

Curriculum Vitae

SUKEN A. SHAH, MD

Nemours/Alfred I. duPont Hospital for Children
Department of Orthopaedics
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Wilmington, DE 19899
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CLINICAL APPOINTMENTS:

Alfred I. duPont Hospital for Children, Department of Orthopaedics
Wilmington, Delaware
Attending Pediatric Orthopaedic Surgeon (2000-present)
Division Chief, Spine and Scoliosis Service (2010-present)
Clinical Fellowship Director (2009-present)

Thomas Jefferson University, Department of Orthopaedic Surgery
Philadelphia, Pennsylvania
Associate Professor of Orthopaedic Surgery and Pediatrics

POST GRADUATE TRAINING:

Alfred I. duPont Hospital for Children, Department of Orthopaedics
Wilmington, Delaware
Fellowship in Pediatric Orthopaedics, 1999-2000

Thomas Jefferson University, Department of Orthopaedic Surgery
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HONORS / AWARDS:

Best Doctors in America (2007-2012)
Scoliosis Research Society Traveling Fellowship
American Academy of Orthopaedic Surgeons Achievement Award
Spinal Deformity Educational Group Advancement Award
Nemours Quality of Care Award of Excellence
Virtua Health Humanitarian Award
American Orthopaedic Association / Zimmer Resident Research Award
New Investigator Recognition Award – Orthopaedic Research Society
Alpha Omega Alpha Honor Medical Society
Grand Marshall – Jefferson Medical College Commencement
Sandoz Student Service Award – JMC Student Council President
Lange Medical Publications Award
Hobart Amory Hare Medical Honor Society
NIH Summer Scholar Research Fellowship
William Potter Research Award
Sigma Xi Society Award for Outstanding Research

CERTIFICATION:

American Board of Orthopaedic Surgery: 2002, re-certified 2012

MEDICAL LICENSURE:

Pennsylvania
Delaware
New Jersey

SOCIETY MEMBERSHIPS:

Scoliosis Research Society
Board of Directors (2011-present)
Program Committee (2011-present, Chair)
Education Committee (2012-present)
Worldwide Course Committee (2009-2012)
Research Council (2011-2012)
Growing Spine Committee (2009-present, Past-Chair)
Education Committee (2012-present)
Awards and Scholarships Committee (2012-present)
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American Medical Association
Medical Society of Delaware
Delaware Society of Orthopaedic Surgeons
Secretary/Treasurer (2008-present)
Jefferson Orthopaedic Society

JOURNAL REVIEWER:

Spine
Journal of Pediatric Orthopaedics
Journal of Spine Deformity
Journal of Orthopaedic Science
Scoliosis

PUBLICATIONS:

Butler C., Campos M., Sill H., Shah SA, Gardner T., Hollis T. "Histamine H₁ Receptor Mediates Decrease in Glomerular Surface Area of Filtration in Histamine-Infused Diabetic Rats," *FASEB Journal*, 42: 1990, 285.

Sill H., Shah S.A., Hollis T. "Shear Stress Patterns in Cultured Bovine Endothelial Cells," *FASEB Journal*, 42: 1990, 326.

Sinha R.K., Shah S.A., Tuan R.S. "Differential Attachment of Human Osteoblasts Upon Commonly Used Orthopaedic Implant Materials," *Jeff Orthop J*, 20: 1991, 67-74.

Sinha R.K., Shah S.A., Tuan R.S. "Cell Spreading and Attachment of Human Osteoblasts to Metallic Substrates," *J Cell Biol*, 115: 1991, 448.

Sinha R.K., Morris F., Shah S.A., Tuan R.S.. "Surface Composition of Orthopaedic Implant Materials Regulates Cell Adhesion, Spreading, and Cytoskeletal Organization of Primary Human Osteoblasts in Vitro," *Clin Orthop*, 305: 1994, 258-272.

Lin S.S., Shah S.A., Pizzutillo P.D., Tuan R.S. "In Vivo Efficacy of Antibiotic Delivery Using a Biodegradable Drug Delivery System," *Jeff Orthop J*, 22: 1993, 103-109.

Lane G.J., Hozack W.J., Shah S.A., Rothman R.H., Booth R.E., Eng K., Smith P. "Simultaneous Bilateral Versus Unilateral Total Knee Arthroplasty: An Outcomes Analysis," *Clin Orthop*, 345: 1997, 106-112.

Kupcha P.C., Shah S.A. "Posterior Tibial Tendon Dysfunction as a Cause of Acquired Flatfoot in Adults," *Del Med J*, 69: 255-257, 1997.

Shah S.A. Kupcha P.C. "Posterior Tibial Tendon Dysfunction as a Cause of Acquired Flatfoot in Adults," *Jeff Orthop J*, 26: 1997, 86-89.

Lane G.J., Shah S.A., Hozack W.J., Rothman R.H., Booth R.E., Eng K., Smith P. "Simultaneous Bilateral Versus Unilateral Total Knee Arthroplasty: An Analysis of Relative Risk, Complications and Cost," *Jeff Orthop J*, 26: 1997, 64-68.

Becker C.E., Keeler K.A., Kruse R.W., Shah S.A. "Complications of Blade Plate Removal," *J Ped Orthop*, 19(2): 1999, 188-193.

Anderson S.A., Shah S.A., Bowen J.R. "Humeral Lengthening and Intraoperative Neurophysiologic Monitoring Techniques: A Case Report and Review of the Literature," *Jeff Orthop J*, 29: 2000, 47-53.

PUBLICATIONS: *(continued)*

PUBLICATIONS: *(continued)*

Sponseller PD, Jain A, Lenke LG, Shah S.A., Sucato DJ, Emans JB, Newton PO. “Vertebral column resection in children with neuromuscular spine deformity,” *Spine* 37(11): E655-61, 2012.

Lonner BS, Lazar-Antman MA, Sponseller PD, Shah S.A., Newton PO, Betz R, Shufflebarger HL. “Multivariate analysis of factors associated with kyphosis maintenance in adolescent idiopathic scoliosis,” *Spine* 37(15): 1297-302, 2012.

Oto M, Holmes L, Rogers KJ, Yilmaz G, Yorgova P, Shah S.A., “Outcomes of posterior titanium spinal instrumentation in neuromuscular scoliosis patients,” *Joint Dis Rel Surg* [Eklem Hastalik Cerrahisi] 23(1): 30-4, 2012.

Marks M, Newton PO, Petcharaporn M, Bastrom TP, Shah S.A., Betz R, Lonner B, Miyanji F. “Postoperative segmental motion of the unfused spine distal to the fusion in 100 patients with adolescent idiopathic scoliosis,” *Spine* 37(10): 826-32, 2012.

Gjolaj JP, Sponseller PD, Shah SA., Newton PO, Flynn JM, Neubauer PR, Marks MC, Bastrom TP. “Spinal deformity correction in Marfan syndrome versus adolescent idiopathic scoliosis: learning from the differences,” *Spine* 37(18):1558-1565, 2012.

Yilmaz G, Borkkhuu B, Dhawale AA, Oto M, Littleton AG, Mason DE, Gabos PG, Shah SA. “Comparative analysis of hook, hybrid and pedicle screw instrumentation in the posterior treatment of adolescent idiopathic scoliosis,” *J Pediatr Orthop* 32(5): 490-9, 2012.

Newton PO, Bastrom TP, Emans JB, Shah SA., Shufflebarger HL, Sponseller PD, Sucato DJ, Lenke LG. “Antifibrinolytic agents reduce blood loss during pediatric vertebral column resection procedures,” *Spine* 37(23): E1459-63, Aug. 2012. PMID:22872217

Thabet AM, Kowtharapu DN, Miller F, Dabney KW, Shah SA., Rogers K, Holmes L Jr. “Wrist fusion in patients with severe quadriplegic cerebral palsy,” *Musculoskelet Surg* 96(3): 199-204, Aug. 2012. PMID:22893448

McElroy MJ, Sponseller PD, Dattilo JR, Thompson GH, Akbarnia BA, Shah SA., Snyder BD, Growing Spine Study Group. “Growing rods for the treatment of scoliosis in children with cerebral palsy: a critical assessment,” *Spine* 37(24): E1504-10, Aug. 2012. PMID:22926278

Oda, JE, Shah SA., Mackenzie WG, Akbarnia BA, Yazici M, “Concurrent Tethered Cord Release and Growing-Rod Implantation-Is it Safe?”, *Global Spine*, December 2012

Lenke LG, Newton PO, Sucato DJ, Shufflebarger HL, Emans JB, Sponseller PD, Shah SA., Sides BA, Blanke KM. “Complications following 147 consecutive vertebral column resections for severe pediatric spinal idiopathic scoliosis,” *Spine* 37(24): E1504-10, Aug. 2012. PMID:22926278

PUBLICATIONS: *(continued)*

Yilmaz G, Hwang S, Oto M, Rogers KJ, Bober MB, Cahill PJ, Kruse RW, Shah SA, "Surgical treatment of

TEXTBOOK CHAPTERS:

Shah S.A., Vaccaro A.R., Becker C.E. "Fixed Traumatic Atlantoaxial Rotatory Deformity," in *Mastercases: Spine Surgery*, Vaccaro A.R., Albert T.J. (eds). New York: Thieme, 2000.

Shah S.A., Kramer D.L., Klein G.R., Cotler J.M. "Traumatic Injuries of the Occipitocervical Junction," in *Mastercases: Spine Surgery*, Vaccaro A.R., Albert T.J. (eds). New York: Thieme, 2000.

Klein G.R., Shah S.A., Vaccaro A.R. "Bilateral Cervical Facet Joint Dislocation without Neurologic Deficit," in *Mastercases: Spine Surgery*, Vaccaro A.R., Albert T.J. (eds). New York: Thieme, 2000.

Shah S.A. "The Hip." In *Gellis & Kagan's Current Pediatric Therapy, 17/e*, Burg F.D., Ingelfinger J.R., Polin R.A., Gershon A.A. (eds). Philadelphia: W.B. Saunders, 2002.

Shah S.A., Buono L.M., Frueh W.W., Saxena A., Vaccaro A.R. "Congenital Intraspinous Abnormalities of the Cervical, Thoracic, Lumbar and Sacral Spine." In *Principles and Practice of Spine Surgery*, Vaccaro A.R., Betz R.R., Zeidman S.M. (eds). Philadelphia: Mosby, 2003.

Shah S.A., Takemitsu M., Westerlund E., Albert T.J. "Kyphosis: Scheuermann's Disease and Congenital Deformity." In *Rothman and Simeone's The Spine, 5/e*, Herkowitz H.N., Bell G., Garfin S. (eds). Philadelphia: Lippincott Williams & Wilkins, 2005.

Shah S.A., Takemitsu M. "Posterior Surgical Anatomy and Posterior Surgical Approaches to the Thoracic Spine and Thoracolumbar Junction." In *Surgical Techniques in Spinal Instrumentation*, Vaccaro A.R., Fessler R.G., Kim D. (eds). New York: Thieme Medical Publishers Inc., 2005.

Mackenzie W.G., Shah S.A., Takemitsu M. "The Cervical Spine in Skeletal Dysplasia." In *The Cervical Spine, 4/e*, Clark C.R. (ed). Philadelphia: Lippincott Williams & Wilkins, 2005.

Shah S.A., Stankovits L.M. "The Hip." In *Current Pediatric Therapy, 18/e*, Burg F.D., Ingelfinger J.R., Polin R.A., Gershon A.A. (eds). Philadelphia: Saunders Elsevier, 2006.

Shah SA. "Scheuermann's Kyphosis." In: *Spinal Deformities: The Essentials*, Heary RF, Albert TJ, (eds). New York: Thieme, Inc., 2007.

Shah SA. Section Editor for "Systemic Disorders," *Orthopaedic Knowledge Update 9*. Rosemont, IL: American Academy of Orthopaedic Surgeons, 2008.

Shah SA., Belthur M. "Thoracoplasty for Rib Deformity." In *Spine Surgery: Operative Techniques*, Vaccaro AR and Baron E (eds). Philadelphia: Saunders/Elsevier, 2008.

Shah SA., DePass K. "Evaluation and Surgical Management of Lumbar Injuries in Children." In *Atlas of Spine Trauma: Adult and Pediatric*, Kim DH, Ludwig SC, Vaccaro AR, Chang J-C (eds). Philadelphia: Saunders/Elsevier, 2009.

Shah SA., Smith H. "Operative Treatment of Neuromuscular Spinal Deformity." In *Surgical Management of Spinal Deformities*, Errico TJ, Lonner BS, Moulton A (eds). Philadelphia: Saunders/Elsevier, 2009.

Shah SA., Oda J. "Spine Trauma." In *Orthopaedic Knowledge Update: Pediatrics 4*, Song KM (ed). Rosemont, IL: American Academy of Orthopaedic Surgeons, 2011.

Hwang S, Samdani A, Shah SA. "Kyphosis." In *Orthopaedic Knowledge Update: Pediatrics 4*, Song KM (ed). Rosemont, IL: American Academy of Orthopaedic Surgeons, 2011.

SCIENTIFIC PRESENTATIONS:

SCIENTIFIC PRESENTATIONS: *(continued)*

Tsirikos A., Shah S.A

SCIENTIFIC PRESENTATIONS: *(continued)*

Senaran H., Shah S.A., Dabney K.W., Miller F., “The Associated Effects of Unilateral Hip Dislocation in Cerebral Palsy Scoliosis,” Pediatric Orthopaedic Society of North America Annual Meeting, San Diego, CA, 2006.

Shah S.A., Senaran H., Presedo A., Dabney K.W., Miller F., “Scoliosis Progression after Intrathecal Baclofen Therapy in Cerebral Palsy,” 25th Annual Meeting of the European Pediatric Orthopaedic Society, Dresden, Germany, 2006.

Shah S.A., “Do Modern Techniques Alter Indications or Outcomes for Pediatric Scoliosis Surgery?: Pedicle Screws,” Scoliosis Research Society Pre-Meeting Course, Monterey, CA, 2006.

Senaran H., Shah S.A., Glutting J., Dabney K.W., Miller F., “Scoliosis in Cerebral Palsy: Natural History and Risk Factors for Progression,” Scoliosis Research Society, 41st Annual Meeting, Monterey, CA, 2006.

Senaran H., Shah S.A., Dabney K.W., Miller F., “The Associated Effects of Unilateral Hip Dislocation in Cerebral Palsy Scoliosis,” Scoliosis Research Society, 41st Annual Meeting, Monterey, CA, 2006.

Shah S.A., Senaran H., Glutting J., Dabney K.W., Miller F., “The Natural History of Scoliosis in Children with Spastic Quadriplegic Cerebral Palsy,” American Society of Pediatric Orthopaedics, 25th Annual Meeting, San Diego, CA, 2006.

SCIENTIFIC PRESENTATIONS: *(continued)*

Shah S.A., Borkhuu B., Littleton A.G., Belthur M.V., Mason D.E., Gabos P.G., “Pedicule Screw Versus Hook Versus Hybrid Instrumentation in PSF for AIS – A Minimum 2 Year Follow Up Comparative Study,” 14

SCIENTIFIC PRESENTATIONS: *(continued)*

Shah S.A., Ramirez-Garnica G, Ye G, Stanton RP, Celerin L. “What Factors are Important in Determining Intraoperative Blood Loss During Scoliosis Surgery?” Spinal Deformity: Current Concepts, SRS Worldwide Regional Meeting, New Delhi, India, 2008.

Shah S.A., Sponseller P.D., Abel M.F., Newton P.O., Sucato D.J., Letko L., Betz R.R., “Pelvic Fixation in Cerebral Palsy Scoliosis Results in Better Restoration of Pelvic Obliquity, Sitting Ability and a Lower Reoperation Rate: Do the Benefits Outweigh the Costs?” Spinal Deformity: Current Concepts, SRS Worldwide Regional Meeting, New Delhi, India, 2008. 44[(d)- EMC /P #MCID 6BDC BT8 0 0 1 93.624 579.82 Tm[(32.75ah)4()-2(S.A)10(.)-2(.)] TJET0 g93.624 637.06 42.485

Shah S.A., Newton PO, Shufflebarger HL, O’Brien MF, Betz RR, Bastrom T, Marks MC. “The Uniplanar Screw: A New T6SLQE3BNL36XU0

SCIENTIFIC PRESENTATIONS: *(continued)*

Yang JS, Sponseller PD, Akbarnia BA, Thompson GH, Kostial P, Solari P, Emans JB, Skaggs DL, Yacizi M, Shah S.A., Asher MA, Growing Spine Study Group. "Indications and Practice of Growing Rods: Characterizing Current Use," 16th International Meeting on Advanced Spine Techniques, Vienna, Austria, 2009.

Shah S.A., Fisher AO, Heck J, Shaffer TH, Theroux MC. "Tryptase Expression as a Marker of Lung Injury During Thoracoscopic Surgery: A Porcine Model of Single Lung Ventilation," 16th International Meeting on Advanced Spine Techniques, Vienna, Austria, 2009.

Yaszay B, Newton PO, Shufflebarger HL, Shah S.A., Bastrom T, Harms Study Group. "A New Indication for Ponte Releases in Adolescent Idiopathic Scoliosis: Restoring Thoracic Kyphosis," 16th International Meeting on Advanced Spine Techniques, Vienna, Austria, 2009.

Shah SA. Newton PO, Lonner BS, Shufflebarger HL, Bastrom T, Marks MC. "Rod Strength: Is it an Important Factor in Coronal and Sagittal Realignment after Surgery for Adolescent Idiopathic Scoliosis?" 16th International Meeting on Advanced Spine Techniques, Vienna, Austria, 2009.

Shah SA. Tally WC, Muzumdar A, Ingalhalikar A, Moldavsky M, Khalil S. "Sequential Release of the Posterior Elements Increases Vertebral Rotation and Kyphosis Generation: A Cadaveric Study," 16th International Meeting on Advanced Spine Techniques, Vienna, Austria, 2009.

Auerbach JA, Crerand CE, Lonner BS, Shah SA. Flynn JM, Bastrom T, Bowe WP, Newton PO. "Body Image in Patients with Adolescent Idiopathic Scoliosis: Validation of the Body Image Disturbance Questionnaire-Scoliosis Version," 16th International Meeting on Advanced Spine Techniques, Vienna, Austria, 2009.

Lonner BS, Kean KE, Sponseller PD, Shufflebarger HL, Shah SA. Crawford AH, O'Brien MF, Betz RR, Newton PO. "Scheuermann Kyphosis: Prospective Evaluation of Clinical Presentation and Impact on Quality of Life in 43 Patients," 16th International Meeting on Advanced Spine Techniques, Vienna, Austria, 2009.

Marks MC, Newton PO, Betz RR, Sponseller PD, Lonner BS, Shah SA. Shufflebarger HL, Harms Study Group. "Surgical Site Infection (SSI) in Spinal Surgery: The Newest "Never" Event," 16th International Meeting on Advanced Spine Techniques, Vienna, Austria, 2009.

Shah SA. Oda JE, Yorgova P, Ali MHM, Rogers KJ, Holmes LH. "Titanium Instrumentation for the Treatment of Spinal Deformity in Children: Does the Type of Metal Matter?" 16th International Meeting on Advanced Spine Techniques, Vienna, Austria, 2009.

Oda JE, Shah SA. Mackenzie WG. "Concurrent Tethered Cord Release and Growing Rod Implantation: Is it Safe?" 16th Intl Meeting on Advanced Spine Techniques, Vienna, Austria, 2009.

Dalal AH, Newton PO, Upasani VV, Shah SA. Harms Study Group. "A Novel Method for Assessing the Axial Plane in Scoliosis Demonstrates Uniplanar Screws Outperform Polyaxial Screws," Scoliosis Research Society 44th Annual Meeting, San Antonio, TX, 2009.

Shah SA. Garrido E, Farooq N, Tucker SK, Noordeen MH. "In vivo Distraction Force and Length Measurements of Growing Rods: Which Factors Influence the Ability to Lengthen?" Scoliosis Research Society 44th Annual Meeting, San Antonio, TX, 2009.

Schwartz DM, Sestokas AK, Bhalodia VM, Wiggins CR, Flynn JM, Mackenzie WG, Shah SA. Gabos PG, Bowen JR, Crawford AH, Wall EJ, Dormans JP. "The Role of Neuromonitoring in Growing Rod and Rib-based Instrumentation Surgery," Scoliosis Research Society 44th Annual Meeting, San Antonio, TX, 2009.

SCIENTIFIC PRESENTATIONS: *(continued)*

Farooq N, Shah SA, Garrido E, Altaf F, Dartnell J, Tucker SK, Noordeen MH. “Submuscular Growing Rods: Technique, Results and Complications of 88 Patients with Minimum 2-year Follow-up,” Scoliosis Research Society 44th Annual Meeting, San Antonio, TX, 2009.

Marks MC, Newton PO, Petcharaporn M, Bastrom T, Shah SA, Betz RR, Lonner BS, Miyanji F. “A More Distal Fusion is Associated with Increased Motion at L4/L5: A Set-up for Degeneration?” Scoliosis Research Society 44th Annual Meeting, San Antonio, TX, 2009.

Lonner BS, Kean KE, Sponseller PD, Shufflebarger HL, Shah SA, Crawford AH, Betz RR, Newton PO. “Body Mass Index in Scheuermann Kyphosis: Does BMI Differ in Patients with SK vs. AIS?” Scoliosis Research Society 44th Annual Meeting, San Antonio, TX, 2009.

Shah SA, Yorgova P, Ali MHM, Rogers KJ. “Beta Tricalcium Phosphate as a Bone Graft Substitute for the Posterior Treatment of Adolescent Idiopathic Scoliosis: Results of a Prospective Clinical Study,” Scoliosis Research Society 44th Annual Meeting, San Antonio, TX, 2009.

Shah SA.

SCIENTIFIC PRESENTATIONS: *(continued)*

~~Lonner BS, Kean KE, Sponser PD, Shuffelbarger HL, Shah SA, Crawford A, O'Brien MF, Betz RR, Newton~~
PO. "Sheuermann Kyphosis: Clinical Presentation and Impact on Quality of Life," Annual Meeting of the American Academy of Orthopaedic Surgeons, New Orleans, LA, 2010.

Marks MC, Newton PO, Petcharaporn M, Bastrom T, Shah SA, Lonner BS, Miyajji F. "Unfused Segmental Motion Increases with a More Distal Fusion: A Set-up for Disc Degeneration?" Pediatric Orthopaedic Society of North America Annual Meeting, Waikoloa, HI, 2010.

Shah SA, Garrido E, Farooq N, Tucker SK, Noordeen MH. "In vivo Distraction Force and Length Measurements of Growing Rods: Which Factors Influence the Ability to Lengthen?" Pediatric Orthopaedic Society of North America Annual Meeting, Waikoloa, HI, 2010.

Yilmaz G, Rogers KJ, Shah SA. "Surgical Treatment of Scoliosis in Osteogenesis Imperfecta Patients with Cement Augmented Pedicle Screw Instrumentation," Pediatric Orthopaedic Society of North America Annual Meeting, Waikoloa, HI, 2010.

SCIENTIFIC PRESENTATIONS: *(continued)*

SCIENTIFIC PRESENTATIONS: *(continued)*

Shah SA, “Better Patient-Based Outcomes in Adolescent Idiopathic Scoliosis with All Pedicle Screw Constructs,”
Pediatric Orthopaedic Society of North America Annual Meeting, Montreal, Canada, 2011.

Sponseller PD, Gjolaj JP, Narayanan UG, Shah SA.

SCIENTIFIC PRESENTATIONS: *(continued)*

Samdani AF, Garg H, Cahill PJ, Marks MC, Bastrom T, Lonner BS, Shah SA, Miyanji F, Shufflebarger HL, Newton PO, Betz RR. "Treatment of Adolescent Idiopathic Scoliosis with All Pedicle Screw Constructs with Minimum Five Year Follow Up," 18th International Meeting on Advanced Spine Techniques, Copenhagen, Denmark, 2011.

Lonner BS, Yaszay B, Terran JS, Newton PO, Shah SA, Sponseller PD, Samdani AF, Betz RR, Shufflebarger HL. "Early and One Year Complication Rates in Scheuermann's Kyphosis: Are the Surgical Challenges Different from Adolescent Idiopathic Scoliosis?" 18th International Meeting on Advanced Spine Techniques, Copenhagen, Denmark, 2011.

Shah SA, Dhawale AA, Reichard S, Holmes L, Brislin R, Rogers KJ, Mackenzie WG. "Casting for Early Onset Scoliosis: The Pitfall of Increased Peak Inspiratory Pressure," Scoliosis Research Society 46th Annual Meeting and Course, Louisville, KY, 2011.

Yaszay B, Kabirian N, Pawelek J, Emans JB, Johnston CE, Shah SA, Mundis GM, Akbarnia BA, Growing Spine Study Group. "Beware the Risks of Instrumenting to the Pelvis in Ambulatory Early Onset Scoliosis Patients Treated with Growth Sparing Surgery," Scoliosis Research Society 46th Annual Meeting and Course, Louisville, KY, 2011.

Shah SA, Winters B, Curry EP, Yorgova P, Neiss G, Hilibrand AS, Harms Study Group. "Cervical Sagittal Contour Decomensation Before and After Posterior Surgery for Adolescent Idiopathic Scoliosis," Scoliosis Research Society 46th Annual Meeting and Course, Louisville, KY, 2011.

Cahill PJ, Samdani AF, Pahys JM, Gresh M, Yaszay B, Marks MC, Bastrom T, Lonner BS, Shah SA, Shufflebarger HL, Newton PO, Betz RR. "Youth and Experience: The Effect of Surgeon Experience on Outcomes in AIS Surgery," Scoliosis Research Society 46th Annual Meeting and Course, Louisville, KY, 2011.

Shah SA, Wiggins CR, Schwartz DM, Sestokas AK, Rogers KJ, Gabos PG, Dabney KW, Miller F. "Spinal Cord Monitoring During Scoliosis Surgery in Children with Spastic Cerebral Palsy: Is It Feasible and Safe Even with an Active Seizure Disorder?" Scoliosis Research Society 46th Annual Meeting and Course, Louisville, KY, 2011.

Lonner BS, Teran JS, Newton PO, Shah SA, Betz RR, Sponseller PD, Samdani AF, Shufflebarger HL. "MRI Screening in Operative Scheuermann's Kyphosis: Is it Necessary?" Scoliosis Research Society 46th Annual Meeting and Course, Louisville, KY, 2011.

Lonner BS, Newton PO, Teran JS, Betz RR, Sponseller PD, Shah SA, Samdani AF, Shufflebarger HL. "Scheuermann's Kyphosis: Impact on Quality of Life in 86 Patients," Scoliosis Research Society 46th Annual Meeting and Course, Louisville, KY, 2011.

Gjolaj J, Sponseller PD, Shah SA, Newton PO, Marks MC, Bastrom T, Flynn JM, Lonner BS, Samdani AF. "Spinal Deformity in Marfan vs. AIS: Learning from the Differences," Scoliosis Research Society 46th Annual Meeting and Course, Louisville, KY, 2011.

Samdani AF, Garg H, Cahill PJ, Marks MC, Bastrom T, Clements DH, Shah SA, Shufflebarger HL, Betz RR, Newton PO. "Five Year Results for Lenke 1 or 2 Curves: Comparison of Anterior, Posterior Hybrid and Posterior All Pedicle Screws," Scoliosis Research Society 46th Annual Meeting and Course, Louisville, KY, 2011.

Shah SA, Dhawale AA, Sponseller PD, Bastrom T, Neiss GI, Yorgova P, Newton PO, Yaszay B, Shufflebarger HL, Gabos PG, Dabney KW, Miller F, Harms Study Group. "The Use of Antifibrinolytics Substantially Reduces Blood Loss During Surgery for Cerebral Palsy Scoliosis," Scoliosis Research Society 46th Annual Meeting and Course, Louisville, KY, 2011.

Marks MC, Bastrom T, Petcharaporn M, Betz RR, Shufflebarger HL, Lonner BS, Shah SA, Newton PO. "Post-Operative Trunk Mobility is Better with the Anterior Approach vs. Posterior in Thoracolumbar Scoliosis," Scoliosis Research Society 46th Annual Meeting and Course, Louisville, KY, 2011.

SCIENTIFIC PRESENTATIONS: *(continued)*

Marks MC, Bastrom T, Petcharaporn M, Betz RR, Shufflebarger HL, Lonner BS, Shah SA, Newton PO. "Trunk Motion Improves Over Time after Spinal Fusion for Adolescent Idiopathic Scoliosis," Scoliosis Research Society 46th Annual Meeting and Course, Louisville, KY, 2011.

Lonner BS, Teran JS, Newton PO, Bastrom T, Shah SA, Betz RR, Samdani AF, Shufflebarger HL, Sponseller PD. "Is Preoperative PFT Assessment Worthwhile in Scheuermann's Kyphosis?" Scoliosis Research Society 46th Annual Meeting and Course, Louisville, KY, 2011.

Shah SA, Yorgova P, Neiss GI, GabBD(u)6(f)8340003>20034.12 Tm[(Sh)8(ah)4()-2(SA)] TJET0 g281.81 637.06 34.944 0.48 re

SCIENTIFIC PRESENTATIONS: *(continued)*

Pourtaheri S, Miller F, Dabney KW, Shah SA, Dubowy S, Holmes L. “Assessment of Deep Wound Infections Following Pediatric Scoliosis Surgery,” 19th International Meeting on Advanced Spine Techniques, Istanbul, Turkey, 2012.

Akbarnia BA, Kabirian N, Pawelek J, Zhang D, Redding G, Emans JB, Shah SA, Johnston CE, Growing Spine Study Group. “Is there a Significant Increase in Thoracic Height after Growing Rod Surgery for Early Onset Scoliosis?” 19th International Meeting on Advanced Spine Techniques, Istanbul, Turkey, 2012.

Dhawale AA, Shah SA, Yorgova P, Neiss GI, Layer D, Rogers KJ, Gabos PG, Holmes L. “Cross-linking Posterior Segmental Instrumentation in Adolescent Idiopathic Scoliosis Has No Demonstrable Clinical or Radiographic Effect,” 19th International Meeting on Advanced Spine Techniques, Istanbul, Turkey, 2012.

Marks MC, Bastrom T, Petcharaporn M, Shah SA, Samdani AF, Lonner BS, Miyanji F, Newton PO. “Motion of the Unfused Lumbar Segments Remains Increased up to Six Years after Fusion for AIS,” Scoliosis Research Society 47th Annual Meeting and Course, Chicago, IL, 2012.

Shah SA, Karatas AF, Dhawale AA, Dede O, Holmes L, Yorgova P, Neiss GI, Mundis GM, Pawelek J, Akbarnia BA, Growing Spine Study Group. “What is the Effect of Serial Growing Rod Lengthening on the Sagittal Profile and Pelvic Parameters in Early Onset Scoliosis?” Scoliosis Research Society 47th Annual Meeting and Course, Chicago, IL, 2012.

Samdani AF, Belin EJ, Miyanji F, Pahys JM, Shah SA, Newton PO, Betz RR, Sponseller PD. “Major Perioperative Complications after Surgery for Cerebral Palsy: Assessment of Risk Factors,” Scoliosis Research Society 47th Annual Meeting and Course, Chicago, IL, 2012.

Larson AN, Polly DW, Ackerman SJ, Ledonio CGT, Lonner BS, Shah SA

INVITED LECTURESHIPS / COURSE FACULTY:

“Supracondylar Fractures of the Humerus in Children,” Thomas Jefferson University Department of Orthopaedic Surgery Grand Rounds, Philadelphia, PA, 1998.

“Developmental Dysplasia of the Hip,” Thomas Jefferson University Department of Orthopaedic Surgery Grand Rounds, Philadelphia, PA, 1998.

“Developmental Dysplasia of the Hip: Current Concepts,” Jefferson Medical College Alumni Reunion Class Clinics, Philadelphia, PA, 1999.

“Knee Injuries in the Pediatric and Adolescent Athlete,” Thomas Jefferson University Department of Orthopaedic Surgery Grand Rounds, Philadelphia, PA, 2000.

“Knee Injuries in the Pediatric and Adolescent Athlete,” Kent General Hospital, Department of Pediatrics Continuing Education, Dover, DE, 2000.

“Sports Injuries in Children,” Riddle Memorial Hospital, Department of Pediatrics Continuing Education, Springfield, PA, 2001.

“Cervical Spine Disorders in Children,” Thomas Jefferson University Department of Orthopaedic Surgery Grand Rounds, Philadelphia, PA, 2001.

“Pain Management in Orthopaedic Surgery,” duPont Hospital for Children, Department of Therapeutic Services, Wilmington, DE, 2001.

“Knee Injuries in the Pediatric and Adolescent Athlete,” Bethesda Naval Hospital, Department of Orthopaedics Visiting Professor, Bethesda, MD, 2001.

“Cervical Spine Disorders in Children,” Bethesda Naval Hospital, Department of Orthopaedics Visiting Professor, Bethesda, MD, 2001.

“Sports Injuries in Children,” Voorhees Pediatric Rehabilitation Hospital, Department of Pediatrics Continuing Education, Voorhees, NJ, 2001.

“Long Bone and Pelvic Fractures in Children,” 4th Annual Trauma Symposium, Atlantic City Medical Center, Atlantic City, NJ, 2002.

“Developmental Dysplasia of the Hip: Current Concepts,” Guest Lecturer, University of Medicine and Dentistry of New Jersey, Stratford, NJ, 2002.

“Contemporary Strategies for Treatment of Pediatric Elbow Fractures,” Guest Lecturer, University of Medicine and Dentistry of New Jersey, Stratford, NJ, 2002.

“Pediatric Sports Medicine Injuries,” Delaware Athletic Trainers Conference, Wilmington, DE, 2002.

“Sports Injuries in Children,” Virtua Health System, Department of Pediatrics Continuing Education, Voorhees, NJ, 2002.

“The Monarch™ Spinal System for the ^

INVITED LECTURESHIPS / COURSE FACULTY: *(continued)*

INVITED LECTURESHIPS / COURSE FACULTY: *(continued)*

“Anatomic Position of the Aorta Before and After Anterior Thoracoscopic Spinal Surgery for Scoliosis,” 18th Isola Study Group, Kansas City, MO, 2004.

“Adolescent Idiopathic Scoliosis: Current State of the Art,” Guest Lecturer, University of Medicine and Dentistry of New Jersey, Stratford, NJ, 2004.

“Back Pain / Neck Pain in the Adolescent,” Department of Pediatrics Grand Rounds, Chester County Hospital, West Chester, PA, 2004.

“Thoracic Pedicle Screws in Adolescent Idiopathic Scoliosis: Technique, Rationale, Pros and Cons,” Advanced Techniques in Posterior Spinal Deformity Surgery Tutorial, San Diego, CA, 2004.

“Sacral/Pelvic Fixation Options in Spinal Deformity Correction,” Advanced Techniques in Posterior Spinal Deformity Surgery Tutorial, San Diego, CA, 2004.

“Thoracoscopic Spinal Deformity Surgery: Indications, Techniques and Complications,” Department of Anesthesiology and Critical Care Grand Rounds, Alfred I. duPont Hospital for Children, Wilmington, DE, 2004.

“Overuse Athletic Injuries in the Adolescent/Pediatric Population,” Medical Aspects of Sports, 36th Annual Seminar, Department of Health and Exercise Science, University of Delaware, Newark, DE, 2005.

INVITED LECTURESHIPS / COURSE FACULTY: *(continued)*

“The Use of Fulcrum Bending Radiographs in the Treatment of Adolescent Idiopathic Scoliosis with Pedicle Screw Instrumentation,” Orthopaedic Spine Service Grand Rounds, Queen Mary Hospital, Hong Kong University, Hong Kong, 2005.

“Spinal Fusion in Ambulatory Cerebral Palsy Patients: Can a Child Walk after Instrumentation to the Pelvis?” Department of Orthopaedics and Traumatology Research Day, Prince of Wales Hospital, Chinese University of Hong Kong, Hong Kong, 2005.

“Adolescent Spinal Deformity: The Role and Technique of Thoracic Pedicle Screws,” Department of Orthopaedics and Traumatology Research Day, Chinese University of Hong Kong, Hong Kong, 2005.

INVITED LECTURESHIPS / COURSE FACULTY: *(continued)*

“A Prospective Comparison of Coronal Deformity Correction in Thoracic Scoliosis Using Segmental Thoracic Pedicle Screw Instrumentation and Fulcrum-Bending Radiographs,” Mexican Pediatric Orthopaedic Society, 19th

INVITED LECTURESHIPS / COURSE FACULTY: *(continued)*

“Scoliosis: Current Concepts and Future Directions,” Jefferson Medical College Department of Pediatrics Grand Rounds, Philadelphia, PA, 2007.

“Pediatric Orthopaedic Injuries,” Pediatric Trauma – Protecting our Future, Wilmington, DE, 2007.

“Treatment of Scoliosis and Pelvic Obliquity,” Orthopaedic Treatment of Cerebral Palsy: Current Concepts Update POSNA Tutorial, Wilmington, DE, 2007.

“Intrathecal Baclofen Therapy for the Treatment of Spasticity: Implantation, Management and Troubleshooting,” Orthopaedic Treatment of Cerebral Palsy: Current Concepts Update POSNA Tutorial, Wilmington, DE, 2007.

“Complications of Spinal Surgery for Neuromuscular Scoliosis,” Orthopaedic Treatment of Cerebral Palsy: Current Concepts Update POSNA Tutorial, Wilmington, DE, 2007.

“The Pediatric Orthopaedic Exam,” R.O.Y. Warren Memorial Medical Seminar, Wilmington, DE 2007.

“Pediatric Orthopaedic Injuries,” Pediatric Trauma – Protecting Our Future Conference, Wilmington, DE, 2007. Published at PedsEducation.org (http://www.pedseducation.org/online_education/UnitPage.cfm?unitID=20080205).

“Junctional Problems in Spinal Surgery,” Complications in Spine Surgery – A Case Based Approach, Las Vegas, NV, 2007.

“Neurological Complications in Spinal Deformity Surgery,” Complications in Spine Surgery – A Case Based Approach, Las Vegas, NV, 2007.

Instructional Course Lectures and Workshops, 4th International Pediatric Orthopaedic Symposium, Orlando, FL, 2007.

“Fusionless Treatment of Scoliosis: An Update,” Grand Rounds Presentation, Great Ormond Street Hospital, London, England, 2008.

“Pros and Cons of Thoracic Pedicle Screw Use in Pediatric/Adolescent Deformity,” Cedars-Sinai Seventh Annual Symposium on Current Concepts in Spinal Disorders, Las Vegas, NV, 2008.

“Fusionless Treatment for Scoliosis,” Cedars-Sinai Seventh Annual Symposium on Current Concepts in Spinal Disorders, Las Vegas, NV, 2008.

“Apical Derotation vs. Thoracic Hypokyphosis,” Vail Spinal Summit, Vail, CO, 2008.

“Minimally Invasive Proximal and Distal Fixation in Deformity Surgery,” “Advanced Deformity Hands-On Practical Lab, Las Vegas, NV, 2008.

“Vertebral Derotation Techniques,” Advanced Deformity Hands-On Practical Lab, Las Vegas, NV, 2008.

“The Ponte Osteotomy for Deformities Other than Scheuermann’s Kyphosis,” Advanced Spinal Deformity Summit, Miami, FL, 2008.

“Vertebral Body Derotation: D Advanced Spinal Deformity

INVITED LECTURESHIPS / COURSE FACULTY: *(continued)*

“Minimally Invasive Instrumentation in Spinal Deformity Surgery: Managing the Learning Curve,” Advanced Spinal Deformity Summit, Miami, FL, 2008.

“Spondylolysis and Spondylolisthesis,” POSNA One Day Course: Sports Related Injuries in the Skeletally Immature Athlete, Albuquerque, NM, 2008.

“Debate: Overzealous Correction of the Frontal Plane in Scoliosis Surgery,” Passionate about Spine Meeting, Brocket Hall, Welwyn, England, 2008.

“The Treatment of Scoliosis in Cerebral Palsy: The Controversies,” Passionate about Spine Meeting, Brocket Hall, Welwyn, England, 2008.

“Fusionless Surgery for Scoliosis,” Passionate about Spine Meeting, Brocket Hall, Welwyn, England, 2008.

Instructional Course Lectures and Workshops, 5th International Pediatric Orthopaedic Symposium, Orlando, FL, 2008.

INVITED LECTURESHIPS / COURSE FACULTY: *(continued)*

“Contemporary Topics in Genetic Testing for Scoliosis,” Educational Symposium in combination with the Pediatric Orthopaedic Society of North America Annual Meeting, Waikoloa, HI, 2010

INVITED LECTURESHIPS / COURSE FACULTY: *(continued)*

“AIS Case Review,” 7th International Pediatric Orthopaedic Symposium, Orlando, FL, 2010.

“Treatment Challenges in Early Onset Scoliosis,” Visiting Professor, Pediatric Spine Update, ALL India Institute of Physical Medicine and Rehabilitation, Mumbai, India, 2011.

“Classification of Adolescent Idiopathic Scoliosis and its Role in Planning Surgery,” Association of Spinal Surgeons of India 24th Annual Conference, Mumbai, India, 2011.

“Choosing Anchorage Elements and Correction Maneuvers in Adolescent Idiopathic Scoliosis,” Association of Spinal Surgeons of India 24th Annual Conference, Mumbai, India, 2011.

“Proximal and Distal Junctional Problems after Deformity Surgery,” Association of Spinal Surgeons of India 24th Annual Conference, Mumbai, India, 2011.

“Growing Rod Techniques in Early Onset Scoliosis,” Association of Spinal Surgeons of India 24th Annual Conference, Mumbai, India, 2011.

“Kyphosis – Scheuermann and Congenital,” Association of Spinal Surgeons of India 24th Annual Conference, Mumbai, India, 2011.

Guest Lectures and Case Presentations (Moderator), Association of Spinal Surgeons of India 24th Annual Conference, Mumbai, India, 2011.

“High Grade Spondylolisthesis: An Overview of Surgical Techniques,” Association of Spinal Surgeons of India 24th Annual Conference, Mumbai, India, 2011.

“Normal Radiographic Parameters in the Pediatric Cervical Spine and Advanced Imaging,” Pediatric Cervical Spine: Current Concepts and Techniques of Management (Instructional Course Moderator), Annual Meeting of the American Academy of Orthopaedic Surgeons, San Diego, CA 2011.

“Cervical Spinal Instrumentation,” Pediatric Cervical Spine: Current Concepts and Techniques of Management (Instructional Course Moderator), Annual Meeting of the American Academy of Orthopaedic Surgeons, San Diego, CA 2011.

“Etiology, Natural History and Genetics of Scoliosis,” *Measures in Scoliosis* #

INVITED LECTURESHIPS / COURSE FACULTY:

INVITED LECTURESHIPS / COURSE FACULTY: *(continued)*

Moderator, Adolescent Idiopathic Scoliosis II: Correction Techniques for Simple to Severe Curves Instructional Course, 18th International Meeting on Advanced Spine Techniques, Copenhagen, Denmark, 2011.

“Pediatric Deformity: My Worst Complication and How I Treated It,” 18th International Meeting on Advanced Spine Techniques, Copenhagen, Denmark, 2011.

Moderator, Roundtable Case Discussion: Pediatric Deformity, 18th International Meeting on Advanced Spine Techniques, Copenhagen, Denmark, 2011.

“Technique of Early Spinal Fusion,” Growth Sparing Treatment of Early Onset Neuromuscular Spinal Deformity Instructional Course Lecture, Scoliosis Research Society 46th

INVITED LECTURESHIPS / COURSE FACULTY: *(continued)*

Moderator and Course Co-Chair, Complications of the Very Young and Very Old and Level Selection in Adolescent Idiopathic Scoliosis, Deformity Peer to Peer Meeting, Miami, FL, February 2012.

“Early Onset Scoliosis: Defining the Extent of the Problem,” Combined Scoliosis Research Society Worldwide Course and Association of Spinal Surgeons of India 25th Annual Conference, Delhi, India, February 2012.

Moderator, Early Onset Scoliosis Scientific Session, Combined Scoliosis Research Society Worldwide Course and Association of Spinal Surgeons of India 25th Annual Conference, Delhi, India, February 2012.

“Complications in Spinal Deformity Surgery,” Combined Scoliosis Research Society Worldwide Course and Association of Spinal Surgeons of India 25th Annual Conference, Delhi, India, February 2012.

“Indications, Advantages and Complications of Percutaneous Pedicle Screws,” Combined Scoliosis Research Society Worldwide Course and Association of Spinal Surgeons of India 25th Annual Conference, Delhi, India, February 2012.

“Prognosis of AIS after Maturity...Concerns,” Complex Spinal Deformity Symposium, San Francisco, CA, March 2012.

“Rod Contour and Biomechanics: What is Ideal for Spinal Deformity Correction?” Spinal Deformity Summit, Boston, MA, April 2012.

“Challenges and Outcomes of Spinal Fixation in the Osteoporotic Spine,” Spinal Deformity Summit, Boston, MA, April 2012.

“Assessment of Skeletal Maturity,” Early Onset Scoliosis Instructional Course Lecture, 19th International Meeting on Advanced Spine Techniques, Istanbul, Turkey, July 2012.

“Tethering Options for Scoliosis,” Early Onset Scoliosis Instructional Course Lecture, 19th International Meeting on Advanced Spine Techniques, Istanbul, Turkey, July 2012.

Moderator, Adolescent Idiopathic Scoliosis Podium Session, 19th International Meeting on Advanced Spine Techniques, Istanbul, Turkey, July 2012.

Moderator, Adolescent Idiopathic Scoliosis Instructional Course, “Correction Techniques for Simple to Severe Curves, 19th International Meeting on Advanced Spine Techniques, Istanbul, Turkey, July 2012.

Pediatric Subgroup Collaborator, AAOS Orthopaedic Patient Safety Summit, Chicago, IL, August 2012.

“Pediatric Spinal Infections: Have the Etiology, Incidence, Demographics and Treatment Modalities Changed Over the Past 10 Years? Neuromuscular and Myelomeningocele,” Instructional Half Day Course, Scoliosis Research Society 47th Annual Meeting and Course, Chicago, IL, August 2012.

Case Presentations, “Acute Postoperative and Pyogenic Osteomyelitis: Discussion of Treatment Options,” Scoliosis Research Society 47th Annual Meeting and Course, Chicago, IL, August 2012.

Moderator, Early Onset Scoliosis Session, Scoliosis Research Society 47th Annual Meeting and Course, Chicago, IL, August 2012.

“Scolioscore: Has it Proven Effective in Predicting the Progression of Scoliosis?” A Decade of Evolution in Spine Deformity Management: A Critical Appraisal of Practice Changes, Outcomes and Technology, Scoliosis Research Society 47th Annual Meeting and Course, Chicago, IL, August 2012.

INVITED LECTURESHIPS / COURSE FACULTY: *(continued)*

“Spondylolysis and Spondylolisthesis” and “Adolescent Idiopathic Scoliosis: Three Dimensional Correction Techniques,” NYU Langone/Hospital for Joint Diseases Department of Orthopaedic Surgery Grand Rounds, New York NY, October 2012.

“Key Concepts in Early Onset Scoliosis,” and “The Next Decade in AIS: What will it Bring?” Georgetown University Hospital Department of Orthopaedic Surgery Grand Rounds, Washington DC, October 2012.

“Pediatric Cervical Spine: Trauma and Anomalies,” Moderator, Instructional Course Lecture, AAOS/POSNA International Pediatric Orthopaedic Symposium, Orlando FL, November 2012.

“Treatment of Cervical Spine Injury / Fixation Techniques,” AAOS/POSNA International Pediatric Orthopaedic Symposium, Orlando FL, November 2012.

“Protecting the Sagittal Plane During Deformity Correction,” AAOS/POSNA International Pediatric Orthopaedic Symposium, Orlando FL, November 2012.

“Adolescent Idiopathic Scoliosis: Early Cases and Key Principles,” Moderator, Instructional Course Lecture, AAOS/POSNA International Pediatric Orthopaedic Symposium, Orlando FL, November 2012.

“State of the Art of Spinal Deformity Correction,” Moderator, Instructional Course Lecture, AAOS/POSNA International Pediatric Orthopaedic Symposium, Orlando FL, November 2012.

“Treatment of Cerebral Palsy Scoliosis,” Instructional Course Lecture, AAOS/POSNA International Pediatric Orthopaedic Symposium, Orlando FL, November 2012.

Course Chairman and Moderator, “The Harms Study Group Presents...Advanced Techniques for AIS Correction with Video Vignettes,” VuMedi Webinar, December 2012.

“Proximal and Distal Junctional Kyphosis after Deformity Surgery: Prevention and Treatment Strategies,” Association of Spinal Surgeons of India 26th Annual Conference, Kochi, India, January 2013.

“3D Evaluation of Adolescent Idiopathic Scoliosis,” Association of Spinal Surgeons of India 26th Annual Conference, Kochi, India, January 2013.

“Sagittal Plane Restoration in AIS,” Association of Spinal Surgeons of India 26th Annual Conference, Kochi, India, January 2013.

Moderator, Spinal Tumors and Infection Scientific Session, Association of Spinal Surgeons of India 26th Annual Conference, Kochi, India, January 2013.

Grand Rounds Presentation / Visiting Professor, Thomas Jefferson University, Philadelphia, PA March 7, 2013

Surgical Technique for Pedicle Anatomy and Screw Insertion, Advanced Spinal Deformity Tutorial, San Diego, CA April 2013

Monitoring of the Intraoperative Surgical Case During: Rod Approximation, Rod Rotation & Vertebral Derotation, Advanced Spinal Deformity Tutorial, San Diego, CA April 2013

Panel discussion & Debate: Ponte Osteotomies should be routing for almost all AIS cases, Advanced Spinal Deformity Tutorial, San Diego, CA April 2013

Case Discussion: Neuromuscular including Sacral Screws, Advanced Spinal Deformity Tutorial, San Diego, CA April 2013

INVITED LECTURESHIPS / COURSE FACULTY: *(continued)*

Faculty: Thoracic Pedicle Screw Insertion Demonstration, Advanced Spinal Deformity Tutorial, San Diego, CA April 2013

Faculty: Posterior Osteotomy Demonstration, Advanced Spinal Deformity Tutorial, San Diego, CA April 2013

Faculty: Sacropelvic Fixation Demonstration, Advanced Spinal Deformity Tutorial, San Diego, CA April 2013

“Inter and Intra-Observer Reliability of the Simplified Skeletal Maturity Scoring System for Scoliosis Progression” An Analysis of 277 Patients; Scoliosis Research Society 48th Annual Meeting; Lyon, France September 16-23, 2013

“The Simplified Skeletal Maturity Method and its Correlation with Curve Progression in Idiopathic Scoliosis” Scoliosis Research Society 48th Annual Meeting; Lyon, France September 16-23, 2013

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