

LUMBAR SPINE RESEARCH SOCIETY 15TH ANNUAL MEETING PROGRAM

Thursday April 7, 2022

7:00 Intro **Announcements** **Michael P. Steinmetz, MD and Jason W. Savage, MD**

**Session 1: Opioids & Pain Management**  
Moderator: Bruce V. Darden, II, MD, FAOA

ABSTRACT ID	Abstract Title	Author List
7:05 Paper 1	350 Personalized Opioid Prescription Protocol to Combat the Opioid Pandemic in 612 Patients Undergoing Lumbar Spine Surgery	<b>Nitin Agarwal, MD; Erica Langnas, MD; Vijay Letchuman, BA; Saman Shabani, MD; Andrew Chan, MD; Mark Schumacher, MD; Christopher Abrecht, MD; Catherine Miller, MD; Sujatha Sankaran, MD; Sigurd Berven, MD; Dean Chou, MD; Zhonghui Guan, MD; Praveen Mummaneni, MD</b>
7:10 Paper 2	380 In Opioid Naive Patients, Smoking Increases Risk of Opioid Use Disorder Following Thoracolumbar Spinal Fusion	<b>Sai Chilakapati, MS; Owoicho Adogwa, MD; Syed Khalid, MD; Cody Eldridge, BS</b>
7:15 Paper 3	428 Pain Plan Implementation Decreases Post-Operative Opioid Use, Hospital Length of Stay, and Clinic Resource Utilization for Patients Undergoing Elective Spine Surgery	<b>Seth Williams, MD; Harjot Uppal, BS; Miranda Bice, MD; Scott Hetzel, MS; Trisha Ludwig, Doctor of Pharmacy; Kristin Hesselbach, Pharmacy Student; Sydney Rozenfeld, BA</b>

7:20-7:28 DISCUSSION

**Session 2: Isthmic Spondylolisthesis**  
Moderator: Dean Chou, MD; Leo R. Spector, MD, MBA

ABSTRACT ID	Abstract Title	Author List
7:30 Paper 4	469 Single-Level MIS TLIF vs ALIF for Surgical Treatment of Isthmic Spondylolisthesis	<b>Kevin Jacob, BS; Madhav Patel, BS; Michael Prabhu, BS; Hanna Pawlowski, BS; Nisheka Vanjani, BS; Kern Singh, MD</b>
7:35 Paper 5	648 ALIF versus TLIF for L5-S1 Isthmic Spondylolisthesis: ALIF Demonstrates Superior Segmental and Regional Radiographic Outcomes and Clinical Improvements Across More PROMs Domains	<b>Harry Lightsey, IV, MD; Alfred Pisano, MD; Brendan Striano, MD; Alexander Crawford, MD; Grace Xiong, MD; Stuart Hershman, MD; Andrew Schoenfeld, MD; Andrew Simpson, MD</b>
7:40 Paper 6	452 Response to pre-operative steroid injections predicts surgical outcomes in patients undergoing fusion for isthmic spondylolisthesis	<b>Joel Turtle, MD; Zane Randell, BS; W. Ryan Spiker, MD; Darrel Brodke, MD; Nicholas Spina, MD</b>

7:45-7:53 DISCUSSION

**Session 3: Degenerative Spondylolisthesis**  
Moderator: Rakesh Patel, MD; Robert F. Heary, MD

ABSTRACT ID	Abstract Title	Author List
7:55 Paper 7	521 A Prospective Study of Lumbar Facet Arthroplasty in the Treatment of Degenerative Spondylolisthesis and Stenosis: Results from the Total Posterior Spine System (TOPS) IDE Study	<b>Zachariah Pinter, MD; Brett Freedman, MD; Ahmad Nassr, MD; Arjun Sebastian, MD; Domagoj Coric, MD; Michael Steinmetz, MD; Stephen Robbins, MD; Yossi Smorgick, MD; Yoram Anekstein, MD</b>
8:00 Paper 8	471 Comparison of Postoperative Clinical Outcomes Between Primary MIS TLIF and MIS TLIF with Revision Decompression for Degenerative Spondylolisthesis	<b>Kevin Jacob, BS; Madhav Patel, BS; Alexander Parsons, MS; Frank Chavez, BS; Max Ribot, BA; Nisheka Vanjani, BS; Michael Prabhu, BS; Hanna Pawlowski, BS; Kern Singh, MD</b>
8:05 Paper 9	567 Patient-Reported and Clinical Outcomes after Lumbar Laminectomy and Fusion Versus Laminectomy Alone in Patients with Lumbar Spondylolisthesis and Harmonious Sagittal Spinopelvic Alignment	<b>Sarthak Mohanty, BS; Stephen Barchick, MD; Manasa Kadiyala, BS; Meeki Lad, BS; Armaan Rouhi, BA; Comron Saifi, MD; Amrit Khalsa, MD; David Casper, MD</b>

8:10-8:18 DISCUSSION

**Symposium 1 Latest on Biologics to Enhance Lumbar Fusion**  
Moderator: Zorica Buser, PhD, MBA

8:18 P15 Paul Arnold, MD

8:19-8:30 BMP-2 Raymond Hah, MD

8:30-8:41 Cellular allografts Andrew T. Dailey, MD

8:41-8:52 Improving the delivery of biological agents Wellington K. Hsu, MD

8:52-9:03 DISCUSSION

9:03-9:13

9:13 - 9:39 **B R E A K**

POSTER BREAK OUT - Moderator: Don Moore, MD

9:23 Poster 28	652 The Effects of Florida Law HB21 on Opioid Prescriptions After Lumbar Spine Surgery	<b>Joseph Geller, MD; Jacob Milner, BS; Shivani Pandya, BS; Neil Mohile, MD; Dustin Massel, MD; Motasem Al Maaieh, MD</b>
9:26 Poster 29	539 Weekend Admission Increases Risk of Readmissions Following Elective Thoracolumbar Spinal Fusion	<b>Sara Pasik, BA; Calista Dominy, BAS; Ashley Rosenberg, BS; Brian Cho, BS; Varun Arvind, BS; Aly Valliani, BA; Jun Kim, MD; Samuel Cho, MD</b>
9:29 Poster 30	575 Predictors for Improvement in Low Back Pain Following Lumbar Laminectomy	<b>David Mazur-Hart, MD; Christian Lopez Ramos, MD; James Obayashi, BS; Hanne Gehling, BS; Won Hyung A. Ryu, MD</b>

DISCUSSION

LUMBAR SPINE RESEARCH SOCIETY 15TH ANNUAL MEETING PROGRAM

Thursday April 7, 2022

**Session 4: Rapid Fire Presentation - 1**

9:39 Moderator: Bradford L. Currier, MD

ABSTRACT ID	Abstract Title	Author List
9:40 RF Paper 1	620 The Impact of Socioeconomic Status on Discharge Disposition following 1-2 Level Posterior Interbody Fusion	Priscilla Varghese, MS,BS,MBA; Lindsay Kim, BA; Nicholas O'Malley, BS; Brooke O'Connell, MS; Constance Maglaras, PhD; Tina Raman, MD; Themistocles Protapsaltis, MD; Yong Kim, MD; <b>Charla Fischer, MD</b>
9:42 RF Paper 2	655 Social Media Use by Spine Surgeons May Not Increase the Number of Ratings on Physician Review Websites	Ryan A. Finkel, BS; Jabra Mustafa, BS; <b>Rawan Suleiman, BS</b> ; Daniel Caicedo, BA; Razan Suleiman, BS; Tom Murickan, BS; Rafia Ali, BS; Lubna Ziauddin, BS; Maimuna Zafer, BS; Zakariah Siyaji, BS; Arash Sayari, MD
9:44 RF Paper 3	347 Appropriate Telemedicine Utilization in Spine Surgery: Results From a Delphi Study	<b>Sravisht Iyer, MD</b> ; Patawat Bovonratwet, MD; Dino Samartzis, PhD; Andrew Schoenfeld, MD; Howard An, MD; Waleed Awwad, MD; Scott Blumenthal, MD; Jason Cheung, MBBS; Peter Derman, MD; Mohammad El-Sharkawi, MD
9:46 RF Paper 4	346 Propensity Matched Cohort Study Comparing Accuracy of Robotic Assisted Spinal Surgery versus Navigation Alone: Early Experience of 260 Pedicle Screws	<b>Saman Shabani, MD</b> ; Nitin Agarwal, MD; Jeremy Huang, BS; Alma Rechav Ben-Natan, BA; Alexander Aabedi, BS; Vivian Le, MPH; Lee Tan, MD; Praveen Mummaneni, MD; Dean Chou, MD
9:48 RF Paper 5	495 Comparing Health-related quality of life (QoL) between Decompression and Paraspinous Tension Band Stabilization (D+PTB) and Transforaminal lumbar interbody fusion (TLIF) for Lumbar Degenerative Spondylolisthesis (DS)	<b>Hania Shahzad, MBBS</b> ; Nazihah Bhatti, BS; Louis Fielding, MS; Rick Sasso, MD; Hyun Bae, MD; Sangwook Yoon, MD,PhD; William Lavelle, MD; Ravinder Bains, MD; Calvin Kuo, MD; Harvinder Sandhu, MD; Michael Stauff, MD; Mick Perez-Cruet, MD; Sigurd Berven, MD; Jeffrey Fischgrund, MD; Harel Deutsch, MD; Hamid Hassanzadeh, MD; Richard Guyer, MD; Jeffrey Gum, MD; Todd Alamin, MD; Elizabeth Yu, MD
9:50 RF Paper 6	490 Prediction Models for Length of Stay and Discharge Disposition in Elective Spine Surgery: Analysis of N=3,678 Patients and Comparison to ACS NSQIP Risk Calculator	<b>Ayush Arora, BS</b> ; Dmytro Lituiev, PhD; Dexter Hadley, MD,PhD; Sigurd Berven, MD; Thomas Peterson, PhD

9:50-9:59 DISCUSSION

**Session 5: Deformity**

9:59 Moderator: Jason W. Savage, MD

ABSTRACT ID	Abstract Title	Author List
10:00 Paper 10	641 Comparison of Harmonious versus Localized Correction in Adult Spinal Deformity Surgery	<b>Paul Park, MD</b> ; Peter Passias, MD; Tyler Williamson, MS; Rachel Joujon-Roche, BS; Bailey Imbo, BA; Oscar Krol, BA; Andrew Schoenfeld, MD; Peter Tretiakov, BS; Stephane Owusu-Sarpong, MD; Ekamjeet Dhillon, MD; Jordan Lebovic, MD; Oluwatomi Lanre-Amos, MD; Shaleen Vira, MD; Bassel Diebo, MD; Justin Smith, MD; Renaud Lafage, MS; Virginie Lafage, PhD
10:05 Paper 11	581 Lumbar Lordosis Correction with Transforaminal Lumbar Interbody Fusion in Adult Spinal Deformity Patients with Minimum Two Year Follow Up	<b>Anthony Mikula, MD</b> ; Nikita Lakomkin, MD; Zach Pennington, MD; Benjamin Elder, MD,PhD; Jeremy Fogelson, MD
10:10 Paper 12	573 Vacuum Discs in Lumbar Spinal Deformity: Relationships with Pain and Patient Factors	<b>John Kleimeyer, MD</b> ; Tanmaya Sambare, MD; Akaila Cabell, MD; Matthew Follett, MD; Jayme Koltsov, PhD; Huaishuang Shen, PhD; Todd Alamin, MD; Kirkham Wood, MD; Serena Hu, MD
10:15 Paper 13	639 Determining the Utility of 3-Column Osteotomies in Revisions Compared to Primary Surgeries	<b>Paul Park, MD</b> ; Peter Passias, MD; Tyler Williamson, MS; Bailey Imbo, BA; Peter Tretiakov, BS; Rachel Joujon-Roche, BS; Oscar Krol, BA; Stephane Owusu-Sarpong, MD; Ekamjeet Dhillon, MD; Jordan Lebovic, MD; Oluwatomi Lanre-Amos, MD; Shaleen Vira, MD; Andrew Schoenfeld, MD; Bassel Diebo, MD; Justin Smith, MD; Renaud Lafage, MS; Virginie Lafage, PhD

10:20-10:29 DISCUSSION

**Session 6: Telemedicine & COVID**

10:29 Moderator: Gregory D. Schroeder, MD; Charla R. Fischer, MD, FAOA

ABSTRACT ID	Abstract Title	Author List
10:30 Paper 14	591 Telemedicine Visits Can Generate Highly Accurate Diagnoses and Surgical Plans for Spine Patients	Patawat Bovonratwet, MD; <b>Junho Song, BS</b> ; Ashley Yeo Eun Kim, BS; Daniel Shinn, BS; Kyle Morse, MD; Russel Huang, MD; Todd Albert, MD; Harvinder Sandhu, MD; Sheeraz Qureshi, MD; Sravisht Iyer, MD
10:35 Paper 15	617 Understanding the Influence of Prior Positive COVID-19 Infection on 90-day Outcomes following Elective Lumbar Spine Surgery	Azeem Tariq Malik, MBBS; <b>Austin Roebke, MD</b> ; Christian Curatolo, MD; Joey Drain, MD; Jeremy Jones, MD; Kathryn Jurenovich, MD; Jonathan Karnes, MD; Safdar Khan, MD
10:40 Paper 16	535 Patient Satisfaction with Spine Surgery Telemedicine Visits	<b>Mark Plantz, MD</b> ; Nicholas Arpey, MD; Cody Goedder, BS; Erik Gerlach, MD; Joseph Weiner, MD; Peter Swiatek, MD; Srikanth Divi, MD; Alpesh Patel, MD,MBA; Wellington Hsu, MD
10:45 Paper 17	329 Similar Accuracy of Surgical Plans after Initial In-Person and Telemedicine Evaluation of Spine Patients	Ivan Ye, BS; <b>Alexandra Thomson, MD</b> ; Jack Donahue, BS; Vincent Miseo, MD; Julio Jauregui, MD; Daniel Cavanaugh, MD; Eugene Koh, MD,PhD; Steven Ludwig, MD; Daniel Gelb, MD

10:50-11:00 DISCUSSION

AWARDS AND GRANTS

Moderators: Andrew Dailey, MD and Addisu Mesfin, MD

LUMBAR SPINE RESEARCH SOCIETY 15TH ANNUAL MEETING PROGRAM

Thursday April 7, 2022

11:00	<b>Best Paper Awards</b>	
11:02	<b>LSRS Education Scholarship Awards*</b>	
11:04	<b>2022 LSRS Zimmer Biomet Research Grant Award Winner</b> Do Cannabinoids Affect Spinal Fusion Rates in an Animal Model <b>Overview of Research Project</b>	<b>Harold Fogel, MD</b>
11:08	<b>2021 LSRS Medtronic Research Grant Report</b> Double-Blind, Randomized Controlled Trial of Erector Spinae Block for Peri-Operative Opioid Reduction in Lumbar Spine Fusion	<b>Nicholas Spina, MD</b>
11:15	<b>2019 Research Grant Report</b> A Multi-Disciplinary Approach to Reduce Chronic Opioid Use Prior to Elective Lumbar Spine Surgery	<b>Andrew Pugely, MD</b>
11:22-11:28	DISCUSSION	*Education Scholarships were made possible by a generous donation by Carlsmed

11:28	<b>Symposium 2</b>	<b>Impact of Chronic Pain on Surgical Outcomes</b>	<b>Moderator: Michael P. Steinmetz, MD</b>
11:30		Outcome measures in the chronic pain patient	Dominic Pelle, MD
11:41		Perioperative optimization: Behavioral Strategies	Sara Davin, PsyD, MPH
11:52		How to manage/wean narcotics in the peri-operative period	Josephine Sabharwal, MD
12:03-12:15		DISCUSSION	

12:15	<b>Attendees Luncheon</b>	Paris Foyer
	<b>Members Business Luncheon</b>	Café Des Architects

1:15 **Announcements**

**Session 7: Rapid Fire Presentation - 2**  
Moderator: Jeffrey Fischgrund, MD

	ABSTRACT ID	Abstract Title	Author List
1:18 RF Paper 7	477	Impact of Interbody Approach and Lumbar Level on Segmental, Adjacent, and Sagittal Alignment in Degenerative Disease	Bailey O'Connor, BS; <b>Jean-Christophe Leveque, MD</b> ; Venu Nemani, MD, PhD; Katie Krause, MD, PhD; Jesse Shen, MD; Rajiv Sethi, MD; Philip Louie, MD
1:20 RF Paper 8	429	Utilizing Previous Patient Opioid Experiences for Pain Plan Implementation: Role of Opioid Use Categorization on Inpatient and Outpatient Opioid Use, Length of Stay, Pain Scores, and Clinic Resource Utilization Following Elective Spine Surgery	<b>Seth Williams, MD</b> ; Sydney Rozenfeld, BA; Miranda Bice, MD; Scott Hetzel, MS; Kristin Hesselbach, Pharmacy Student; Trisha Ludwig, Doctor of Pharmacy; Harjot Uppal, BS
1:22 RF Paper 9	598	A Retrospective Review of 110 Prone Lateral Lumbar Interbody Fusion Cases: A Single Surgeon Experience	<b>Ashish Patel, MD</b> ; Ravi Paul; RonJan Paul, MD
1:24 RF Paper 10	441	Impact of Predominant Back Pain versus Predominant Leg Pain on VAS and ODI Satisfaction Scores following MIS LD	<b>Madhav Patel, BS</b> ; Kevin Jacob, BS; Conor Lynch, MS; Elliot Cha, MS; Michael Prabhu, BS; Hanna Pawlowski, BS; Nisheka Vanjani, BS; Kern Singh, MD
1:26 RF Paper 11	631	Prophylaxis Usage Can Mitigate the Effects of Radiographic Complications in Patients Who Maintained a Poor Post-Operative Alignment	Peter Passias, MD; Oscar Krol, BA; Peter Tretiakov, BS; Rachel Joujon-Roche, BS; Bailey Imbo, BA; <b>Stephane Owusu-Sarpong, MD</b> ; Ekamjeet Dhillon, MD; Jordan Lebovic, MD; Oluwatomi Lanre-Amos, MD; Tyler Williamson, MS; Shaleen Vira, MD; Bassel Diebo, MD; Renaud Lafage, MS; Virginie Lafage, PhD; Dean Chou, MD; Praveen Mummaneni, MD; Paul Park, MD; Saman Shabani, MD; Burhan Janjua, MD; Andrew Schoenfeld, MD; Justin Smith, MD
1:28 RF Paper 12	566	Clinical and Patient Reported Outcomes(PROs) Comparing Lumbar Laminectomy and Fusion versus Laminectomy Alone in Patients with Radiographic Spinopelvic Malalignment in the Setting of Lumbar Stenosis and Spondylolisthesis: A Non-Randomized, Prospective Cohort Study	<b>Sarthak Mohanty, BS</b> ; Manasa Kadiyala, BS; Stephen Barchick, MD; Meeki Lad, BS; Armaan Rouhi, BA; Chetan Vadali; Comron Saifi, MD; Amrit Khalsa, MD; David Casper, MD
1:30-1:39		DISCUSSION	

**Session 8: Imaging/Hounsfield Units**  
Moderator: Paul A. Anderson, MD

Abstract ID	Abstract Title	Author List
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LUMBAR SPINE RESEARCH SOCIETY 15TH ANNUAL MEETING PROGRAM

Thursday April 7, 2022

1:40	Paper 18	410 Lower Hounsfield Units are Significantly Associated with Proximal Junctional Kyphosis and Failure at the Upper Thoracic Spine	<b>Anthony Mikula, MD; Nikita Lakomkin, MD; Zach Pennington, MD; Zachariah Pinter, MD; Ahmad Nassr, MD; Brett Freedman, MD; Kingsley Abode-Iyamah, MD; Mohamad Bydon, MD; Jeremy Fogelson, MD; Benjamin Elder, MD, PhD</b>
1:45	Paper 19	317 Does measurement technique impact the strength of CT-based diagnosis of osteoporosis or osteopenia? A comparison of axial and sagittal measures of Hounsfield units	<b>Matthew Parry, BS; Stephan Aynaszyan, BS; Luis Devia, MS, BS; Siddharth Badve, MD; Edward DelSole, MD</b>
1:50	Paper 20	580 MRI-based Score for Assessment of Bone Mineral Density in Operative Spine Patients	<b>Ashley Yeo Eun Kim, BS; Keith Lyons, MD; J. Manuel Sarmiento, MD; Sheeraz Qureshi, MD; Virginia Lafage, PhD; Sravisht Iyer, MD</b>
1:55	Paper 21	519 Lower Hounsfield Units at the Upper Instrumented Vertebra and Severe Multifidus Sarcopenia are Independent Predictors of Increased Risk for Proximal Junctional Kyphosis and Failure following Thoracolumbar Fusion	<b>Zachariah Pinter, MD; Anthony Mikula, MD; Sarah Townsley, MD; Harold Salmons, MD; Nikita Lakomkin, MD; Giorgos Michalopoulos, MD; Ahmad Nassr, MD; Brett Freedman, MD; Arjun Sebastian, MD; Mohamad Bydon, MD; Jeremy Fogelson, MD; Benjamin Elder, MD, PhD</b>
2:00-2:09	DISCUSSION		
2:09	<b>Session 09: Outcomes</b> Moderator:	Timothy Witham, MD & Jad G. Khalil, MD	
	<b>Abstract ID</b>	<b>Abstract Title</b>	<b>Author List</b>
2:10	Paper 22	599 The Effect of Preoperative Ambulation Status on Postoperative Patient Reported Outcomes in Patients Undergoing Lumbar Spine Surgery	<b>Petros Koutsogiannis, DO; Austen Katz, MD; Cesar Iturriaga, DO; Junho Song, BS; Mitchell Seitz, BA; Adam Strigenz, BA; Jeff Silber, MD; David Essig, MD</b>
2:15	Paper 23	516 Does Physical Therapy Improve Patient Reported Outcomes Following Lumbar Decompression?	<b>Nicholas D'Antonio, BS; Mark Lambrechts, MD; Payton Boere, BS; Jose Canseco, MD, PhD; Alan Hilibrand, MD; Chris Kepler, MD; Alexander Vaccaro, MD, PhD, MBA; Gregory Schroeder, MD</b>
2:20	Paper 24	392 Determining What Markers Increase the Odds of Successful Non-Operative Treatment of Lumbar Disc Herniation	<b>Devender Singh, PhD; Eric Truumees, MD; Ashley Duncan, RN, MBA; Erik Kano Mayer, MD</b>
2:25	Paper 25	439 Influence of Preoperative SF-12 MCS on PROMs and Achievement of MCID in an Isthmic Spondylolisthesis Population undergoing MIS TLIF	<b>Kevin Jacob, BS; Madhav Patel, BS; Frank Chavez, BS; Michael Prabhu, BS; Hanna Pawlowski, BS; Nisheka Vanjani, BS; Kern Singh, MD</b>
2:30-2:39	DISCUSSION		

2:40-3:04 **B R E A K**

POSTER BREAK OUT - Michael J. Lee, MD

2:50	Poster 31	313 Operative Treatment of Bertolotti Syndrome: Resection versus Fusion	<b>Anthony Mikula, MD; Nikita Lakomkin, MD; Ryan Ransom, MD, PhD; Laura Waksdahl, CNP; Zach Pennington, MD; Manish Sharma, MBBS; Benjamin Elder, MD, PhD; Jeremy Fogelson, MD</b>
2:53	Poster 32	528 PROMIS is more sensitive than ODI for the detection of MCID in surgical patients with mild to moderate disability from lumbar degenerative pathology	<b>Nicholas Lanzetta, BS; Alexander Linton, BS; Andrew Furman, MBA; Erik Gerlach, MD; Alpesh Patel, MD, MBA; Srikanth Divi, MD; Wellington Hsu, MD; Eileen Phan, BA</b>
2:56	Poster 33	451 Risk Factors for Requiring Multiple Revision Procedures after previous Lumbar fusion <4 levels fused	<b>Fares Ani, MD; Arnaav Wallia, BA; Gregory Perrier, BS; Julianna Bono, BS; Nathan Kim, BS; Constance Maglaras, PhD; Hershil Patel, BS; Aonnicha Burapachaisri, BS; Brooke O'Connell, MS; Themistocles Protapsaltis, MD; Tina Raman, MD</b>
	DISCUSSION		

3:04 **Session 10: Artificial Intelligence and Predicting Outcomes**  
Moderator: Alpesh A. Patel, MD, MBA, FACS and Srikanth Divi, MD

	<b>Abstract ID</b>	<b>Abstract Title</b>	<b>Author List</b>
	Paper 26	Withdrawn	
3:05	Paper 27	413 Predicting Patient Success with Decompressive Spinal Surgery: Looking Into the Past to Predict the Future	<b>Arpan Patel, MD; Jeffery Coombs, BS; Nicholas Rabah, BS; Swetha Sundar, MD; Sebastian Salas, PhD; Michael Steinmetz, MD; Thomas Mroz, MD; Ghaith Habboub, MD</b>
3:10	Paper 28	374 Determining the Utility of the RAPSIF Score as a Means of Predicting Post-Surgical Outcomes Following Elective Lumbar Fusions	<b>Jesse Eisler, MD, PhD, MBA; Matthew Solomito, PhD</b>
3:15	Paper 29	603 Data-Driven Phenotyping of Pre-Operative Functional Decline Patterns in Lumbar Decompression and Lumbar Fusion Patients Using Smartphone Accelerometry	<b>Hasan Ahmad, BS; Shikha Singh, BS; Kenneth Jiao, None; Gregory Basil, MD; Michael Wang, MD; William Welch, MD; Jang Yoon, MD</b>
3:20 - 3:30	DISCUSSION		
3:30	<b>Symposium 3: Robotics and the Future of Spine Surgery</b>	<b>Moderator: Raymond Hah, MD</b>	
3:35		Current state of the art	Gregory D. Schroeder, MD
3:46		Impact of technology on training young surgeons	Chetan K. Patel, MD
3:57		What's next for robotics	Paul Park, MD
4:08 - 4:20	<b>DISCUSSION</b>	Faculty Panel	
4:20	CLOSING REMARKS		
4:30	ADJOURN		

LUMBAR SPINE RESEARCH SOCIETY 15TH ANNUAL MEETING PROGRAM

FRIDAY, APRIL 8, 2022

7:00 **Announcements: Michael P. Steinmetz, MD and Jason W. Savage, MD**

**Session 11: Surgical Outcomes**

Moderator: Shah Nawaz Dodwad, MD; Cara Sedney, MD

	Abstract ID	Abstract Title	Author List
7:05 Paper 30	586	Decision Making Factors Leading to Fusion vs. Decompression for One Level Degenerative Spondylolisthesis: Survey Results from Members of the Lumbar Spine Research Society and Society of Minimally Invasive Spine Surgery	Kyle Morse, MD; Michael Steinhaus, MD; Patawut Bovonratwet, MD; Gregory Kazarian, MD; Avani Vaishnav, MBBS; Junho Song, BS; Virginie Lafage, PhD; Renaud Lafage, MS; Sravisht Iyer, MD; Sheeraz Qureshi, MD
7:10 Paper 31	354	The Effects of Static and Expandable Cages on Local and Global Lumbar Lordosis (LL) in Transforaminal Lumbar Interbody Fusion (TLIF) Patients: A Minimum One Year Follow Up	Tzu Chuan Yen, MD; Major Burch, MD; Julia Crim, MD; Emily Leary, PhD; Sameh Abolfotouh, MD; Don Moore, MD
7:15 Paper 32	364	Multicenter Evaluation of the Effect of Surgical Approach on Sagittal Plane Alignment in One- or Two- Level Fusions for Degenerative Pathology	Jean-Christophe Leveque, MD; Caroline Drolet, PhD; Venu Nemani, MD,PhD; Katie Krause, MD,PhD; Jesse Shen, MD; Rajiv Sethi, MD; Philip Louie, MD
7:20-7:29		DISCUSSION	

**Session 12: Outcomes/Deformity**

Moderator: Darrel Brodke, MD; Douglas Orndorff, MD

	Abstract ID	Abstract Title	Author List
7:30 Paper 33	352	Modified Frailty Index Independently Predicts Morbidity in Patients Undergoing 3-Column Osteotomy	Austen Katz, MD; Mitchell Seitz, BA; Adam Strigenz, BA; Junho Song, BS; Jeff Silber, MD; Rohit Verma, MD; Sohrab Virk, MD; David Essig, MD
Paper 34		Withdrawn	
7:35 Paper 35	455	The Effect of In-patient Step Count on Complications in the Elderly Patient after Adult Spinal Deformity Surgery	Fares Ani, MD; Gregory Perrier, BS; Arnaav Walia, BA; Julianna Bono, BS; Brooke O'Connell, MS; Constance Maglaras, PhD; Aonicha Burapachaisri, BS; Hershil Patel, BS; Nathan Kim, BS; Themistocles Protopsaltis, MD; Tina Raman, MD
7:40 Paper 36	340	Effects of Hypovitaminosis-D Diagnosis and Treatment on Hardware Failure in Adult Patients Undergoing Posterior Lumbar Spine Fusion	Bianca Robison, BS; Spencer Smith, BS; Travis Phillip, MD; Jung Yoo, MD
7:45-7:53		DISCUSSION	

**Session 13: Rapic Fire Presentations - 3**

Moderator: Don Moore, MD

	Abstract ID	Abstract Title	Author List
7:55 RF Paper 13	358	Percutaneous Vertebral Augmentation does not Alter Refracture Rate in Osteoporotic Compression Fractures, but Anti-Osteoporotic Medications Do	Emily Mills, MD; Raymond Hah, MD; Zoe Fresquez, BS; Zorica Buser, PhD; Ram Alluri, MD; Paul Anderson, MD
7:57 RF Paper 14	398	Dynamic Changes in Intervertebral Lumbar Spine Kinematics During Gait May Explain Improvement in Back Pain in Hip-Spine Syndrome	Stephen Chen, MD; Clarissa LeVasseur, MS; Christopher Como, BS; Brandon Couch, MD; Brian Klatt, MD; Michael O'Malley, MD; William Donaldson, MD; Joon Lee, MD; William Anderst, PhD; Jeremy Shaw, MD,MS
7:59 RF Paper 15	418	Patient Report Outcomes, Complications, and Readmissions in Patients with Parkinson's Disease Undergoing Elective Lumbar Spine Surgery- a Propensity Matched Analysis	Anthony Steinle, BA; Jacquelyn Pennings, PhD; Byron Stephens, MD; Scott Zuckerman, MD,MPH; Mohamad Bydon, MD; Clinton Devin, MD; Amir Abtahi, MD
8:01 RF Paper 16	524	A Prospective Randomized Study Assessing the Impact of a Standardized Educational Curriculum on Resident Rod Bending Proficiency	Zachariah Pinter, MD; Rachel Honig, MD; Harold Salmons, MD; Brett Freedman, MD; Benjamin Elder, MD,PhD; Jeremy Fogelson, MD; Ahmad Nassr, MD; Arjun Sebastian, MD
8:03 RF Paper 17	305	Should Physical Therapy be Incorporated in Patient Care Post 1-2 Level Lumbar Fusions for Degenerative Lumbar Instability? -A Comparative Outcome Analysis	Devender Singh, PhD; Eric Truumees, MD; Ashley Duncan, RN,MBA; Eric Kano Mayer, MD
8:05-8:13		DISCUSSION	

	Symposium 4	Debate: Lumbar Fusion vs. Arthroplasty DDD with Foraminal Stenosis	L5/S1
8:14		No need for fusion: Foraminotomy is best	Moderator: Paul A. Anderson, MD
8:15		ALIF is optimal	Iain Kalfas, MD
8:27		TDR is optimal	Thomas A. Zdeblick, MD
8:38		DISCUSSION	Scott Blumenthal, MD
8:51-9:04			

LUMBAR SPINE RESEARCH SOCIETY 15TH ANNUAL MEETING PROGRAM

FRIDAY, APRIL 8, 2022

9:04 **Session 14: Rapid Fire Presentation - 4**  
Moderator: Seth K. Williams, MD

Abstract ID	Abstract Title	Author List
9:05 RF Paper 18	642 Obesity and Low Back Pain in Children: Associations with Lumbar Spine Degeneration, Alignment, and Pain Management	<b>Samuel Rudisill, BS</b> ; Alexander Hornung, BS; J. Nicolas Barajas, BS; G. Mallow, BS; Howard An, MD; Dino Samartzis, PhD
9:07 RF Paper 19	421 Using Big Data to Define Gradations of Functional Recovery after Minimally Invasive Lumbar Fusion Through Smartphone-Based Activity Monitoring	<b>Hasan Ahmad, BS</b> ; Kenneth Jiao; Gregory Basil, MD; Jang Yoon, MD; Michael Wang, MD; William Welch, MD
9:09 RF Paper 20	444 Two-Level MIS TLIF vs ALIF: A Comparison of Patient Reported Outcomes, MCID Achievement, Post-operative Complications and Recovery Ratios	Madhav Patel, BS; Kevin Jacob, BS; Max Ribot, BA; Frank Chavez, BS; Alexander Parsons, MS; Nisheka Vanjani, BS; <b>Michael Prabhu, BS</b> ; Hanna Pawlowski, BS; Kern Singh, MD
9:11 RF Paper 21	530 What Degree of Coronal Correction is Needed in Adult Spinal Deformity Patients to Reduce Radiographic Complications in Patients with Ideal Post-operative Sagittal Alignment?	Peter Passias, MD; Oscar Krol, BA; Peter Tretiakov, BS; Tyler Williamson, MS; Bailey Imbo, BA; Rachel Joujon-Roche, BS; <b>Stephane Owusu-Sarpong, MD</b> ; Ekamjeet Dhillon, MD; Joradan Lebovic, MD; Oluwatomi Lanre-Amos, MD; Shaleen Vira, MD; Bassel Diebo, MD; Renaud Lafage, MS; Virginia Lafage, PhD; Dean Chou, MD; Praveen Mummaneni, MD; Paul Park, MD; Saman Shabani, MD; Burhan Janjua, MD; Andrew Schoenfeld, MD; Justin Smith, MD
9:13 RF Paper 22	549 Propensity-score matched analysis of subsidence and reoperation after LLIF using 3D porous titanium vs. Polyetheretherketone	Nallammai Muthiah, BS; Lena Vodovotz, BS; Hansen Deng, MD; Robert Dembinski, BS; Alp Ozpinar, MD; <b>Nitin Agarwal, MD</b> ; David Hamilton, MD; Adam Kanter, MD; David Okonkwo, MD; Nima Alan, MD
9:15 - 9:24	DISCUSSION	

9:25 BREAK

POSTER BREAK OUT - Jonathan Sembrano, MD

9:35 Poster 34	353 Modified Frailty Index Independently Predicts Morbidity in Patients Undergoing Instrumented Fusion Following Extradural Tumor Removal	<b>Austen Katz, MD</b> ; Adam Strigenz, BA; Mitchell Seitz, BA; Junho Song, BS; Rohit Verma, MD; Sohrab Virk, MD; Jeff Silber, MD; David Essig, MD
9:38 Poster 35	540 Risk Factors for Short-Term Complications Among Octogenarians Undergoing Elective Lumbar Decompression or Fusion Procedures: A Matched-Cohort Study	Joshua Weissman, BBA; Mark Plantz, MD; <b>Erik Gerlach, MD</b> ; Nicholas Arpey, MD; Peter Swiatek, MD; Wellington Hsu, MD; Alpesh Patel, MD, MBA; Srikanth Divi, MD
9:41 Poster 36	443 Stand Alone ALIF vs ALIF with Posterior Instrumentation: Comparison of Clinical Outcomes	Kevin Jacob, BS; Madhav Patel, BS; Alexander Parsons, MS; Frank Chavez, BS; Hanna Pawlowski, BS; <b>Nisheka Vanjani, BS</b> ; Michael Prabhu, BS; Kern Singh, MD
9:44 Poster 37	492 Low Back Pain with Surgical and Nonsurgical Treatment of Closed Pelvic Ring Fractures with Sacral Injuries: A Single Institutional Retrospective Review	<b>Tzu Chuan Yen, MD</b> ; Haley Huff, BS; Emily Leary, PhD; Kyle Schweser, MD; Michael Ghassibi, DO; Don Moore, MD
	DISCUSSION	

9:50 **Transfer of Presidents**

**Moderator: Raj Rao, MD**

9:55 **Tribute to President Presidential Speech**

Plaque Ceremony  
Paul Arnold, MD

10:10 **Announcement of Incoming President**  
Bruce V. Darden, II, MD, FAOS

Pin Ceremony

10:14 **Session 15: Miscellaneous**  
Moderator: James Harrop, MD & Daniel S. Yanni, MD

Abstract ID	Abstract Title	Author List
10:15 Paper 37	649 Does Cutibacterium acnes (C. acnes, formerly Propionibacterium acnes) Play a Role in Degenerative Disc Disease?	Amy Phan, BS; Noorullah Maqsoodi, BS; <b>Karim Elmobdy, BS</b> ; Ann Gill, PhD; Steven Gill, PhD; Addisu Mesfin, MD.

LUMBAR SPINE RESEARCH SOCIETY 15TH ANNUAL MEETING PROGRAM

FRIDAY, APRIL 8, 2022

10:20 Paper 38	629 Clinical and Radiographic Differences Between Single- and Multi-Level Lumbar Disc Herniations and Resorption:a Prospective Multi-Imaging and Clinical Phenotype Study	<i>Alexander Hornung, BS; Samuel Rudisill, BS; J. Nicolas Barajas, BS; Garrett Harada, MD; Ashlyn Fitch, BS; Ashley Roberts, BS; Howard An, MD; Anton Epifanov, MD; Hanne Albert, PhD,PT, MPH; Alexander Tkachev, MD; Dino Samartzis, PhD</i>
10:25 Paper 39	365 Utility of the Erector Spinae Plane Block in Posterior and Transforaminal Lumbar Interbody Fusions	<i>Heeren Makanji, MD; Matthew Solomito, PhD; Sean Esmende, MD; Carla Maffeo-Mitchell, MD; Kevin Finkel, MD,FASA</i>
10:30 Paper 40	334 Bone Morphogenetic Protein and Cancer in Spinal Fusion: A Propensity-Matched Analysis	<i>Josiah Orina, MD,FACS; Jung Yoo, MD</i>
10:35-10:44	DISCUSSION	
10:44	<b>Session 16: Socioeconomics in Spine</b> Moderator: Siddharth A. Badve, MD	
	<u>Abstract ID</u>	<u>Abstract Title</u>
10:45 Paper 41	453 Outcomes of Indirect versus Direct Decompression in Single-Position Surgery	<i>Fares Ani, MD; Arnaav Walia, BA; Gregory Perrier, BS; Julianna Bono, BS; Brooke O'Connell, MS; Aonnicha Burapachaisri, BS; Hershil Patel, BS; Nathan Kim, BS; Constance Maglaras, PhD; Tina Raman, MD; Themistocles Protopsaltis, MD</i>
10:50 Paper 42	553 Bundled Payments in Spine Surgery	<i>Natalie Glass, PhD; Andrew Pugely, MD; Mary Stolley, MS, RN; Ben Hall, MBA; Joshua Eisenberg, MD; Kyle Kesler, MD; Catherine Olinger, MD; Ashley Bell, BS</i>
10:55 Paper 43	322 Social Vulnerability is an Important Contributor to Racial Disparities in the Safety of Spine Surgery	<i>Ian Engler, MD; Kinjal Vasavada, BA; Megan Vanneman, PhD,MPH; Andrew Schoenfeld, MD; Brook Martin, PhD, MPH</i>
Paper 44	328 Telemedicine Improves Access to Care for Spine Patients with Low Socioeconomic Status	<i>Ivan Ye, BS; Alexandra Thomson, MD; Vincent Miseo, MD; Julio Jauregui, MD; Daniel Cavanaugh, MD; Eugene Koh, MD,PhD; Daniel Gelb, MD; Steven Ludwig, MD</i>
11:00	DISCUSSION	
11:05-11:14		
11:14	<b>Session 17: Basic Science</b> Moderator: Zorica Buser, PhD, MBA	
	<u>Abstract ID</u>	<u>Abstract Title</u>
11:15 Paper 45	379 Changes in Plasma Cytokine Markers are Predictive of Persistent Postsurgical Pain Following Complex Spine Surgery	<i>Sai Chilakapati, MS; Owoicho Adogwa, MD; Michael Burton, PhD</i>
11:20 Paper 46	529 Sex Differences in Response to Recombinant Human Bone Morphogenetic Protein-2 (rhBMP-2) in a Rat Posterolateral Fusion Spine Model	<i>Nicholas Lanzetta, BS; Andrew Furman, MBA; Alexander Linton, BS; James Foley, MD; Elianna Fred, BS; Allison Wintring, BS; Mark Plantz, MD; Avinash Patwardhan, PhD; Stuart Stock, PhD; Wellington Hsu, MD; Erin Hsu, PhD; Eileen Phan, BA</i>
11:25 Paper 47	378 Changes in Plasma Pro-inflammatory Cytokines Robustly Predict Risk for Postoperative Delirium Following Complex Spine Surgery	<i>Sai Chilakapati, MS; Owoicho Adogwa, MD; Michael Burton, PhD</i>
11:30 Paper 48	361 Percutaneous delivery of Recombinant Human Bone Morphogenetic Protein-2 augments fusion in a nicotine-impaired rabbit fusion model	<i>Sohrab Virk, MD; Avani Vaishnav, MBBS; Sheeraz Qureshi, MD</i>
11:35-11:44	DISCUSSION	
11:44	<b>Symposium 5 Deformity-Achieving Fusion at L5/S1</b>	<b>Moderator: Dominic Pelle, MD</b>
11:46	ALIF is optimal for correction and fusion	Clifford Tribus, MD
11:58	No need for anterior work, TLIF is best	Jason W. Savage, MD
12:10	No interbody needed to achieve good outcomes	Darrel S. Brodke, MD
12:11 - 12:25	DISCUSSION	
12:25	Closing Remarks	
12:30	Adjourn	

## LUMBAR SPINE RESEARCH SOCIETY 15TH ANNUAL MEETING PROGRAM

### 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	501 Clinical and Patient Reported Outcomes in Revision Lumbar Spinal Fusion Compared to Primary Surgery	<i>Gregory Toci, BS; <b>Mark Lambrechts, MD</b>; Nicholas Siegel, BS; Nicholas D'Antonio, BS; Dominic Lambo; Brian Karamian, MD; Jose Canseco, MD,PhD; Alan Hilibrand, MD; Chris Kepler, MD; Alexander Vaccaro,</i>
Poster 02	558 Incidence and Cost Trends of Interlaminar and Transforaminal Epidural Steroid Injections for Neurological Claudication, Radiculopathy, and Sciatica Patients and Their Conversion to Lumbar Fusion or Decompression Surgery	<i>Zoe Fresquez, BS; <b>Zorica Buser, PhD</b>; David Cheng, MD; Christopher Ornelas, MD; Gene Tekmyster, DO</i>
Poster 03	571 Motorized Hinged Operating Table Facilitated Sagittal Correction after Spinal Osteotomies using Smith- Peterson Osteotomies and Transforaminal Lumbar Interbody Fusion	<i>Kenneth Holton, MD; Paul Soriano, MD; <b>Jonathan Sembrano, MD</b>; Christopher Martin, MD; Kristen Jones, MD; Nathan Hendrickson, MD,MS; David Polly, Jr, MD</i>
Poster 04	604 Closed Incision Negative Pressure Therapy Reduces Incidence of Surgical Site Infection After Spinal Surgery	<i><b>Dominic Ridolfi, BS</b>; Anthony Oyekan, MD; Aaron Zheng, BS; Raghav Ramraj, BS; Asher Mirvish, BS; Brandon Couch, MD; Emmett Gannon, MD; Jeremy Shaw, MD,MS; William Donaldson, MD; Joon Lee, MD</i>
Poster 05	404 Vertebral Bone Quality (VBQ) Score may be Useful in Recognizing Patients at Risk for Secondary Fracture After Vertebroplasty	<i><b>Aamir Kadri, MS</b>; Daniel Liu; Neil Binkley, MD; Andrew Ross, MD; Paul Anderson, MD</i>
Poster 06	569 Should Patients with Lumbar Stenosis and Grade I Spondylolisthesis Be Treated Differently Based on Spinopelvic Alignment? A Comparison of Patient-Reported Outcome Measures and Clinical Outcomes from Multiple Sites Within a Single Health System	<i><b>Sarthak Mohanty, BS</b>; Manasa Kadiyala, BS; Stephen Barchick, MD; Armaun Rouhi, BA; Meeki Lad, BS; Chetan Vadali; Amrit Khalsa, MD; Comron Saifi, MD; David Casper, MD</i>
Poster 07	557 Results of Minimally Invasive Decompression Compared with Traditional Lumbar Microdiscectomy and Open Laminectomy	<i>Arnaav Walia, BA; Julianna Bono, BS; Gregory Perrier, BS; Fares Ani, MD; Hershil Patel, BS; Aonnicha Burapachaisri, BS; Nathan Kim, BS; Constance Maglaras, PhD; Brooke O'Connell, MS; <b>Charla Fischer, MD</b>; Themistocles Protopsaltis, MD; Tina Raman, MD</i>
Poster 08	496 Impact of Time to Surgery for Workers' Compensation Patients Undergoing MIS TLIF	<i><b>Madhav Patel, BS</b>; Kevin Jacob, BS; Conor Lynch, MS; Elliot Cha, MS; Hanna Pawlowski, BS; Nisheka Vanjani, BS; Michael Prabhu, BS; Kern Singh, MD</i>
Poster 09	478 ALIF As a Salvage Procedure for TLIF Pseudarthrosis: A clinical outcome study	<i><b>Madhav Patel, BS</b>; Kevin Jacob, BS; Elliot Cha, MS; Conor Lynch, MS; Michael Prabhu, BS; Hanna Pawlowski, BS; Nisheka Vanjani, BS; Kern Singh, MD</i>



Poster 10	486 Clinical and Radiographic Outcomes after Bracing for Acute to Subacute Thoracic and Lumbar Compression Fractures: A Meta-Analysis of Randomized Controlled Trials	<b>Mathieu Squires, MD;</b> Jordan Green, MD; Rakesh Patel, MD; Ilyas Aleem, MD
Poster 11	342 Does Karnofsky performance score improve after surgery for metastatic spine tumors in patients with SINS 7-12 with Bilsky grade 2 & 3 cord compression?	<b>Saman Shabani, MD;</b> Enrique Vargas, BS; Alexander Aabedi, BS; Alma Rechav Ben-Natan, BA; Nitin Agarwal, MD; Praveen Mummaneni, MD; Dean Chou, MD
Poster 12	546 Risk Factors for Subsidence following Anterior Lumbar Interbody Fusion	<b>Athan Zavras, BA;</b> Vincent Federico, MD; Michael Nolte, MD; Navya Dandu, BS; Mohammed Munim, BS; Daniel Harper, BS; Gregory Lopez, MD; Christopher Dewald, MD; Howard An, MD; Kern Singh, MD; Frank Phillips, MD; Matthew Colman, MD
Poster 13	494 PROMIS Physical Function and Pain Interference are Independent Predictors of Unplanned Readmission after Instrumented Lumbar Spinal Arthrodesis.	<b>Nathan Hendrickson, MD,MS;</b> Linda Amofo, MS; Yue Zhang, PhD; Nicholas Spina, MD; Darrel Brodke, MD
Poster 14	366 Utility of Spine Surgery for Functional Independence for Thoracolumbar Spinal Cord Injury	<b>Anant Naik, BS;</b> Bailey Macinnis, BS; Michael Pozin, MSE; Daniel Najafali, BS; Suguna Pappu, MD,PhD; Paul Arnold, MD
Poster 15	568 Does the Use of Smoke Evacuation Reduce Smoke Exposure in the OR? A Prospective Study	<b>James Hall, MD;</b> Joshua Eisenberg, MD; Chris Carender, MD; Chris Lindsay, MD; Ashley Bell, BS; Natalie Glass, PhD; Catherine Olinger, MD; Andrew Pugely, MD
Poster 16	565 Patients Undergoing Lumbar Fusion Show Similar Improvement in PROMIS Outcomes and Overall Healthcare Utilization at 2 years Compared to Patients Undergoing Decompression Alone	<b>Erik Gerlach, MD;</b> Mark Plantz, MD; Peter Swiatek, MD; Nicholas Arpey, MD; Jeremy Marx, MD; Joseph Weiner, MD; Srikanth Divi, MD; Wellington Hsu, MD; Alpesh Patel, MD,MBA
Poster 17	408 Return to Work, Activities of Daily Living and Disability Improvement: 12-month Outcomes of an FDA IDE Trial of Decompression and Tension Band Stabilization for Degenerative Spondylolisthesis	<b>William Lavelle, MD;</b> Rick Sasso, MD; Hyun Bae, MD; Sangwook Yoon, MD,PhD; Ravinder Bains, MD; Calvin Kuo, MD; Michael Stauff, MD; Harvinder Sandhu, MD; Mick Perez-Cruet, MD; Sigurd Berven, MD; Jeffrey Fischgrund, MD; Marrew J. Mermer, MD; Harel Deutsch, MD; Hamid Hassanzadeh, MD; Elizabeth Yu, MD; Umesh Metkar, MD; Richard Guyer, MD; Jeffrey Gum, MD; Todd Alamin, MD; Louis Fielding, MS, Hania Shahzad
Poster 18	319 Does level selection matter when assessing bone quality on lumbar spine CT?	Luis Devia, MS,BS; Stephan Aynaszyan, BS; Matthew Parry, BS; Siddharth Badve, MD; <b>Edward DelSole, MD</b>
Poster 19	300 Opioid Use after Spine Surgery: How Much Are We Over-Prescribing?	<b>Alexandra Thomson, MD;</b> Lindsay Orosz, MS,PA-C; Fenil Bhatt, BS; Brandon Allen; Andre Sabet, MS; Thomas Schuler, MD; Christopher Good, MD; Colin Haines, MD; Ehsan Jazini, MD
Poster 20	362 Adjunct Pelvic Fixation in Short-to-Medium Segment Degenerative Fusion Constructs Independently Predicts Readmission and Morbidity	Austen Katz, MD; <b>Junho Song, BS;</b> Sohrab Virk, MD; Jeff Silber, MD; David Essig, MD

Poster 21	330 Floseal versus Surgiflo: Similar Outcomes, Different Costs in a Matched Cohort Analysis	<i>Ivan Ye, BS; <b>Alexandra Thomson, MD</b>; Jack Donahue, BS; Vincent Miseo, MD; Julio Jauregui, MD; Daniel Cavanaugh, MD; Eugene Koh, MD, PhD; Steven Ludwig, MD</i>
Poster 22	545 6-month Outcomes for Patients Undergoing Posterior vs Circumferential Surgical Approach for Isthmic Spondylolisthesis	<i><b>Paul Arnold, MD</b>; Steven Ludwig, MD; Alexander Vaccaro, MD, PhD, MBA; Darrel Brodke, MD; Justin Smith, MD; James Harrop, MD; Thomas Mroz, MD; Michael Fehlings, MD, PhD, FRCS(C)</i>
Poster 23	605 Rate of Recurrent Infections and Implant Removal After Initial Debridement in Spine Surgery	<i>Anthony Oyekan, MD; <b>Dominic Ridolfi, BS</b>; Aaron Zheng, BS; Audrey Chang, BS; Noel Bien Carlos, BS; Ryan Lin, BS; Brandon Couch, MD; Jeremy Shaw, MD, MS; Joon Lee, MD</i>
Poster 24	572 Postoperative lower lumbar (L4-S1) hypolordosis is associated with worse outcomes after 1-2 level spinal fusion	<i><b>Jonathan Sembrano, MD</b>; Paul Soriano, MD; Roj Cosiquien; Kenneth Holton, MD</i>
Poster 25	384 Utility of the Transversus Abdominis Plane and Rectus Sheath Blocks in Patients Undergoing Anterior Lumbar Interbody Fusions	<i><b>Sean Esmende, MD</b>; Matthew Solomito, PhD; Jesse Eisler, MD, PhD, MBA; Kevin Finkel, MD, FASA; Pranjali Kainkaryam, MD; Carla Maffeo-Mitchell, MD</i>
Poster 26	335 Total Intravenous Anesthetic for Posterior Thoracolumbar Fusion Increases Risk of Postoperative Ileus Compared to Inhaled Anesthetic	<i><b>Brandon Sherrod, MD</b>; Robert Kim, MD; Joshua Hunsaker, BS; Courtney Rada, BS; Clint Christensen, MD; Darrel Brodke, MD; Marcus Mazur, MD; Erica Bisson, MD; Andrew Dailey, MD</i>
Poster 27	561 The Influence of Persistent Opioid Use on Healthcare Resource Utilization After Elective Lumbar Spine Surgery	<i><b>Erik Gerlach, MD</b>; Mark Plantz, MD; Peter Swiatek, MD; Nicholas Arpey, MD; Jeremy Marx, MD; Joseph Weiner, MD; Srikanth Divi, MD; Wellington Hsu, MD; Alpesh Patel, MD, MBA</i>
Poster 28	652 The Effects of Florida Law HB21 on Opioid Prescriptions After Lumbar Spine Surgery	<i>Joseph Geller, MD; Jacob Milner, BS; Shivani Pandya, BS; Neil Mohile, MD; <b>Dustin Massel, MD</b>; Motasem Al Maaieh, MD</i>
Poster 29	539 Weekend Admission Increases Risk of Readmissions Following Elective Thoracolumbar Spinal Fusion	<i>Sara Pasik, BA; Calista Dominy, BAS; <b>Ashley Rosenberg, BS</b>; Brian Cho, BS; Varun Arvind, BS; Aly Valliani, BA; Jun Kim, MD; Samuel Cho, MD</i>
Poster 30	575 Predictors for Improvement in Low Back Pain Following Lumbar Laminectomy	<i><b>David Mazur-Hart, MD</b>; Christian Lopez Ramos, MD; James Obayashi, BS; Hanne Gehling, BS; Joseph G. Nugent, MHS; Won Hyung A. Ryu, MD</i>
Poster 31	313 Operative Treatment of Bertolotti Syndrome: Resection versus Fusion	<i><b>Anthony Mikula, MD</b>; Nikita Lakomkin, MD; Ryan Ransom, MD, PhD; Laura Waksdahl, CNP; Zach Pennington, MD; Manish Sharma, MBBS; Benjamin Elder, MD, PhD; Jeremy Fogelson, MD</i>
Poster 32	528 PROMIS is more sensitive than ODI for the detection of MCID in surgical patients with mild to moderate disability from lumbar degenerative pathology	<i><b>Nicholas Lanzetta, BS</b>; Alexander Linton, BS; Andrew Furman, MBA; Erik Gerlach, MD; Alpesh Patel, MD, MBA; Srikanth Divi, MD; Wellington Hsu, MD; Eileen Phan, BA</i>
Poster 33	451 Risk Factors for Requiring Multiple Revision Procedures after previous Lumbar fusion <4 levels fused	<i><b>Fares Ani, MD</b>; Arnaav Walia, BA; Gregory Perrier, BS; Julianna Bono, BS; Nathan Kim, BS; Constance Maglaras, PhD; Hershil Patel, BS; Annonicha Burapachaisri, BS; Brooke O'Connell, MS; Themistocles Protopsaltis, MD; Tina Raman, MD</i>
Poster 34	353 Modified Frailty Index Independently Predicts Morbidity in Patients Undergoing Instrumented Fusion Following Extradural Tumor Removal	<i>Austen Katz, MD; Adam Strigenz, BA; Mitchell Seitz, BA; <b>Junho Song, BS</b>; Rohit Verma, MD; Sohrab Virk, MD; Jeff Silber, MD; David Essig, MD</i>

- Poster 35      540 Risk Factors for Short-Term Complications Among Octogenarians Undergoing Elective Lumbar Decompression or Fusion Procedures: A Matched-Cohort Study      *Joshua Weissman, BBA; Mark Plantz, MD; Erik Gerlach, MD; Nicholas Arpey, MD; Peter Swiatek, MD; Wellington Hsu, MD; Alpesh Patel, MD, MBA; Srikanth Divi, MD*
- Poster 36      443 Stand Alone ALIF vs ALIF with Posterior Instrumentation: Comparison of Clinical Outcomes      *Kevin Jacob, BS; Madhav Patel, BS; Alexander Parsons, MS; Frank Chavez, BS; Hanna Pawlowski, BS; Nisheka Vanjani, BS; Michael Prabhu, BS; Kern Singh, MD*
- Poster 37      492 Low Back Pain with Surgical and Nonsurgical Treatment of Closed Pelvic Ring Fractures with Sacral Injuries: A Single Institutional Retrospective Review      *Tzu Chuan Yen, MD; Haley Huff, BS; Emily Leary, PhD; Kyle Schweser, MD; Michael Ghassibi, DO; Don Moore, MD*