



**CSRS 47th Annual Meeting
November 21-23, 2019
New York, NY**

**Program Co-Chairs – Gregory D. Schroeder, MD &
Justin Smith, MD**

President – Alexander Vaccaro, MD, PhD

Thursday, November 21, 2019

Broadway Ballroom

7:00 AM - 7:10 AM Welcome and Announcements
Gregory D. Schroeder, MD & Justin S. Smith, MD, PhD

Thursday, November 21, 2019

7:11 AM - 7:51 AM **Abstract Session I: Outcomes I (Cervical Myelopathy)**

Moderators: Michael Fehlings, MD, PhD, Jefferson Wilson, MD, and Chiba Kazuhiro, MD

7:11 AM - 7:16 AM The Impact Of Older Age On Functional Recovery After Surgical Decompression For Degenerative Cervical Myelopathy: Results From An International, Multicentre, Prospective Dataset In 757 Patients 18010
Presentation #1

Jamie R F Wilson

7:17 AM - 7:22 AM Surgical Treatment Of Cervical Spondylotic Myelopathy Leads To Functional Improvement In Hand Strength And Dexterity: A Prospective Quantitative Study 18341
Presentation #2

Tyler S Cole

7:23 AM - 7:28 AM Neck Pain Improvement After Operative Intervention In Patients With Degenerative Cervical Myelopathy: Results From An International Multicenter Ambispective Study Of 664 Patients 18186
Presentation #3

Michel M. Schneider

7:29 AM - 7:34 AM Comparison Of Three Anterior Techniques In The Surgical Treatment Of Three-Level Cervical Spondylotic Myelopathy With Intramedullary T2-Weighted Increased Signal Intensity 18162
Presentation #4

YiFei Gu

7:35 AM - 7:40 AM Spondylotic Myelopathy Accompanying Local Kyphosis: A Matched Analysis Using Propensity Scores 17714
Presentation #5

Satoshi Maki

7:40 AM - 7:51 AM **Discussion**

Thursday, November 21, 2019

7:52 AM - 8:33 AM **Abstract Session II: Complications I**

Moderators: Vincent Traynellis, MD, and K. Daniel Riew, MD

7:52 AM - 7:57 AM Clinical And Radiological Analysis Of C5 Palsy In Cervical Spine Surgery Patients: A Korean Cervical Spine Study Group (Kcsg) Multicenter Study 17847
Presentation #6

Ho Jin Lee

7:58 AM - 8:03 AM Which Intraoperative Neuromonitoring Characteristics Are Important For Predicting Neurologic Outcome In Cervical Spine Surgery? 18220
Presentation #7

Srikanth N Divi

8:04 AM - 8:09 AM

- Presentation #8 Therapeutic Impact Of Traction Release After C5 Nerve Root Motor Evoked Potential Alerts In Cervical Spine Surgery 18043
W. Bryan Wilent
- 8:10 AM - 8:15 AM Predicting Risk Of Post-Operative C5 Palsy Among Patients Undergoing Posterior Cervical Spine Surgery 18041
Presentation #9
Daniel Lubelski
- 8:16 AM - 8:21 AM Cord Float Back Does Not Predict The Occurrence Of C5 Palsy Amongst Patients Undergoing Posterior Cervical Spine Surgery 18063
Presentation #10
Daniel Lubelski
- 8:21 AM - 8:33 AM **Discussion**

Thursday, November 21, 2019

- 8:34 AM - 9:15 AM **Abstract Session III: Trauma**
Moderators: James Harrop, MD, and Daniel Sciubba, MD
- 8:34 AM - 8:39 AM Early Versus Late Surgical Decompression For Acute Spinal Cord Injury: A Pooled Analysis Of 1,548 Patients 18020
Presentation #11
Jetan H. Badhiwala
- 8:40 AM - 8:45 AM Clinical Outcomes Of Acute Cervical Spinal Cord Injury Depending On The Timing Of Surgery 18164
Presentation #12
Jong Hyun Ko
- 8:46 AM - 8:51 AM Early Versus Late Surgical Decompression For Central Cord Syndrome: A Propensity Score-Matched Analysis 17937
Presentation #13
Jetan H. Badhiwala
- 8:52 AM - 8:57 AM Can The Proposed Posterior Ligament-Bone Injury Classification And Severity Score Predict The Failure Of Anterior-Only Surgery For Subaxial Cervical Facet Dislocations? 17732
Presentation #14
Junsong Yang
- 8:58 AM - 9:03 AM Cervical Spine Fractures: Who Really Needs Ct Angiography? 18069
Presentation #15
Mitchell Stephen Fourman
- 9:03 AM - 9:15 AM **Discussion**
- 9:15 AM - 9:45 AM **Break - Westside Ballroom**

Thursday, November 21, 2019

- 9:46 AM - 10:49 AM **Symposium #1: Spine Trauma**
Moderators: Alexander Vaccaro, MD, PhD, MBA, and Michael Fehlings, MD, PhD
- 9:46 AM - 9:56 AM Where Do We Stand with Pharmacologic Treatment for SCI?
Jefferson Wilson
- 9:57 AM - 10:07 AM Lateral Mass and Facet Fractures: When to Operate
Gregory Schroeder
- 10:07 AM - 10:17 AM **Discussion**
- 10:18 AM - 10:28 AM Which Patients with Central Cord Need Urgent Surgery?
Ryan Spiker
- 10:29 AM - 10:39 AM Management of Cervical Spine Fractures in an Ankylosed Spine
Addisu Mesfin
- 10:39 AM - 10:49 AM **Discussion**
- Thursday, November 21, 2019**

10:50 AM - 11:25 AM **Presidential Introduction and Address**

10:50 AM - 10:55 AM Introduction to CSRS President

Rick Sasso, MD

10:55 AM -11:25 AM Presidential Address

Alexander Vaccaro, MD, PhD, MBA

Thursday, November 21, 2019

11:30 AM - 1:30 PM **Industry Workshops - Lunch Available for Workshop Attendees Only, Prior Registration Not Required, No CME Credits**

Workshop #1: Medtronic

Workshop #2: Nuvasive

Workshop #3: DePuy

Workshop #4: Globus

Workshop #5: Zimmer Biomet

Workshop #6: Stryker

Thursday, November 21, 2019

1:35 PM - 2:38 PM **Symposium #2: Pearls from the Experts**

Moderators: Andrew Dailey, MD, and Justin Smith, MD, PhD

1:35 PM - 1:45 PM How to Achieve Good Outcomes with 4-Level ACDF

Alan S. Hilbrand

1:46 PM - 1:56 PM How and When to Use Cervical Pedicle Screws

Sang Lee

1:56 PM - 2:06 PM **Discussion**

2:07 PM -2:17 PM Pearls for Instrumentation and Reconstructive Techniques in the Pediatric Cervical Spine

Heiko Koller

2:18 PM - 2:28 PM En Bloc Cervical Tumor Resection: Surgical Technique and Pearls for Optimizing Outcomes

Christopher Ames

2:28 PM - 2:38 PM **Discussion**

Thursday, November 21, 2019

2:39 PM - 3:24 PM **Abstract Session IV: Cervical Deformity**

Moderators: Jabob Buchowski, MD, and Jason Savage, MD

2:39 PM -2:44 PM What Drives Disability In Cervical Deformity: Novel Patient Generated Outcome Versus Legacy Hrql 17906
Presentation #16

Themistocles S Protopsaltis

2:45 PM - 2:50 PM Intraoperative Alignment Goals For Severe Cervical Deformity To Achieve Optimal Improvements In Health-Related Quality Of Life Measures 18013
Presentation #17

Sohrab Virk

2:51 PM - 2:56 PM Improvement In Cervical Lordosis And Sagittal Alignment After Vertebral Body Sliding Osteotomy In Patients With Spondylotic Cervical Myelopathy And Kyphosis 18073
Presentation #18

Dong Ho Lee

2:57 PM - 3:02 PM Pre-Operative Extension Lateral Cervical Radiographs Are Associated With Osteotomy Type, Approach And Post-Operative Cervical Alignment Following Cervical Deformity Surgery 18117
Presentation #19

Eric Klineberg

3:03 PM - 3:08 PM

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|---------------------------------------|--|
| Presentation #20 | Simulated Corrections Of Cervical Deformity Using In-Construct Measures Demonstrate That Insufficient Corrections Result In Djk 17912 Themistocles S Protosaltis |
| 3:09 PM - 3:14 PM Presentation #21 | Comparison Of Perioperative Complications Following Posterior Column Osteotomies Versus Posterior Based Three Column Osteotomy For Correction Of Severe Cervical Sagittal Deformity In 95 Patients: A Single Center Study 17794 Darryl Lau |
| 3:14 PM - 3:24 PM | Discussion |
| 3: 25 PM - 3:55 PM | Break - Westside Ballroom |

Thursday, November 21, 2019

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|---------------------------------------|--|
| 3:56 PM - 4:59 PM | Abstract Session V: Complications II |
| Moderators: | Alan S. Hilibrand, MD, and Alpesh Patel, MD |
| 3:56 PM - 4:01 PM Presentation #22 | Effect Of Local Retropharyngeal Steroids On Fusion Rate After Anterior Cervical Discectomy And Fusion 18211 Steven Wahlmeier |
| 4:02 PM - 4:07 PM Presentation #23 | Effect Of Topical Steroid On Swallowing Following Acdf: Results Of A Prospective Randomized Double Blind Control Trial 17943 Todd Albert |
| 4:08 PM - 4:13 PM Presentation #24 | A Prospective Cohort Study Of Dysphagia After Subaxial Cervical Surgery 17706 Kenichiro Sakai |
| 4:14 PM - 4:19 PM Presentation #25 | Association Between The Severity Of Dysphagia And Various Parameters Of The Cervical Spine; Videofluoroscopic Analysis In Neutral And Retraction Position Of The Normal Volunteers 18067 Jae Taek Hong |
| 4:19 PM - 4:27 PM | Discussion |
| 4:28 PM -4:33 PM Presentation #26 | Same Day Surgical Intervention Dramatically Minimizes Complication Occurrence And Optimizes Peri-Operative Outcomes For Central Cord Syndrome 17874 Peter Passias |
| 4:34 PM - 4:39 PM Presentation #27 | Prospective Risk Factor Analysis Of Surgery-Related Complications In Primary Cervical Spine Surgery For Degenerative Diseases 17921 Shota Takenaka |
| 4:40 PM - 4:45 PM Presentation #28 | The Influence Of Frailty Of Patients On The Incidence Of Surgical Site Infection After Spine Surgery –The Analysis Of Over 1000 Cases 18075 Tomoya Yoshikawa |
| 4:46 PM - 4:51 PM Presentation #29 | Upper Cervical Surgery, Increased Signal Intensity Of The Spinal Cord, And Hypertension As Risk Factors For Dyspnea After Multilevel Anterior Cervical Discectomy And Fusion 18244 Seongbae An |
| 4:51 PM - 4:59 PM | Discussion |
| 5:00 PM - 6:30 PM | Welcome Reception - Westside Ballroom |

Friday, November 22, 2019

Broadway Ballroom

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|-------------------|--|
| 7:00 AM - 7:10 AM | Welcome and Announcements / Special Presentation |
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7:11 AM - 7:51 AM

Abstract Session VI: Outcomes IV

Moderators:

Howard S. An, MD, and Kris Radcliff, MD

7:11 AM - 7:16 AM

Nonoperative Management Of Asymptomatic Cervical Spinal Stenosis: A Long-Term Follow-Up Study 18079

Presentation #30

Michael P. Kelly

7:17 AM - 7:22 AM

Prospective Evaluation Of Degenerative Cervical Myelopathy In Asymptomatic Patients Over 60 Years 18243

Presentation #31

Sam Adams

7:23 AM - 7:28 AM

Home Versus Standard Physical Therapy After Acdf Surgery: Preliminary Results Of Health-Related Quality Of Life Outcomes From A Randomized Controlled Trial 18282

Presentation #32

Srikanth N Divi

7:29 AM - 7:34 AM

Effectiveness Of Surgical Treatment In Reducing Falls And Fall-Related Neurological Deterioration In Patients With Degenerative Cervical Myelopathy: A Multi-Institutional Prospective Study 17851

Presentation #33

Atsushi Kimura

7:35 AM - 7:40 AM

Improvement In Cervicogenic Headaches After Laminoplasty: A Single Institutional Study Of 143 Adult Patients 18127

Presentation #34

Owoicho Adogwa

7:41 AM - 7:46 AM

Improvements In Neck Pain And Disability Following C1-C2 Posterior Cervical Instrumentation And Fusion For Atlanto-Axial Osteoarthritis 17781

Presentation #35

Owoicho Adogwa

7:46 AM - 7:58 AM

Discussion

7:59 AM - 8:38 AM

Abstract Session VII: Basic Science

Moderators:

Brian Kwon, MD, and Thomas Mroz, MD

7:59 AM - 8:04 AM

Lotus Over Expression Enhanced The Motor Function Recovery Following Ips-Ns/Pc Transplantation 17984

Presentation #36

Shuhei Ito

8:05 AM - 8:10 AM

Involvement Of Autophagy In Human Cervical Spine Degenerated And Herniated Discs 18087

Presentation #37

Takashi Yurube

8:11 AM - 8:16 AM

Inhibiting Spinal Phospholipase A2 Prevents Pain & Attenuates Spinal Neuron Activity After Nerve Root Compression 17770

Presentation #38

Beth A. Winkelstein

8:17 AM - 8:22 AM

Electrospun Synthetic Bone Graft Promotes Msc Function And Spinal Fusion 17811

Presentation #39

Derek Ju

8:23 AM - 8:28 AM

Intraarticular Mmp-1 Is Sufficient To Induce Pain & Substance P Regulation In Drg Afferents Absent Any Structural Damage 17752

Presentation #40

Beth A. Winkelstein

8:28 AM - 8:38 AM

Discussion

8:39 AM AM - 9:20 AM

Research Grant Session

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|--------------------|--|
| Moderators: | Zoher Ghogawala, MD, and Brandon Lawrence, MD |
| 8:39 AM - 8:48 AM | Announcement- 2019 Research Grant Winners |
| 8:49 AM - 8:50 AM | Introduction- Research Grant Updates |
| 8:51 AM - 8:56 AM | 2018 Medtronic Grant |
| 8:57 AM - 9:02 AM | 2018 CSRS 21st Century Research and Education Grants |
| 9:03 AM - 9:08 AM | 2018 Seed Starter Grant |
| 9:09 AM - 9:14 AM | 2018 Seed Starter Grant |
| 9:15 AM - 9:20 AM | 2018 Seed Starter Grant |
| 9:20 AM - 9:54 AM | Break - Westside Ballroom |

Friday, November 22, 2019

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|---------------------|---|
| 9:55 AM - 11:00 AM | President Guest Lecture |
| Moderators: | Alexander Vaccaro, MD, PhD, MBA |
| 9:55 AM - 10:00 AM | Introduction of Presidential Guest Speaker Alexander Vaccaro, MD, PhD, MBA |
| 10:00 AM - 10:45 AM | Henry Bohlman Presidential Guest Lecture Steve Forbes, Chairman and Editor-in-Chief of Forbes Media |
| 10:45 AM - 11:01 AM | Discussion |

Friday, November 22, 2019

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| 11:02 AM - 12:05 PM | Symposium #3: Concussions, Spine Injury, and Return to Play |
| Moderators: | Alexander Vaccaro, MD, PhD, MBA, and Wellington Hsu, MD |
| 11:02 AM - 11:09 AM | Prevention and Evaluation of Concussions in the NFL Andrew Cappuccino |
| 11:10 AM - 11:17 AM | Sideline Evaluation: When Does a Player Need to be Removed From Play? Drew Dossett |
| 11:17 AM - 11:25 AM | Discussion |
| 11:26 AM - 11:33 AM | Two- and Three-Level Disease: When Can a Patient Return to Play after Multilevel Anterior and Posterior Procedures? Bob Watkins, Sr. |
| 11:34 AM - 11:41 AM | Asymptomatic Spinal Cord Compression: Is Surgery Necessary to Allow Return to Play? Andy Hect |
| 11:41 AM - 11:49 AM | Discussion |
| 11:49 AM - 12:05 PM | Review of CSRS Survey on Return to Play and a Modified Delphi Method Establishing CSRS Return to Play Guidelines Greg Schroeder |

12:05 PM - 1:05 PM **Lunch - Westside Ballroom**

Friday, November 22, 2019

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|-------------------|--|
| 1:10 PM - 1:36 PM | Traveling Fellowship Report and Meeting Previews |
| Moderator: | <i>John Rhee, MD</i> |
| 1:10 PM - 1:18 PM | Traveling Fellowship Report Ilyas S. Aleem, BSc, MD, MS, FRCSC and Lee A. Tan, M.D. |
| 1:19 PM - 1:24 PM | Preview CSRS 2020 Annual Meeting in Las Vegas, NV Michael Daubs, MD, 2020 Meeting Local Host |

1:25 PM - 1:30 PM Preview CSRS Asia Pacific Section 2020 Annual Meeting

Kyung-Soo Suk, MD, President CSRS - AP

1:31 PM - 1:36 PM Preview CSRS European Section 2020 Annual Meeting

Björn Zoëga, MD, President CSRS - EU

Friday, November 22, 2019

1:37 PM - 2:24 PM **Abstract Session VIII: Motion Preservation**

Moderators: Rick Sasso, MD, and Frank Phillips, MD

1:37 PM - 1:42 PM Two-Level Cervical Disc Arthroplasty Vs. Anterior Cervical Discectomy And Fusion: Ten-Year Outcomes Of A
Presentation #41 Prospective, Randomized Ide Clinical Trial 17665

Jeffrey R McConnell

1:43 PM - 1:48 PM Single-Level Cervical Arthroplasty With Prodisc-C Artificial Disc: 10-Year Follow-Up Results In One Center
Presentation #42 17668

Yanbin Zhao

1:49 PM - 1:54 PM Unintended Fusion In Cervical Artificial Disc Replacement: A Prospective Study On Heterotopic Ossification,
Presentation #43 Evolution Through Time, And Clinical Outcome, With 5 Years Follow-Up 17957

Catarina Marques

1:55 PM - 2:00 PM Does Positioning Of Cervical Disc Arthroplasty Implant Affect Postoperative Outcome 18055

Presentation #44

Philip York

2:01 PM - 2:06 PM The Effect Of Acdf Or Arthroplasty On Cervicogenic Headaches: A Post-Hoc Analysis Of A Prospective,
Presentation #45 Multicenter Study With 10-Year Follow-Up 18140

K. Daniel Riew

2:07 PM - 2:12 PM Comparison Of Three Fda-Approved Artificial Cervical Discs: A Finite Element Study 18086

Presentation #46

Hoon Choi

2:12 PM - 2:24 PM

Discussion

2:25 PM - 2:55 PM **Break - Westside Ballroom**

Friday, November 22, 2019

2:56 PM - 3:58 PM **Abstract Session IX: Outcomes II**

Moderators: Ahmad Nassr, MD, and Eric Klineberg, MD

2:56 PM - 3:01 PM Mid-Term Surgical Outcome Of Posterior Decompression With Instrumented Fusion For K-Line Negative
Presentation #47 Type Cervical Opll -Minimum 5 Years Follow-Up 18254

Takeo Furuya

3:02 PM - 3:07 PM Does Pre- Or Post-Operative Cervical Sagittal Alignment Correlate With The Outcomes Of Cervical
Presentation #48 Laminoplasty? A Minimum Of One-Year Follow-Up Study 18177

Shuo Niu

3:08 PM - 3:13 PM The Effect Of Duration Of Symptoms On Clinical Outcomes Following Anterior Cervical Discectomy And
Presentation #49 Fusion 17998

Joon Yoo

3:14 PM - 3:19 PM The Impact Of Post-Operative Physical Therapy On Patient-Reported Outcomes At 1-Year After Cervical
Presentation #50 Spine Surgery 17991

Kristin R. Archer

3:19 PM- 3:27 PM

Discussion

3:28 PM - 3:33 PM

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|-------------------|---|
| Presentation #51 | Asymptomatic Acdf Non-Unions Underestimate The True Prevalence Of Radiographic Pseudoarthrosis 17776 Charles H. Crawford III |
| 3:34 PM - 3:39 PM | Does Chronic Preoperative Opioid Use Affect Patient Outcomes After Acdf Surgery 18210 |
| Presentation #52 | John J Mangan |
| 3:40 PM - 3:45PM | Can We Predict A Patient’S Arm Pain, Neck Pain, And Disability Level One Year After Cervical Spine Surgery For Radiculopathy? 18239 |
| Presentation #53 | Ahilan Sivaganesan |
| 3:46 PM - 3:51 PM | Preliminary Results From The Multi-Center Prospective, Randomized Csm-S Study: Overall Quality Of Life Improvement, Complications, And Return To Work 17988 |
| Presentation #54 | Zoher Ghogawala |
| 3:51 PM - 3:59 PM | Discussion |
| 16:00 | Adjourn |

Saturday, November 23, 2019

Broadway Ballroom

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|-------------------|---|
| 7:00 AM - 7:10 AM | Welcome and Announcements Gregory D. Schroeder, MD & Justin S. Smith, MD, PhD |
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Saturday, November 23, 2019

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|-------------------|---|
| 7:11 AM - 7:51 AM | Abstract Session X: Complications III and Outcomes III Moderators: Darrel Brodke, MD, and Chiba Kazuhiro, MD |
| 7:11 AM - 7:16 AM | Fate Of Anterior Cervical Discectomy (Acdf) Non-Union At 6 Months 18136 |
| Presentation #55 | K. Daniel Riew |
| 7:17 AM - 7:22 AM | Epidemiology Of Iatrogenic Vertebral Artery Injury In Cervical Spine Surgery: 21 Multicenter Studies 17768 |
| Presentation #56 | Chang-Hyun Lee |
| 7:23 AM - 7:28 AM | Is Facet Joint Distraction A Cause Of Postoperative Axial Neck Pain After Acdf Surgery? 18215 |
| Presentation #57 | Srikanth N Divi |
| 7:29 AM - 7:34 AM | Degenerative Cervical Spondylolisthesis: Does Adjacent Level Surgical Stabilization Result In Progressive Listhesis? 18071 |
| Presentation #58 | Philip K. Louie |
| 7:34 AM - 7:42 AM | Discussion |
| 7:43 AM - 7:48 AM | Crossing The Cervicothoracic Junction During Laminectomy And Posterior Spinal Fusion Surgery For Cervical Spondylotic Myelopathy Is Associated With Superior Cervical Radiographic Outcomes 18034 |
| Presentation #59 | Andrew Kai-Hong Chan |
| 7:49 AM - 7:54 AM | Assessing Radiographic Fusion Rates Following A Stand-Alone Interbody Cage Versus An Anterior Plate Construct For Adjacent Segment Disease After Anterior Cervical Discectomy And Fusion 18214 |
| Presentation #60 | Steven Wahlmeier |
| 7:55 AM - 8:00 AM | Sagittal Parameters Poorly Predict Clinical Outcomes Following Anterior Cervical Discectomy And Fusion 18134 |
| Presentation #61 | Bryce A. Basques |
| 8:01 AM - 8:06 AM | |

Presentation #62 Discrepancies In The Surgical Management Of Central Cord Syndrome: Assessment Of Non-Operative, Surgical, And Crossover To Surgery Patients 17877
Peter Passias

8:06 AM - 8:14 AM **Discussion**

Saturday, November 23, 2019

8:15 AM - 9:18 AM **Abstract Session XI: Surgical Techniques and Imaging Parameters**

Moderators: John Rhee, MD, and Paul Arnold, MD

8:15 AM - 8:20 AM Microendoscopic Laminotomy Versus Conventional Laminoplasty For Cervical Spondylotic Myelopathy - A 5-Year Follow-Up Study 18104
Presentation #63

Akihito Minamide

8:21 AM - 8:26 AM Effect Of C3 Laminectomy In Cervical Laminoplasty For Degenerative Cervical Myelopathy: C3 Laminectomy Vs. C3 Laminoplasty 17850
Presentation #64

Koji Nakajima

8:27 AM - 8:32 AM Minimally-Invasive Posterior Cervical Foraminotomy As An Alternative To Anterior Cervical Discectomy And Fusion For Unilateral Cervical Radiculopathy 17824
Presentation #65

Stuart Changoor

8:33 AM - 8:38 AM Optimizing Cervicothoracic Junction Biomechanics After C7 Pedicle Subtraction Osteotomy: A Cadaveric Study Of Stability And Rod Strain 17970
Presentation #66

Brian Kelly

8:38 AM - 8:46 AM **Discussion**

8:47 AM - 8:52 AM A Deep Learning Model For Detection Of Cervical Spinal Cord Compression In Mri Scans 17958
Presentation #67

Zamir Merali

8:53 AM - 8:58 AM Intervertebral Foramen Width Is An Important Factor In Deciding Additional Uncinate Process Resection In Acdf -- A Retrospective Study 17751
Presentation #68

Yang Liu

8:59 AM - 9:04 AM A New Index For Making Decisions Regarding C2 Lamina Decompression In Cervical Ossification Of The Posterior Longitudinal Ligament: The R-Line 18204
Presentation #69

Jin Hoon Park

9:05 AM - 9:10 AM Can C7 Slope Be Used As A Substitute For T1 Slope? A Radiographic Analysis 17835
Presentation #70

Ivan Ye

9:10 AM - 9:18 AM **Discussion**

Saturday, November 23, 2019

11:02 AM - 12:05 PM **Symposium 4: Cervical Deformity and Complex Cervical Reconstruction**

Moderators: Christopher Ames, MD, and Han Jo Kim, MD

9:19 AM - 9:29 AM Alignment Planning for Deformity Correction

Themistocles Protopsaltis

9:30 AM - 9:40 AM Management of Cervical Deformity Resulting from Trauma

Heiko Koller

9:40 AM - 9:50 AM **Discussion**

9:51 AM - 10:01 AM Three-Column Osteotomies for Deformity Correction: Technique and Video Demonstration

Christopher Ames

10:02 AM - 10:12 AM Complications Associated with Complex Cervical Reconstruction: Occurrence and Techniques for Avoidance

Peter Passias

10:12 AM - 10:22 AM **Discussion**

Saturday, November 23, 2019

10:23 AM - 10:27 AM **Announcement of Poster Award Winners**

Moderator: *Jeffrey D. Coe, MD*

10:28 AM - 10:33 AM **Presentation of CSRS Medallion to Rick Sasso, MD**

Moderator: Alexander Vaccaro, MD, PhD, MBA

10:34 AM - 11:14 AM **Abstract Session XII: Economics, Safety, and Health Policy**

Moderators: Michael Kelly, MD, and Michael Steinmetz, MD

10:34 AM - 10:39 AM Effect Of Opioid-Limiting Legislation On Postoperative Prescription Patterns Following Anterior Cervical Decompression And Fusion 18231
Presentation #71

Daniel B.C. Reid

10:40 AM -10:45 AM Perioperative Spending In Single-Level Anterior Cervical Discectomy And Fusion For Degenerative Pathology 18258
Presentation #72

Majd Marrache

10:46 AM - 10:51 AM The Fault Within Our “Drgs”: Refining Risk-Adjustment For Bundled Payment Models In Cervical Fusions 17707
Presentation #73

Azeem Tariq Malik

10:52 AM - 10:57 AM Anterior Cervical Discectomy And Fusions (Acdfs) At Physician Owned Hospitals – Is It Time To Reconsider The Sanctions Of The Affordable Care Act (Aca)? 17725
Presentation #74

Azeem Tariq Malik

10:58 AM - 11:03 AM No S.C.A.R.E Protocol: A Streamlined Safety Protocol

Presentation #75

Tyler J. Jenkins

11:03 AM - 11:14 AM

Discussion

11:15 AM - 11:29AM **Break - 6th Floor Foyer**

Saturday, November 23, 2019

11:29 AM - 12:44 PM **Focused Podium Presentations (2 minutes)**

Moderators: Michael Daubs, MD, and Robert Hart, MD

11:29 AM - 11:31 AM Anterior Cord Compression Is Associated With Neurologic Deficit In Patients With Degenerative Cervical Myelopathy. Does It Have Evidence? 18109
Presentation #76

Kyung Chung Kang

11:32 AM - 11:34 AM Cervical Bone Mineral Density Measured By Qct In Patients Undergoing Anterior Cervical Spine Surgery 17750
Presentation #77

Stephan N Salzmann

11:35 AM - 11:37 AM Continuous Optical Monitoring Of Spinal Cord Hemodynamics During The First 7 Days Post-Injury In A Porcine Model Of Acute Spinal Cord Injury 18193
Presentation #78

Brian K. Kwon

11:38 AM - 11:40 AM Risk Factors Associated With Vertebral Artery Anomalies In The Subaxial Cervical Spine 18175

Presentation #79

Fabian Winter

11:41 AM - 11:43 AM Therapeutic Impact Of Grafted Oligodendrogenic-Neural Progenitor Cells Combined With Sustained Delivery Of Chondroitinase Abc Using An Innovative Methylcellulose Biomaterial For Chronic Spinal Cord Injury 17674
Presentation #80

Satoshi Nori

11:43 AM - 11:53 AM **Discussion**
 11:54 AM - 11:56 AM Establishing Maximal Medical Improvement Following Anterior Cervical Discectomy And Fusion 17974
 Presentation #81
Joon Yoo

11:57 AM - 11:59 AM Does Neurologic Diagnosis Affect Improvement In Neck Pain After Acdf Surgery? 17827
 Presentation #82
Justin Stull

12:00 PM -12:02 PM Predictive Models For Long-Term Patient-Reported Outcomes After Cervical Spine Surgery For Myelopathy:
 Presentation #83 A National Study Of 2717 Patients 18242
Ahilan Sivaganesan

12:03 PM - 12:05 PM How Much Do Patients With Predominantly Neck Pain Improve After Acdf Surgery For Cervical
 Presentation #84 Radiculopathy? 18208
Srikanth N Divi

12:06 PM - 12:08 PM Functional Range Of Motion Of The Cervical Spine In Posterior Cervical Discectomy And Fusion Patients
 Presentation #85 During Activities Of Daily Living 18032
Kevin Bell

12:08 PM - 12:19 PM **Discussion**
 12:20 PM - 12:22 PM Which Topical Agent Is More Efficacious In Diminishing Postoperative Drainage Following Multi-Level
 Presentation #86 Cervical Laminoplasty/Laminectomy 17844
Jiwon Park

12:23 PM - 12:25 PM Pseudoarthrosis Rates After Anterior Cervical Discectomy And Fusion (Acdf) Using Polyetheretherketone
 Presentation #87 (Peek) Or Structural Allograft For Interbody Grafting: Minimum 2-Year Follow Up 18279
Minghao Wang

12:26 PM - 11:28 PM Cta In Addition To Mri May Not Be Necessary In Detecting Subaxial Vertebral Artery Anomalies In Anterior
 Presentation #88 Cervical Spine Surgery 18046
Fabian Winter

12:29 PM - 12:31 PM Can Reinforcing Lateral Mass Screw With Multiple Points Of Fixation Improve Anchoring Performance And
 Presentation #89 Reduce Screw Pullout? 17999
Franck Le Naveaux

12:32 PM - 12:34 PM The Effect Of Arthrodesis On Neuroforaminal Area 18008
 Presentation #90
William Anderst

12:34 PM - 12:44 PM **Discussion**

Saturday, November 23, 2019

12:45 PM - 12:46 PM **Closing Remarks**
Moderators: Gregory D. Schroeder, MD, and Justin S. Smith, MD, PhD

Saturday, November 23, 2019

12:47 PM - 12:48 PM **Adjourning Notices**
Moderators: Rick Sasso, MD