

2023 LSRS Instructional Course – May 10, 2023 – Chicago, IL

2:00PM Welcome and Introduction Zorica Buser, PhD, MBA, and Rakesh Patel, MD, MBA

Section 1: Patient Selection and Optimization Moderator: Zorica Buser, PhD, MBA

2:05PM-2:21PM **Debate:** Self-promotion via social media for patient acquisition vs let your skills speak for themselves
Cara L. Sedney, MD, MA, FAANS
Scott D. Daffner, MD

2:22PM-2:38PM **Debate:** Have virtual physical exams have replaced in person visits?
Rakesh D. Patel, MD, MBA
Bruce V. Darden, III, MD, FAOA

2:38PM – 2:48PM Discussion

2:48PM – 2:58PM **AI/Predictive as a tool to select ideal patients**
2:58PM – 3:08 PM **Effectiveness of comprehensive rehab programs**
3:08PM – 3:18PM Discussion
Nitin Agarwal, MD
Michael J. Lee, MD

Section 2: Surgical Techniques Moderator: Victor W. Chang, MD

3:18PM – 3:34PM **Debate:** Robot TLIF vs open posterior fusion L4-5 spondy
Osama Kashlan, MD
Thomas A. Zdeblick, MD

3:35PM – 3:51PM **Debate:** Endoscopic surgery is superior to miniopen: discectomies
Michael C. Gerling, MD
Paul A. Anderson, MD

3:52PM – 4:08PM **Debate:** All spine cases are deformity cases vs treat the problem-deformity
Raymond J. Hah, MD
Dean Chou, MD

4:08PM – 4:18PM Discussion

4:18PM – 4:28PM **Advances in intra-op visualization**
4:28PM – 4:38PM **Burden of proof prior to adapting technology**
4:38PM – 4:48PM **Appropriate training for new tech, what do we need?**
4:48PM – 5:00PM Discussion
Zorica Buser, PhD, MBA
Wellington K. Hsu, MD
Jason W. Savage, MD

5:00PM – 5:20PM BREAK

Section 3: Postoperative Care Moderator: Rakesh D. Patel, MD, MBA

5:20PM – 5:36PM **Debate:** Surgery center vs in hospital surgery
Addisu Mesfin, MD
Michael P. Steinmetz, MD

5:37PM – 5:53PM **Debate:** Routine x-rays vs no imaging – is it worth it?
Jeremy D. Shaw, MD
Andrew T. Dailey, MD

5:54PM – 6:10PM **Debate:** Standard follow-up vs app based assessment – are they useful in person, do we measure right outcomes?
Hemil Maniar, MD
Daniel S. Yanni, MD, FAANS

6:10PM – 6:20PM Discussion

6:20 Closing Remarks

6:30 Adjourn

LUMBAR SPINE RESEARCH SOCIETY 16TH ANNUAL MEETING PROGRAM

Thursday, May 11, 2023

7:00 Intro **Announcements** Jason W. Savage, MD and Andrew T. Dailey, MD

Session 1: Degenerative Spondylolisthesis 1
Moderators: Bruce V. Darden II, MD and Thomas A. Zdeblick, MD

ABSTRACT ID	Abstract Title	Author List
7:05 Paper 1 #79	Decompression With or Without Fusion for Grade 1 Degenerative Lumbar Spondylolisthesis: 60-Month Outcomes From the QOD	Andrew Chan, MD ; Erica Bisson, MD,MPH; Mohamad Bydon, MD; Steven Glassman, MD; Kevin Foley, MD; Christopher Shaffrey, MD; Eric Potts, MD; Mark Shaffrey, MD; Domagoj Coric, MD; John Knightly, MD; Paul Park, MD; Michael Wang, MD; Kai-Ming Fu, MD,PhD; Jonathan Slotkin, MD; Anthony Asher, MD; Michael Virk, MD, PhD; Vivian Le, MPH; Dean Chou, MD; Praveen Mummaneni, MD,MBA
7:10 Paper 2 #140	Early Compensatory Segmental Angle Changes at L3-4 and L4-5 Following a L5-S1 Anterior versus Transforaminal Lumbar Interbody Fusion	Bailey O'Connor, BS ; Gina Canlas, BS; Caroline Drolet, PhD; Jesse Shen, MD; Venu Nemani, MD,PhD; Eric Varley, DO; Jean-Christophe Leveque, MD; Rajiv Sethi, MD; Philip Louie, MD
7:15 Paper 3 #184	Analyzing Relationships Between Slippage and Clinical Outcomes Following Surgical Treatment of Lumbar Degenerative Spondylolisthesis	Michael Rogalski, BS; Rebecca Sullivan, BS ; Saharsh Mehta, MD; Celestine Warren, MD; Emily Adams, BS; Michael Stauff, MD

7:20-7:28 DISCUSSION

Session 2: Surgical Outcomes 1
Moderator: Shah Dodwad, MD and R. Douglas Orr, MD

ABSTRACT ID	Abstract Title	Author List
7:30 Paper 4 #164	TLIF is Associated with Lower Rates of Adjacent Segment Disease and Complications Compared to ALIF: A Propensity Matched Study	Xu Tao, BS ; Abhijith Matur, MD; Syed Khalid, MD; Rebecca Garner, MD; Kyle McGrath, BS; Bryce Owen, MD; Phillip Vorster, BS; Geet Shukla, BS; Louisa Onyewadume, MD; Andrew Wu, BS; Benjamin Motley, MD; Joseph Cheng, MD; Owoicho Adagwa, MD
7:35 Paper 5 #70	The Impact of Foraminal Osteophytes on PROMs Following L5-S1 ALIF and TLIF	Eric Zhao, BS; Tejas Subramanian, BE ; Andrew Kim, BA; Kasra Araghi, BS; Jerry Du, MD; Mitchell Fourman, MD; Sheeraz Qureshi, MD; Sravisht Iyer, MD
7:40 Paper 6 #170	What is the Early Fate of Adjacent Segmental Lordosis Compensation at L3-4 and L5-S1 Following a Lateral versus Transforaminal Lumbar Interbody Fusion at L4-5?	Mary Kim, BS ; Caroline Drolet, PhD; Thomas Hanks, BS; Karissa Yamaguchi, BS; Jesse Shen, MD; Katie Krause, MD,PhD; Venu Nemani, MD,PhD; Jean-Christophe Leveque, MD; Philip Louie, MD

7:45-7:53 DISCUSSION

Session 3: Spinal Oncology
Moderator: Michael P. Steinmetz, MD and Ahmad Nassr, MD

ABSTRACT ID	Abstract Title	Author List
7:55 Paper 7 #276	The Spinal Instability Neoplastic Score (SINS) is Predictive of Instability Necessitating Surgical Intervention: An External Validation Study	Zachariah Pinter, MD ; Breydan Wright, MD; Mikaela Sullivan, MD; Brandon McMaster, MD; Brian Goh, MD; James Bernatz, MD; Giorgos Michalopoulos, MD; Ahmad Nassr, MD; Brett Freedman, MD; Benjamin Elder, MD,PhD; Mohamad Bydon, MD; Jeremy Fogelson, MD; Peter Rose, MD; Arjun Sebastian, MD
8:00 Paper 8 #269	Percutaneous Versus Open Pedicle Screw Fixation for the Management of Metastatic Spine Disease: A Matched-Cohort Study	Mina Botros, MD ; Clark Cady-McCrea, MD; Mark Lawlor, MD; Takaki Shimizu, MD; Addisu Mesfin, MD,
8:05 Paper 9 #142	Incidence of Postoperative VTE Complications following Spine Instrumentation in Patients Treated for Oncologic Spinal Pathology	Khaled Taghlabi, MD; Takashi Hirase, MD; Jesus Cruz Garza, PhD; Amir Faraji, MD, PhD; Comron Saifi, MD

8:10-8:18 DISCUSSION

8:18 **Symposium 1 What is the role of SI joint fusion in 2023?**
Moderator: David W. Polly, MD
Is the SI joint a pain generator? (Evaluation & diagnosis of SI joint pathology)
8:19-8:30 What does the data show about "MIS SI joint fusion" in 2023
8:30-8:41 The role of SI joint fusion in TL deformity correction
8:41-8:52 DISCUSSION
8:52-9:03

Boyle C. Cheng, PhD
Jean-Christophe Leveque, MD
Jad G. Khalil, MD

LUMBAR SPINE RESEARCH SOCIETY 16TH ANNUAL MEETING PROGRAM

Thursday, May 11, 2023

9:03 - 9:30 B R E A K

POSTER BREAK OUT 1 - Moderator: Andrew J. Pugley, MD, MHCDS

9:15	Poster 28 #277	Osteoporosis is Underdiagnosed and Undertreated in Patients with Fragility Femoral Neck and Vertebral Compression Fractures	<i>Philip Zakko, MD; Lauren Eberhardt, BS; Madeleine DeClercq, BS; Ahyoung Park, PharmD; Megan Audet, MD; Daniel Park, MD</i>
9:18	Poster 29 #139	Percutaneous Lumbopelvic Fixation Without Fusion is Effective in the Management of U shaped Sacral Fractures	<i>Mark Lawlor, MD; Addisu Mesfin, MD; Mina Botros, MD; Clark Cady-McCrea, MD</i>
9:21	Poster 30 #272	Validation of the MISDEF2 Algorithm for Adult Spinal Deformity: Analysis of 2-Year Clinical and Patient Reported Outcomes	<i>Ibrahim Hussain, MD; Andrew Chan, MD; Nitin Agarwal, MD; Christopher Shaffrey, MD; Paul Park, MD; Juan Uribe, MD; Richard Fessler, MD,PhD; Adam Kanter, MD; David Okonkwo, MD,PhD; Gregory Mundis, Jr., MD; Robert Eastlack, MD; Michael Virk, MD,PhD; Jacob Goldberg, MD; Neel Anand, MD,FAAOS; Pierce Nunley, MD; Vivian Le, MPH; Shay Bess, MD; Michael Wang, MD; Dean Chou, MD; Praveen Mummaneni, MD,MBA; Kai-Ming Fu, MD,PhD</i>

DISCUSSION

Rapid Fire Presentations 1

Session 4:

9:30 Moderator: Alpesh A. Patel, MD, MBA, FACS and Douglas Orndorff, MD

ABSTRACT ID	Abstract Title	Author List
9:30 RF01 #205	Access Denied: Minimally Invasive SI Joint Fusion Patient Reported Outcomes in Obese Patients	<i>David Polly, Jr., MD; Daniel Cher, MD; Kari Odland, DAT, ATC, LAT</i>
9:33 RF02 #36	Nerve Root Retraction Time During Lumbar Endoscopic Discectomy Surgery: Association with Post-Operative Radiculitis	<i>Michael Gerling, MD; Melissa Baker, BS; Evan Chaladoff, Undergrad; Eloise Stanton, BS; Zorica Buser, PhD,MBA</i>
9:36 RF03 #27	Inflammatory Bowel Disease a Risk Factor for Post-Surgical Infections Following Lumbar Fusion: A Large Database Study	<i>Sean Esmende, MD; Matthew Solomito, PhD; Regina Kostyun, MS; Heeren Makanji, MD</i>
9:39 RF04 #208	Understanding the Impact of Social Determinants of Health on 90-Day Readmission Rates Following Posterolateral Fusion: A Machine Learning Approach	<i>Samuel Reyes, BS; Pranav Bajaj, BA; Steven Kurapaty, MD; Austin Chen, BA; Mark Plantz, MD; Erik Gerlach, MD; Anitesh Bajaj, BS; Rushmin Khazanchi, BA; Wellington Hsu, MD; Alpesh Patel, MD,MBA; Srikanth Divi, MD</i>
9:42 RF05 #302	Machine Learning and Deep Learning Algorithms Outperform ASA Benchmark in Prediction of Health Resource Utilization Metrics Following Lumbar Spine Surgery	<i>Rushmin Khazanchi, BA; Anitesh Bajaj, BS; Rohan Shah, BA; Austin Chen, BA; Robert Oris, BS; Pranav Bajaj, BA; Samuel Reyes, BS; Alpesh Patel, MD,MBA; Wellington Hsu, MD; Srikanth Divi, MD</i>
9:45 RF06 #177	MIS vs. Open Lumbo-Pelvic Fixation: Is There a Difference in Distal Junctional Failure Rates? A Propensity Score-Matched Analysis.	<i>Vardhaan Ambati, MS; Timothy Chryssikos, MD,PhD; Michael Tawil, BS; Abraham Dada, BA; Ryan Sadjadi, BA, MPH; Alma Rechav Ben-Natan, BA; Youssef Sibih, BS; Mohamed Macki, MD; Andrew Chan, MD; Sigurd Berven, MD; Dean Chou, MD; Aaron Clark, MD; Praveen Mummaneni, MD,MBA</i>

9:49-9:59 DISCUSSION

Session 5: Basic Science

9:59 Moderator: Zorica Buser, PhD, MBA and Wellington K. Hsu, MD

ABSTRACT ID	Abstract Title	Author List
10:00 Paper 10 #270	Impact of Interbody Implant Material on Early Outcomes in a Prospective Multicenter Study of Lumbar Interbody Fusion	<i>Tyler Jenkins, MD; Khoi Than, MD; Justin Smith, MD; Thomas Buell, MD; David Hamilton, MD</i>
10:05 Paper 11 #212	Analysis of Peri-operative NSAID use and Spinal Fusions	<i>James Rizkalla, MD; Brook Martin, PhD,MPH; Joseph Weiner, MD; Brian Karamian, MD; Nicholas Spina, MD; W. Ryan Spiker, MD; Brandon Lawrence, MD; Darrel Brodke, MD</i>
10:10 Paper 12 #129	Fatty infiltration of the paraspinal muscle is an independent risk factor of lumbar degenerative disc disease - a retrospective cross-sectional study	<i>Lukas Schönnagel, MD; Jiaqi Zhu, MS; Thomas Caffard, MD; Soji Tani, MD; Gaston Camino-Willhuber, MD; Henryk Haffer, MD; Maximilian Muellner, MD; Erika Chiapparelli, MD; Artine Arzani, MD; Krizia Amoroso, MD; Jennifer Shue, MS; Ek-Tsoon Tan, MD; John Carrino, MD; Andrew Sama, MD; Frank Cammisa, MD; Federico Girardi, MD; Alexander Hughes, MD</i>
10:15 Paper 13 #173	The impact of carriers and bone fibers in surgical outcomes and fusion rates after posterolateral lumbar decompression and fusion	<i>Jeremy Heard, BS; Yunsoo Lee, MD; Mark Lambrechts, MD; Nicholas D'Antonio, BS; John Paulik, BS; John Bodnar, BS; Emily Berthiaume, MD; Jose Canseco, MD,PhD; Alan Hilibrand, MD; Alexander Vaccaro, MD,PhD,MBA; Chris Kepler, MD; Gregory Schroeder, MD</i>

10:20-10:29 DISCUSSION

LUMBAR SPINE RESEARCH SOCIETY 16TH ANNUAL MEETING PROGRAM

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Session 6: Health Care Economics

10:29 Moderator: Don Moore, MD and Robert F. Heary, MD

ABSTRACT ID

Abstract Title

Author List

10:30	Paper 14 #180	Significant Variability Exists in Negotiated Rates for Lumbar Spinal Fusion Procedures in the United States	Tariq Issa, BS ; Yunsoo Lee, MD; Aditya Mazmudar, MD,MBA; Richard Padovano, BS; Jose Canseco, MD,PhD; Alan Hilibrand, MD; Alexander Vaccaro, MD,PhD,MBA; Chris Kepler, MD; Gregory Schroeder, MD
10:35	Paper 15 #210	Social Determinants of Health Play a Role in Determining Health Utilization following Lumbar Posterolateral Fusion.	Steven Kurapaty, MD ; Samuel Reyes, BS; Pranav Bajaj, BA; Austin Chen, BA; Erik Gerlach, MD; Mark Plantz, MD; Wellington Hsu, MD; Alpesh Patel, MD,MBA; Srikanth Divi, MD
10:40	Paper 16 #267	Comparing Patient-Reported Outcomes, Opioid Use, and Healthcare Resource Utilization between Patients Undergoing Elective Lumbar Decompression and Fusion versus Decompression Procedures Alone for Degenerative Pathology	Erik Gerlach, MD ; Jeremy Marx, MD; Jason Tegethoff, MD; Mark Plantz, MD; Peter Swiatek, MD; Srikanth Divi, MD; Wellington Hsu, MD; Alpesh Patel, MD,MBA
10:45	Paper 17 #122	Anxiety and Morbid Obesity are Associated with Significantly Increased Healthcare Utilization Following Single-Level Lumbar Fusion	Darren Nin, PhD ; Ya-Wen Chen, MD,MPH; Andrew Powers, MD; Ruijia Niu, MPH; Raymond Hwang, MD,MEng, MBA; David Chang, PhD,MPH, MBA; David Kim, MD

10:50-11:00 DISCUSSION

11:00	Transfer of Presidents Tribute to President <i>Plaque Ceremony</i>	Moderator: Paul Arnold, MD
11:05	Presidential Update	Bruce V. Darden, II, MD
11:25	Incoming President <i>Pin Ceremony</i>	Bruce V. Darden, II, MD // Wellington K. Hsu, MD
11:30	Tribute to LSRS Founder Thomas A. Zdeblick, MD	Wellington K. Hsu, MD

11:35	Symposium 2 The T10-Pelvis "Epidemic"	Moderator: Jason W. Savage, MD
11:37	The importance of spinopelvic parameters for degenerative spine pathology	Andrew J. Pugley, MD, MHCDS
11:47	Not every curve needs a deformity operation (the role of short segment fusion in degenerative scoliosis)	Clifford B. Tribus, MD
11:57	MIS approaches may "save levels" in ASD	Raymond J. Hah, MD
12:07	When should we "go big or go home"	Michael W. Daubs, MD
12:17-12:30	DISCUSSION	

12:30-1:20 **Attendees Luncheon** Paris Foyer
Members Business Luncheon Cannes/LeBar

1:20 **Announcements**

Session 7: Rapid Fire Presentation 2

1:22 Moderator: Dominic Pelle, MD and David Casper, MD

ABSTRACT ID

Abstract Title

Author List

LUMBAR SPINE RESEARCH SOCIETY 16TH ANNUAL MEETING PROGRAM

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1:24	RF07	#15	Does Weight Loss Make the Difference? Outcomes Following Posterior Lumbar Fusion in Patients With and Without a History of Bariatric Surgery	Meera Dhodapkar, BA ; Scott Halperin, BS; Peter Joo, MD,MPH; Gwyneth Maloy, BA; Seongho Jeong, MD; Daniel Rubio, MD; Jonathan Grauer, MD
1:26	RF08	#223	Psychological Distress Does Not Predict Decisional Regret in Adult Spinal Deformity	Jesse Shen, MD; Caroline Drolet, PhD; Jean-Christophe Leveque, MD; Venu Nemani, MD,PhD; Philip Louie, MD ; Rajiv Sethi, MD
1:28	RF09	#298	Management of Lumbopelvic Dissociation With Triangular Osteosynthesis: A Comparison of Percutaneous and Open Techniques	Connor Wathen, MD ; Najib Muhammad, BS; Yohannes Ghenbot, MD; Dmitry Petrov, MD; Ali Ozturk, MD; Samir Mehta, MD; James Schuster, MD,PhD; David Casper, MD
1:30	RF10	#191	Postoperative Use and Early Discontinuation of Intravenous Lidocaine in Spine Patients	David Polly, Jr., MD ; Joseph Resch, MD; Gwenyth Fischer, MD; Paul Brian Soriano, MD; Jason Haselhuhn, DO; Kenneth Holton, MD
1:32	RF11	#42	Factors Influencing Patient Satisfaction With Postoperative Follow-up After Spinal Fusion	Alexander Akoto, MD; Bilal Butt, MD; Aditya Muralidharan, MD ; Muhammad Waheed, MD; Rakesh Patel, MD; Ilyas Aleem, MD
1:34	RF12	#274	Transforaminal Lumbar Interbody Subsidence: Postoperative CT Analysis Defining Incidence and Associated Risk Factors	Zachariah Pinter, MD; Hannah Levy, MD ; Ryder Reed, MD; Joshua Harmer, MD; Konstantinos Katsos, MD; Giorgos Michalopoulos, MD; Mohamad Bydon, MD; Ahmad Nassr, MD; Brett Freedman, MD; Arjun Sebastian, MD
1:36-1:45			DISCUSSION	

Session 8: Imaging

1:45 Moderator: Paul A. Anderson, MD and Cara L. Sedney, MD, MA, FAANS

	Abstract ID	Abstract Title	Author List
1:45	Paper 18 #12	Projected Lifetime Cancer Risk Associated with Intraoperative Computed Tomography for Lumbar Spine Surgery	Alexander Crawford, MD ; Brendan Striano, MD; Carew Giberson-Chen, MD; Grace Xiong, MD; Harry Lightsey, MD; Andrew Schoenfeld, MD; Andrew Simpson, MD
1:50	Paper 19 #192	Spine Surgeon versus AI Algorithm - Full Length Radiographic Measurements Validation Study	Jason Haselhuhn, DO; Paul Brian Soriano, MD; Priyanka Grover, MS; Janine Huertgen, MS; Marcel Dreischarf, PhD; Nathan Hendrickson, MD,MS; Kristen Jones, MD; Christopher Martin, MD; Jonathan Sembrano, MD; David Polly, Jr., MD
1:55	Paper 20 #203	Trabecular bone score predicts screw pull-out strength better than DXA bone mineral density, CT hounsfield units, and cortical density	James Bernatz, MD , Kevin Sandhu, Diane Krueger, Neil Binkley, Josh Roth, Paul Anderson, MD
2:00	Paper 21 #182	Intraoperative Computed Tomography for the Assessment of Bone Quality	Aamir Kadri, MD ; Ryan Cassidy, MD
2:05-2:14			DISCUSSION

Session 09: Advancing Technologies/MIS

2:15 Moderator: Andrew T. Dailey, MD and Seth Williams, MD

	Abstract ID	Abstract Title	Author List
2:15	Paper 22 #204	Two-Year Outcomes of Full-endoscopic versus Open Discectomy for Sciatica	Pravesh Gadjradj, MD,PhD ; Biswadjet Sanjay Harhangi, MD,PhD
2:20	Paper 23 #30	Adverse Events Associated with Robotic-Assisted Spine Surgery: An Analysis of the U.S. Food and Drug Administration MAUDE Database	Joshua Proal, BS ; Andrew Moon, MD; Nicholas Coccoluto, MD; Nicholas Pagani, MD; Michael Moverman, MD; Brian Kwon, MD
2:25	Paper 24 #32	Which is Better: Percutaneous or Open Robot-Assisted Spine Surgery? Prospective, Multicenter Study of 2,524 Screws in 336 Patients	Nathan Lee, MD,BS; Lindsay Orosz, MS,PA-C; Jeffrey Gum, MD; Gregory Poulter, MD ; Ehsan Jazini, MD; Colin Haines, MD; Christopher Good, MD; Ronald Lehman, MD
2:30	Paper 25 #321	Comparative Analysis of Prone Lateral versus Single-Position Lateral Decubitus Positioning in Achieving Optimal Outcomes and Reducing Complication Rates in Minimally-Invasive Spine Surgery	Peter Passias, MD ; Peter Tretiakov, BS; Rachel Joujon-Roche, BS; Oscar Krol, BA; Tyler Williamson, MS; Bailey Imbo, BA; Pooja Dave, BS; Jamshaid Mir, MD; Shaleen Vira, MD; Bassel Diebo, MD; Dean Chou, MD; Andrew Chan, MD
2:35-2:45			DISCUSSION

2:45-3:04 **BREAK**

POSTER BREAK OUT 2- Moderator: Jonathan Grauer, MD

2:50	Poster 31 #130	Relationship between lumbar spinal stenosis and axial muscle wasting - a retrospective cross-sectional study	Lukas Schönagel, MD ; Maximilian Muellner, MD; Thomas Caffard, MD; Soji Tani, MD; Gaston Camino-Willhuber, MD; Henryk Haffer, MD; Artine Arzani, MD; Erika Chiapparelli, MD; Krizia Amoroso, MD; Jiaqi Zhu, MS; Jennifer Shue, MS; Ek Tsoon Tan, MD; John Carrino, MD; Andrew Sama, MD; Frank Cammisa, MD; Federico Girardi, MD; Alexander Hughes, MD
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LUMBAR SPINE RESEARCH SOCIETY 16TH ANNUAL MEETING PROGRAM

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2:53	Poster 32 # 195	Persistent Low Back Pain Following Lumbar Surgery: Is The Sacroiliac Joint to Blame?	Stephan Aynaszyan, BS ; Jacob Linker, BA; Bencha Boualam, BS; Michael Pheasant, MD; Matthew Parry, BS; Christopher SanCraint, BS; Siddharth Badve, MD; Hemil Maniar, MD; Edward DelSole, MD
2:56	Poster 33 #315	Decreased Hip Motion is Associated with Inferior Spine Outcomes	Emily Mills, MD ; Jennifer Wang, BS; Joshua Sanchez, BS; Gabriel Bouz, MD; Andy Ton, BS; Annabel Kim, BS; Jeffrey Wang, MD; Ram Alluri, MD; Nathanael Heckmann, MD; Raymond Hah, MD

DISCUSSION

Session 10 Degenerative Spondylolisthesis 2

3:04 Moderator: Leo Spector, MD and Landon Bulloch, MD

Abstract ID	Abstract Title	Author List
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3:05	Paper 26 #271	Is Fusion Always Necessary in the Setting of Degenerative Spondylolisthesis with Stenosis? A Prospective Randomized Controlled Trial of Decompression and Fusion versus Decompression and Facet Arthroplasty	Zachariah Pinter, MD ; Arjun Sebastian, MD; Domagoj Coric, MD; Brett Freedman, MD; Michael Steinmetz, MD; Ahmad Nassr, MD
3:10	Paper 27 #252	A Prospective, Randomized Clinical Trial of Pedicle Lengthening Osteotomy Versus Open Decompression with Transforaminal Lumbar Interbody Fusion for Lumbar Degenerative Spondylolisthesis with Stenosis	Bradley Anderson, BS ; Jonathan Ledesma, BS; Greg Anderson, MD
3:15	Paper 28 #81	Minimally Invasive Versus Open Transforaminal Lumbar Interbody Fusion for Grade 1 Lumbar Spondylolisthesis: 60-Month Follow-Up from the QOD Multi-Center Prospective Registry	Andrew Chan, MD ; Mohamad Bydon, MD; Erica Bisson, MD,MPH; Steven Glassman, MD; Kevin Foley, MD; Christopher Shaffrey, MD; Eric Potts, MD; Mark Shaffrey, MD; Domagoj Coric, MD; John Knightly, MD; Michael Wang, MD; Paul Park, MD; Kai-Ming Fu, MD,PhD; Jonathan Slotkin, MD; Anthony Asher, MD; Michael Virk, MD, PhD; Giorgos Michalopoulos, MD; Nitin Agarwal, MD; Christine Park, BS; Dean Chou, MD; Praveen Mummaneni, MD,MBA

3:20 - 3:30 DISCUSSION

Symposium 3 Degenerative Spondylolisthesis: Common problem without consensus treatment

3:30 Moderator: Darrel S. Brodke, MD

3:35	What defines instability in degenerative spondylolisthesis?	Nicholas Spina, MD
3:45	When is decompression alone a good treatment option for degenerative spondylolisthesis	Matthew Colman, MD
Case debate: 65 y/o M with a grade 1 degen spondy		
3:55	MIS TLIF	Wellington K. Hsu, MD
4:05	OLIF with perc screws	Dominic Pelle, MD
4:15	Prone lateral is the wave of the future	Ashish Patel, MD
4:25	Open posterior decompression and fusion (+/- interbody) is still the gold standard	Alpesh A. Patel, MD, MBA, FACS
4:25-4:35	DISCUSSION Faculty Panel	

4:35 CLOSING REMARKS

4:40 ADJOURN

LUMBAR SPINE RESEARCH SOCIETY 16TH ANNUAL MEETING PROGRAM

Friday, May 12, 2023

7:00 **Announcements: Jason W. Savage, MD and Andrew Dailey, MD**

Session 11: Opioid Epidemic

Moderator: Nicholas Spina, MD and Jose Canseco, MD, PhD

	Abstract ID	Abstract Title	Author List
7:05 Paper 29	#144	The Potential Role of Intraoperative Ketamine Administration in Reducing Postoperative Opioid Consumption among Chronic Opioid Users after Spine Surgery	<i>Jennifer Liu, MD; Thomas Sullivan, BS; Kevin Bondar, MD; Bradley Lambert, PhD; Comron Saifi, MD</i>
7:10 Paper 30	#6	What Perioperative Factors are Associated with High-Risk Daily Morphine Milligram Equivalent Totals in Spinal	<i>Ashley Duncan, RN,MBA; Devender Singh, PhD; Sophia Stokes, BS; Matthew Geck, MD; John Stokes, MD; Eric Truumees, MD</i>
7:15 Paper 31	#24	Cannabis Use is Associated with Decreased Opioid Prescription Fulfillment Following Single Level Lumbar Fusion: A Large	<i>Sean Esmende, MD; Matthew Solomito, PhD; Regina Kostyun, MS; Heeren Makanji, MD</i>
7:20-7:27		DISCUSSION	

Session 12: Miscellaneous

7:27 Moderator: Michael McCarthy, MD, MPH and Scott Vincent, MD

	Abstract ID	Abstract Title	Author List
7:28 Paper 32	#320	Impact of Enhanced Recovery After Surgery in Minimally Invasive Spine Surgery	<i>Peter Passias, MD; Jamshaid Mir, MD; Peter Tretiakov, BS; Pooja Dave, BS; Andrew Chan, MD; Dean Chou, MD</i>
7:33 Paper 33	#197	Increase Rates of Minimally Invasive SI Joint Fusion by Proceduralists in the Medicare Population	<i>Tej Azad, MD; Andrew Hersh, BS; Karolina Pellot, BS; Jungho Gong, BS; Timothy Witham, MD</i>
7:38 Paper 34	#165	Lumbar Arthroplasty is Associated with a Lower Incidence of Adjacent Segment Disease Compared to ALIF: A Propensity Matched Analysis	<i>Syed Khalid, MD; Abhijith Matur, MD; Rebecca Garner, MD; Bryce Owen, MD; Natalie Ivey, MD; Phillip Vorster, BS; Geet Shukla, BS; Louisa Onyewadume, MD; Xu Tao, BS; Andrew Wu, BS; Benjamin Motley, MD; Joseph Cheng, MD; Owoicho Adogwa, MD</i>
7:43-7:50		DISCUSSION	

AWARDS AND GRANTS

Moderators: Addisu Mesfin, MD and Michael P. Steinmetz, MD

8:10	Best Paper Awards	Michael P. Steinmetz, MD
7:50	Thank you to LSRS grant sponsors	Bruce V. Darden, II, MD
8:10	Research Grant Awards	Addisu Mesfin, MD
7:53	2023 LSRS Cerapedics Research Grant Award Winner	
	The impact of electronic cigarette vaping extracts on lumbar fusion	Romie Gibly, MD, PhD
7:55	2023 LSRS Young Investigator Grant Award Winner*	
	The effect of fluoxetine and duloxetine in a rodent model	Yunsoo Lee, MD
7:57	2022 LSRS Zimmer Biomet Research Grant Award Winner	
	Do Cannabinoids Affect Spinal Fusion Rates in an Animal Model	
	Research Update	Harold Fogel, MD

8:05-8:10 DISCUSSION

*This Young Investigator Grant was made possible by the LSRS 2nd Decade Fund

LUMBAR SPINE RESEARCH SOCIETY 16TH ANNUAL MEETING PROGRAM

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Session 13: Rapid Fire - Complications

8:14 Moderator: Jad G. Khalil, MD and Michael Conti Mica, MD

Abstract ID	Abstract Title	Author List
8:15 RF13 #160	Cannabis Use is Associated with Increased Rates of Pseudoarthrosis Following TLIF: A Propensity Matched Study	<i>Abhijith Matur, MD; Syed Khalid, MD; Rebecca Garner, MD; Kyle McGrath, BS; Xu Tao, BS; Geet Shukla, BS; Phillip Vorster, BS; Andrew Wu, BS; Louisa Onyewadume, MD; Benjamin Motley, MD; Joseph Cheng, MD; Owoicho Adogwa, MD</i>
8:17 RF14 #7	Assessing the Readmission Rate of Patients Discharged Same-Day After Intra-Operative Durotomy and Subsequent Repair in Lumbar Spinal Surgery	<i>Joshua Proal, BS; Andrew Moon, MD; Kristen LaHaise, BS; James Taylor, DO; Brian Kwon, MD</i>
8:19 RF15 #214	30 Day Complications Associated with Oral Methylprednisolone Use in the Immediate Post-Operative Period.	<i>Nitin Khanna, MD; Michael Krzykowski, PA-C; Yazan Altarshan, BS, MS3</i>
8:21 RF16 #216	Bariatric Surgery Prior to Posterior Lumbar Interbody Fusion is Associated with Higher Revision Rate but Lower Medical Complication Rate Compared with Morbidly Obese Patients	<i>Jordan Arakawa, MD; Clifford Lin, MD; James Wright, MD; Won Hyung A. Ryu, MD; Jung Yoo, MD</i>
8:23 RF17 #25	Association Between Cannabis Use and Complications Following Lumbar Fusion: A Large Database Study	<i>Heeren Makanji, MD; Matthew Solomito, PhD; Regina Kostyun, MS; Sean Esmende, MD</i>
8:25-8:34	DISCUSSION	

Session 14: Surgical Outcomes - 2

8:34 Moderator: Comron Saifi, MD and Serena Hu, MD

Abstract ID	Abstract Title	Author List
8:35 Paper 35 #172	Patient Reported Outcomes of Lumbar Decompression Surgery: Does Foraminal Stenosis Severity Matter?	<i>Jeremy Heard, BS; Yunsoo Lee, MD; Mark Lambrechts, MD; Khoa Tran, BA; Tariq Issa, BS; Akash Singh, BS; Goutham Yalla, BS; Sydney Somers, BS; Caroline Purtill, BS; Jose Canseco, MD, PhD; Alan Hilibrand, MD; Alexander Vaccaro, MD, PhD, MBA; Chris Kepler, MD; Gregory Schroeder, MD; Ian Kaye, MD</i>
8:40 Paper 36 #105	Early Summative Depressive Burden Affects Patient-Reported Outcomes in Matched Lumbar Decompression Cohorts	<i>Timothy Hartman, MD; James Nie, BS; Omolabake Oyetayo, BS; Eileen Zheng, BS; Keith MacGregor, BS; Vincent Federico, MD; Dustin Massel, MD; Arash Sayari, MD; Kern Singh, MD</i>
8:45 Paper 37 #167	Rheumatoid Arthritis Patients Are At Increased Risk For Adverse Events Following Lumbar Discectomy	<i>Philip Ratnasamy, BS; Katelyn Rudisill, BS; Michael Gouzoulis, BA; Jonathan Grauer, MD</i>
8:50 Paper 38 #115	Why didn't you walk yesterday? Factors associated with slow early recovery after adult spinal deformity surgery	<i>Gregory Kazarian, MD; Francis Lovecchio, MD; Robert Merrill, MD; John Clohisey, MD; Bo Zhang, MD; Jerry Du, MD; Yusef Jordan, MD; Anthony Pajak, BS; Rachel Knopp, MPH; David Kim, BS; Justin Samuel, BS; Jonathan Elysee, BS; Izzet Akosman, BS; Pratyush Shahi, MBBS, MS; Han Jo Kim, MD</i>
8:55-9:04	DISCUSSION	

Symposium 4 Emerging technologies in lumbar spine surgery

Moderator: Andrew T. Dailey, MD

9:04		
9:05-9:15	The utility of navigation and robotics in 2023	<i>Gregory Schroeder, MD</i>
9:15-9:25	Endoscopic spine surgery: Fad or Future	<i>Mark Mahan, MD</i>
9:25-9:35	Motion sparing techniques: Hype or Here to Stay	<i>Michael P. Steinmetz, MD</i>
9:35-9:45	Exploring the push for "outpatient" spine surgery: Financial considerations and Patient Outcomes	<i>Rick C. Sasso, MD</i>

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9:45-9:55 DISCUSSION

Session 15: Spinal Deformity

9:55 Moderator: Jason W. Savage, MD and Brandon Lawrence, MD

Abstract ID	Abstract Title	Author List
9:55 Paper 39 #176	Differences in the Rate of Distal Junctional Pathology Between L3 and L4 PSO: Minimum One Year Follow-up for 117 Patients	Vardhaan Ambati, MS ; Saman Shabani, MD; Timothy Chryssikos, MD, PhD; Alma Rechav Ben-Natan, BA; Jeremy Huang, BS; Alysha Jamieson, BA; Mohamed Macki, MD; Nitin Agarwal, MD; Michael Tawil, BS; Jeremy Guinn, BS; Hao-Hua Wu, MD,PGY4; Minghao Wang, MD; Pingguo Duan, MD; Zhuo Xi, MD,PhD; Joshua Rivera, BA; Parishkrita Srivastava, High School; Shane Burch, MD; Sigurd Berven, MD; Praveen Mummaneni, MD,MBA; Dean Chou, MD; Lee Tan, MD
10:00 Paper 40 #324	Maintenance of Pelvic Tilt Normalization following Adult Spinal Deformity Corrective Surgery: Analysis of Prevalence, Timing, and Predictors influencing Occurrence	Peter Passias, MD ; Pooja Dave, BS; Peter Tretiakov, BS; Jamshaid Mir, MD; Dean Chou, MD; Andrew Chan, MD
10:05 Paper 41 #17	Spinopelvic Mismatch after Short Segment Lumbar Fusions Results in Increased Disability at Two Years Following Surgery	Devon LeFever, MD ; Caroline Drolet, PhD; Venu Nemani, MD,PhD; Rajiv Sethi, MD; Jean-Christophe Leveque, MD; Philip Louie, MD
10:10 Paper 42 #275	Lower Hounsfield Units and Severe Semispinalis Cervicis Sarcopenia are Independent Predictors of Increased Risk for Proximal Junctional Kyphosis and Failure following Thoracolumbar Fusions Terminating in the Upper Thoracic Spine	Zachariah Pinter, MD ; Anthony Mikula, MD; Nikita Lakomkin, MD; Zach Pennington, MD; Arjun Sebastian, MD; Ahmad Nassr, MD; Brett Freedman, MD; Mohamad Bydon, MD; Jeremy Fogelson, MD; Benjamin Elder, MD,PhD

10:15 - 10:24 DISCUSSION

10:25-10:50 BREAK

POSTER BREAK OUT 3- Moderator: Jean-Christopher Leveque, MD

10:38 Poster 34 #59	Outcomes and Predictors of Subsidence After Expandable Cage in Minimally Invasive Transforaminal Lumbar Interbody Fusion	Tejas Subramanian, BE ; Pratyush Shahi, MBBS,MS; Omri Maayan, BS; Shane Pathania, BS; Daniel Shinn, BS; Ashley Yeo Eun Kim, BS; Eric Zhao, BS; Kasra Araghi, BS; Michael Steinhaus, MD; Avani Vaishnav, MBBS; Yahya Othman, BS; Andre Samuel, MD; Francis Lovecchio, MD; Evan Sheha, MD; Sravisht Iyer, MD; Sheeraz Qureshi, MD
10:41 Poster 35 #169	Radiographic Evaluation of Spinal Fusion: Does Clinical Practice Align with State-of-the-art?	Michael Steinmetz, MD ; Fotis Souslian, MD; Noojan Kazemi, MD
10:44 Poster 36 #335	Preoperative Calcium Levels are Predictive of Medical Complications and Health Resource Utilization in Patients Undergoing Lumbar Decompression	Anitesh Bajaj, BS ; Rushmin Khazanchi, BA; Rohan Shah, BA; Robert Oris, BS; Austin Chen, BA; Pranav Bajaj, BA; Samuel Reyes, BS; Wellington Hsu, MD; Alpesh Patel, MD,MBA; Srikanth Divi, MD

DISCUSSION

10:50 **Session 16: Degenerative Spondylolisthesis 3**
Moderator: Clifford B. Tribus, MD and Srikanth Divi, MD

Abstract ID Abstract Title Author List

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10:50	Paper 43	#72	Patterns of Opioid Use Prior to Single-Level Lumbar Fusion are Associated with Postoperative Opioid Use and Adverse Events	Jayme Koltsov, PhD ; Tanmaya Sambare, MD; John Kleimeyer, MD; Todd Alamin, MD; Kirkham Wood, MD; Eugene Carragee, MD; Serena Hu, MD
10:55	Paper 44	#185	Smoking and Spondylolisthesis: Assessing the Impact of Smoking History on Patient-Reported Outcomes Following Surgical Treatment for Lumbar Degenerative Spondylolisthesis	Michael Rogalski, BS; Rebecca Sullivan, BS ; Saharsh Mehta, MD; Celestine Warren, MD; Emily Adams, BS; Michael Stauff, MD
11:00	Paper 45	#337	Decompression and Dynamic Sagittal Tether for Patients with Stenosis and Degenerative Spondylolisthesis: 4 year Comparative Results to TLIF from the US IDE Trial	Todd Alamin, MD ; Eugene Carragee, MD; Sigurd Berven, MD; Serena Hu, MD; Zack Ray, MD; Elizabeth Yu, MD; Richard Guyer, MD; Calvin Kuo, MD; Matthew Mermer, MD; KD Kim, MD; Hyun Bae, MD; Sangwook Yoon, MD, PhD; Louis Fielding, MS; Jeffrey Gum, MD; Harel Deutsch, MD; Michael Stauff, MD; Mick Perez-Cruet, MD; William Lavelle, MD; Adam Shimer, MD; Jens Chapman, MD; Rick Sasso, MD
11:05	Paper 46	#137	Reduction in Post-Operative Opioid Use after Posterior Lumbar Interbody Fusion between 2014-15 and 2018-19: Effect of State Legislation	Jamila Godil, BS; Katrina Rapp, BS; Spencer Smith, BS ; Won Hyung A. Ryu, MD; Jung Yoo, MD

11:10-11:17

DISCUSSION

11:17 **Session 17: Lateral Interbody Fusion**
Moderator: Matthew Colman, MD and Harold Fogel, MD

	Abstract ID	Abstract Title	Author List
11:18	Paper 47 #13	Transforaminal versus lateral interbody fusions for treatment of adjacent segment disease in the lumbar spine	Prashant Rajan, MD ; Mark Megerian, BS; Ansh Desai, BS; Penelope Halkiadakis, BS; James Showery, MD; Zachary Gabel, MD; Dominic Pelle, MD; Jason Savage, MD
11:23	Paper 48 #29	A Novel Neurovascular Classification System for Lateral Lumbar Surgery	Fernando Villamil, MD ; Jeffrey Moore, MD
11:28	Paper 49 #75	What is the Prevalence and Prognosis of Coronal Malalignment Following LLIF for Adult Spinal Deformity With Qiu Type A Coronal Alignment?	Andrew Chan, MD ; Praveen Mummaneni, MD, MBA; Paul Park, MD; Juan Uribe, MD; Jay Turner, MD, PhD; Vivian Le, MPH; Robert Eastlack, MD; Richard Fessler, MD, PhD; Kai-Ming Fu, MD, PhD; Michael Wang, MD
11:33	Paper 50 #328	The Change in Lordosis from the Standing to Lateral Position: Implications for Lateral Interbody Fusion	Emily Mills, MD ; Jennifer Wang, BS; Brian Chung, MD; Lucas Mayer, MD; Mary Richardson, BS; Andy Ton, BS; Raymond Hah, MD; Nathanael Heckmann, MD

11:38-11:45

DISCUSSION

11:45 **Session 18: Complications**
Moderator: Michael J. Lee, MD and Boyle C. Cheng, PhD

	Abstract ID	Abstract Title	Author List
11:45	Paper 51 #112	Statin usage decreases the incidence of pseudarthrosis following posterior lumbar fusion	Monish Lavu, MHM ; Jason Savage, MD; Dominic Pelle, MD
11:50	Paper 52 #143	Preoperative Serum Albumin Level Predicts Length of Stay and Perioperative Complications Following Vertebral Corpectomy and Posterior Stabilization for Oncologic Spinal Pathology	Takashi Hirase, MD; Khaled Taghlabi, MD; Jesus Cruz Garza, PhD; Amir Faraji, MD, PhD; Comron Saifi, MD
11:55	Paper 53 #26	Low BMI Patients Undergoing an Anterior Lumbar Fusion Have an Increased Risk of Post-operative Complications: A Large Database Study	Heeren Makanji, MD ; Mark Gleeson, BS; Matthew Solomito, PhD; Regina Kostyun, MS; Sean Esmende, MD
12:00	Paper 54 #289	Perioperative Hyperglycemia Increases Rates of Infection in Spine Surgery	Ryan Finkel, MD; Evan Nigh, MD; Daniel Farivar, BS ; Chris Johnson, MD; Kevin Rezzadeh, MD; Sang Kim, MD

12:00-12:08

DISCUSSION

12:08 **Symposium 5 Considerations in the aging population when performing TL spine fusion procedures**

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Moderator: Arjun Sebastian, MD

Evaluation and management of osteoporosis for elective lumbar fusion procedures

Paul A. Anderson, MD

Frailty & Sarcopenia: What is it, how do we measure it, and most importantly, how do we optimize it?

David Casper, MD

Osteoporotic spine fractures: Tips and Tricks from experience

John France, MD

DISCUSSION

1:00 Closing Remarks

1:00 Adjourn

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ePOSTER SESSION

ePosters will be available for viewing throughout the annual meeting via monitors and/or online on the LSRS Website, please refer to the Scientific Sessions program for Posters that will be presented live, during the breaks

Poster 01	#325	Predicting Presence of High Resource Utilizers after Adult Spinal Deformity Surgery: Analysis of Patient Outcomes and Cost Effectiveness	Peter Passias, MD; Pooja Dave, BS; Jamshaid Mir, MD; Peter Tretyakov, BS; Dean Chou, MD; Andrew Chan, MD
Poster 02	#41	The Effect of Preoperative HbA1c on Complications in Pre-Diabetic and Diabetic Patients Undergoing Spine Surgery	Rudy Zambrano, MD; Nima Saboori, BA; Melissa Baker, BS; Eloise Stanton, BS; Michael Gerling, MD; Zorica Buser, PhD, MBA
Poster 03	#174	Opioid-free versus Traditional Opioid-containing Postoperative Pain Management for Idiopathic Scoliosis	Michael Schallmo, MD; Kayla Hietpas, MPH; Michael Paloski, DO MBA
Poster 04	#120	Perception of Physical Function, Pain, and Disability Outcomes are Strongly Correlated with Mental Health up to Two Years after Lumbar Decompression	Timothy Hartman, MD; James Nie, BS; Keith MacGregor, BS; Omolabake Oyetayo, BS; Eileen Zheng, BS; Vincent Federico, MD; Dustin Massel, MD; Arash Sayari, MD; Kern Singh, MD
Poster 05	282	Evaluation of spin in systematic reviews and meta-analyses of minimally invasive surgical techniques and standard microdiscectomies for treating lumbar disc herniation	Maya Abu-Zahra, BA; Cory Mayfield, MD; Ashley Thompson, BS; Oswald Garica, BS; Bryan Bashrum, BS; N. Mina Hwang, MPH; Joseph Liu, MD; Frank Petrigliano, MD; Ram Alluri, MD
Poster 06	196	Acceptance and Commitment Therapy Screening Model for Patients Undergoing Spinal Surgery	Happy Kumar, BS; Alex Coffman, BS; Natalie Glass, PhD; Valerie Keffala, PhD; Cassim Igram, MD; Andrew Pugely, MD; Catherine Olinger, MD
Poster 07	95	Osteoporosis Is a Risk Factor for Revision Spine Surgery in Patients Undergoing Short Segment Fusions with Lumbar Degenerative Disease	Wesley Durand, BS; Miguel Cartagena-Reyes, BS; Amit Jain, MD
Poster 08	141	Healthcare Costs Following Lumbar Fusion and Disc Replacement for Discogenic Pain	Darren Nin, PhD; Ya-Wen Chen, MD,MPH; Raymond Hwang, MD,MEng, MBA; Ruijia Niu, MPH; David Chang, PhD,MPH, MBA; David Kim, MD
Poster 09	242	Prior Year Hospital Admission Predicts Thirty-Day Hospital Readmission and ED Presentation After Surgical Intervention for Lumbar Spinal Stenosis	Yunting Tang, MD; Richard Wawrose, MD; Jonathan Dalton, MD; Joon Lee, MD; Jeremy Shaw, MD,MS
Poster 10	257	Association of Bariatric Surgery with Adjacent Segment Disease Following TLIF: A Propensity Matched Analysis	Syed Khalid, MD; Abhijith Matur, MD; Phillip Vorster, BS; Rebecca Garner, MD; Bryce Owen, MD; Natalie Ivey, MD; Geet Shukla, BS; Louisa Onyewadume, MD; Xu Tao, BS; Andrew Wu, BS; Benjamin Motley, MD; Joseph Cheng, MD; Owoicho Adogwa, MD
Poster 11	22	Posterior fixation without debridement for vertebral body osteomyelitis and discitis: a 10-year retrospective review	Sarah Lindsay, MD; Hanne Gehling, BS; Jung Yoo, MD; Travis Philipp, MD
Poster 12	31	90-Day Complication and Revision Surgery Rates Using Navigated Robotics in Thoracolumbar Spine Surgery	Lindsay Orosz, MS,PA-C; Nathan Lee, MD,BS; Tarek Yamout, MD,BS; Jeffrey Gum, MD; Ronald Lehman, MD; Gregory Poulter, MD; Colin Haines, MD; Ehsan Jazini, MD; Christopher Good, MD
Poster 13	34	A Retrospective Study of Cauda Equina Syndrome: Improving Diagnostic Accuracy and Efficiency	Gautham Chitturu, BA; Fahim Choudhury, BA; Saharsh Mehta, MD; Emily Adams, BS; Daniel Chen, BS; Andy Wang, BA; Sashrika Saini, BS; Michael Stauff, MD; Irene Say, MD
Poster 14	63	Intraoperative CT for Lumbar Fusion Is Not Associated with Improved Short- or Long-Term Complication Profiles	Alexander Crawford, MD; Brendan Striano, MD; Harry Lightsey, MD; Jonathan Gong, BS; Andrew Simpson, MD; Andrew Schoenfeld, MD
Poster 15	158	Lumbar Laminotomy: Variables Affecting Postoperative Reimbursement	Scott Halperin, BS; Meera Dhodapkar, BA; Michael Gouzoulis, BA; Maxwell Laurans, MD,FAANS; Arya Varthi, MD; Jonathan Grauer, MD
Poster 16	249	Machine Learning-Driven Prediction of Discharge Destination After Instrumented Lumbar Fusion	Akash Shah, MD; Jennifer Kallani, MD; Sai Devana, MD; Changhee Lee, BS; Don Park, MD

	Poster 17	218	Incidence and Risk Factors associated with Spontaneous Vertebral Osteomyelitis and Discitis: Population Study	Luke Channer, BS ; Olivia Krol, BS; Travis Philipp, MD; Christina Wright, MD; Jonathan Kark, MD; Spencer Smith, BS; Jung Yoo, MD
	Poster 18		WITHDRAWN	
	Poster 19	215	Patient Attributes that Predict Severe Self-Reported Disability with Machine-Learning Algorithm Differs from Regression Analysis	Jung Yoo, MD ; Christina Wright, MD; Spencer Smith, BS
	Poster 20	222	Disparities in Access to Timely Spine Surgeon Evaluation for Degenerative Lumbar Pathology	Karissa Yamaguchi, BS; Caroline Drolet, PhD; Thomas Hanks, BS; Mary Kim, BS; Jesse Shen, MD; Venu Nemani, MD,PhD; Jean-Christophe Leveque, MD; Philip Louie, MD
	Poster 21	247	An Ensemble Model Predicts Risk of Major Perioperative Complications After Instrumented Lumbar Fusion	Akash Shah, MD; Jennifer Kallani, MD ; Sai Devana, MD; Changhee Lee, BS; Don Park, MD
	Poster 22	128	Comparison of Subcutaneous Fat Thickness in the Lumbar Spine Related to BMI Between Males and Females	Landon Bulloch, MD
	Poster 23	305	Biportal Endoscopic Spine Surgery for Lumbar Laminectomy and Discectomy: Preliminary Post-Operative Outcomes and Surgical Learning Curve	Matthew Lipphardt, MD ; Philip Zakko, MD; Ali Jawad, MD; Daniel Park, MD; Maximillian Lee
	Poster 24	20	Methadone Analgesia and Narcotic Use After Lumbar Spinal Fusion	Keagan Gertz, MD ; Andrew White, MD; Kaeli Samson, MA, MPH; Chris Cornett, MD
	Poster 25	86	Characterization of Ion Release from a Novel Biomaterial, Molybdenum-47.5Rhenium, in Physiologic Environments	James Mok, MD ; Kornelis Poelstra, MD,PhD; Kevin Ammar, MD; Matthew McGirt, MD; Robert Hart, MD; Jason Cormier, MD; Jordan Bauman; Pam Cowart, MS,RN; Ishan Sheth; Preet Singh, PhD; Peter Gallagher; Jay Yadav, MD
	Poster 26	255	Minimally Invasive Single Position Prone Lateral Corpectomies: A Retrospective Review including Indications and Perioperative Outcomes	Ashish Patel, MD; Michael Conti-Mica, MD; Michael Rogers, BS ; Nika Byrne, BS,MPH; Rebecca Michna, PA-C
	Poster 27	#154	Predictive Factors of Symptomatic Lumbar Pseudoarthrosis following Multi-Level Primary Lumbar Fusion	Hania Shahzad, MBBS; Moizzah Ahmad ; Varun Singh, MD; Nazihah Bhatti, BS; Elizabeth Yu, MD; Frank Phillips, MD; Safdar Khan, MD
breakout	Poster 28	#277	Osteoporosis is Underdiagnosed and Undertreated in Patients with Fragility Femoral Neck and Vertebral Compression Fractures	Philip Zakko, MD ; Lauren Eberhardt, BS; Madeleine DeClercq, BS; Ahyoung Park, PharmD; Megan Audet, MD; Daniel Park, MD
breakout	Poster 29	#139	Percutaneous Lumbopelvic Fixation Without Fusion is Effective in the Management of U shaped Sacral Fractures	Mark Lawlor, MD; Addisu Mesfin, MD; Mina Botros, MD ; Clark Cady-McCrea, MD
breakout	Poster 30	#272	Validation of the MISDEF2 Algorithm for Adult Spinal Deformity: Analysis of 2-Year Clinical and Patient Reported Outcomes	Ibrahim Hussain, MD; Andrew Chan, MD ; Nitin Agarwal, MD; Christopher Shaffrey, MD; Paul Park, MD; Juan Uribe, MD; Richard Fessler, MD,PhD; Adam Kanter, MD; David Okonkwo, MD,PhD; Gregory Mundis, Jr., MD; Robert Eastlack, MD; Michael Virk, MD,PhD; Jacob Goldberg, MD; Neel Anand, MD, FAAOS; Pierce Nunley, MD; Vivian Le, MPH; Shay Bess, MD; Michael Wang, MD; Dean Chou, MD; Praveen Mummaneni, MD,MBA; Kai-Ming Fu, MD,PhD
breakout	Poster 31	#130	Relationship between lumbar spinal stenosis and axial muscle wasting - a retrospective cross-sectional study	Lukas Schönengel, MD ; Maximilian Muellner, MD; Thomas Caffard, MD; Soji Tani, MD; Gaston Camino-Willhuber, MD; Henryk Haffer, MD; Artine Arzani, MD; Erika Chiapparelli, MD; Krizia Amoroso, MD; Jiaqi Zhu, MS; Jennifer Shue, MS; Ek Tsoon Tan, MD; John Carrino, MD; Andrew Sama, MD; Frank Cammisia, MD; Federico Girardi, MD; Alexander Hughes, MD
breakout	Poster 32	195	Persistent Low Back Pain Following Lumbar Surgery: Is The Sacroiliac Joint to Blame?	Stephan Aynaszyn, BS ; Jacob Linker, BA; Benchaa Boulalam, BS; Michael Pheasant, MD; Matthew Parry, BS; Christopher SanCraint, BS; Siddharth Badve, MD; Hemil Maniar, MD; Edward DeSole, MD
breakout	Poster 33	#315	Decreased Hip Motion is Associated with Inferior Spine Outcomes	Emily Mills, MD ; Jennifer Wang, BS; Joshua Sanchez, BS; Gabriel Bouz, MD; Andy Ton, BS; Annabel Kim, BS; Jeffrey Wang, MD; Ram Alluri, MD; Nathanael Heckmann, MD; Raymond Hah, MD

breakout	Poster 34	#59	Outcomes and Predictors of Subsidence After Expandable Cage in Minimally Invasive Transforaminal Lumbar Interbody Fusion	Tejas Subramanian, BE ; Pratyush Shahi, MBBS,MS; Omri Maayan, BS; Shane Pathania, BS; Daniel Shinn, BS; Ashley Yeo Eun Kim, BS; Eric Zhao, BS; Kasra Araghi, BS; Michael Steinhaus, MD; Avani Vaishnav, MBBS; Yahya Othman, BS; Andre Samuel, MD; Francis Lovecchio, MD; Evan Sheha, MD; Sravisht Iyer, MD; Sheeraz Qureshi, MD
breakout	Poster 35	#169	Radiographic Evaluation of Spinal Fusion: Does Clinical Practice Align with State-of-the-art?	Michael Steinmetz, MD ; Fotis Souslian, MD; Noojan Kazemi, MD
breakout	Poster 36	#335	Preoperative Calcium Levels are Predictive of Medical Complications and Health Resource Utilization in Patients Undergoing Lumbar Decompression	Anitesh Bajaj, BS; Rushmin Khazanchi, BA ; Rohan Shah, BA; Robert Oris, BS; Austin Chen, BA; Pranav Bajaj, BA; Samuel Reyes, BS; Wellington Hsu, MD; Alpesh Patel, MD,MBA; Srikanth Divi, MD