. **Jain A**, Amin A, Jain P, Burger P, Jallo G, Lim M, Bettgowda C. Subependymoma: clinical features and surgical outcomes. *Neurological Research*. 2012 Sep; 34(7):677-84.
8. **Jain A**, Njoku D, Sponseller P. Does patient diagnosis predict blood loss during posterior spinal fusion in children? *Spine*. 2012 Sep; 37(19):1683-7.
9. Morris A, Do D, Gottlieb-Smith R, Ng J, **Jain A**, Shochet R, Wright S. The impact of a fitness intervention on medical students. *Southern Medical J*. 2012 Dec; 105(12):630-4.
10. Hassanzadeh H, **Jain A**, El Dafrawy M, Ain M, Mesfin A, Skolasky R, Kebaish K. Three-column osteotomies in the treatment of spinal deformity in adult patients 60 years old and older: outcome and complications. *Spine*. 2013 Apr; 38(9):726-31.
11. **Jain A**, Kebaish K, Sponseller P. Factors associated with use of bone morphogenetic protein during pediatric spinal fusion surgery: an analysis of 4,817 patients. *J Bone Joint Surg Am*. 2013 Jul; 95(14):1265-70.
12. Hassanzadeh H, **Jain A**, El Dafrawy M, Mesfin A, Neubauer P, Skolasky R, Kebaish K. Clinical results and functional outcome in adult patients surgically treated for spinal deformity: primary versus revision surgery. *J Bone Joint Surg Am*. 2013 Aug; 95(15):1413-9.
13. Sponseller P, **Jain A**, Shah S, Samdani A, Yaszay B, Newton P, Thaxton L, Bastrom T, Marks M. Deep wound infections after spinal fusion in children with cerebral palsy: a prospective cohort study. *Spine*. 2013 Nov; 38(23):2023-7.
14. Hassanzadeh H, Gjolaj J, El Dafrawy M, **Jain A**, Skolasky R, Cohen D, Kebaish M. The timing of surgical staging has a significant impact on the complications and functional outcomes of adult spinal deformity surgery. *Spine J*. 2013 Dec; 13(12):1717-22.
15. Hassanzadeh H, Gupta S, **Jain A**, El Dafrawy M, Skolasky R, Kebaish K. Type of anchor at the proximal fusion level has a significant effect on the incidence of proximal junctional kyphosis and outcome in adults after long posterior spinal fusion. *Spine Deformity*. 2013; 1(4):299-305.
16. Hassanzadeh H, **Jain A**, El Dafrawy M, Ain M, Skolasky R, Kebaish K. Clinical results and functional outcomes in adult patients after revision surgery for spinal deformity correction: patients younger than sixty-five years versus sixty-five years and older. *Spine Deformity*. 2013; 1(5):371-376.
17. Hassanzadeh H, **Jain A**, Kebaish K, Neubauer P, Mesfin A, Stein B, Ain M. Prevalence of allograft contamination during intraoperative processing for spinal deformity correction surgery. *Spine Deformity*. 2013; 1(5):348-351.
18. Menga E, Kebaish K, **Jain A**, Carrino J, Sponseller P. Clinical results and functional outcomes after direct screw repair of spondylolysis. *Spine*. 2014 Jan; 39(1):104-10.

19. Menga E, **Jain A**, Kebaish K, Zimmerman S, Carrino J, Sponseller P. Anatomic parameters: direct intralaminar screw repair of spondylolysis. *Spine*. 2014 Feb; 39(3):E153-8.
20. **Jain A**, Hassanzadeh H, Strike S, Skolasky R, Riley L. rhBMP use in cervical spine surgery: associated factors and in-hospital complications. *J Bone Joint Surg Am*. 2014 Apr; 96(8):617-23.
21. Stein B, Hassanzadeh H, **Jain A**, Lemma M, Cohen D, Kebaish K. Changing trends in cervical spine fusions in patients with rheumatoid arthritis. *Spine*. 2014 Jul 1; 39(15):1178-82.
22. **Jain A**, Karas D, Skolasky R, Sponseller P. Thromboembolic complications in children after spinal fusion surgery. *Spine*. 2014 Jul; 39(16):1325-9.
23. **Jain A**, Menga E, Hassanzadeh H, Jain P, Lemma M, Mesfin A. Thoracic disc disorders with myelopathy: treatment trends, patient characteristics, and complications. *Spine*. 2014 Sep 15; 39(20):E1233-8.
24. Bazzi A, Brooks J, **Jain A**, Ain M, Tis J, Sponseller P. Is non-operative treatment of pediatric type I open fractures safe and effective? *J Child Orthop*. 2014 Dec; 8(6):467-471.
25. **Jain A**, Sponseller P, Kebaish K, Mesfin A. National trends in spinal fusion surgery for Scheuermann Kyphosis. *Spine Deformity*. 2015; 3:52-56.
26. Brodell D, **Jain A**, Elfar J, Mesfin A. National Trends in the Management of Central Cord Syndrome: An Analysis of 16,134 patients. *Spine J*. 2015 Mar 1; 15(3):435-42.
27. **Jain A**, Sponseller P, Newton P, Shah S, Cahill P, Njoku D, Betz R, Samdani A, Bastrom T, Marks M, Harms Study Group. Smaller Body Size Increases the Percentage of Blood Volume Lost During Posterior Spinal Arthrodesis. *J Bone Joint Surg Am*. 2015 Mar 18; 97(6):507-11.
28. Mesfin A, El Dafrawy M, **Jain A**, Hassanzadeh H, Kostuik J, Lemma M, Kebaish K. Surgical outcomes of long spinal fusions for scoliosis in adult patients with rheumatoid arthritis. *J Neurosurg Spine*. 2015 Apr; 22(4):367-73.
29. **Jain A**, Sponseller P, Negrini S, Newton P, Cahill P, Bastrom T, Marks M, Harms Study Group. SRS-7: A Valid, Responsive, Linear, and Unidimensional Functional Outcome Measure for Operatively Treated Patients with AIS. *Spine*. 2015 May 1; 40(9):650-5.
30. **Jain A**, Brooks J, Rao S, Ain M, Sponseller P. Cervical fractures with associated spinal cord injury in children and adolescents: epidemiology, costs, and in-hospital mortality rates in 4418 patients. *J Child Orthop*. 2015 Jun; 9(3):171-5.
31. **Jain A**, Puvanesarajah V, Menga E, Sponseller P. Unplanned Hospital Readmissions and Reoperations after Pediatric Spinal Fusion Surgery. *Spine*. 2015 Jun 1; 40(11):856-62.
32. Ponnusamy K, **Jain A**, Thakkar S, Sterling R, Skolasky R, Khanuja H. Inpatient mortality and morbidity for dialysis patients undergoing a primary total hip or knee arthroplasty. *J Bone Joint Surg Am*. 2015 Aug 19; 97(16):1326-32.
33. Mesfin A, El Dafrawy M, **Jain A**, Hassanzadeh H, Kebaish K. Total en bloc spondylectomy for primary and metastatic spine tumors. *Orthopedics*. 2015 Nov; 38(11):e995-e1000.
34. Menga E, Hirschfeld C, **Jain A**, Tran D, Caine H, Njoku D, Karol L, Sponseller P. Intraoperative Cardiopulmonary Arrest in Children Undergoing Spinal Deformity Correction: Causes and Associated Factors. *Spine*. 2015 Nov; 40(22):1757-62.
35. **Jain A**, Thompson J, Brooks J, Ain M, Sponseller P. Implant-Related Fractures in Children with Proximal Femoral Osteotomy: Blade-Plate versus Screw-Side-Plate Constructs. *J Pediatr Orthop*. 2016 Jan; 36(1):e1-5.
36. Liu A, **Jain A**, Sankey E, Jallo G, Bettegowda C. Sporadic Intramedullary Hemangioblastoma of the Spine: A Review of 21 Cases. *Neurol Res*. 2016 Mar; 38(3):205-9.
37. Brooks J, **Jain A**, Perez-Gruoso F, Skaggs D, Thompson G, Akbarnia B, Sponseller P, Growing Spine Study Group. Outcomes of Pelvic Fixation in Growing Rod Constructs: An Analysis of Patients with a Minimum of Four Years of Postoperative Follow-Up. *Spine Deformity*. 2016 May; 4(3):211-216.
38. **Jain A**, Kebaish K, Sponseller P. Sacral alar iliac fixation in pediatric deformity: radiographic outcomes and complications. *Spine Deformity*. 2016 May; 4(3):225-229.
39. Bian Q, **Jain A**, Xu X, Kebaish K, Crane J, Zhang Z, Wan M, Ma L, Riley L, Sponseller P, Guo X, Lu W, Wang Y, Cao X. Excessive Activation of TGF β by Spinal Instability Causes Vertebral Endplate Sclerosis. *Scientific Reports*. 2016 Jun 3; 6:27093.
40. De la Garza-Ramos R, **Jain A**, Kebaish K, Bydon A, Passias P, Sciubba D. Inpatient Morbidity and Mortality after Adult Spinal Deformity Surgery in Teaching versus Non-Teaching Hospitals. *J Neurosurg Spine*. 2016;25(1):15-20.
41. **Jain A**, Sponseller P, Flynn J, Shah S, Thompson G, Emans J, Pawelek J, Akbarnia B, Growing Spine Study Group. Avoidance of "Final" Surgical Fusion After Growing-Rod Treatment for Early-Onset Scoliosis. *J Bone Joint Surg Am*. 2016 Jul 6; 98(13):1073-8.

42. De La Garza-Ramos R, Goodwin C, Abu-Bonsrah N, **Jain A**, Miller E, Neuman B, Protopsaltis T, Passias P, Sciubba D. Prolonged length of stay after posterior surgery for cervical spondylotic myelopathy in patients over 65 years of age. *J Clin Neuroscience*. 2016 Sep;31:137-41.
43. Puvanesarajah V, **Jain A**, Shimer A, Singla A, Shen F, Hassanzadeh H. The effect of coagulopathies on perioperative complications and clinical outcomes in patients treated with posterior lumbar fusions. *Spine*. 2016 Sep;41(17):1063-8.
44. **Jain A**, Lafage V, Kelly M, Hassanzadeh H, Neuman B, Sciubba D, Bess S, Shaffrey C, Ames C, Scheer J, Burton D, Gupta M, Hart R, Hostin R, Kebaish K, International Spine Study Group. Validity, reliability, and responsiveness of SRS-7 as an outcomes assessment instrument for operatively treated patients with adult spinal deformity. *Spine*. 2016 Sep 15;41(18):1463-8.
45. Puvanesarajah V, Shen F, Cancienne J, Novicoff W, **Jain A**, Shimer A, Hassanzadeh H. Risk Factors for Revision Surgery Following Primary Adult Spinal Deformity Surgery in Patients 65 Years and Older. *J Neurosurg Spine*. 2016 Oct;25(4):486-493.
46. Sponseller P, **Jain A**, Newton P, Lonner B, Shah S, Shufflebarger H, Bastrom T, Marks M, Betz R. Posterior Spinal Fusion with Pedicle Screws in Patients with Idiopathic Scoliosis and Open Triradiate Cartilage: Does Deformity Progression Occur? *J Pediatr Orthop*. 2016 Oct-Nov;36(7):695-700.
47. Brooks J, Reidler J, **Jain A**, LaPorte D, Sterling R. Post-interview communication during application to orthopaedic surgery residency programs. *J Bone Joint Surg Am*. 2016 Oct 5;98(19):e84.
48. Puvanesarajah V, **Jain A**, Hess D, Shimer A, Shen F, Hassanzadeh H. Complications and Mortality after Lumbar Spinal Fusion in Elderly Patients with Late Stage Renal Disease. *Spine*. 2016 Nov 1;41(21):E1298-E1302.
49. De la Garza Ramos R, Goodwin C, **Jain A**, Abu-Bonsrah N, Fisher C, Bettgowda C, Sciubba D. Development of a Metastatic Spinal Tumor Frailty Index (MSTFI) Using a Nationwide Database and Its Association with Inpatient Morbidity, Mortality, and Length of Stay After Spine Surgery. *World Neurosurg*. 2016 Nov;95:548-555.e4.
50. Bernard J, Dattilo J, Srikumaran U, Zikria B, **Jain A**, LaPorte D. Reliability and validity of 3 methods of assessing orthopedic resident skill in shoulder surgery. *J Surg Educ*. 2016 Nov - Dec;73(6):1020-1025.
51. De la Garza Ramos R, **Jain A**, Nakhla J, Nasser R, Puvanesarajah V, Hassanzadeh H, Yassari R, Sciubba D. Postoperative morbidity and mortality after elective anterior cervical fusion in patients with chronic and end-stage renal disease. *World Neurosurg*. 2016 Nov;95:480-485.
52. **Jain A**, Sponseller P, Shah S, Samdani A, Cahill P, Yaszay B, Njoku D, Abel M, Newton P, Marks M, Narayanan U, The Harms Study Group. Neuromuscular Subclassification of GMFCS Level 5 Cerebral Palsy Patients as a Predictor for Postoperative Complications and Health-Related Quality of Life Following Spinal Fusion. *J Bone Joint Surg Am*. 2016 Nov 2;98(21):1821-1828.
53. Scheer J, Osorio J, Smith J, Schwab F, Lafage V, Hart R, Bess S, Line B, Diebo B, Protopsaltis T, **Jain A**, Ailon T, Burton D, Klineberg E, Ames C, International Spine Study Group. Development of Validated Computer Based Pre-operative Predictive Model for Proximal Junction Failure (PJF) or Clinically Significant PJK with 86% Accuracy based on 510 ASD Patients with 2-year Follow-up. *Spine*. 2016 Nov 15;41(22):E1328-E1335.
54. Bernstein D, **Jain A**, Brodell D, Li Y, Rubery P, Mesfin A. Impact of the Economic Downturn on Elective Cervical Spine Surgery in the United States: A National Trend Analysis, 2003-2013. *World Neurosurg*. 2016 Dec;96:538-544.
55. Puvanesarajah V, **Jain A**, Qureshi R, Carstensen S, Tyger R, Hassanzadeh H. Elective Thoracolumbar Spine Fusion Surgery in Patients with Parkinson Disease. *World Neurosurg*. 2016 Dec;96:267-271.
56. Yildirim B, Puvanesarajah V, An H, Novicoff W, **Jain A**, Shen F, Hassanzadeh H. Lumbosacral Epidural Lipomatosis: A Matched Control Study. *World Neurosurg*. 2016 Dec;96:209-214.
57. De la Garza-Ramos R, Goodwin CR, **Jain A**, Abu-Bonsrah N, Huang N, Miller E, Kebaish K, Sponseller P, Sciubba D. Patient and operative factors associated with postoperative complications in adolescent idiopathic scoliosis surgery: An analysis of 36335 patients from the Nationwide Inpatient Sample. *J Neurosurg Pediatrics*. 2016 Dec;25(6):730-736.
58. Puvanesarajah V, **Jain A**, Cancienne J, Shimer A, Singla A, Shen F, Hassanzadeh H. Complication and Reoperation Rates Following Surgical Management of Cervical Spondylotic Myelopathy in Medicare Beneficiaries. *Spine*. 2017 Jan 1;42(1):1-7.
59. Ajiboye R, Puvanesarajah V, Zoller S, **Jain A**, D'Oro A, Kebaish K, Burke Z, Shaffrey C, Sheppard W, Sciubba D, Wang C. Poor Nutrition Status and Lumbar Spine Fusion Surgery in the Elderly. *Spine*. 2017 Jan 1;42(14):979-83.
60. Gans I, **Jain A**, Sirisreetreerux N, Haut E, Hasenboehler E. Current practice of antibiotic prophylaxis for surgical fixation of closed long bone fractures: A survey of 297 members of the Orthopaedic Trauma Association. *Patient Safety in Surgery*. 2017;11:2.
61. Bian Q, Ma L, **Jain A**, Crane J, Kebaish K, Wan M, Zhang Z, Guo X, Sponseller P, Seguin C, Riley L, Wang Y, Cao X. Mechanosignaling activation of TGF β maintains intervertebral disc homeostasis. *Bone Research*. 2017;5:17008.

62. Puvanesarajah V, Werner B, Cancienne J, **Jain A**, Pehlivan H, Shimer A, Singla A, Shen F, Hassanzadeh H. Morbid Obesity and Lumbar Fusion in Patients Older than 65 Years: Complications, Readmissions, Costs, and Length of Stay. *Spine*. 2017 Jan 15;42(2):122-127.
63. Puvanesarajah V, **Jain A**, Shimer AL, Li XJ, Singla A, Shen FH, Hassanzadeh H. Complications and Mortality Following 1 to 2 Level Lumbar Fusion Surgery in Patients Above 80 Years of Age. *Spine*. 2017 Mar 15;42(6):437-441.
64. De la Garza R, Goodwin C, Elder B, Boah A, Miller E, **Jain A**, Klineberg E, Ames C, Neuman B, Kebaish K, Lafage V, Schwab F, Bess S, Sciubba D. Preoperative functional status as a predictor of short-term outcome in adult spinal deformity surgery. *J Clin Neurosci*. 2017 May;39:118-123.
65. Puvanesarajah V, **Jain A**, Singla A, Shen F, Shimer A, Hassanzadeh H. Complications and Mortality Following 1 to 2 Level Anterior Cervical Fusion for Cervical Spondylosis in Patients Above 80 Years of Age. *Spine*. 2017 May;42(9):E509-E514.
66. **Jain A**, Modhia U, Njoku D, Shah S, Newton P, Marks M, Bastrom T, Miyanji F, Sponseller P. Recurrence of Deep Surgical Site Infection in Cerebral Palsy After Spinal Fusion is Rare. *Spine Deformity*. 2017 May;5(3):208-212.
67. Buckland A, Puvanesarajah V, Vigdorchik J, Schwarzkopf R, **Jain A**, Klineberg E, Hart R, Hassanzadeh H, International Spine Study Group. Dislocation of Primary Total Hip Arthroplasty is More Common in Patients with Lumbar Spinal Fusion. *Bone and Joint J*. 2017 May;99-B(5):585-591.
68. **Jain A**, Kebaish K, Sciubba D, Hassanzadeh H, Scheer J, Neuman B, Lafage V, Bess S, Protosaltis T, Burton D, Smith J, Shaffrey C, Hostin R, Ames C, International Spine Study Group. Early patient-reported outcomes predict 3-year outcomes in operatively treated patients with adult spinal deformity. *World Neurosurg*. 2017 Jun;102:258-262.
69. Puvanesarajah V, **Jain A**, Kebaish K, Shaffrey C, Sciubba D, De la Garza Ramos R, Khanna A, Hassanzadeh H. Poor Nutrition Status and Lumbar Spine Fusion Surgery in the Elderly: Readmissions, Complications, and Mortality. *Spine*. 2017 Jul;42(13):979-983.
70. Rao S, **Jain A**, Zhou D, Njoku D, Sponseller P. Routine Preoperative Echocardiograms in Select Patients with Adolescent Idiopathic Scoliosis Rarely Show Abnormalities and do not Predict Adverse Cardiovascular Events. *MOJ Orthopaedics and Rheumatology*. 2017; 7(1):00259.
71. Passias P, Poorman G, Jalai C, Neuman B, De la Garza-Ramos R, Miller E, **Jain A**, Sciubba D, McClelland S, Day L, Ramachandran S, Vira S, Diebo B, Isaacs E, Bono O, Bess S, Gerling M, Lafage V. Morbidity of Adult Spinal Deformity Surgery in Elderly Has Declined Over Time. *Spine*. 2017 Aug 15;42(16):E978-E982.
72. Puvanesarajah V, **Jain A**, Cancienne J, Stein B, Novicoff W, Shimer A, Shen F, Hassanzadeh H. BMP Use and the Risk of Revision Surgery Following Long Posterolateral Fusions in Elderly. *Clin Spine Surg*. 2017 Aug;30(7):931-937.
73. Poorman G, Passias P, Buckland A, Jalai C, Kelly M, Sciubba D, Neuman B, Hamilton D, **Jain A**, Diebo B, Lafage V, Bess S, Klineberg E, International Spine Study Group. Comparative Analysis of Peri-operative Outcomes Using Nationally Derived Hospital Discharge Data Relative to a Prospective Multi-center Surgical Database of Adult Spinal Deformity Surgery. *Spine*. 2017 Aug 1;42(15):1165-1171.
74. Goldschmidt E, Angriman F, Agarwal N, Zhou J, Chen K, Tempel Z, Gerszten P, Kanter A, Okonkwo D, Passias P, Scheer J, Protosaltis T, Lafage V, Lafage R, Schwab F, Bess S, Ames C, Smith J, Shaffrey C, Miller E, **Jain A**, Neuman B, Sciubba D, Burton D, Hamilton D, International Spine Study Group. A Novel Tool for Deformity Surgery Planning: Determining the Magnitude of Lordotic Correction Required to Achieve a Desired Sagittal Vertical Axis. *World Neurosurg*. 2017 Aug;104:904-908.
75. Qureshi R, Puvanesarajah V, **Jain A**, Kebaish K, Shimer A, Shen F, Hassanzadeh H. Cost Implications of Primary versus Revision surgery in Adult Spinal Deformity. *World Neurosurg*. 2017 Aug;104:68-73.
76. Puvanesarajah V, Kirby D, **Jain A**, Werner B, Hassanzadeh H. Cost Variation of Anterior Cervical Fusions in Elderly Medicare Beneficiaries. *Spine*. 2017 Sep 1;42(17):E1010-E1015.
77. Hassanzadeh H, Nandyala S, Puvanesarajah V, Manning B, **Jain A**, Hammerberg K. Serial Mehta Cast Utilization in Infantile Idiopathic Scoliosis: Evaluation of Radiographic Predictors. *J Pediatr Orthop*. 2017 Sep;37(6):387-391.
78. Scheer J, Keefe M, Lafage V, Kelly M, Bess S, Burton D, Hart R, **Jain A**, Lonner B, Protosaltis T, Hostin R, Shaffrey C, Smith J, Schwab F, Ames C. Importance of Patient Reported Individualized Goals When Assessing Outcomes for Adult Spinal Deformity (ASD): Initial experience with a Patient Generated Index (PGI). *Spine J*. 2017 Oct;17(10):1397-1405.
79. Hamilton D, Buza J, Passias P, Jalai C, Kim H, Ailon T, Gupta M, Sciubba D, **Jain A**, Ames C, Deviren V, Daniels A, Lafage V, Bess S, Klineberg E, Shaffrey C, Smith J, Hart R. The Fate of Patients with Adult Spinal Deformity Incurring Rod Fracture After Thoracolumbar Fusion. *World Neurosurg*. 2017 Oct;106:905-911.
80. **Jain A**, Hassanzadeh H, Puvanesarajah V, Klineberg E, Sciubba D, Kelly M, Hamilton D, Lafage V, Buckland A, Passias P, Protosaltis T, Lafage R, Smith J, Shaffrey C, Kebaish K, International Spine Study Group. Incidence of

- perioperative medical complications and mortality among elderly undergoing surgery for spinal deformity: analysis of 3519 patients. *J Neurosurg Spine*. 2017 Nov;27(5):534-539.
81. **Jain A**, Sponseller P, Shah S, Yaszay B, Njoku D, Miyani F, Newton P, Bastrom T, Marks M, Harms Study Group. Incidence of and risk factors for loss of one blood volume during spinal fusion surgery in patients with cerebral palsy. *J Pediatr Orthop*. 2017 Dec;37(8):e484-e487.
 82. **Jain A**, Sullivan B, Kuwabara A, Kebaish K, Sponseller P. Sacral-Alar-Iliac Fixation in Children with Neuromuscular Scoliosis: Minimum 5-Year Follow-Up. *World Neurosurg*. 2017 Dec;108:474-478.
 83. Miller E, Neuman B, **Jain A**, Daniels A, Ailon T, Sciubba D, Kebaish K, Lafage V, Scheer J, Smith J, Bess S, Shaffrey C, Ames C, International Spine Study Group. An assessment of frailty as a tool for risk stratification in adult spinal deformity surgery. *Neurosurg Focus*. 2017 Dec;43(6):E3.
 84. Qureshi R, Puvanesarajah V, **Jain A**, Shimer A, Shen F, Hassanzadeh H. A Comparison of Anterior and Posterior Lumbar Interbody Fusions—Complications, Readmissions, Discharge Dispositions and Costs. *Spine*. 2017 Dec;42(24):1865-1870.
 85. Puvanesarajah V, Cancienne J, Werner B, **Jain A**, Singla A, Shimer A, Shen F, Hassanzadeh H. Perioperative complications associated with posterolateral spine fusions: a study of elderly Medicare beneficiaries. *Spine*. 2018 Jan 1;43(1):16-21.
 86. Yeramaneni S, Gum J, Carreon L, Klineberg E, Smith J, **Jain A**, Hostin R. Impact of Readmissions in Episodic Care of Adult Spinal Deformity: Event-based Cost Analysis of 695 Consecutive Cases. *J Bone Joint Surg Am*. 2018 Mar 21;100(6):487-495.
 87. **Jain A**, Menga E, Mesfin A. Outcomes Following Surgical Management of Cauda Equina Syndrome: Does Race Matter? *Journal of Racial and Ethnic Health Disparities*. 2018 Apr;5(2):287-292.
 88. Qureshi R, Werner B, Puvanesarajah V, Horowitz J, **Jain A**, Sciubba D, Shen F, Hassanzadeh H. Factors Affecting Long-Term Postoperative Narcotic Use in Discectomy Patients. *World Neurosurg*. 2018 Apr;112:e640-e644.
 89. Goodwin R, De La Garza Ramos R, Abu-Bonsrah N, **Jain A**, Passias P, Neuman B, Sciubba D. Predictive factors for percutaneous endoscopic gastrostomy tube placement after anterior cervical fusion. *Global Spine J*. 2018 May;8(3):260-265.
 90. Grabel Z, Armaghani S, Vu C, **Jain A**, Yoon ST. Variations in treatment of C2 fractures by time, age, and geographic region in the United States: an analysis of 4818 patients. *World Neurosurg*. 2018 May;113:e535-e541.
 91. Amin R, Puvanesarajah V, Qureshi R, **Jain A**, Shen F, Kebaish K, Hassanzadeh H. Lumbar Spine Fusion Surgery in Solid Organ Transplant Recipients is Associated with Increased Medical Complications and Mortality. *Spine*. 2018 May 1;43(9):617-621.
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Review Articles [RA]

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Case Reports [CR]

1. Mesfin A, Nesterenko S, Al-Hourani K, **Jain A**, Sponseller P. Management of hangman's fractures and a subaxial compression fracture in two children with osteogenesis imperfecta. *J Surg Orthop Adv*. 2013;22(4):326-9.
2. Goh B, **Jain A**, Sponseller P. Delayed, reversible cervical paralysis after scoliosis corrective surgery in a child with osteogenesis imperfecta. *JBJS Case Connect*. 2018 Jan-Mar;8(1):e16.
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4. Dhanjani S, Altaieb M, Margalit A, Puvanesarajah V, **Jain A**. Pediatric Back Pain Associated with Bertolotti Syndrome: A Report of Three Cases with Varying Treatment Strategies. *JBJS Case Connector*. 2021 Nov 17;11(4).

Group Authorship/Consortium Publications [GA/CP]

1. COVIDSurg Collaborative, GlobalSurg Collaborative. SARS-CoV-2 vaccination modelling for safe surgery to save lives: data from an international prospective cohort study. *Br J Surg*. 2021;108(9):1056-1063.
2. COVIDSurg Collaborative; GlobalSurg Collaborative. Effects of pre-operative isolation on postoperative pulmonary complications after elective surgery: an international prospective cohort study. *Anaesthesia*. 2021;76(11):1454-1464.
3. COVIDSurg Collaborative; GlobalSurg Collaborative. Timing of surgery following SARS-CoV-2 infection: an international prospective cohort study. *Anaesthesia*. 2021 Jun;76(6):748-758.

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5. NIHR Global Health Research Unit on Global Surgery; STARSurg Collaborative. A prognostic model for use before elective surgery to estimate the risk of postoperative pulmonary complications (GSU-Pulmonary Score): a development and validation study in three international cohorts. *Lancet Digit Health*. 2024 Jul;6(7):e507-e519.

Book Chapters, Monographs [BC]

1. **Jain A**, Khanna A, Srikumaran U. Imaging of the Spine. In: *Orthopaedic Surgery Essentials: Spine*. (Ed. Bono C, Schoenfeld A). Wolters Kluwer Health: Philadelphia, PA; 2017; 13-31.
2. Reidler J, **Jain A**, Khanna A. Cervical spine trauma. In: *The Spine Handbook*. (Ed. Desai M, O'Brien J). Oxford University Press: New York, NY; 2018; 147-172.
3. **Jain A**, Riew K, Rhee J. Cervical Myelopathy. In: *Bridwell and DeWald's Textbook of Spinal Surgery*. (Ed. Bridwell K, Gupta M). Wolters Kluwer Health: Philadelphia, PA; 2019.
4. Li P, **Jain A**, Cao X. Sources of lumbar back pain during aging and potential therapeutic targets. In: *Hormones and Aging*. (Ed. Litwack G). Elsevier: Cambridge, MA; 2021; 571-584.
5. Parekh Y, Durand W, **Jain A**. Subaxial Laminectomy and Fusion. In: *Cervical Spine Surgery*. (Ed. Baaj A, Than K, Baessa S, Shankar G, Daniels A). Thieme. 2024. In Press.
6. Malik M, Muthu S, **Jain A**. Discectomy Approaches: Microdiscectomy, Endoscopic, and Conventional. In: *Low Back Ache*. (Ed. Dhath S, Kumar V). Springer Nature. 2024. In Press.

Books, Textbooks [BK]

1. Srikumaran U, **Jain A**, Khanna A. *MRI in Orthopaedics and Sports Medicine*. Thieme Medical Publishers: New York, NY; 2025.

Editorials, News Articles [ED]

1. **Jain A**, Aggarwal S. COVID-19 created a surgery backlog that's only going to get worse. *The Baltimore Sun*. June 23, 2020.
2. **Jain A**, Dai T, Bibee K, Myers C. Covid-19 Created an Elective Surgery Backlog. How Can Hospitals Get Back on Track? *Harvard Business Review*. August 10, 2020.
3. **Jain A**, Humbyrd C. Keep Recurring Meetings Virtual. *AAOS Now*. September 27, 2021.
4. Mittal R, Jain S, Myers C, Dai T, **Jain A**. A 100% COVID Vaccination Rate is Possible. *Medpage Today*. October 22, 2021.
5. **Jain A**, Myers C, Patel A. Let's Realign the Surgeon-Hospital Relationship. March 5, 2022.
6. Jain D, **Jain A**. Gaining New Heights in Adult Deformity Surgery. *J Bone Joint Surg Am*. 2023 Sep 20;105(18):e45.
7. **Jain A**. The Investment Gap in Pediatric Orthopaedic Innovation: Commentary on an article by Jacob Jordan, MD, et al.: "Twenty-Five Years of Global Private Investment in Pediatric Orthopaedic Start-ups." *J Bone Joint Surg Am*. 2026 Jun 22.

Other Media [OM]

- 2019 **Jain A**. YouTube video. Adolescent Idiopathic Scoliosis Case Presentation for Pediatric Providers.
- 2020 **Jain A**. Interview on ABC/ WMAR News. Study shows it may take seven to 16 months for surgeons to complete backlog of elective surgeries. Recorded by Kelly Broderick. June 17, 2020.
- 2025 **Jain A**. Interview on ABC News. Impact of School Backpack on Back Pain.

FUNDING

EXTRAMURAL Funding

Research Extramural Funding – Current

2021-2025 Skeleton and Joint Degeneration with Aging
 NIH P01 grant
 Sponsor: NIH/ National Institute on Aging
 Funding: \$9,500,000
 PI: Cao X

Role: Co-Investigator, 5% effort with salary support
Description: Investigate pathophysiology of spinal degeneration with aging

- 2022-2026 Robotic System for Spinal Decompression and Interbody Fusion
NIH R01 grant
Sponsor: NIH/ National Institute of Arthritis and Musculoskeletal and Skin Diseases
Funding: \$2,830,000
Role: Principal Investigator (multiple PI grant, with Mehran Armand), 10% effort with salary support
Description: Development of an active surgical robotic system for advanced applications in spinal surgery
- 2024-2025 Image-Guided Workstation and Tools for Bone Defects
NIH R01 grant, JH Subaward
Sponsor: NIH/ National Institute of Biomedical Imaging and Bioengineering
Funding: \$91,980
Role: Sub Principal Investigator (main PI: Mehran Armand), 3% effort with salary support
Description: Development of specialized tools for robotic orthopaedic surgery
- 2024-2026 Dermatologist-level detection of suspicious pigmented skin lesions from high-resolution full-body images
NSF STTR Phase II grant, JH Subaward
Sponsor: NSF
Funding: \$207,523
Role: Sub Principal Investigator (main PI: Mehran Armand), 3% effort with salary support
Description: Development of computer vision methods for automated image analysis

Research Extramural Funding-- Pending

- 2026-2030 Skeleton and Joint Degeneration with Aging
NIH P01 grant Renewal
Sponsor: NIH/ National Institute on Aging
Funding: \$9,500,000, Expected, grant scored below payline
PI: Cao X
Role: Co-Investigator, 5% effort with salary support
Description: Competitive renewal of P01 to investigate pathophysiology of spinal degeneration

Research Extramural Funding -- Previous

- 2015-2016 Duration of Antibiotic Prophylaxis in Orthopaedic Trauma
Sponsor: Orthopaedic Research and Education Foundation
Funding: \$5,000
Role: Principal Investigator, 1% effort/no salary support.
Description: Small research grant to study the role of antibiotic duration in orthopaedic trauma
- 2021-2022 Health Disparities in Spine Surgery
Sponsor: Gladden Orthopaedic Society
Funding: \$6,000
Role: Principal Investigator, 1% effort/no salary support.
Description: Small research grant to study health disparities and outcomes in spine surgery
- 2022-2024 DegenPro: Anterior Cervical Discectomy and Fusion Study
Sponsored Registry Grant
Sponsor: AO Spine International
Funding: per patient enrollment
Role: Principal Investigator, no salary support
Description: Grant to enroll patients in prospective international, multicenter spine registry

Educational Extramural Funding

2021-2023	Medtronic Spine Fellowship Grant Industry grant Sponsor: Medtronic Funding: \$50,000 Role: Principal Investigator, no salary support Description: grant to support Johns Hopkins spine surgery fellowship	
2025-2026	Medtronic Spine Fellowship Grant Industry grant Sponsor: Medtronic Funding: \$50,000 Role: Principal Investigator, no salary support Description: grant to support Johns Hopkins spine surgery fellowship	
Clinical Extramural Funding		None
System Innovation or Quality Improvement Extramural Funding		None
Other Extramural Funding		None
INTRAMURAL Funding		
Research Intramural Funding -- Current		None
Research Intramural Funding -- Pending		None
Research Intramural Funding -- Previous		
2020-2021	COVID-19, Elective Surgery Deferment and the Maryland Total Cost of Care Model Sponsor: Hopkins Business of Health Initiative Funding: \$20,000 Role: Principal Investigator, 5% effort/ no salary support. Description: investigate the ability of the Maryland Total Cost of Care to withstand economic shocks	
2020-2022	William F. Rienhoff Jr., M.D., Scholars Program Sponsor: Johns Hopkins School of Medicine Funding: \$42,000 Role: Award Recipient. Description: internal School of Medicine grant to support orthopaedic surgery quality and safety research	
2022-2023	Elective Orthopaedic Surgery as a Model for Comparing Traditional Medicare vs. Medicare Advantage Sponsor: Hopkins Business of Health Initiative Funding: \$20,000 Role: Principal Investigator (co-PI: Kelly Anderson, PhD), 5% effort/ no salary support. Description: analyze impact of Medicare Advantage on utilization of elective joint replacement	
2023-2024	Impact of Medicare Advantage on Quality of Care: Evidence from Osteoporosis Funding: \$20,000 Role: Principal Investigator, 5% effort/ no salary support.	
Educational Intramural Funding – Current		
2025-2026	Shaping the Future of Medicare Advantage: Policy, Innovation, and Markets Sponsor: Johns Hopkins University Nexus Award Program Funding: \$100,000 Role: Convening organizer, along with Daniel Polsky, Kali Thomas, Melinda Buntin Description: organize convening at Johns Hopkins Bloomberg Center on Medicare Advantage	
Clinical Intramural Funding		None

System Innovation or Quality Improvement Intramural Funding	None
Other Intramural Funding	None

CLINICAL ACTIVITIES

Clinical Focus

Committed to delivering excellent clinical outcomes, I have cultivated a busy practice specializing in complex spinal care for adults and children with spinal disorders. I offer minimally invasive and motion sparing surgical techniques for adults with degenerative spinal pathologies and children with complex spinal deformities.

Certification

Medical, other state/government licensure

2018-Present Maryland Board of Physicians, License # D85009

Boards, other specialty certification

2010 USMLE Step 1 Passed
 2011 USMLE Step2 CS Passed
 2012 USMLE Step 2 CK Passed
 2013 USMLE Step 3 Passed
 2020 American Board of Orthopaedic Surgeons Board Certified

Clinical (Service) Responsibilities

2018-Present Attending Surgeon, Adult Spine Surgery, Johns Hopkins Hospital
 2018-Present Attending Surgeon, Pediatric Spine Surgery, Johns Hopkins Hospital
 2018-Present Attending Surgeon, Spine Surgery, Howard County General Hospital
 2018-Present Chief, Minimally Invasive Spine Surgery, Johns Hopkins University, Baltimore, MD

Clinical Productivity

2018-Present >90th %ile in national orthopaedic surgery and spine surgery metrics of productivity measured against the Academic Orthopaedic Consortium and AAMC benchmarks.

Clinical Draw

2018-Present Adult spine patients seeking latest minimally-invasive (MIS) and robotic spine surgery treatments, and pediatric spinal deformity patients seeking cutting-edge scoliosis treatments, such as vertebral body tethering, are referred to me. My practice draws patients broadly from the mid-Atlantic region (MD, DC, VA, PA, WV, NJ) and complex international patients from the middle east.

Membership in or examiner of the specialty board

2022-Present American Board of Orthopaedic Surgeons. Member of the Spine Examination Blueprint Review Committee.

Clinical Program Building/ Leadership

2018-Present Chief of Minimally Invasive Spine Surgery at Johns Hopkins Hospital: I partner with operating room leadership to develop and implement best practices for providing robotic and minimally invasive spine surgery to address degenerative spinal conditions in a less-invasive and cost-effective manner.
 2018-Present Pediatric Spinal Deformity Surgery program at Johns Hopkins Hospital: I partner with pediatric anesthesia and pediatric nursing leadership to develop and implement best practice care pathways for patients with pediatric scoliosis and complex spinal deformities.

Clinical Demonstration Activities

Development of nationally recognized clinical standard of care

2024-2026	As head of the AO Spine Emerging and Enabling Technologies group, I led the group's effort on development of best practice guidelines for complication avoidance in use of enabling and emerging technologies such as surgical robotics, navigation, and augmented reality in spine surgery. The guidelines have been accepted for publication in Global Spine Journal.
2021-2024	As a Steering committee member of the AO Spine International Knowledge Forum Degenerative, I co- led the global initiative focusing on development of clinical guidelines for use of osteobiologics in anterior cervical spine surgery. The guidelines set the clinical standard for the field. Published as focus issue in Global Spine Journal.
2022-2023	As part of international experts in the International Consensus on Venous Thromboembolisms work group, I developed the VTE guidelines for pediatric spinal surgery. Published as focus issue in JBJS.
2016-2020	As a member of the international Harms Study Group, I led the development and validation of a new classification system for patients with cerebral palsy to predict perioperative complications after spinal fusion surgery. This classification system has become the standard of care for treatment of these patients. Published in JBJS.

EDUCATIONAL ACTIVITIES

Educational Focus

I am passionate about educating next generation of orthopaedic trainees, and hold key national educational leadership roles. As Director of the national American Academy of Orthopaedic Surgeons (AAOS) Board Review Course, I am responsible for curriculum design, faculty development, and quality of the highly regarded program that attracts over 300 orthopaedic residents annually and plays a crucial role in preparing them for annual board certification. I also serve as a faculty lecturer in the course, sharing my expertise in Pediatric Spinal Deformity. At Johns Hopkins, as Spine Fellowship Director, I oversee the fellowship program, and the clinical and research experiences, weekly educational conferences, and a rigorous didactic curriculum for our 4 spine fellows.

Teaching

Classroom Instruction

JHMI/Regional

2018-Present	Weekly classroom instruction for spine surgery fellows, residents, and medical students on the Adult Spine Surgery Service. Lecture topics include: spinal stenosis, spondylolisthesis, minimally-invasive spine surgery, and adolescent idiopathic scoliosis.
2018-Present	Quarterly classroom instruction for medical students and residents rotating on the Pediatric Orthopaedic Surgery service. Lecture topics include: pediatric cervical injuries, pediatric spine trauma, and pediatric spinal deformities.
2024-Present	Fall 2024 Course: Musculoskeletal Biology and Disease. Classroom instruction to biomedical engineering students on spinal degeneration, and advances in spinal surgical treatments and robotics.

National

4/13/18	Faculty Lecturer, Orthopaedic surgery residents at the AAOS Board Review Course, "Preparing for the Boards: Game Plan for Final 3 Months." American Academy of Orthopaedic Surgeons, Chicago, IL
4/26/19	Faculty Lecturer, Orthopaedic surgery residents at the AAOS Board Review Course, "Orthopaedic Basic Science Review" and "Board Prep Strategies." American Academy of Orthopaedic Surgeons, Chicago, IL
4/17/20	Faculty Lecturer, Orthopaedic surgery residents at the AAOS Board Review Course, "Orthopaedic Basic Science Review." American Academy of Orthopaedic Surgeons. Virtual.
2/10/21	Visiting Professor, Orthopaedic surgery residents and fellows, "Adolescent Idiopathic Scoliosis Principles." University of Virginia, Charlottesville, VA.
4/23/21	Faculty Lecturer, Orthopaedic surgery residents at the AAOS Board Review Course, "Orthopaedic Basic Science Review." American Academy of Orthopaedic Surgeons. Virtual.
4/22/22	Faculty Lecturer, Orthopaedic surgery residents at the AAOS Board Review Course, "Orthopaedic Basic Science Review." American Academy of Orthopaedic Surgeons. Virtual.

- 4/21-22/23 Faculty Lecturer, Orthopaedic surgery residents at the AAOS Board Review Course, “Orthopaedic Basic Science Review” and “Pediatric Spine and Pediatric Infection Review.” American Academy of Orthopaedic Surgeons. Virtual.
- 3/7/24 Visiting Professor, Orthopaedic surgery residents, “Business of Health: What Residents Need to Know.” George Washington University, Washington, D.C.

International

- 10/30/19 Visiting Professor, Orthopaedic residents and fellows, “Spine Surgery Principles.” Post Graduate Institute of Medical Education and Research, Chandigarh, India.

Clinical Instruction

JHMI/Regional

- 2017-2018 Clinical Instructor; 2nd and 4th year Orthopaedic surgery residents; Inpatient adult spine surgery service; Learners: ~10. Emory University Orthopaedic and Spine Hospital, Atlanta, GA
- 2018-Present Attending surgeon; Spine Surgery fellows and Orthopaedic surgery residents; Inpatient adult spine surgery service; Learners: ~10; Johns Hopkins Hospital, Baltimore, MD
- 2018-Present Attending surgeon; Orthopaedic surgery residents; Inpatient pediatric orthopaedic surgery service; Learners: ~10; Johns Hopkins Children’s Center, Baltimore, MD
- 2018-Present Attending surgeon; Orthopaedic surgery residents PGY3-5; Inpatient adult spine surgery service; Learners: ~10; Howard County General Hospital, Columbia, MD

National

- 5/5/21 Invited Course Faculty; Spine fellows; Spine Pre-Fellows Course; Lectures on cervical anatomy and cadaver lab; Learners: ~40; Chicago, IL.
- 3/19/22 Invited Course Instructor; attending surgeons; Lateral Access Surgery Course; Lectures on anterior to psoas approach; Learners: ~20; New York City, NY.
- 4/28/23 Invited Course Instructor; attending surgeons; Lateral Access Spine Surgery. Lecture on lateral access surgery; Learners: ~20; Philadelphia, PA.
- 5/6/23 Invited Course Faculty; Spine fellows; Spine Pre-Fellows Course; Lectures on cervical laminoplasty and laminectomy/fusion, and cadaver lab; Learners: ~40; Chicago, IL.
- 7/22/23 Invited Course Instructor; Spine fellows; Fellows Final Course; Lecture on spine complications; Learners: ~20; Raynham, MA.
- 3/1-2/24 Invited Course Faculty; attending surgeons; Pediatric Spinal Deformity Course; Lectures on management of stiff curves and pelvic fixation, and cadaver lab course; Learners: ~20; Miami, FL.
- 11/1/24 Invited Course Faculty; attending surgeons; Skull to Sacrum Course; Lecture on management of high grade spondylolisthesis; Learners: ~70; New York City, NY.

CME Instruction

JHMI/Regional

- 11/14/18 Invited Lecturer, Internal Medicine Providers, “Evaluation of the Spine Patient: What Not to Miss”. 19th Annual Internal Medicine Provider Retreat of Johns Hopkins Community Physicians, Johns Hopkins, Linthicum Heights, MD.
- 3/13/19 Invited Lecturer, Family Medicine Providers, “Evaluation of Back and Neck Pain.” JHCP Family Medicine Provider Retreat, Johns Hopkins, Mount Washington, MD.
- 2/23/22 Invited Lecturer, Johns Hopkins Advanced Practice Providers, “Spine Imaging—What Not to Miss.” Johns Hopkins Advanced Practice Providers Grand Rounds, Baltimore, MD.

National

- 03/14/19 Course Faculty, Orthopaedic Surgeons, “Lumbar Disc Herniation: Natural History and Treatment.” Instructional Course Lecture at the American Academy of Orthopaedic Surgeons, Las Vegas, NV.
- 7/17/21 Faculty Lecturer, Orthopaedic surgeons in Practice attending the AAOS Maintenance of Certification Virtual Course, “Basic Science Concepts, High-Yield Content.” American Academy of Orthopaedic Surgeons. Virtual.

- 7/16/22 Faculty Lecturer, Orthopaedic surgeons in Practice attending the AAOS Maintenance of Certification Virtual Course, “Basic Science Concepts, High-Yield Content.” American Academy of Orthopaedic Surgeons. Virtual.
- 7/14/23 Faculty Lecturer, Orthopaedic surgeons in Practice attending the AAOS Maintenance of Certification Virtual Course, “Basic Science Concepts, High-Yield Content.” American Academy of Orthopaedic Surgeons. Virtual.
- 7/20/24 Faculty Lecturer, Orthopaedic surgeons in Practice attending the AAOS Maintenance of Certification Virtual Course, “Basic Science Concepts, High-Yield Content.” American Academy of Orthopaedic Surgeons. Virtual.

Workshops/Seminars

JHMI/Regional

- 12/20/18 Lecturer, Lunch Seminar for Howard County General Hospital Internal Medicine/Hospitalist Service, “Common Spine Patient Scenarios.” Howard County General Hospital, Columbia, MD
- 4/24/19 Director, Evening Seminar for Howard County General Hospital Staff and Patients, “When Back Pain Keeps Coming Back.” Howard County General Hospital, Columbia, MD
- 3/4/23 Spine surgery dissection lab. Workshop for spine surgery fellow education, Columbia, MD
- 7/20/23 Mobile spine surgery lab. Spine surgery workshop for resident and fellow education with cadavers and didactics. Baltimore, MD
- 3/21/24 Mobile spine surgery lab. Spine surgery workshop for resident and fellow education with cadavers and didactics. Baltimore, MD

National

- 6/14/18 Webinar Director, educational webinar for orthopaedic surgery residents “Basic Science Review for ABOS Part 1.” Sponsor: American Academy of Orthopaedic Surgeons, Chicago, IL. Virtual.
- 6/13/19 Webinar Director, educational webinar for orthopaedic surgery residents “Basic Science Review for ABOS Part 1.” Sponsor: American Academy of Orthopaedic Surgeons, Chicago, IL. Virtual.
- 6/1/19 Faculty Co-Organizer, Setting Scoliosis Straight Power Over Scoliosis Event. Baltimore, MD.
- 6/10/21 Webinar Director, “AAOS Board Prep Refresher Webinar.” American Academy of Orthopaedic Surgeons. Virtual.
- 6/29/21 Webinar Director, “Statistics for the Orthopaedic Surgeon.” American Academy of Orthopaedic Surgeons. Virtual.
- 11/17/23 Webinar Director, “Physician Non-Competes: Workforce Integrity and Patient Access.” Hopkins Business of Health Initiative. Virtual.

International

- 4/18/22 Webinar Director, Updates in Translational Research in Spine Surgery. AO Spine International Knowledge Forum Degenerative. Virtual.
- 10/12/23 Webinar Moderator, AIS Long Term Follow up. Harm Study Group and the Setting Scoliosis Foundation. Virtual. Attended by over 100 surgeons.
- 2/29/24 Webinar Director, Leaps in Treatment of Cerebral Palsy Scoliosis. Harms Study Group and the Setting Scoliosis Foundation. Virtual. Attended by over 200 surgeons from 5 continents.

Mentoring

Pre-doctoral Advisees/Mentees

- 2014-2015 Varun Puvanesarajah. Medical student research fellow. Currently Assistant Professor of spine surgery at U Rochester. Shared publications: OR:31, 43, 45, 48, 51, 55, 56, 58, 59, 62, 63, 65, 67, 69, 72, 75, 76, 77, 80, 84, 85, 91, 95, 101, 111, 114, 117, 118, 120, 121, 125, 126, 128-134, 138, 141, 143, 145, 148, 150, 151, 153, 156, 157, 159, 162, 163, 166, 174, 175, 180, 185.
- 2016-2017 Micheal Raad. Medical student research fellow. Currently spine surgery fellow at Johns Hopkins. Shared publications: OR:92, 94, 103, 106, 108, 109, 111, 112, 114, 117, 121, 122, 124, 125, 126, 128-134, 141-143, 150, 151, 153, 157, 159, 162, 163, 166, 184-186, 192, 195, 202, 206, 207, 217, 219-224.

2018-2019 Andrew Harris. Medical student research fellow. Currently orthopaedic surgery chief resident at Johns Hopkins. Shared publications: OR:114, 116, 117, 121, 122, 124, 126, 128, 130-133, 142-145, 150, 151, 153, 159, 166, 174, 197, 210, 214.

2018-2019 Majd Marrache. Medical student research fellow. Currently orthopaedic surgery chief resident at Johns Hopkins. Shared publications: OR:121, 122, 128, 130-133, 136, 142-145, 147, 148, 150, 151, 153, 156, 157, 166, 174, 179, 180, 195, 211.

2020-2021 Kevin Wang. Medical student research fellow. Currently Orthopaedic surgery resident at Harvard. Shared publications: OR:161-163, 165, 171, 173-175, 180, 183, 187, 188, 194.

2021-2022 Carlos Ortiz. Medical student research fellow. Currently Orthopaedic surgery resident at U Rochester. Shared publications: OR:183-186, 188, 190, 192, 195, 199, 217, 218, 220.

2022-2023 Miguel Cartagena. Medical student research fellow. Currently Orthopaedic surgery resident at Miami/West Palm Beach. Shared publications: OR:192, 214, 219, 220, 222, 225, 237, 257.

2023-2024 Gabriel Nazario. Medical student research fellow. Shared publications: OR: 219, 225, 227, 237, 246.

2024-2025 Elyette Lugo. Medical student research fellow. Shared publications: OR: 245, 246, 249, 257.

Post-doctoral Advisees/Mentees

2015-2018 Sandesh Rao, MD. Postdoc research fellow. Currently orthopaedic surgeon in DC. Shared publications: OR:30, 70, 118.

2021-2022 Adam Margalit, MD. NIH T32 Mentee. Currently hand surgery fellow. Project: Autonomous Spinal Robotic System for Transforaminal Lumbar Epidural Injections: A Proof of Concept of Study. Currently Hand Surgeon in Staten Island. Multiple co-authored articles. Shared publications: OR:161-163, 1761, 173, 175, 177-179, 187, 189, 208.

Thesis Committees

2026 Student: Ping-Cheng Ku. Graduate Board Oral exam committee chair. Primary Advisor: Mehran Armand, PhD. GBO meeting on 1/7/26. Laboratory for Computational Sensing and Robotics. JHU.

2020-2023 Henry Phalen. PhD. Advisory committee member. Primary Advisor: Russ Taylor, PhD. Research Defense on 8/30/23. Laboratory for Computational Sensing and Robotics. JHU. Shared publications: OR:189, 201, 208.

2019-2022 Cong Gao, PhD. Advisory committee member. Primary Advisor: Mathias Unberath, PhD. Research Defense on 6/29/22. Laboratory for Computational Sensing and Robotics. JHU. Shared publications: OR:189, 208.

2019-2022 Eduardo Gonzalez, PhD. Advisory committee member. Primary Advisor: Bisi Bell, PhD. Research Defense on 5/18/22. Department of Biomedical Engineering. JHU. Shared publications: OR:167.

Educational Program Building/Leadership

2018-Present Spine Resident and Fellow Education. I helped re-design and implement a new annual didactic curriculum for the spine surgery fellows and for the orthopaedic surgery residents that rotate on the spine service. The curriculum consists of integrated core lectures given by adult and pediatric spine surgery faculty, research conferences, and journal clubs.

Educational Demonstration Activities to external audiences None

RESEARCH ACTIVITIES

Research Focus

My research focuses on promoting value-based care, advancing quality and safety in spine surgery, and pioneering innovations in surgical robotics. This work has resulted in high-quality publications (H-index 48) and fostered multiple successful international collaborations.

Research Program Building/ Leadership

2018-Present Director of Spine Research, Dept of Orthopaedic Surgery, Johns Hopkins University. I have developed and cultivated productive research programs that aim to advance the fields of orthopaedic and spine

surgery. I have focused my efforts in the following specific domains:

- 1) Value Based Musculoskeletal Care: I investigate factors driving variation in musculoskeletal healthcare quality, costs, and utilization. As a key member of the executive leadership team for the Hopkins Business of Health Initiative, I collaborate with scholars from the Carey Business School and Bloomberg School of Public Health to develop research questions that inform policy recommendations. Our work has been published in leading journals such as the Journal of the American Medical Association and the Journal of Bone and Joint Surgery.
- 2) Quality and safety in spine surgery: My research aims to improve outcomes for adult and pediatric patients undergoing spinal surgery. I develop novel surgical techniques and consensus based perioperative protocols for minimally invasive spine surgery and pediatric deformity surgery. The resulting work has led to publications in high-impact journals such as Spine, Spine Deformity, and Global Spine Journal.
- 3) Innovations in Surgical Robotics: I partner with engineers from the Whiting School of Engineering to develop innovative surgical devices and novel technological solutions to enable minimally invasive spine and advanced orthopaedic surgery. We have several NIH grants to support our work. Our research has led to publications in leading engineering journals, including IEEE Transactions and IEEE Sensors.

2021-Present AO Spine International Degenerative Knowledge Forum; Chair, Emerging and Enabling Technologies Committee (since 2023), and Steering Committee Member (since 2021). My active involvement in the leadership of the AO Spine International Degenerative Knowledge Forum reflects my commitment to advancing spine surgery through global collaborations. I lead a group of renowned experts in design and execution of multicenter clinical studies that address critical challenges in the treatment of degenerative spinal pathologies. Our achievements include the development of international guidelines for spinal osteobiologics in cervical surgery, which have been widely adopted; development of consensus guidelines for complication avoidance with enabling and emerging technologies; and modified-Delphi approach for cervical fusion assessment. These collaborative efforts have generated impactful research presented at international forums such as Global Spine Congress and published in leading journals, including *Global Spine Journal*.

2016-Present Hopkins Site PI, Harms Study Group, Setting Scoliosis Straight Foundation.
As Director of the Johns Hopkins site for the Harms Study Group, an international consortium of leading pediatric spine surgeons, I actively contribute to advancing the field of pediatric spinal deformities. I led the group's research on neuromuscular risk stratification, blood loss reduction, and cost-utility analyses, resulting in multiple award-winning presentations at international forums, and publications in top orthopaedic journals such as *Journal of Bone and Joint Surgery*. This work has helped redefine clinical standards in pediatric spine care.

Research Demonstration Activities None

Inventions, Patents, Copyrights

12/21 Patent: Imaged Guided Robotic Spine Injection System

Technology Transfer Activities None

SYSTEM INNOVATION AND QUALITY IMPROVEMENT ACTIVITIES

System Innovation Focus

As Medical Director of Value-Based Care for the Johns Hopkins Health System, my broad focus is on improving quality and containing costs for enhanced performance in the Maryland capitated model. I developed the system's strategy for

readmission prevention. I lead the Care Continuum and Readmission Prevention forum, a collaborative of about 60 cross entity JHM leaders focused on developing and piloting strategies for improving transitions of care and reducing readmissions. As surgeon-champion of the pediatric spinal deformity program, I collaborate with pediatric anesthesia and PICU colleagues to establish perioperative care protocols for pediatric spinal surgery. These protocols, now adopted as ERAS pathways for adolescent idiopathic scoliosis and neuromuscular scoliosis have enhanced care quality and efficiency.

System Innovation and Quality Improvement efforts within JHMI

2018-2020	Surgeon Champion, Johns Hopkins Health System Spinal Implants Initiative. The initiative resulted in a reduction of \$7.3 Million annual spend from a prior expenditure of \$27 Million annual spend on spinal implants throughout the health system.
2018-2020	Member, Spine Enhanced Recovery Pathway Committee. Represented Johns Hopkins and Howard County General Hospital to develop standardized ERAS pathway for adult spine care across the Johns Hopkins Health System
2018-2020	Member, ZBOR3 Perioperative Operations/Kaizen Committee, Johns Hopkins Hospital. The aim of the committee is to improve operative efficiency and quality of care provided through ZBOR3.
2022-2023	Member, JHHS Perioperative Play Book Committee, Johns Hopkins Health System. The aim of the committee is to standardize policies and processes in perioperative care across the health system.
2024-Present	Surgeon Lead, MSK Care Transformation Service line, Johns Hopkins Health System. Partnered with Care Transformation team to develop and implement new spine patient intake process and patient reported outcome capture in Epic.

System Innovation and Quality Improvement efforts outside of JHMI

2017-Present	As a member of the Harms Study group, I led the group effort to analyze factors associated with increased blood loss in high risk (neuromuscular) pediatric spine cases. We summarized our findings and recommendations for blood management through a series of publications which set the standard for perioperative management in children undergoing spinal fusion surgery for deformity (OR-8,27,81).
2023-Present	As a Steering committee member of the AO Spine KF Degen, I lead the group's effort to understand the factors that result in variability in fusion outcomes after ACDF surgery. This is a multicenter international research and quality improvement effort. My current focus is on implementation of a modified Delphi process to develop consensus regarding definition of successful cervical fusion.

System Innovation and Quality Improvement Program Building/Leadership

2022-Present	Clinician Leader, Episode Quality Improvement Program. I am leading the Hopkins ortho spine group effort to reduce potentially avoidable waste, readmissions, and episodic costs as a participant in the Maryland HSCRC EQIP initiative.
2024-Present	Medical Director, Value Based Care, Office of Population Health, Johns Hopkins Health System. I am dedicated to optimizing system performance by leading initiatives aimed at reducing costs and improving care transitions. As leader of the system-wide Care Continuum and Readmission Prevention forum, I drive the development and implementation of strategies to reduce readmissions and enhance support for patients requiring complex care management after discharge. Additionally, I develop strategic planning initiatives, including a comprehensive advanced care planning and palliative care capacity plan.

ORGANIZATIONAL ACTIVITIES

Institutional Administrative Appointments

2014-2017	Member, Resident Education Committee, Orthopaedic Surgery, Johns Hopkins University
2015-2017	Member, Resident Advocacy Group, Orthopaedic Surgery, Johns Hopkins University
2018-Present	Chief, Minimally Invasive Spine Surgery, Orthopaedic Surgery, Johns Hopkins
2018-Present	Director, Spine Research, Johns Hopkins
2018-Present	Member, Spine Enhanced Recovery Pathway Committee, Johns Hopkins Hospital
2018-2020	Member, ZBOR3 Perioperative Operations/Kaizen Committee, Johns Hopkins Hospital
2018-2020	Surgeon Champion, Johns Hopkins Health System Spinal Implants Initiative, Johns Hopkins Medicine
2019-2020	Surgeon Leader, Johns Hopkins Health System Bone Biologics Initiative, Johns Hopkins Medicine

2020-Present	Member, Spine Implant and Device Approval Committee, Johns Hopkins Health System
2022-2023	Member, JHHS Perioperative Play Book Committee, Johns Hopkins Health System
2022-Present	Spine Fellowship Co-Director, Orthopaedic Surgery, Johns Hopkins University, Baltimore, MD
2022-Present	Director of Business Development and Strategy, Dept of Orthopaedic Surgery, Johns Hopkins
2024-Present	Medical Director, Value Based Care, Johns Hopkins Health System, Baltimore, MD
2026-Present	Vice President, Care Transformation, Johns Hopkins Health System, Baltimore, MD

Editorial Activities

2020	Editor of Seminars in Spine Surgery special issue on Perioperative Considerations in Spinal Surgery in the Elderly
2025	Editor of Seminars in Spine Surgery special issue on Advances in Pediatric Spinal Deformity

Editorial Board appointments

2020-Present	Editorial Board Member, Spine Deformity
2022-Present	Deputy Editor, Bone Research

Journal Peer Review Activities

2018-Present	Journal of Bone and Joint Surgery; flagship journal in orthopaedic surgery
2018-Present	Spine Journal; flagship journal in spine surgery
2020-Present	Global Spine Journal; prominent international journal in spine surgery

Other peer review activities None

Advisory Committees, Review Groups, Study Sections

2014-2017	Member, International Spine Study Group (research group on adult spinal deformity surgery) I led the group's efforts on development and validation of SRS7, a new patient reported outcome tool.
2017-Present	Associate Member, Harms Study Group (research group on pediatric spinal deformity surgery) I led the group's efforts on studying variation in blood loss during pediatric deformity surgery.
2018-2021	Associate Member, Degenerative Knowledge Forum, AO Spine (research group on degenerative spinal conditions). I led the group's effort on comparing autograft vs. PEEK for interbody fusion during cervical surgery.
2021-Present	Steering Committee Member, Degenerative Knowledge Forum, AO Spine. I am leading the group's international multicenter cervical spine research effort.
2020-Present	Scoliosis Research Society, Health Policy Committee
2022-Present	Cervical Spine Research Society, Abstract Review Committee and Instructional Course Committee
2023-Present	AANS/CNS Spine Summit Health Economics Committee
2024-2025	CSRS Instructional Course Committee
2025-2026	IMAST Program Committee Chair

Professional Societies

2012-Present	American Academy of Orthopaedic Surgeons. Active fellow 2022-Present.
2018-Present	AO Spine International Knowledge Forum Degenerative. Steering Committee member 2021-Present.
2018-Present	Scoliosis Research Society. Active fellow 2022-Present. Previously candidate member.
2018-Present	Cervical Spine Research Society. Active fellow 2022-Present. Previously candidate member.
2021-Present	American College of Surgeons. Active Fellow.
2025-2026	President, Maryland Orthopaedic Association.

Conference Organizer

JHMI/Regional

04/22-23/19	Co-Director, International Symposium on Spine and Bone Mineral Research. Hosted at the Center for Musculoskeletal Research at Johns Hopkins, Baltimore, MD
6/1/19	Site Organizer, Power Over Scoliosis Event by Setting Scoliosis Straight Foundation. Hosted at Johns Hopkins, Baltimore, MD

2/8/25 Conference Co-Organizer, Annual Meeting of the Maryland Orthopaedic Association.
2/21/26 Conference Chair, Annual Meeting of the Maryland Orthopaedic Association.

National

9/10/20 Lunchtime Symposium Chair. Topic: Innovations in Spinal Deformity Correction. Scoliosis Research Society Annual International Meeting. Phoenix, AZ.
4/9-11/21 Program Committee Member, Annual Interdisciplinary Conference on Orthopaedic Value Based Care. Newport Beach, CA.
6/3/22 Symposium Chair. Topic: Updates in DVT/PE Prophylaxis in Spine Surgery. Global Spine Congress Annual Meeting. Las Vegas, USA.
6/4/22 Research Session Chair. Topic: Degenerative lumbar: Radiologic. Global Spine Congress Annual Meeting. Las Vegas, USA.
12/4/25 Lunchtime Symposium Chair. Topic: Value in Cervical Spine Surgery. Cervical Spine Research Society Annual Meeting. Washington, DC.

International

5/23/20 Symposium Chair. Topic: Update on ACDF, Grafts and Devices. Global Spine Congress Annual Meeting. Rio de Janeiro, Brazil.
11/6/21 Symposium Chair. Topic: Controversies in Cervical Disc Arthroplasty. Global Spine Congress Annual Meeting. Paris, France.
6/2/23 Research Session Chair. Topic: Contemporary Surgery for Adolescent Deformity. Global Spine Congress Annual Meeting. Prague, Czech Republic.
6/3/23 Symposium Chair. Topic: Degenerative Spondylolisthesis: Advances in treatment. Global Spine Congress Annual Meeting. Prague, Czech Republic.
5/17/24 Symposium Chair. Topic: Hybrid Constructs in Cervical Spine. Global Spine Congress Annual Meeting. Bangkok, Thailand.
5/18/24 Symposium Chair. Topic: Best Practices in Emerging and Enabling Technologies. Global Spine Congress Annual Meeting. Bangkok, Thailand.
5/31/25 Symposium Chair. Topic: Controversies in the Treatment of Isthmic Spondylolisthesis. Global Spine Congress Annual Meeting. Rio de Janeiro, Brazil.
4/15-17/25 Program Committee Chair. International Meeting on Advanced Spine Techniques. Toronto, Canada. Meeting organizer for one of the most prominent spine meetings in the world.

Consultantships

2017-2019 Spine Surgery consultant for the Practicing Wisely Initiative, Oliver Wyman
2020-present Spine Surgery consultant for DePuy spine
2020-present Spine Surgery consultant for Globus spine
2024-present Spine Surgery consultation for Medtronic spine

RECOGNITION

Awards, Honors

2026 Selected for the Presidential Leadership Scholar Program
2025 Elected to American Orthopaedic Association (Orthopaedic leadership group)
2025 Award to the Best Faculty for Outstanding Contribution to the Resident Experience in Orthopaedic Surgery
2025 Avant Garde Top 1% Orthopaedic Researcher in United States
2025 Best Paper Award, Innovation Category, International Meeting on Advanced Spine Techniques 2025
2025 Baltimore Magazine Top Doctor in Spine Surgery
2024 Avant Garde Top 1% Spine Researcher in United States
2023 Baltimore Magazine Top Doctor in Spine Surgery
2022 American Orthopaedic Association North American Travelling Fellowship
2021 Steering Committee Member, AO Spine International KF Degenerative
2020 William F. Rienhoff, Jr., M.D. Scholars Award, Johns Hopkins University

2017 Miller-Coulson Award for Clinical Excellence as a Resident, Johns Hopkins University
 2017 Ronald Byank Chief Resident Award for Servant Leadership, Johns Hopkins Orthopaedic Surgery
 2017 Best Resident Researcher Award, Dept of Orthopaedic Surgery, Johns Hopkins Orthopaedic Surgery
 2017 Elected to Alpha Omega Alpha as House Officer
 2016 John H. Moe Award for Best Poster at Scoliosis Research Society
 2016 Thomas E. Whitecloud Award for Best Clinical Paper at IMAST
 2016 Selected to attend the American Orthopaedic Association Resident Leadership Forum
 2016 Selected to attend the Value Based Health Care Delivery Intensive Seminar at Harvard Business School
 2016 Scoliosis Research Society OrthoPediatrics Resident Scholarship
 2015 AAOS/OREF Resident Research Grant
 2015 Selected to attend the AAOS/OREF/ORS Clinician Scholar Development Program
 2014 Best Clinical Paper, International Congress on Early Onset Scoliosis
 2012 Best Scientific Paper, National Medical Association- Orthopaedic Section
 2012 Graduation Speaker at Johns Hopkins School of Medicine
 2011 Russell A. Hibbs Award for Best Clinical Paper at Scoliosis Research Society
 2010 Paul and Daisy Soros Fellow
 2010 Rhodes Scholarship Finalist
 2008 Elected to Phi Beta Kappa Honor Society
 2007 Elected to Tau Beta Pi Honor Society
 2007 Best Poster Award, 8th Annual UC System-wide Bioengineering Symposium
 2004 U.S. Air Force Association Scholarship
 2004 UC Berkeley Alumni Scholarship
 2004 Folsom High School Valedictorian

Invited Talks

JHMI/Regional

4/27/17 Grand Rounds Speaker, Johns Hopkins Orthopaedic Surgery, "From Volume to Value: Implications for Orthopaedic Surgery," Baltimore, MD.
 6/10/17 Grand Rounds Speaker, Johns Hopkins Orthopaedic Surgery, "Cost Utility Analysis of Adolescent Idiopathic Scoliosis," Baltimore, MD.
 11/01/18 Invited Lecturer, University of Maryland Orthopaedic residents, "Orthopaedic Basic Science." University of Maryland, Baltimore, MD
 11/13/18 Invited Lecturer, Johns Hopkins Anesthesia/Pain Management education, "Evaluation of the Spine Patient." Johns Hopkins University, Baltimore, MD
 11/14/18 Faculty Guest Lecturer, Internal Medicine Providers, "Evaluation of the Spine Patient: What Not to Miss". 19th Annual Internal Medicine Provider Retreat of Johns Hopkins Community Physicians, Johns Hopkins, Linthicum Heights, MD.
 12/20/18 Guest Speaker, Howard County General Hospital Internal Medicine team, "Evaluation of neck and back pain." Howard County General Hospital, Columbia, MD.
 4/22/19 Invited speaker, Spine basic science researchers, "Treatment of discogenic back pain." International Symposium on Spine and Bone Mineral Research, Baltimore, MD.
 4/24/19 Invited Lecturer, Howard County General Hospital Patient Seminar, "When Back Pain Keeps Coming Back." Howard County General Hospital, Columbia, MD.
 6/27/19 Grand Rounds Speaker, Johns Hopkins Orthopaedic Surgery, "Evaluation of Degenerative Spinal Conditions," Baltimore, MD.
 5/7/21 Invited Talk, "Evaluation of the Spine Patient: What Not to Miss". 65th Annual Tumulty Topics in Clinical Medicine, Johns Hopkins. Baltimore, MD. Virtual.
 5/26/21 Invited Speaker, JH Alumni Association, "Backs and the Future." Johns Hopkins University. Virtual.
 5/27/21 Grand Rounds Speaker, Johns Hopkins Orthopaedic Surgery, "Economic Impact of COVID and the Maryland Total Cost of Care Model," Baltimore, MD. Virtual.
 2/23/22 Grand Rounds Speaker to Johns Hopkins Advance Practice Providers, "Spinal Imaging and What Not to Miss," Baltimore, MD. Virtual.

10/24/23	Visiting Professor and Grand Rounds Speaker at Sinai Hospital, Baltimore. Talk on: "Scoliosis, Innovation, and Value in Health Care."
National	
3/14/19	Faculty Lecturer, Orthopaedic Surgeons at AAOS Annual Meeting, "Lumbar Disc Herniation: Natural History and Treatment." Instructional Course Lecture at the American Academy of Orthopaedic Surgeons Annual Meeting, Las Vegas, NV
9/10/20	Invited Speaker, "Innovations in Pediatric and Adult Spinal Deformity Surgery." Scoliosis Research Society, Phoenix, AZ.
11/13/20	Invited Grand Rounds Speaker, "Impact of the pandemic on Orthopaedic care." Northwestern University, Dept of Orthopaedic Surgery, Chicago, IL. Virtual.
12/10/20	Invited Grand Rounds Speaker, "Impact of the pandemic on Orthopaedic care." Emory University, Dept of Orthopaedic Surgery, Atlanta, GA. Virtual.
2/3/21	Visiting Professor and Grand Rounds Speaker. Brown University, Dept of Orthopaedic Surgery, Providence, RI. Virtual.
2/10/21	Visiting Professor and Grand Rounds Speaker. University of Virginia, Dept of Orthopaedic Surgery, Charlottesville, VA. Virtual.
3/17/21	Invited Grand Rounds Speaker, University of New Mexico, Dept of Orthopaedic Surgery, NM. Virtual.
4/19/21	Visiting Professor and Grand Rounds Speaker, Oregon Health and Science University, Dept of Orthopaedic Surgery, Portland, OR. Virtual.
5/11/21	Invited Speaker, "Statistics and Epidemiology for the Orthopaedic Surgeon." Food and Drug Administration, Office of Health Technology: Office of Orthopedic Devices. Virtual.
9/3/21	Faculty Lecturer, Orthopaedic Surgeons at AAOS Annual Meeting, "Lumbar Disc Herniation: Natural History and Treatment." Instructional Course Lecture at the American Academy of Orthopaedic Surgeons Annual Meeting, San Diego, CA.
6/3-4/22	Invited Speaker at Global Spine Congress 2022. Talks on: "Risk Assessment for DVT/PE in Spine Surgery" in Symposium on Controversies in DVT/PE Prophylaxis in Spine Surgery; "Case Debate of Degenerative Spondylolisthesis: I Always Go Posterior" in Symposium on Lordosis Correction and Advanced Surgical Techniques; "How to Manage Patients Who Refuse Blood Products" in Symposium on Surgical Blood Loss Prevention and Management. Las Vegas, USA.
10/8/22	Visiting Scholar at Stanford University. Talk on: "Minimally Invasive Spine Surgery: Current and Future Directions." Palo Alto, CA.
10/10/22	Visiting Scholar at University of California, San Francisco. Talk on: "Health Economics and Business of Health in the United States." San Francisco, CA.
10/11/22	Visiting Scholar at University of California, Davis. Talk on: "Robotics and Spinal Surgery." Sacramento, CA.
10/14/22	Visiting Scholar at University of California, Irvine. Talk on: "Minimally Invasive Spine Surgery." Irvine, CA.
10/19/22	Visiting Scholar at Naval Medical Center San Diego. Talk on: "History of Hopkins Medicine." San Diego, CA.
10/21/22	Visiting Scholar at University of Nevada Las Vegas. Talk on: "Robotic and Minimally Invasive Spine Surgery." Las Vegas, NV.
10/24/22	Visiting Scholar at University of Colorado. Talk on: "Business of Medicine and Orthopaedic Surgery." Denver, CO.
10/26/22	Visiting Scholar at University of Arizona. Talk on: "Robotic and Minimally Invasive Spine Surgery." Phoenix, AZ.
3/3/23	Invited Speaker, "Managing Complications in Complex Spine Surgery." Spinal Deformity and Complex Spine Surgery Symposium. Virtual.
3/5/23	Invited Speaker, "Enabling Technologies and Techniques in Spinal Deformity Surgery." Spine Summit. Miami, FL.
9/10/23	Invited Speaker, "Management of Stiff CP Curves" AACPD Cerebral Palsy Scoliosis Course. Chicago, IL.
9/10/23	Invited Speaker, "Pelvic Obliquity Management in CP" AACPD Cerebral Palsy Scoliosis Course. Chicago, IL.

- 10/7/23 Visiting Professor at Brown University. Talk on: “Building a Productive Clinical and Research Practice.” Providence, Rhode Island.
- 3/7/24 Visiting Professor at George Washington University. Talk on: “Innovations in Pediatric Spinal Deformity Surgery.” Washington DC.
- 7/17/25 Visiting Professor at Virginia Mason Hospital. Talk on: “The Role of Collaborative Academic Pursuits: Address Gaps and Apply Findings.” Seattle, WA.
- 9/17/25 Invited Speaker, “Use of Artificial Intelligence for Patient Interactions.” SRS Annual Meeting Pre-Course. Washington, DC.
- 12/3/25 Invited Speaker, “Use of Artificial Intelligence to Improve Patient Experience.” CSRS Annual Meeting Instructional Course Lecture. Washington, DC.
- 12/4/25 Invited Speaker, “Value Proposition of Technology in Cervical Spine Surgery.” CSRS Annual Meeting Lunchtime Symposium. Washington, DC.

International

- 2/14-15/17 Invited Guest, First Affiliated Hospital, Xinjiang Medical University. Talks on: “Surgical Management of Spinal Deformity in Patients with Cerebral Palsy” and “Orthopaedic Training and Graduate Medical Education in the United States,” Urumqi, China.
- 10/30-31/19 Visiting Professor of Spine Surgery at Post Graduate Institute of Medical Education and Research. Talks on: “Evaluation of Spinal Degenerative Conditions” and on “Principles of Managing Pediatric Spinal Deformities.” Chandigarh, India.
- 11/1/19 Invited Keynote Speaker at 6th Annual Conference of the Minimally Invasive Spine Surgeons Association of Bharat. “Use of Robotics in Spine Surgery.” Zirakpur, India.
- 9/9/20 Symposium Moderator at Scoliosis Research Society Annual Meeting. Topic: “Innovations in Spinal Deformity Correction: Time for Individualized Medicine.” Virtual.
- 2/28/21 Invited Speaker at Scoliosis Research Society International Webinar. Topic: “The Balancing Act: Building an Adult and Pediatric Spine Practice.” Virtual.
- 11/5-6/21 Invited Speaker at Global Spine Congress 2021. Talks on: “Evidence for ACDF Interbodies, Bone vs. Synthetic” in Symposium on Bone Biologics; “Indications, Patient Selection and Technical Pearls on Cervical Arthroplasty” in Symposium on Cervical Arthroplasty. Paris, France.
- 10/3/22 Visiting Scholar at University of British Columbia. Talk on: “Business of Health in the United States.” Vancouver, Canada.
- 10/6/22 Visiting Scholar at University of Calgary. Talk on: “Health Economics and Orthopaedic Surgery.” Calgary, Canada.
- 6/3/23 Invited Speaker at Global Spine Congress 2023. Talk on: “Robotic MIS Fusion.” Prague, Czech Republic.
- 5/17-18/24 Invited Speaker at Global Spine Congress 2024. Talks on: “Future of Enabling and Technologies in Spine Surgery” and “Updates on Latest Trends in Cervical Hybrids.” Bangkok, Thailand.
- 7/1/24 Visiting Professor of Spine Surgery at Peking Union Medical College. Talk on: “Advanced Strategies for Management of Pediatric Spinal Deformities.” Beijing, China.
- 4/4/25 Invited Speaker at International Meeting on Advanced Spine Techniques 2025. Talk on “Enabling Technologies: Battle of Robotics vs. Navigation vs. Augmented Reality.” Glasgow, Scotland.
- 5/10/25 Visiting Professor of Spine Surgery at American International Hospital. Talks on: “Principles of Scoliosis Management,” and on “Spondylolisthesis: Evaluation and Management.” Ho Chi Minh City, Vietnam.
- 5/12/25 Visiting Professor of Spine Surgery at Wiltse Memorial Hospital. Talk on: “Advance Concepts in Management of Scoliosis.” Suwon, South Korea.

OTHER PROFESSIONAL ACCOMPLISHMENTS

Posters

- 9/26-29/07 Ulrich T, **Jain A**, Kumar S. Mechanobiology of Glioblastoma Multiforme. Biomedical Engineering Society (BMES) Annual Meeting in Los Angeles, CA.
- 6/21-24/10 Sponseller P, **Jain A**, Lenke L, Shah S, Sucato D, Emans J, Newton P. Vertebral Column Resection in children with neuromuscular spine deformity. 18th International Meeting on Advanced Spine Techniques (IMAST) in Toronto, Canada.
- 2/15-19/11 **Jain A**, Stein B, Skolasky R, Jones L, Hungerford M. Total joint arthroplasty in patients with Rheumatoid

- Arthritis: a United States experience from 1992 through 2005. American Academy of Orthopaedic Surgeons (AAOS) Annual Meeting in San Diego, CA.
- 3/7/11 Hassanzadeh H, **Jain A**, El Dafrawy M, Mesfin A, Skolasky R, Ain M, Kebaish K. Vertebral Column Resection (VCR) and Pedicle Subtraction Osteotomy in the treatment of spinal deformity in adult patients 60 years and older: outcome and complications. Maryland Orthopaedic Association (MOA) Annual Meeting in Baltimore, MD.
- 4/9-13/11 **Jain A**, Amin A, Jain P, Bettgowda C, Jallo G. Subependymoma: clinical features and surgical outcomes. American Association of Neurological Surgeons (AANS) Annual Meeting in Denver, CO.
- 4/9-13/11 **Jain A**, Amin A, Jain P, Bettgowda C, Jallo G. Sporadic spinal Hemangioblastomas. American Association of Neurological Surgeons (AANS) Annual Meeting in Denver, CO.
- 7/13-16/11 Hassanzadeh H, **Jain A**, El Dafrawy M, Mesfin A, Ain M, Skolasky R, Kebaish K. Functional outcome and complications following revision surgery in adult spinal deformity stratified by age: younger vs. older than 65 years. 18th International Meeting on Advanced Spine Techniques (IMAST) in Copenhagen, Denmark.
- 7/13-16/11 Hassanzadeh H, **Jain A**, El Dafrawy M, Mesfin A, Skolasky R, Ain M, Kebaish K. Vertebral Column Resection (VCR) and Pedicle Subtraction Osteotomy in the treatment of spinal deformity in adult patients 60 years and older: outcome and complications. 18th International Meeting on Advanced Spine Techniques (IMAST) in Copenhagen, Denmark.
- 7/13-16/11 Hassanzadeh H, **Jain A**, Neubauer P, Mesfin A, Kebaish K, Stein B, Ain M. Incidence of allograft contamination during intraoperative processing in patients with spinal deformity correction surgery. 18th International Meeting on Advanced Spine Techniques (IMAST) in Copenhagen, Denmark.
- 7/13-16/11 Hassanzadeh H, Gjolaj J, El Dafrawy M, **Jain A**, Skolasky R, Kebaish M. Staging regimen in adult spinal deformity surgery significantly impact functional outcome, complications and total hospital days. 18th International Meeting on Advanced Spine Techniques (IMAST) in Copenhagen, Denmark.
- 9/14-17/11 Mesfin A, **Jain A**, Hassanzadeh H, Kebaish K. Outcomes of long spinal fusions for scoliosis patients with Rheumatoid Arthritis. Scoliosis Research Society (SRS) 46th Annual Meeting in Louisville, KY.
- 11/2-5/11 Hassanzadeh H, **Jain A**, El Dafrawy M, Khanna J, Mesfin A, Neubauer P, Skolasky R, Kebaish K. Clinical results and functional outcome in adult patients following surgical treatment for spinal deformity: primary vs. revision. North American Spine Society (NASS) Annual Meeting in Chicago, IL.
- 11/2-5/11 Hassanzadeh H, **Jain A**, El Dafrawy M, Mesfin A, Skolasky R, Ain M, Kebaish K. Vertebral Column Resection (VCR) and Pedicle Subtraction Osteotomy in spinal deformity correction in adult patients 60 years and older. North American Spine Society (NASS) Annual Meeting in Chicago, IL.
- 2/7-11/12 Hassanzadeh H, **Jain A**, El Dafrawy M, Khanna AJ, Neubauer P, Mesfin A, Skolasky R, Kebaish K. Clinical results and Functional outcome in Adult Patients Following surgical treatment for Spinal Deformity: Primary vs. Revision. American Academy of Orthopaedic Surgeons (AAOS) Annual Meeting, San Francisco, CA.
- 2/7-11/12 Hassanzadeh H, Gjolaj J, El Dafrawy M, **Jain A**, Cohen D, Kebaish M. Staging regimen in adult spinal deformity surgery significantly impact functional outcome, complications & total hospital days. American Academy of Orthopaedic Surgeons (AAOS) Annual Meeting, San Francisco, CA.
- 2/7-11/12 Hassanzadeh H, **Jain A**, El Dafrawy M, Skolasky R, Kebaish M. The Anchor Type in Spinal Deformity Surgery Significantly Impact the Incidence of Proximal Junctional Kyphosis. American Academy of Orthopaedic Surgeons (AAOS) Annual Meeting, San Francisco, CA.
- 3/7-10/12 Amin A, Wu H, Pradilla G, **Jain A**, Jallo G, Gokaslan Z, Hsu W. DVT Prophylaxis in Primary Spinal Cord Tumor Resection. 28th Annual meeting of the American Association of Neurological Surgeons (AANS)/ Congress of Neurological Surgeons (CNS) Section on Disorders of the Spine and Peripheral Nerves in Orlando, FL.
- 4/14-18/12 Amin A, Wu H, Pradilla G, **Jain A**, Jallo G, Gokaslan Z, Hsu W. DVT Prophylaxis in Primary Spinal Cord Tumor Resection. American Association of Neurological Surgeons (AANS) 80th annual meeting in Miami, FL.
- 4/14-18/12 Amin A, Crabill G, Pradilla G, **Jain A**, Lim M, Rigamonti D, Hsu W. Spinal Epidural Abscess: Clinical Features and Surgical Outcomes. American Association of Neurological Surgeons (AANS) 80th annual meeting in Miami, FL.
- 4/14-18/12 **Jain A**, Amin A, Bettgowda C, Jallo G. Pleomorphic Xanthoastrocytomas: Clinical Presentation,

- Radiological Features and Surgical Outcomes. American Association of Neurological Surgeons (AANS) 80th annual meeting in Miami, FL.
- 4/14-18/12 **Jain A**, Ruzevick J, Amin A, Bettegowda C, Jallo G. Glioblastoma Multiforme in Children. American Association of Neurological Surgeons (AANS) 80th annual meeting in Miami, FL.
- 07/18-21/12 **Jain A**, Sponseller P. Factors Associated with Use of Bone Morphogenetic Protein During Pediatric Spinal Fusion Surgery: An Analysis of 3,924 Patients. 19th International Meeting on Advanced Spine Techniques (IMAST) in Istanbul, Turkey.
- 07/18-21/12 El Dafrawy M, Neubauer P, Hassanzadeh H, **Jain A**, Alapatt M, Kebaish K. Spontaneous Reduction of Low-Grade Spondylolisthesis by Positioning on the Operating Table: Does it Really Occur? 19th International Meeting on Advanced Spine Techniques (IMAST) in Istanbul, Turkey.
- 07/18-21/12 El Dafrawy M, Hassanzadeh H, **Jain A**, Neubauer P, Cohen D, Kebaish K. Focal and global correction following 3 column osteotomies of the lumbar spine in adult deformity patients: A comparative radiographic analysis between Pedicle Subtraction Osteotomy and Vertebral Column Resection. 19th International Meeting on Advanced Spine Techniques (IMAST) in Istanbul, Turkey.
- 07/18-21/12 Stein B, Hassanzadeh H, **Jain A**, Lemma M, Cohen D, Skolasky R, Kebaish K. Cervical spine fusion in patients with Rheumatoid Arthritis: A US Experience from 1992 to 2008. 19th International Meeting on Advanced Spine Techniques (IMAST) in Istanbul, Turkey.
- 10/24-27/12 Mesfin A, **Jain A**, Buchowski J. A Nationwide Perspective on the Surgical Treatment for Hyperostotic Disorders of the Spine: Ankylosing Spondylitis and DISH. North American Spine Society (NASS) Annual Meeting in Dallas, TX.
- 12/6-8/12 Stein B, Hassanzadeh H, **Jain A**, Lemma M, Cohen D, Skolasky R, Kebaish K. Cervical Spine Fusion in Patients with Rheumatoid Arthritis: A United States Experience from 1992 through 2008. Cervical Spine Research Society (CSRS) Annual Meeting in Chicago, IL.
- 03/19-23/13 El Dafrawy M, Hassanzadeh H, **Jain A**, Neubauer P, Cohen D, Kebaish K. Comparative radiographic analysis between Pedicle Subtraction Osteotomy and Vertebral Column Resection. American Academy of Orthopaedic Surgeons (AAOS) Annual meeting in Chicago, IL.
- 03/19-23/13 El Dafrawy M, Neubauer P, Hassanzadeh H, **Jain A**, Alapatt M, Kebaish K. Spontaneous Reduction of Low-Grade Spondylolisthesis by Positioning on the Operating Table: Does it Really Occur? American Academy of Orthopaedic Surgeons (AAOS) Annual meeting in Chicago, IL.
- 03/19-23/13 **Jain A**, Sponseller P. Thromboembolic Complications in Children with Spinal Fusion Surgery. American Academy of Orthopaedic Surgeons (AAOS) Annual meeting in Chicago, IL.
- 5/1-4/13 **Jain A**, Kebaish K, Sponseller P. Factors Associated With the Use of BMP During Pediatric Spinal Fusion Surgery: An Analysis Of 4817 Patients. Pediatric Orthopaedic Society of North American (POSNA) Annual Meeting in Toronto, Canada.
- 7/10-13/13 **Jain A**, Menga E, Hassanzadeh H, Jain S, Mesfin A. Treatment of Spina Bifida with Spinal Fusion Surgery: Demographics, Complications and Mortality. International Meeting on Advanced Spine Techniques (IMAST) in Vancouver, Canada.
- 7/10-13/13 **Jain A**, Wohlgemut J, Sponseller P. Analysis of Unplanned Hospital Readmissions Following Pediatric Spinal Fusion Surgery. International Meeting on Advanced Spine Techniques (IMAST) in Vancouver, Canada.
- 7/10-13/13 **Jain A**, Kebaish K, Sponseller P. Factors Associated with the Use of BMP during Pediatric Spinal Fusion Surgery: An Analysis of 4817 Children. International Meeting on Advanced Spine Techniques (IMAST) in Vancouver, Canada.
- 9/18-21/13 **Jain A**, Menga E, Hassanzadeh H, Jain S, Mesfin A. Treatment of Spina Bifida with Spinal Fusion Surgery: Demographics, Complications and Mortality. Scoliosis Research Society (SRS) Annual Meeting in Lyon, France.
- 9/18-21/13 **Jain A**, Wohlgemut J, Sponseller P. Analysis of Unplanned Hospital Readmissions Following Pediatric Spinal Fusion Surgery. Scoliosis Research Society (SRS) Annual Meeting in Lyon, France.
- 9/18-21/13 **Jain A**, Kebaish K, Sponseller P. Factors Associated with the Use of BMP during Pediatric Spinal Fusion Surgery: An Analysis of 4817 Children. Scoliosis Research Society (SRS) Annual meeting in Lyon, France.
- 3/11-15/14 **Jain A**, Hassanzadeh H, Strike S, Kebaish K. Spino-pelvic alignment and relationship to sagittal balance. Scientific Exhibit. American Academy of Orthopaedic Surgeons (AAOS) Annual Meeting in New Orleans, LA.

- 3/11-15/14 Menga E, Kebaish K, **Jain A**, Carrino J, Sponseller P. Clinical Results and Functional Outcomes after Direct Intralaminar Screw Repair of Spondylolysis. American Academy of Orthopaedic Surgeons (AAOS) Annual Meeting in New Orleans, LA.
- 7/16-19/14 Menga E, Hirschfield C, **Jain A**, Caine H, Njoku N, Karol L, Sponseller P. Intraoperative Cardiopulmonary Arrest in Pediatric Patients Undergoing Spinal Deformity Correction: Associated Factors. International Meeting on Advanced Spine Techniques (IMAST) in Valencia, Spain.
- 9/10-13/14 Modhia U, **Jain A**, Shah S, Newton P, Miyanji F, Marks M, Bastrom T, Sponseller P. Long-Term Follow Up of Deep SSI after Spinal Fusion in Cerebral Palsy: Recurrence Rare, but Lower HRQOL. Scoliosis Research Society (SRS) Annual Meeting in Anchorage, AK.
- 9/10-13/14 Hassanzadeh H, **Jain A**, Menga E, Sponseller P. Posterolateral Discectomies as Alternative to Anterior Posterior Spinal Fusion in Children with Severe Spinal Deformities. Scoliosis Research Society (SRS) Annual Meeting in Anchorage, AK.
- 11/6-9/14 **Jain A**, Ponnusamy K, Thakkar S, Sterling R, Khanuja H. Factors Associated with Increased Length of Stay Following Total Hip Arthroplasty. American Association of Hip and Knee Surgeons (AAHKS) Annual Meeting in Dallas, TX.
- 3/24-28/15 Thakkar S, Ponnusamy K, **Jain A**, Sterling R, Dorr L, Khanuja H. An Overview of the Outcomes of Technological Advances in Performing Total Hip Arthroplasty. Scientific Exhibit. American Academy of Orthopaedic Surgeons (AAOS) Annual meeting in Las Vegas, NV.
- 3/24-28/15 Ponnusamy K, **Jain A**, Thakkar S, Skolasky R, Sterling R, Khanuja H. Mortality and Morbidity for Sickle Cell Patients Undergoing a Primary Total Hip Arthroplasty. American Academy of Orthopaedic Surgeons (AAOS) Annual meeting in Las Vegas, NV.
- 3/24-28/15 **Jain A**, Sponseller P, Modhia U, Shah S, Thompson G, Emans J, Pawelek J, Akbaria B, Growing Spine Study Group. Can a "Final Fusion" Procedure be Avoided in EOS Patients Who Reach Skeletal Maturity After Growing Rod Treatment? American Academy of Orthopaedic Surgeons (AAOS) Annual meeting in Las Vegas, NV.
- 4/29-05/2/15 **Jain A**, Sponseller D, Newton P, Shah S, Cahill P, Betz R, Samdani A, Bastrom T, Marks M, Harms Study Group. Smaller Patients Lose A Greater Proportion of Their Blood Volume During Posterior Spinal Arthrodesis. Pediatric Orthopaedic Society of North America (POSNA) Annual Meeting in Atlanta, GA.
- 4/29-05/2/15 **Jain A**, Brooks J, Rao S, Sponseller P. Pediatric Cervical Fractures With Associated Spinal Cord Injury: Epidemiology, Costs, And In-Hospital Mortality In 4418 Children. Pediatric Orthopaedic Society of North America (POSNA) Annual Meeting in Atlanta, GA.
- 4/29-05/2/15 Hassanzadeh H, **Jain A**, Menga E, Sponseller P. Posterolateral Discectomies As Alternative To Anterior Posterior Spinal Fusion In Children With Severe Spinal Deformities. Pediatric Orthopaedic Society of North America (POSNA) Annual Meeting in Atlanta, GA.
- 4/29-05/2/15 Modhia U, **Jain A**, Shah S, Newton P, Marks M, Bastrom T, Miyanji F, Sponseller P. Long-Term Follow Up Of Deep Infection In Cerebral Palsy Spine Surgery: Recurrence Rare But Lower HRQOL. Pediatric Orthopaedic Society of North America (POSNA) Annual Meeting in Atlanta, GA.
- 4/29-05/2/15 Brooks J, **Jain A**, Perez-Gruesso F, Skaggs D, Thompson G, Akbaria B, Sponseller P, Growing Spine Study Group. Pelvic Anchors In Growing Rod Constructs: Better Pelvic Obliquity Correction With Iliac Fixation Compared With Sacral Fixation At A Minimum Of 4 Years Of Follow-Up. Pediatric Orthopaedic Society of North America (POSNA) Annual Meeting in Atlanta, GA.
- 4/29-05/2/15 Bazzi A, Brooks J, **Jain A**, Ain M, Tis J, Sponseller P. Is Non-Operative Treatment Of Pediatric Type I Open Fractures Safe And Effective? Pediatric Orthopaedic Society of North America (POSNA) Annual Meeting in Atlanta, GA.
- 10/14-17/15 ISSG, Scheer J, Keefe M, Kelly M, Lafage V, Bess S, Burton D, Hart R, **Jain A**, Protosaltis T, Hostin R, Shaffrey C, Smith J, Schwab F, Ames C. Quantifying Risk Aversion and Likelihood of Decision Regret in the Preoperative Evaluation of the Adult Deformity Patient. North American Spine Society (NASS) Annual Meeting in Chicago, IL.
- 10/14-17/15 Konbaz F, Ramji A, **Jain A**, Neuman B. Post-Operative Changes in Lumbar Lordosis and Proximal Junctional Angle are Risk Factors for the Development of Proximal Junctional Kyphosis. North American Spine Society (NASS) Annual Meeting in Chicago, IL.
- 2/1/16 **Jain A**, Karas D, Skolasky R, Sponseller P. Thromboembolic complications in children after spinal fusion surgery. Johns Hopkins High Value Research Symposium in Baltimore, MD.

- 2/1/16 **Jain A**, Puvanesarajah V, Menga E, Sponseller P. Unplanned Hospital Readmissions and Reoperations After Pediatric Spinal Fusion Surgery. Johns Hopkins High Value Research Symposium, Baltimore, MD.
- 2/1/16 Bazzi A, Brooks J, **Jain A**, Ain M, Tis J, Sponseller P. Is nonoperative treatment of pediatric type I open fractures safe and effective? Johns Hopkins High Value Research Symposium in Baltimore, MD.
- 3/1-5/16 **Jain A**, Kuwabara A, Kebaish K, Sponseller P. Sacral-Alar-Iliac (SAI) Fixation in Children with Neuromuscular Scoliosis: Minimum 5-Year Follow-Up. American Academy of Orthopaedic Surgeons (AAOS) Annual meeting in Orlando, FL.
- 3/1-5/16 Hsu N, **Jain A**, Ponnusamy K, Srikumaran U, McFarland E. Cardiovascular Complication Following Shoulder Arthroplasty: Incidence, Associated Factors, and Mortality. American Academy of Orthopaedic Surgeons (AAOS) Annual meeting in Orlando, FL.
- 4/14-15/16 Puvanesarajah V, **Jain A**, Hess D, Shimer AL, Shen FH, Hassanzadeh H. Complications and Mortality after Lumbar Spinal Fusion in Elderly Patients with Late Stage Renal Disease. Lumbar Spine Research Society (LSRS) Annual Meeting in Chicago, IL.
- 4/14-15/16 Puvanesarajah V, **Jain A**, Shimer A, Li X, Singla A, Shen F, Hassanzadeh H. Complications and Mortality Following 1 to 2 Level Lumbar Fusion Surgery in Patients Above 80 Years of Age. Lumbar Spine Research Society (LSRS) Annual Meeting in Chicago, IL.
- 4/14-15/16 Puvanesarajah V, Cancienne J, Werner B, **Jain A**, Singla A, Shimer A, Shen F, Hassanzadeh H. Perioperative Complications Associated with Posterolateral Spine Fusions: a Study of Elderly Medicare Beneficiaries. Lumbar Spine Research Society (LSRS) Annual Meeting in Chicago, ILL.
- 4/15-17/16 Puvanesarajah V, **Jain A**, Hess D, Shimer A, Shen F, Hassanzadeh H. Complications and Mortality after Lumbar Spinal Fusion in Elderly Patients with Late Stage Renal Disease. Virginia Orthopedic Society Annual Meeting in Williamsburg, VA.
- 4/15-17/16 Puvanesarajah V, **Jain A**, Cancienne J, Shimer A, Singla A, Shen F, Hassanzadeh H. BMP Use and the Risk of Revision Surgery Following Long Posterolateral Fusions in the Elderly. Virginia Orthopedic Society Annual Meeting in Williamsburg, VA.
- 4/15-17/16 Yildirim B, Puvanesarajah V, An H, **Jain A**, Shen F, Hassanzadeh H. Lumbosacral Epidural Lipomatosis: a Matched Control Study. Virginia Orthopedic Society Annual Meeting in Williamsburg, VA.
- 4/15-17/16 Puvanesarajah V, **Jain A**, Shimer A, Shen F, Hassanzadeh H. The effect of coagulopathies on perioperative complications and clinical outcomes in patients treated with posterior lumbar fusions. Virginia Orthopedic Society Annual Meeting in Williamsburg, VA.
- 9/21-24/16 Poorman G, Passias P, Buckland A, Jalai C, Kelly M, Sciubba D, Neuman B, Hamilton D, **Jain A**, Lafage V, Bess S. Comparative Analysis of Peri-operative Outcomes Using Nationally Derived Hospital Discharge Data Relative to a Prospective Multicenter Surgical Database of Adult Spinal Deformity Surgery. Scoliosis Research Society (SRS) Annual Meeting in Prague, Czech Republic.
- 9/21-24/16 Puvanesarajah V, Cancienne J, Werner B, **Jain A**, Singla A, Shimer A, Shen F, Hassanzadeh H. Perioperative Complications Associated with Posterolateral Spine Fusions: A Study of Elderly Medicare Beneficiaries. Scoliosis Research Society (SRS) Annual Meeting in Prague, Czech Republic.
- 9/21-24/16 **Jain A**, Kebaish F, Lenke L, Dahl B, Cheung K, Pellisé F, Qiu Y, Fehlings M, Ames C, Matsuyama Y, Mehdian H, Schwab F, Carreon L, Shaffrey C, Kebaish K. Geographical Variations in Practice Patterns and Outcomes in Surgically Treated Adult Spinal Deformity Patients: A ScolRisk-1 Sub-analysis. Scoliosis Research Society (SRS) Annual Meeting in Prague, Czech Republic.
- 9/21-24/16 **Jain A**, Kebaish K, Carreon L, Lafage V, Hassanzadeh H, Neuman B, Sciubba D, Gupta M, Burton D, Ames C, Hostin R, Bess S, Kelly M. SF-6D Health Utility can be Reliably Estimated from SRS-22r and ODI in Patients with Adult Spinal Deformity. Scoliosis Research Society (SRS) Annual Meeting in Prague, Czech Republic.
- 9/21-24/16 **Jain A**, Kelly M, Samdani A, Lenke L, Lonner B, Shah S, Newton P, Marks M, Sponseller P. Are Health Related Quality of Life Outcomes Stably Maintained Between 1-Year and 5-Year Follow-up in Surgically Treated Patients with Adolescent Idiopathic Scoliosis? Scoliosis Research Society (SRS) Annual Meeting in Prague, Czech Republic.
- 9/21-24/16 **Jain A**, Hassanzadeh H, Puvanesarajah V, Klineberg E, Kelly M, Hamilton D, Lafage V, Buckland A, Passias P, Protosaltis T, Lafage R, Smith J, Shaffrey C, Kebaish K. Medical Complications in 3,519 Surgically Treated Elderly Patients with Adult Spinal Deformity: Comparison of Multicenter Surgeon Maintained vs. Medicare Claims Database. Scoliosis Research Society (SRS) Annual Meeting in Prague, Czech Republic.

- 9/21-24/16 Puvanesarajah V, Shen F, Cancienne J, **Jain A**, Shimer A, Hassanzadeh H. Risk Factors for Revision Surgery Following Primary Adult Spinal Deformity Surgery in Patients 65 Years and Older. Scoliosis Research Society (SRS) Annual Meeting in Prague, Czech Republic.
- 9/21-24/16 **Jain A**, Kebaish F, Lenke L, Qiu Y, Matsuyama Y, Dahl B, Cheung K, Pellisé F, Fehlings M, Ames C, Mehdian H, Schwab F, Carreon L, Shaffrey C, Kebaish K. Incidence of Proximal Junctional Kyphosis in Patients with Adult Spinal Deformity Fused to the Pelvis: A ScolioRisk-1 Sub-analysis. Scoliosis Research Society (SRS) Annual Meeting in Prague, Czech Republic.
- 9/21-24/16 **Jain A**, Kebaish F, Lenke L, Ames C, Fehlings M, Qiu Y, Matsuyama Y, Dahl B, Cheung K, Pellisé F, Mehdian H, Schwab F, Carreon L, Shaffrey C, Kebaish K. Early Postoperative Surgical Site Infections in the Scolio-Risk 1 Cohort of Complex Spinal Deformity Patients Still Allowed For Improved Health Related Quality of Life Outcomes at 2 Year Follow-Up. Scoliosis Research Society (SRS) Annual Meeting in Prague, Czech Republic.
- 10/5-7/16 Pellisé F, **Jain A**, Naef F, Lenke L, Qiu Y, Matsuyama Y, Ames C, Fehlings M, Dahl B, Cheung K, Mehdian H, Schwab F, Carreon L, Shaffrey C, Kebaish K. Impact of depression on health related quality of life (HRQOL) outcomes in surgically treated adult spinal deformity patients – a Scolio-RISK-1 sub-analysis. Eurospine Annual Meeting in Berlin, German.
- 10/5-7/16 Pellisé F, **Jain A**, Naef F, Lenke L, Qiu Y, Matsuyama Y, Ames C, Fehlings M, Dahl B, Cheung K, Mehdian H, Schwab F, Carreon L, Shaffrey C, Kebaish K. Geographical variations in practice patterns and outcomes in surgically treated adult spinal deformity patients – a Scolio-RISK-1 sub-analysis. Eurospine Annual Meeting in Berlin, German.
- 10/19-22/16 Gans I, **Jain A**, Sirisreeterux N, Haut E, Hasenboehler E. Perioperative Antibiotic Usage for Long Bone Fracture Fixation Varies Considerably. Eastern Orthopaedic Association (EOA) Annual Meeting. In New Orleans, LA.
- 10/26-29/16 Puvanesarajah V, **Jain A**, Cancienne J, Shimer A, Shen F, Hassanzadeh H. BMP Use and the Risk of Revision Surgery Following Long Posterolateral Fusions in the Elderly. North American Spine Society (NASS) Annual Meeting in Boston, MA.
- 10/26-29/16 Buckland A, Puvanesarajah V, **Jain A**, Klineberg E, Vigdorichik J, Schwarzkopf R, Shaffrey C, Smith J, Hart R, Ames C. Dislocation of Primary Total Hip Arthroplasty is More Common in Patients with Lumbar Spinal Fusion. North American Spine Society (NASS) Annual Meeting in Boston, MA.
- 10/26-29/16 Hamilton K, Buza J, Passias P, Jalai C, Kim H, Hart R, Ailon T, Gupta M, Ames C, Deviren V, Daniels A, Lafage V, Bess S, Klineberg E, Shaffrey C, **Jain A**, Smith J, ISSG. The Fate of Adult Spinal Deformity (ASD) Patients Incurring Rod Fracture after Thoracolumbar Fusion without Prior Three-Column Osteotomy. North American Spine Society (NASS) Annual Meeting in Boston, MA.
- 10/26-29/16 Puvanesarajah V, Cancienne J, Werner B, **Jain A**, Singla A, Shimer A, Shen F, Hassanzadeh H. Perioperative Complications Associated with Posterolateral Spine Fusions: A Study of Elderly Medicare Beneficiaries. North American Spine Society (NASS) Annual Meeting in Boston, MA.
- 10/26-29/16 Puvanesarajah V, **Jain A**, Hess D, Shimer A, Shen F, Hassanzadeh H. Complications and Mortality after Lumbar Spinal Fusion in Elderly Patients with Late Stage Renal Disease. North American Spine Society (NASS) Annual Meeting in Boston, MA.
- 10/26-29/16 **Jain A**, Kelly M, Padula W, Lenke L, Errico T, Kebaish K, Sponseller P. Cost Utility Analysis of Operative versus Non-Operative Treatment for Adolescent Idiopathic Scoliosis. North American Spine Society (NASS) Annual Meeting in Boston, MA.
- 10/26-29/16 Poorman G, Passias P, Buckland A, Jalai C, Kelly M, Sciubba D, Neuman B, Hamilton D, **Jain A**, Lafage V, Bess S, Klineberg E, ISSG. Comparative Analysis of Perioperative Outcomes Using Nationally Derived Hospital Discharge Data Relative to a Prospective Multicenter Surgical Database of Adult Spinal Deformity Surgery. North American Spine Society (NASS) Annual Meeting in Boston, MA.
- 10/26-29/16 Miller E, Neuman B, Sciubba D, Scheer J, Smith J, Mundis G, Daniels A, **Jain A**, Ailon T, Kebaish K, Schwab F, Lafage V, Klineberg E, Ames C, ISSG. Comparison of Frailty Based on Cervical and Global SVA Classification. North American Spine Society (NASS) Annual Meeting in Boston, MA.
- 10/26-29/16 Miller E, **Jain A**, Daniels A, Neuman B, Soroceanu A, Ailon T, Sciubba D, Bess S, Line B, Lafage V, Scheer J, Kebaish K, Smith J, Ames C, ISSG. Assessment of a Novel Adult Spinal Deformity (ASD) Frailty Index (ASD-FI) to Assist with Risk Stratification for ASD Surgery. North American Spine Society (NASS) Annual Meeting in Boston, MA.

- 3/14-18/17 **Jain A**, Lenke L, Kebaish F, Fehlings M, Ames C, Carreon L, Dahl B, Schwab F, Shaffrey C, Kebaish K. Impact of Depression on Health-Related Quality of Life Outcomes in Surgically Treated Adult Spinal Deformity Patients. American Academy of Orthopaedic Surgeons (AAOS) Annual Meeting in San Diego, CA.
- 3/19-22/17 **Jain A**, Hassanzadeh H, Puvanesarajah V, Sciubba D, Buckland A, Klineberg E, Kelly M, Passias P, Lafage V, Lafage R, Shaffrey C, Smith J, Kebaish K. Perioperative Medical Complications and Mortality Rate Among 3,519 Elderly Patients Undergoing Surgery for Spinal Deformity. Orthopaedic Research Society (ORS) Annual Meeting in San Diego, CA.
- 9/6-9/17 Yeramaneni S, **Jain A**, Gum J, Kelly M, Glassman S, Polly D, Kebaish K, Burton D, Ames C, Smith J, Shaffrey C, Sethi R, Bess S, Hostin R, International Spine Study Group. Cost-Effectiveness and Clinical Effectiveness in Adult Spinal Deformity Patients: Results from a Prospective, Multicenter Study. Scoliosis Research Society (SRS) Annual Meeting in Philadelphia, PA.
- 9/6-9/17 Raad M, Amin R, **Jain A**, Kebaish K. Predictors of High Cost in Adult Spine Deformity Surgery. Scoliosis Research Society (SRS) Annual Meeting in Philadelphia, PA.
- 9/6-9/17 Gum J, **Jain A**, Carreon L, Hostin R, Yeramaneni S, Glassman S, Kelly M, Burton D, Polly D, Smith J, Shaffrey C, Schwab F, Sethi R, Neuman B, Ames C, Bess S, International Spine Study Group. Planned Staging of Complex ASD Surgery Does Not Result in Increased Length of Stay or Increased Cost. Scoliosis Research Society (SRS) Annual Meeting in Philadelphia, PA.
- 9/6-9/17 Raad M, Gupta M, Hassanzadeh H, **Jain A**, Neuman B, Burton D, Mundis G, Lafage V, Klineberg E, Daniels A, Hostin R, Ames C, Bess S, Sciubba D, Kebaish K, International Spine Study Group. The S2AI Technique Has a Lower Complication Rate Compared to Iliac Screws: A Multicenter Study of 418 Adult Spinal Deformity Patients. Scoliosis Research Society (SRS) Annual Meeting in Philadelphia, PA.
- 3/6-10/18 Qureshi R, Wener B, Puvanesarajah V, **Jain A**, Sciubba D, Shimer A, Hassanzadeh H. Factors Affecting Long-Term Postoperative Narcotic Use in Discectomy Patients. American Academy of Orthopaedic Surgeons (AAOS) Annual Meeting in New Orleans, LA. Mar 6-Mar 10, 2018.
- 3/6-10/18 Qureshi R, Puvanesarajah V, **Jain A**, Mesfin A, Singla A, Shimer A, Shen F, Hassanzadeh H. Medicare Reimbursement Variations following Complications in Anterior Cervical Fusions. American Academy of Orthopaedic Surgeons (AAOS) Annual Meeting in New Orleans, LA.
- 5/14-18/18 Yoon S, **Jain A**, Hobson S, Yoon E, Boden S, Heller J, Rhee J. Older age is independently associated with increased hospital charges and resource utilization in degenerative lumbar surgery: an analysis of 2,010 cases at a single institution. International Society for the Study of the Lumbar Spine (ISSLS) Annual Meeting in Banff, Canada.
- 5/14-18/18 Yoon S, **Jain A**, Hobson S, Yoon E, Boden S, Heller J, Rhee J. Obesity is associated with increased OR time, hospital stay, and postoperative wound complications in lumbar fusion surgery: analysis of 1,196 cases at a single institution. International Society for the Study of the Lumbar Spine (ISSLS) Annual Meeting in Banff, Canada.
- 10/10-13/18 Puvanesarajah V, Horowitz J, **Jain A**, Gjolaj J, Shen F, Hassanzadeh H. Fragility Fracture Risk in Elderly Patients with Cervical Myelopathy. Scoliosis Research Society (SRS) Annual Meeting in Bologna, Italy.
- 10/10-13/18 Nhan D, **Jain A**, Sponseller P, Sullivan B, Shah S, Samdani A, Yaszay B, Abousamra O, Cahill P, Marks M, Newton P, Harms Study Group. Outcomes of Spinal Fusion in Children with Cerebral Palsy: Are We Getting Better? Scoliosis Research Society (SRS) Annual Meeting in Bologna, Italy.
- 03/12-16/19 Klyce W, **Jain A**, Parent S, Shah S, Cahill P, George S, Clements D, Upsani V, Yaszay B, Miyani F, Kelly M, Lonner B, Marks M, Newton P, Sponseller P, Harms Study Group. Pedicle Screw Plowing in Adolescent Idiopathic Scoliosis: How Common Is It, and Is It a Problem? AAOS Annual Meeting in Las Vegas, Nevada.
- 03/12-16/19 **Jain A**, Hobson S, Yoon E, Boden S, Heller J, Rhee J, Yoon S. Obesity is Associated with Worse Perioperative Outcomes and Increased Costs in Lumbar Fusion Surgery: Analysis of 1,196 Cases at a Single Institution. AAOS Annual Meeting in Las Vegas, Nevada.
- 03/12-16/19 Horowitz J, Puvanesarajah V, **Jain A**, Li X, Shimer A, Shen F, Hassanzadeh H. Perioperative Allogenic Red Blood Cell Transfusion is Associated with Surgical Site Infection Following Posterior Lumbar Interbody Fusion Surgery in the Elderly. AAOS Annual Meeting in Las Vegas, Nevada.

Oral/Podium Presentations

- 3/4-7/10 **Jain A**, Erkula G, Leet A, Ain M, Sponseller P. Fractures at pediatric implants: a 15-year review. Pediatric Orthopaedic Society of North America (POSNA) Annual Meeting in Waikoloa, HI.
- 11/5-7/10 **Jain A**, Stein B, Skolasky R, Jones L, Hungerford M. Total joint arthroplasty in patients with Rheumatoid Arthritis: A United States experience from 1992 through 2005. American Association of Hip and Knee Surgeons (AAHKS) Annual Meeting in Dallas, TX.
- 2/15-19/11 **Jain A**, Erkula G, Leet A, Ain M, Sponseller P. Fractures at pediatric implants: a 15-year review. American Academy of Orthopaedic Surgeons (AAOS) Annual Meeting in San Diego, CA.
- 5/19-22/11 Hassanzadeh H, **Jain A**, El Dafrawy M, Khanna J, Mesfin A, Neubauer P, Skolasky R, Kebaish K. Clinical results and functional outcome in adult patients following surgical treatment for spinal deformity: primary vs. revision. The Spine Study Group 22nd Symposium in Palm Beach, FL.
- 6/3-4/11 Hassanzadeh H, **Jain A**, El Dafrawy M, Khanna J, Mesfin A, Neubauer P, Skolasky R, Kebaish K. Clinical results and functional outcome in adult patients following surgical treatment for spinal deformity: primary vs. revision. American College of Spine Surgery (ACSS) Annual Meeting in Las Vegas, NV.
- 6/3-4/11 Hassanzadeh H, Gjolaj J, El Dafrawy M, **Jain A**, Skolasky R, Kebaish M. Staging regimen in adult spinal deformity surgery significantly impact functional outcome, complications and total hospital days. American College of Spine Surgery (ACSS) Annual Meeting in Las Vegas, NV.
- 7/13-16/11 Mesfin A, **Jain A**, Hassanzadeh H, El Dafrawy M, Kostuik J, Kebaish K. Surgical outcomes of long spinal fusions for scoliosis in adult patients with Rheumatoid Arthritis. 18th International Meeting on Advanced Spine Techniques (IMAST) in Copenhagen, Denmark.
- 7/13-16/11 Mesfin A, **Jain A**, Mohamed A, Hassanzadeh H, Kebaish K. Total en bloc spondylectomy: a North American experience. 18th International Meeting on Advanced Spine Techniques (IMAST) in Copenhagen, Denmark.
- 7/20-23/11 Hassanzadeh H, **Jain A**, Tan E, Stein B, Van Hoy M, Stewart N, Lemma M. Compliance with Incentive Spirometry use in the orthopaedic ward. Southern Orthopaedic Association (SOA) 28th Annual Meeting in Big Island, HI.
- 9/14-17/11 Hassanzadeh H, **Jain A**, El Dafrawy M, Khanna J, Neubauer P, Mesfin A, Skolasky R, Kebaish K. Clinical results and functional outcome in adult patients following surgical treatment for spinal deformity: primary vs. revision. Scoliosis Research Society (SRS) Annual Meeting in Louisville, KY.
- 9/14-17/11 Hassanzadeh H, Gupta S, **Jain A**, El Dafrawy M, Skolasky R, Kebaish K. The anchor type at the proximal fusion level has significant effect on the incidence of proximal junctional kyphosis (PJK) and outcome in adults following long posterior spinal fusion. Scoliosis Research Society (SRS) Annual Meeting in Louisville, KY.
- 10/1-6/11 Hassanzadeh H, Gjolaj J, El Dafrawy M, **Jain A**, Skolasky R, Kebaish M. Staging regimen in adult spinal deformity surgery significantly impact functional outcome, complications and total hospital days. Congress of Neurological Surgeons (CNS) Annual Meeting in Washington, DC.
- 11/2-5/11 Hassanzadeh H, Gupta S, **Jain A**, El Dafrawy M, Skolasky R, Kebaish K. The anchor type at the proximal fusion level has significant effect on the incidence of proximal junctional kyphosis (PJK) and outcome in adults following long posterior spinal fusion. North American Spine Society (NASS) Annual Meeting in Chicago, IL.
- 11/2-5/11 Hassanzadeh H, **Jain A**, El Dafrawy M, Mesfin A, Ain M, Skolasky R, Kebaish K. Clinical results and functional outcome in adult patients following revision surgery for spinal deformity correction: patients age 65 years and older vs. younger than 65 years. North American Spine Society (NASS) Annual Meeting in Chicago, IL.
- 3/7-10/12 Amin A, Crabill G, Pradilla G, **Jain A**, Lim M, Rigamonti D, Hsu W. Spinal Epidural Abscess: Clinical Features and Surgical Outcomes. 28th Annual meeting of the American Association of Neurological Surgeons (AANS)/ Congress of Neurological Surgeons (CNS) Section on Disorders of the Spine and Peripheral Nerves in Orlando, FL.
- 7/18-21/12 **Jain A**, Sponseller P, Mesfin A. National Trends, Hospital Costs and Complications of Spinal Fusion for Scheuermann's Kyphosis: Analysis of 2,796 Patients. 19th International Meeting on Advanced Spine Techniques (IMAST) in Istanbul, Turkey.
- 7/18-21/12 **Jain A**, Njoku D, Sponseller P. Does Patient Diagnosis Predict Blood Loss during Posterior Spinal Fusion in Children? 19th International Meeting on Advanced Spine Techniques (IMAST) in Istanbul, Turkey.

- 7/28-8/1/12 **Jain A**, Menga E, Jain P, Mesfin A. Treatment of Cauda Equina Syndrome: Does Race Matter? National Medical Association (NMA) Annual Convention and Scientific Assembly in New Orleans, LA.
- 9/5-8/12 **Jain A**, Sponseller P. Pediatric Cervical Fractures with Associated Spinal Cord Injury. Scoliosis Research Society (SRS) Annual Meeting in Chicago, IL.
- 9/5-8/12 **Jain A**, Sponseller P. Thromboembolic Complications in Children with Spinal Fusion Surgery. Scoliosis Research Society (SRS) Annual Meeting in Chicago, IL.
- 10/24-27/12 Mesfin A, **Jain A**, Menga E. National Complication Rate and Trends in the Management of Ossification of the Posterior Longitudinal Ligament: Analysis of 2,594 Patients. North American Spine Society (NASS) Annual Meeting in Dallas, TX.
- 10/24-27/12 Mesfin A, **Jain A**, Menga E. National Trends in the Treatment of Thoracic Disc Herniation with Myelopathy. North American Spine Society (NASS) Annual Meeting in Dallas, TX.
- 10/24-27/12 Stein B, Hassanzadeh H, **Jain A**, Lemma M, Cohen D, Skolasky R, Kebaish K. Cervical Spine Fusion in Patients with Rheumatoid Arthritis: A United States Experience from 1992 through 2008. North American Spine Society (NASS) Annual Meeting in Dallas, TX.
- 12/6-8/12 Mesfin A, Hassanzadeh H, **Jain A**, Menga E, Riew KD. Complications and Trends in the Management of Ossification of the Posterior Longitudinal Ligament: Analysis of 2,594 Patients Stratified by Procedure, Age, Sex and Race. Cervical Spine Research Society (CSRS) Annual Meeting in Chicago, IL.
- 3/19-23/13 Stein B, Hassanzadeh H, Jakoi A, **Jain A**, Mesfin A, Lemma M, Cohen D, Kebaish K. Cervical Spine Fusion in Patients with Rheumatoid Arthritis: A United States Experience from 1992 through 2008. American Academy of Orthopaedic Surgeons (AAOS) Annual meeting in Chicago, IL.
- 3/19-23/13 **Jain A**, Menga E, Jain S, Hassanzadeh H, Mesfin A. National Trends in the Treatment of Thoracic Disc Herniation with Myelopathy. American Academy of Orthopaedic Surgeons (AAOS) Annual meeting in Chicago, IL.
- 5/1-4/13 **Jain A**, Thompson J, Sponseller P. Pediatric Implant Related Fractures After Proximal Femoral Osteotomies: Blade Plates Vs. Screw and Side Plate Constructs. Pediatric Orthopaedic Society of North American (POSNA) Annual Meeting in Toronto, Canada.
- 5/1-4/13 **Jain A**, Sponseller P. Thromboembolic Complications in Children with Spinal Fusion Surgery. Pediatric Orthopaedic Society of North American (POSNA) Annual Meeting in Toronto, Canada.
- 7/10-13/13 Menga E, Kebaish K, **Jain A**, Carrino J, Sponseller P. Clinical Results and Functional Outcomes after Direct Intralaminar Screw Repair of Spondylolysis. International Meeting on Advanced Spine Techniques (IMAST) in Vancouver, Canada.
- 10/9-12/13 Menga E, **Jain A**, Kebaish K, Zimmerman S, Sponseller P. Anatomic Parameters for Intralaminar Screw Repair of Spondylolysis. North American Spine Society (NASS) Annual Meeting in New Orleans, LA.
- 10/9-12/13 Menga E, Kebaish K, **Jain A**, Carrino J, Sponseller P. Clinical Results and Functional Outcomes after Direct Intralaminar Screw Repair of Spondylolysis. North American Spine Society (NASS) Annual Meeting in New Orleans, LA.
- 7/16-19/14 **Jain A**, Puvanesarajah V, Menga E, Sponseller P. Unplanned Hospital Readmissions Following Pediatric Spinal Fusion Surgery: Rate and Associated Factors. International Meeting on Advanced Spine Techniques (IMAST) in Valencia, Spain.
- 7/16-19/14 **Jain A**, Sponseller P, Modhia U, Shah S, Thompson G, Emans J, Pawelek J, Akbarnia B, Growing Spine Study Group. Can a "Final Fusion" Procedure be Avoided in Early Onset Scoliosis Patients Who Reach Skeletal Maturity After Growing Rod Treatment? International Meeting on Advanced Spine Techniques (IMAST) in Valencia, Spain.
- 9/10-13/14 **Jain A**, Sponseller P, Negrini S, Newton P, Cahill P, Bastrom T, Marks M, Harms Study Group. SRS7: A Valid, Reliable, Responsive, and Unidimensional Functional Outcome Measure for Operatively Treated Patients with AIS. Scoliosis Research Society (SRS) Annual Meeting in Anchorage, AK.
- 11/20-21/14 Brooks J, **Jain A**, Perez-Gruoso F, Skaggs D, Thompson G, Akbarnia B, Sponseller P, Growing Spine Study Group. Pelvic Anchor Outcomes in Growing Rod Constructs: An Analysis of Patients with a Minimum of 4 Years of Post-Operative Follow-Up. International Congress on Early Onset Scoliosis and Growing Spine (ICEOS) Annual Meeting in Warsaw, Poland.
- 11/20-21/14 **Jain A**, Sponseller P, Modhia U, Shah S, Thompson G, Pawelek J, Akbarnia B, Growing Spine Study Group. Can a "No Final Fusion" Produce Equal Results to Final Fusion After Growing Rod Treatment? International Congress on Early Onset Scoliosis and Growing Spine (ICEOS) Annual Meeting in Warsaw, Poland.

- 11/20-21/14 Hassanzadeh H, Nandyala S, Manning B, **Jain A**, Hammerberg K. Radiographic Parameters Correlating with Success of Mehta Cast Utilization in Infantile Idiopathic Scoliosis. International Congress on Early Onset Scoliosis and Growing Spine (ICEOS) Annual Meeting in Warsaw, Poland.
- 3/24-28/15 Ponnusamy K, **Jain A**, Thakkar S, Skolasky R, Sterling R, Khanuja H. Mortality and Morbidity for Sickle Cell Patients Undergoing a Primary Total Knee Arthroplasty. American Academy of Orthopaedic Surgeons (AAOS) Annual meeting in Las Vegas, NV.
- 3/24-28/15 Ponnusamy K, **Jain A**, Thakkar S, Skolasky R, Sterling R, Khanuja H. Inpatient Mortality and Morbidity for Transplant Patients Undergoing a Primary Total Knee Arthroplasty. American Academy of Orthopaedic Surgeons (AAOS) Annual meeting in Las Vegas, NV.
- 3/24-28/15 Ponnusamy K, **Jain A**, Thakkar S, Skolasky R, Sterling R, Khanuja H. Inpatient Mortality and Morbidity for Transplant Patients Undergoing a Primary Total Hip Arthroplasty. American Academy of Orthopaedic Surgeons (AAOS) Annual meeting in Las Vegas, NV.
- 3/24-28/15 Ponnusamy K, **Jain A**, Thakkar S, Skolasky R, Sterling R, Khanuja H. Inpatient Mortality and Morbidity for Dialysis Patients Undergoing a Primary Total Hip Arthroplasty. American Academy of Orthopaedic Surgeons (AAOS) Annual meeting in Las Vegas, NV.
- 3/24-28/15 Ponnusamy K, **Jain A**, Thakkar S, Skolasky R, Sterling R, Khanuja H. Inpatient Mortality and Morbidity for Dialysis Patients Undergoing a Primary Total Knee Arthroplasty. American Academy of Orthopaedic Surgeons (AAOS) Annual meeting in Las Vegas, NV.
- 4/29-5/2/15 **Jain A**, Sponseller P, Modhia U, Shah S, Thompson G, Pawelek J, Akbarnia B, Growing Spine Study Group. Can A “No Final Fusion” Produce Equal Results To Final Fusion After Growing Rod Treatment? Pediatric Orthopaedic Society of North America (POSNA) Annual Meeting in Atlanta, GA.
- 7/8-11/15 Sciubba D, **Jain A**, Neuman B, Kebaish K, Passias P, Zebala L, Kim H, Protosaltis T, Scheer J, Smith J, Hamilton D, Bess S, Klineberg E, Ames C, and the International Spine Study Group. Development of a Pre-Operative Adult Spinal Deformity Frailty Index that Correlates to Common Quality and Value Metrics: Length of Stay, Major Complications and Patient-Reported Outcomes. International Meeting on Advanced Spine Techniques (IMAST) in Kuala Lumpur, Malaysia.
- 7/8-11/15 Neuman B, Scheer J, Ailon T, Klineberg E, Sciubba D, **Jain A**, Kim H, Zebala L, Passias P, Daniels A, Burton D, Protosaltis T, Hamilton K, Ames C, and the International Spine Study Group. Development and Validation of a Novel Adult Spinal Deformity Surgical Invasiveness Score: Analysis of 466 Patients. International Meeting on Advanced Spine Techniques (IMAST) in Kuala Lumpur, Malaysia.
- 7/8-11/15 **Jain A**, Naef F, Lenke L, Ames C, Matsuyama Y, Dahl B, Shaffrey C, Qiu Y, Fehlings M, Mehdiian, H, Boachie-Adjei O, Schwab F, Cheung K, Carreon L, Kebaish K. Analysis of ScolioRisk-1 Prospective Multicenter Database Comparing Perioperative Complications and Patient Reported Outcomes in Primary vs. Revision Surgery for Severe Adult Spinal Deformity. International Meeting on Advanced Spine Techniques (IMAST) in Kuala Lumpur, Malaysia.
- 7/8-11/15 **Jain A**, Ames C, Lafage V, Neuman B, Sciubba D, Hart R, Scheer J, Kelly M, Bess S, Hostin R, Shaffrey C, Gupta M, Schwab F, Kebaish K, and the Internal Spine Study Group. Postoperative Coronal Malalignment is Associated with Significantly Poor Patient Reported Outcomes in Operatively Treated Adult Spinal Deformity. International Meeting on Advanced Spine Techniques (IMAST) in Kuala Lumpur, Malaysia
- 7/8-11/15 **Jain A**, Lafage V, Kelly M, Neuman B, Sciubba D, Bess S, Shaffrey C, Ames C, Scheer J, Burton D, Gupta M, Hart R, Hostin R, Kebaish K, and the International Spine Study Group. Validity, Reliability and Responsiveness of SRS-7 as a Functional Outcome Measure for Operatively Treated Adult Spinal Deformity (ASD) Patients. International Meeting on Advanced Spine Techniques (IMAST) in Kuala Lumpur, Malaysia.
- 7/8-11/15 **Jain A**, Kebaish K, Sciubba D, Neuman B, Scheer J, Schwab F, Lafage V, Protosaltis T, Burton D, Smith J, Shaffrey C, Hostin R, Robinson C, Ames C, and the International Spine Study Group. Early Recovery Kinetics Predict 3-Year Outcomes in Operatively Treated Adult Patients with Spinal Deformity. International Meeting on Advanced Spine Techniques (IMAST) in Kuala Lumpur, Malaysia.
- 7/8-11/15 **Jain A**, Sponseller P, Njoku D, Shah S, Samdani A, Cahill P, Betz R, Newton P, Marks M. Complication Rates after Spinal Surgery for Adolescent Idiopathic Scoliosis Vary Significantly Based on Reporting Methodology: Who to Believe? International Meeting on Advanced Spine Techniques (IMAST) in Kuala Lumpur, Malaysia.

- 7/8-11/15 **Jain A**, Sponseller P, Shah S, Thompson G, Pawelek J, Akbarnia B, and the Growing Spine Study Group. Can a “No Final Fusion” Produce Equal Results to Final Fusion After Growing Rod Treatment? International Meeting on Advanced Spine Techniques (IMAST) in Kuala Lumpur, Malaysia.
- 7/8-11/15 **Jain A**, Hassanzadeh H, Menga E, Sponseller P. Posterolateral Discectomies as Alternative to Anterior Posterior Spinal Fusion in Children with Severe Spinal Deformities. International Meeting on Advanced Spine Techniques (IMAST) in Kuala Lumpur, Malaysia.
- 7/8-11/15 Scheer J, Keefe M, Kelly M, Lafage V, Bess S, Burton D, Hart R, **Jain A**, Protosaltis T, Hostin R, Shaffrey C, Smith J, Schwab F, Ames C, and the International Spine Study Group. Importance of Patient Reported Individualized Goals When Assessing Outcomes for Adult Spinal Deformity (ASD): Initial experience with a Patient Generated Instrument (PGI). International Meeting on Advanced Spine Techniques (IMAST) in Kuala Lumpur, Malaysia.
- 7/8-11/15 Menga E, Hirschfield C, **Jain A**, Tran D, Caine H, Njoku D, Karol L, Sponseller P. Intraoperative Cardiopulmonary Arrest in Children Undergoing Spinal Deformity Correction: Causes and Associated Factors. International Meeting on Advanced Spine Techniques (IMAST) in Kuala Lumpur, Malaysia.
- 7/8-11/15 Brooks J, **Jain A**, Perez-Gruoso F, Skaggs D, Thompson G, Akbarnia B, Sponseller P. Growing Spine Study Group. Outcomes of Pelvic Fixation in Growing Rod Constructs: An Analysis of Patients with a Minimum of 4 Years Follow-Up. International Meeting on Advanced Spine Techniques (IMAST) in Kuala Lumpur, Malaysia.
- 7/8-11/15 Lafage R, Lafage V, Protosaltis T, Hart R, Passias P, Klineberg E, Smith J, Neuman B, Hamilton K, **Jain A**, Mundis G, Zebala L, Shaffrey C, Ames C, and the International Spine Study Group. Focal and Dynamic Cervical Alignment Pathology Correlates with Myelopathy Severity in Cervical Deformity Patients. International Meeting on Advanced Spine Techniques (IMAST) in Kuala Lumpur, Malaysia.
- 9/30-10/3/15 Scheer J, Smith J, Schwab F, Hart R, Hostin R Lafage V, **Jain A**, Burton D, Bess S, Ailon T, Protosaltis T, Klineberg E, Shaffrey C, Ames C, and the International Spine Study Group. Development of a Validated Computer Based Preoperative Predictive Model for Reaching ODI MCID for Adult Spinal Deformity (ASD) Patients. Scoliosis Research Society (SRS) Annual Meeting in Minneapolis, MN.
- 9/30-10/3/15 **Jain A**, Sponseller P, Cahill P, Yaszay B, Samdani A, Njoku D, Abel M, Pahys J, Betz R, Shah S, Newton P, Marks M. Neuromotor Sub-Classification of GMFCS -5 Predicts Complications and HRQoL in Patients with Cerebral Palsy After Spine Fusion. Scoliosis Research Society (SRS) Annual Meeting in Minneapolis, MN.
- 9/30-10/3/15 Neuman B, **Jain A**, Sciubba D, Klineberg E, Kim H, Zebala L, Mundis G, Lafage V, Passias P, Lafage R, Protosaltis T, Hamilton D, Scheer J, Ames C, and the International Spine Study Group. Regional Thoracic and Lumbar Sagittal Cobb Angle Changes and UIV Determine Evolution of Cervical Alignment After ASD Surgery: Series of 171 Patients with Two-Year Follow Up. Scoliosis Research Society (SRS) Annual Meeting in Minneapolis, MN.
- 9/30-10/3/15 Scheer J, Smith J, Schwab F, Lafage V, Hart R, Bess S, Line B, Diebo B, Protosaltis T, **Jain A**, Ailon T, Burton D, Klineberg E, Ames C, and the International Spine Study Group. Development of Validated Computer Based Preoperative Predictive Model for Proximal Junction Failure (PJF) or Clinically Significant PJK with 86 Percent Accuracy Based on 510 ASD Patients with Two-Year Follow Up. Scoliosis Research Society (SRS) Annual Meeting in Minneapolis, MN.
- 9/30-10/3/15 Kelly M, Bess S, Ames C, Burton D, Carreon L, Polly D, Hostin R, **Jain A**, Gum J, Lafage V, Schwab F, Shaffrey C, Smith J, Kim H, and the International Spine Study Group. Minimum Detectable Change (MDC) for Health-Related Quality of Life (HRQL) Measures Varies According Age and Disability in Adult Spinal Deformity (ASD): Implications for Calculating Minimal Clinically Important Difference (MCID). Scoliosis Research Society (SRS) Annual Meeting in Minneapolis, MN.
- 10/14-17/15 ISSG, **Jain A**, Ames C, Neuman B, Sciubba D, Hart R, Hart R, Scheer J, Kelly M, Lafage V, Bess S, Hostin R, Shaffrey C, Gupta M, Schwab F, Kebaish K. Postoperative Coronal Malalignment is Associated with Significantly Poor Patient Reported Outcomes in Operatively Treated Adult Spinal Deformity. North American Spine Society (NASS) Annual Meeting in Chicago, IL.
- 10/14-17/15 ISSG, Scheer J, Smith J, Schwab F, Lafage V, Shaffrey C, Bess S, Hart R, Gupta M, Protosaltis T, Hostin R, Deviren V, Line B, Daniels A, Diebo B, Lafage R, Zebala L, Mundis G, **Jain A**, Ailon T, Kim HJ, Hamilton DK, Burton D, Klineberg E, Ames C. Development of Validated Computer Based Preoperative Predictive Model for Proximal Junction Failure or Clinically Significant Proximal Junction

- Kyphosis with 86% Accuracy Based on 510 Adult Spinal Deformity Patients with Two-Year Follow-Up. North American Spine Society (NASS) Annual Meeting in Chicago, IL.
- 10/14-17/15 ISSG, Scheer J, Gum J, Kelly M, Schwab F, Hostin R, Lafage V, Bess S, Protosaltis T, Kebaish K, Burton D, Gupta M, Soroceanu A, Hart R, Mundis G, **Jain A**, Smith J, Ames C. Ratio of Disability to Deformity Burden in 264 Adult Spinal Deformity Patients with Two-Year Follow-Up: Novel Insight into Drivers of Disability. North American Spine Society (NASS) Annual Meeting in Chicago, IL.
- 3/1-5/16 **Jain A**, Sciubba D, Kebaish K, Neuman B, Bess S, Ames C, ISSG. Development of a Preoperative ASD Frailty Index that Correlates to Common Quality and Value Metrics. American Academy of Orthopaedic Surgeons (AAOS) Annual meeting in Orlando, FL.
- 3/1-5/16 **Jain A**, Sponseller P, Cahill P, Yaszay B, Samdani A, Betz R, Shah S, Newton P, Marks M. Neuromotor Sub-Classification of GMFCS -5 Predicts Complications and HRQoL in Cerebral Palsy after Spine Fusion. American Academy of Orthopaedic Surgeons (AAOS) Annual meeting in Orlando, FL.
- 3/1-5/16 Konbaz F, Ramji A, **Jain A**, Neuman B. Postoperative Radiological Changes and Developing Proximal Junctional Kyphosis. American Academy of Orthopaedic Surgeons (AAOS) Annual meeting in Orlando, FL.
- 4/14-15/16 Puvanesarajah V, Yildirim B, An H, **Jain A**, Shen F, Hassanzadeh H. Lumbosacral Epidural Lipomatosis: a Matched Control Study. Lumbar Spine Research Society (LSRS) Annual Meeting in Chicago, IL.
- 4/14-15/16 Puvanesarajah V, **Jain A**, Shimer A, Shen F, Hassanzadeh H. The Effect of Coagulopathies on Perioperative Complications and Clinical Outcomes in Patients Treated with Posterior Lumbar Fusions. Lumbar Spine Research Society (LSRS) Annual Meeting in Chicago, IL.
- 4/27-30/16 **Jain A**, Sponseller P, Shah S, Samdani A, Cahill P, Yaszay B, Narayanan U, Newton P, Marks M. Neuromotor Sub-Classification of GMFCS-5 Predicts Complications and Health Related Quality of Life in Patients with Cerebral Palsy after Spine Fusion. Pediatric Orthopaedic Society of North America (POSNA) Annual Meeting in Indianapolis, IN.
- 4/27-30/16 Miller A, Varghese R, **Jain A**, Sponseller P. Subclassification of GMFCS 4 and 5 Cerebral Palsy by Neuromotor Impairments Predicts Complications and Quality of Life Following Hip Surgery. Pediatric Orthopaedic Society of North America (POSNA) Annual Meeting in Indianapolis, IN.
- 7/1-3/16 Lowdon H, Miller A, **Jain A**, Sponseller Paul, Varghese R. Neuromotor Comorbidities As Risk Factors For Post-Operative Complications In Children With Cerebral Palsy Undergoing Hip Surgery. European Federation of National Associations of Orthopaedics and Traumatology (EFORT) Annual Meeting in Geneva, Switzerland.
- 7/13-16/16 **Jain A**, Kebaish F, Lenke L, Qiu Y, Matsuyama Y, Ames C, Fehlings M, Dahl B, Mehdiian H, Cheung K, Schwab F, Pellisé F, Carreon L, Shaffrey C, Kebaish K. Incidence of Proximal Junctional Kyphosis in Patients with Adult Spinal Deformity Fused to the Pelvis: A ScolioRisk-1 Sub-analysis. International Meeting on Advanced Spine Techniques (IMAST) in Washington, D.C.
- 7/13-16/16 **Jain A**, Kebaish F, Lenke L, Ames C, Fehlings M, Mehdiian H, Schwab F, Matsuyama Y, Shaffrey C, Cheung K, Qiu Y, Pellisé F, Carreon L, Dahl B, Kebaish K. Early Postoperative Surgical Site Infections in the Scolio-Risk 1 Cohort of Complex Spinal Deformity Patients Still Allowed For Improved Health Related Quality of Life Outcomes at 2 Year Follow-Up. International Meeting on Advanced Spine Techniques (IMAST) in Washington, D.C.
- 7/13-16/16 **Jain A**, Hassanzadeh H, Puvanesarajah V, Klineberg E, Kelly M, Hamilton, D, Lafage V, Buckland A, Passias P, Protosaltis T, Lafage R, Smith J, Shaffrey C, Kebaish K, and the International Spine Study Group. Medical Complications in 3,519 Surgically Treated Elderly Patients with Adult Spinal Deformity: Comparison of Multicenter Surgeon Maintained vs. Medicare Claims Database. International Meeting on Advanced Spine Techniques (IMAST) in Washington, D.C.
- 7/13-16/16 Passias P, Poorman G, Jalai C, Neuman B, De la Garza-Ramos R, Miller E, **Jain A**, Sciubba D, Lafage V. Morbidity of Adult Spinal Deformity Surgery in Elderly Has Declined Over Time. International Meeting on Advanced Spine Techniques (IMAST) in Washington, D.C.
- 7/13-16/16 Puvanesarajah V, **Jain A**, Cancienne J, Shimer A, Shen F, Hassanzadeh H. BMP Use and the Risk of Revision Surgery Following Long Posterolateral Fusions in the Elderly. International Meeting on Advanced Spine Techniques (IMAST) in Washington, D.C.
- 7/13-16/16 Puvanesarajah V, Shen F, Cancienne J, **Jain A**, Shimer A, Hassanzadeh H. Risk Factors for Revision Surgery Following Primary Adult Spinal Deformity Surgery in Patients 65 Years and Older. International Meeting on Advanced Spine Techniques (IMAST) in Washington, D.C.

- 7/27-30/16 Gans I, **Jain A**, Sirisreeterux N, Haut ER. Hasenboehler EA. Perioperative Antibiotic Usage for Long Bone Fracture Fixation Varies Considerably. Southern Orthopaedic Association Annual Meeting in Naples, FL.
- 9/21-24/16 **Jain A**, Kebaish F, Lenke L, Shaffrey C, Fehlings M, Dahl B, Mehdian H, Ames C, Matsuyama Y, Qiu Y, Cheung K, Schwab F, Carreon L, Pellisé F, and Kebaish K. Effect of Age on Postoperative Complications and Patient Reported Outcomes in Severe Adult Spinal Deformity: Patients ≤ 60 Years vs. > 60 Years. Scoliosis Research Society (SRS) Annual Meeting in Prague, Czech Republic.
- 9/21-24/16 **Jain A**, Kebaish K, Skolasky R, Neuman B. Using PROMIS for Health-Related Quality of Life Assessment in Patients with Adult Spinal Deformity. Scoliosis Research Society (SRS) Annual Meeting in Prague, Czech Republic.
- 9/21-24/16 **Jain A**, Kebaish F, Lenke L, Carreon L, Ames C, Fehlings M, Dahl B, Matsuyama Y, Qiu Y, Shaffrey C, Mehdian H, Schwab F, Pellisé F, Cheung K, and Kebaish K. Impact of Depression on Health-Related Quality of Life Outcomes in Surgically Treated Adult Spinal Deformity Patients: A ScolRisk-1 Sub-analysis. Scoliosis Research Society (SRS) Annual Meeting in Prague, Czech Republic.
- 9/21-24/16 **Jain A**, Kebaish F, Lenke L, Shaffrey C, Fehlings M, Dahl B, Ames C, Matsuyama Y, Qiu Y, Mehdian H, Cheung K, Schwab F, Pellisé F, Carreon L, and Kebaish K. Complications and Patient Reported Outcomes of Primary vs. Revision Surgery for Severe Adult Spinal Deformity: A ScolRisk-1 Sub-analysis. Scoliosis Research Society (SRS) Annual Meeting in Prague, Czech Republic.
- 9/21-24/16 Miller E, **Jain A**, Daniels A, Neuman B, Soroceanu A, Ailon T, Sciubba D, Bess S, Line B, Lafage V, Scheer J, Kebaish K, Smith J, Ames C, and the International Spine Study Group. Assessment of a Novel Adult Spinal Deformity (ASD) Frailty Index (ASD-FI) to Assist with Risk Stratification for ASD Surgery. Scoliosis Research Society (SRS) Annual Meeting in Prague, Czech Republic.
- 9/21-24/16 Gum J, Carreon L, Kelly M, **Jain A**, Hostin R, Smith J, Lafage V, Lafage R, Burton D, Schwab F, Hart R, Klineberg E, Shaffrey C, Bess S, Glassman S, and the International Spine Study Group. What Drives Improvement in Self-Image after ASD Surgery? Scoliosis Research Society (SRS) Annual Meeting in Prague, Czech Republic.
- 10/5-7/16 Pellisé F, **Jain A**, Naef F, Lenke L, Qiu Y, Matsuyama Y, Ames C, Fehlings M, Dahl B, Cheung K, Mehdian H, Schwab F, Carreon L, Shaffrey C, Kebaish K. Incidence of proximal junctional kyphosis in patients with adult spinal deformity fused to the pelvis – a Scol-RISK-1 sub-analysis. Eurospine Annual Meeting in Berlin, German.
- 10/5-7/16 Pellisé F, **Jain A**, Naef F, Lenke L, Qiu Y, Matsuyama Y, Ames C, Fehlings M, Dahl B, Cheung K, Mehdian H, Schwab F, Carreon L, Shaffrey C, Kebaish K. A comparison of postoperative complications and patient reported outcomes in severe adult spinal deformity patients aged ≤ 60 years and > 60 years – a Scol-RISK-1 sub-analysis. Eurospine Annual Meeting in Berlin, German.
- 10/26-29/16 **Jain A**, Kebaish F, Lenke L, Shaffrey C, Fehlings M, Dahl B, Ames C, Matsuyama Y, Qiu Y, Mehdian H, Cheung K, Schwab F, Pellisé F, Carreon L, and Kebaish K. Impact of Depression on Health-Related Quality of Life Outcomes in Surgically Treated Adult Spinal Deformity Patients: A ScolRisk-1 Sub-Analysis. North American Spine Society (NASS) Annual Meeting in Boston, MA.
- 10/26-29/16 Protosaltis T, Ramchandran S, Hamilton D, Sciubba D, Soroceanu A, **Jain A**, Passias P, Lafage V, Lafage R, Smith J, Hart R, Gupta M, Burton D, Bess S, Shaffrey C, Ames C. Analysis of Successful versus Failed Radiographic Outcomes Following Cervical Deformity Surgery North American Spine Society (NASS) Annual Meeting in Boston, MA.
- 10/26-29/16 Yildirim B, Puvanesarajah V, An H, **Jain A**, Shen F, Hassanzadeh H. Lumbosacral Epidural Lipomatosis: A Matched Control Study. North American Spine Society (NASS) Annual Meeting in Boston, MA.
- 10/26-29/16 **Jain A**, Kelly M, Padula W, Lenke L, Errico T, Kebaish K, Sponseller P. Cost Utility Analysis of Operative vs. Non-operative Treatment for Adolescent Idiopathic Scoliosis. North American Spine Society (NASS) Annual Meeting in Boston, MA.
- 10/26-29/16 Buckland A, Puvanesarajah V, **Jain A**, Klineberg E, Vigdorchik J, Schwarzkopf R, Shaffrey C, Smith J, Hart R, Ames C, Hassanzadeh H. Dislocation of Primary Total Hip Arthroplasty is More Common in Patients with Lumbar Spinal Fusion. North American Spine Society (NASS) Annual Meeting in Boston, MA.
- 10/26-29/16 **Jain A**, Kebaish F, Lenke L, Shaffrey C, Fehlings M, Dahl B, Ames C, Matsuyama Y, Qiu Y, Mehdian H, Cheung K, Schwab F, Pellisé F, Carreon L, and Kebaish K. Effect of Age on Postoperative

- Complications and Patient Reported Outcomes in Severe Adult Spinal Deformity: Patients ≤ 60 Years versus >60 Years. North American Spine Society (NASS) Annual Meeting in Boston, MA.
- 10/26-29/16 Klineberg E, **Jain A**, Puvanesarajah V, Shaffrey C, Smith J, Bess S, Burton D, Lafage V, Kim H, Sciubba D, Ames C, Scheer J, Gupta M, Hassanzadeh H. Medical Complication Profile for Elective Orthopaedic Surgery in the Elderly, Establishment of a Baseline Complication Rate for THA, TKA, and Spine Fusion. North American Spine Society (NASS) Annual Meeting in Boston, MA.
- 10/26-29/16 Puvanesarajah V, **Jain A**, Shimer A, Li X, Singla A, Shen F, Hassanzadeh H. Complications and Mortality Following One- to Two-Level Lumbar Fusion Surgery in Patients Above 80 Years of Age. North American Spine Society (NASS) Annual Meeting in Boston, MA.
- 10/26-29/16 **Jain A**, Kebaish F, Lenke L, Shaffrey C, Fehlings M, Dahl B, Ames C, Matsuyama Y, Qiu Y, Mehdian H, Cheung K, Schwab F, Pellisé F, Carreon L, and Kebaish K. Incidence of Proximal Junctional Kyphosis in Patients with Adult Spinal Deformity Fused to the Pelvis: Analysis of 198 Patients. North American Spine Society (NASS) Annual Meeting in Boston, MA.
- 10/26-29/16 **Jain A**, Kebaish F, Lenke L, Shaffrey C, Fehlings M, Dahl B, Ames C, Matsuyama Y, Qiu Y, Mehdian H, Cheung K, Schwab F, Pellisé F, Carreon L, and Kebaish K. Complications and Patient-Reported Outcomes of Primary versus Revision Surgery for Severe Adult Spinal Deformity: A ScolioRisk-1 Sub-Analysis. North American Spine Society (NASS) Annual Meeting in Boston, MA.
- 10/26-29/16 **Jain A**, Kebaish K, Skolasky R, Neuman B. Using PROMIS for Health-Related Quality of Life Assessment in Patients with Adult Spinal Deformity. North American Spine Society (NASS) Annual Meeting in Boston, MA.
- 3/14-18/17 **Jain A**, Hassanzadeh H, Puvanesarajah V, Sciubba D, Buckland A, Klineberg E, Kelly M, Passias P, Lafage V, Lafage R, Shaffrey C, Smith J, Kebaish K. Perioperative Medical Complications and Mortality Rate Among 3,519 Elderly Patients Undergoing Surgery for Spinal Deformity. American Academy of Orthopaedic Surgeons (AAOS) Annual Meeting in San Diego, CA.
- 3/14-18/17 **Jain A**, Lenke L, Kebaish F, Ames C, Fehlings M, Carreon L, Schwab F, Shaffrey C, Kebaish K. Early Postoperative Surgical Site Infections in the Scolio-Risk 1 Cohort of Complex Spinal Deformity Patients Still Allowed for Improved Health Related Quality of Life Outcomes at 2 Year Follow-Up. American Academy of Orthopaedic Surgeons (AAOS) Annual Meeting in San Diego, CA.
- 3/14-18/17 **Jain A**, Kelly M, Lenke L, Errico T, Kebaish K, Sponseller P. Cost Utility Analysis of Operative vs. Non-operative Treatment for Adolescent Idiopathic Scoliosis. American Academy of Orthopaedic Surgeons (AAOS) Annual Meeting in San Diego, CA.
- 5/3-6/17 Marks M, **Jain A**, Kelly M, Lenke L, Errico T, Kebaish K, Sponseller P. Cost Utility Analysis of Operative vs. Non-operative Treatment for Adolescent Idiopathic Scoliosis. Pediatric Orthopaedic Society of North America (POSNA) Annual Meeting in Barcelona, Spain.
- 7/12-15/17 Sullivan B, Abousamra O, Puvanesarajah V, **Jain A**, Hadad M, Sponseller P. Deep Infections Differ Following Spinal Fusion for Idiopathic, Syndromic and Neuromuscular Deformity. International Meeting on Advanced Spine Techniques (IMAST) in Cape Town, South Africa.
- 9/6-9/17 **Jain A**, Sullivan B, Hassanzadeh H, Sponseller P. Posterolateral Discectomies for Pediatric Spinal Deformities: Indications, Outcomes, and Comparison with Anteroposterior Spinal Arthrodesis. Scoliosis Research Society (SRS) Annual Meeting in Philadelphia, PA.
- 9/6-9/17 **Jain A**, Sponseller P, Sullivan B, Shah S, Samdani A, Yaszay B, Narayanan U, Newton P, Marks M, Harms Study Group. Relative Valuation of Interventions for Severe Cerebral Palsy: Spinal Correction Ranked the Most Beneficial, but Below G-tube. Scoliosis Research Society (SRS) Annual Meeting in Philadelphia, PA.
- 9/6-9/17 Goh B, Uzosike A, Tamai R, El Dafrawy M, **Jain A**, Sciubba D, Skolasky R, Kebaish K, Neuman B. Utilizing the Fracture Risk Assessment Tool (FRAX) to Assess Risk of Proximal Junctional Kyphosis in Adult Spinal Deformity Surgery. Scoliosis Research Society (SRS) Annual Meeting in Philadelphia, PA.
- 9/6-9/17 **Jain A**, Yeramane S, Gum J, Kelly M, MD; Kebaish K, Burton D, Ames C, Shaffrey C, Smith J, Hassanzadeh H, Glassman S, Carreon L, Bess S, Hostin R, International Spine Study Group. Cost Effectiveness of rhBMP-2 Use in Adult Spinal Surgery. Scoliosis Research Society (SRS) Annual Meeting in Philadelphia, PA.
- 3/6-10/18 Qureshi R, Werner B, Puvanesarajah V, Menga E, **Jain A**, Shen F, Hassanzadeh H. Risk Factors for Narcotic Use beyond Three Months after Lumbar Spinal Deformity Surgery. American Academy of Orthopaedic Surgeons (AAOS) Annual Meeting in New Orleans, LA.

- 3/6-10/18 Gum J, **Jain A**, Carreon L, Hostin R, Yeramaneeni S, Glassman S, Kelly M, Burton D, Polly D, Smith J, Shaffrey C, Schwab F, Sethi R, Neuman B, Ames C, Bess S, ISSG. Planned Staging of Complex Adult Spinal Deformity Surgery Does Not Result in Increased Length of Stay or Increased Cost. American Academy of Orthopaedic Surgeons (AAOS) Annual Meeting in New Orleans, LA.
- 4/5-6/18 **Jain A**, Hobson S, Yoon E, Boden S, Heller J, Rhee J, Yoon T. Obesity is Associated with Increased OR Time, Hospital Stay, and Postoperative Wound Complications in Lumbar Fusion Surgery. Lumbar Spine Research Society (LSRS) Annual Meeting in Chicago, IL.
- 7/11-14/18 **Jain A**, Hobson S, Yoon E, Boden S, Heller J, Rhee J, Yoon S. Obesity is Associated with Increased OR Time, Hospital Stay, and Postoperative Wound Complications in Lumbar Fusion Surgery: Analysis of 1,196 Cases at a Single Institution. International Meeting on Advanced Spine Techniques (IMAST) in Los Angeles, CA.
- 9/18-21/19 Marrache M, Sponseller P, Lonner B, Buckland A, Kelly M, Shah S, Samdani A, Newton P, **Jain A**. Residual Curve and Truncal Shift Impact Patient Satisfaction after Surgery for AIS. Scoliosis Research Society (SRS) Annual Meeting in Montreal, Canada.
- 9/18-21/19 Lonner B, **Jain A**, Sponseller P, Samdani A, Kelly M, Castillo A, Marrache M, Ames C, Shah S. What Are Parents Willing to Accept? A Prospective Study of Risk Tolerance for AIS Surgery. Scoliosis Research Society (SRS) Annual Meeting in Montreal, Canada.
- 9/18-21/19 Marrache M, Sponseller P, Lonner B, Buckland A, Kelly M, Shah S, Samdani A, Marks M, Newton P, **Jain A**. Impact of Poor Mental Health on Clinical Outcomes in Surgically Treated Adolescents Idiopathic Scoliosis Patients. Scoliosis Research Society (SRS) Annual Meeting in Montreal, Canada.
- 9/18-21/19 Lonner B, Castillo A, **Jain A**, Sponseller P, Samdani A, Kelly M, Ames C, Marrache M, Shah S. The Ultimate Patient Reported Outcome Tool: Patient Generated Index in Adolescent Idiopathic Scoliosis. Scoliosis Research Society (SRS) Annual Meeting in Montreal, Canada.
- 9/18-21/19 Klyce W, **Jain A**, Parent S, Shah S, Cahill P, George S, Clements D, Upsani V, Yaszay B, Miyajiri F, Kelly M, Lonner B, Marks M, Newton P, Sponseller P, Harms Study Group. Pedicle Screw Plowing in Adolescent Idiopathic Scoliosis: How Common Is It, and Is It a Problem? Scoliosis Research Society (SRS) Annual Meeting in Montreal, Canada.
- 11/21-23/19 Marrache M, Harris A, Puvanesarajah V, Raad M, **Jain A**. Perioperative Spending In Single-Level Anterior Cervical Discectomy And Fusion For Degenerative Pathology. Cervical Spine Research Society (CSRS) Annual Meeting in New York, NY.
- 9/9-13/20 Prasad N, Marrache M, Njoku D, Sponseller P, **Jain A**. Variability in Anesthetic Practices in Surgical Treatment of Adolescent Idiopathic Scoliosis. Scoliosis Research Society (SRS) Annual Meeting 2020. Virtual.
- 9/9-13/20 Bansal D, Marrache M, Sponseller P, Shah S, Samdani A, Cahill P, Lonner B, Marks M, Newton P, Errico T, **Jain A**. Bone Graft Substitutes and Extenders are Associated with a Higher Rate of Wound Complications. Scoliosis Research Society (SRS) Annual Meeting 2020. Virtual.
- 9/9-13/20 **Jain A**, McNeely E, Neuman B, Gum J, Bess S, Hostin R, Lafage V, Yeramaneeni S, Klineberg E, Lafage R, Gupta M, Smith J, Burton D, Passias P, Protosaltis T, Kebaish K. Residual Coronal Malalignment Results in Less Improvement in Pain and Disability after ASD Surgery. Scoliosis Research Society (SRS) Annual Meeting 2020. Virtual.
- 9/24/21 Suresh K, Sponseller P, Shah S, Miyajiri F, Samdani A, Yaszay B, Newton P, **Jain A**, Harms Study Group. Spinal Fusion Leads to Quality Adjusted Life Year Gains in Cerebral Palsy Patients Sustained up to 5 Years after Surgery. Scoliosis Research Society (SRS) Annual Meeting 2021 in St. Louis, MO.
- 9/24/21 Ikwuezunma I, Wang K, Sponseller P, **Jain A**. Cost-Utility Analysis of Bracing vs. Observation for Adolescent Idiopathic Scoliosis. Scoliosis Research Society (SRS) Annual Meeting 2021 in St. Louis, MO.
- 9/16/22 Gum J, Yeramaneeni S, Wang K, Hostin R, Kebaish K, Neuman B, **Jain A**, Kelly M, Burton D, Ames C, Shaffrey C, Klineberg E, Kim H, Protosaltis T, Passias P, Mundis G, Eastlack R, Schwab F, Hart R, Gupta M, Daniels A, Smith J, Lafage V, Line B, Bess S, International Spine Study Group. Comparison of Patient Factors (Frailty) vs. Surgical Factors (Invasiveness) for Optimization of 2-Year Cost-Utility: We Should Focus on the Patient Factors. Scoliosis Research Society (SRS) Annual Meeting 2022 in Stockholm, Sweden.
- 9/16/22 Gajewski N, Ali A, Sponseller P, **Jain A**, Cahill P, Samdani A, Yaszay B, Shah S, Harms Study Group. Proximal Junctional Kyphosis After Spinal Deformity Correction in Cerebral Palsy: Incidence and Predictive Analytics. Scoliosis Research Society (SRS) Annual Meeting 2022 in Stockholm, Sweden.

- 9/6/23 Durand W, Cartagena-Reyes M, Sponseller P, **Jain A**. Epidemiology of Surgical Management for Pediatric Spondylolysis and Spondylolisthesis. Scoliosis Research Society (SRS) Annual Meeting 2023 in Seattle, WA.
- 9/7/23 Brooks J, Bauer J, **Jain A**, Miyanji F, Parent S, Newton P, Upasani V, Cahill P, Sucato D, Sponseller P, Samdani A, Harms Study Group. Should the C7-T1 Junction Be Feared? The Effect of a T1 UIV on PJK Risk in AIS Patients at LongTerm Follow-Up. Scoliosis Research Society (SRS) Annual Meeting 2023 in Seattle, WA.
- 9/9/23 Durand W, Theologis A, Cartagena-Reyes M, Hassanzadeh H, Kebaish K, Sponseller P, **Jain A**. Patient Financial Burden in Surgical Treatment of Adolescent and Adult Spinal Deformity. Scoliosis Research Society (SRS) Annual Meeting 2023 in Seattle, WA.
- 9/9/23 Benes G, Elnemer W, **Jain A**, Njoku D, Sponseller P. Defect in Extrinsic Pathway Impacts Clotting Efficiency in Neuromuscular Scoliosis. Scoliosis Research Society (SRS) Annual Meeting 2023 in Seattle, WA.
- 4/12/24 Joshi A, Baber J, **Jain A**, Kebaish K, Hassanzadeh H. Vancomycin Efficacy in Reducing Surgical Site Infection in Posterior Spinal Fusion. International Meeting on Advanced Spine Techniques (IMAST) Annual Meeting 2024 in San Diego, CA.
- 12/4/25 **Jain A**. Cost Utility Analysis of Cervical Laminoplasty vs. Laminectomy and Fusion. Cervical Spine Research Society Annual Meeting 2025 in Washington, DC.

Humanitarian Activities

- 02/14 Medical Mission to Ludhiana, India. Organization: Operation Walk
Volunteer orthopaedic surgeon in a team that performed 65 charity total hip and knee arthroplasties over a one-week period in Ludhiana, India.
- 04/16 Medical Mission to Antigua, Guatemala. Organization: Faith in Practice
Volunteer orthopaedic surgeon in a multidisciplinary team that performed 50 charity total joint arthroplasties and sports medicine surgeries over a one-week period in Antigua, Guatemala.