<table>
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<tr>
<th>Time</th>
<th>Session/Panel</th>
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<tr>
<td>7:00–7:10 am</td>
<td>Welcome and Announcements&lt;br&gt;Louis G. Jenis, MD</td>
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<tr>
<td>7:11–7:48 am</td>
<td>Session I: Myelopathy I&lt;br&gt;Moderators: D. Greg Anderson, MD and Erica F. Bisson, MD, MPH</td>
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<tr>
<td>7:11–7:16 am</td>
<td>Effect of Cervical Decompression Surgery on Gait in Cervical Spondylotic Myelopathy Patients&lt;br&gt;Ram Haddas, PhD; Raj Arakal, MD; Akwasi Boah, MD; Theodore Belanger, MD; Kevin L. Ju, MD</td>
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<td>7:17–7:22 am</td>
<td>Surgical Outcome of Elderly Patients Over 80 Years with Cervical Spondylotic Myelopathy&lt;br&gt;Norihiro Isogai, MD; Junichi Yamane; Akio Iwanami; Hitoshi Kono; Yoshimi Kobayashi, MD, PhD; Nobuyuki Fujita; Mitsuji Yagi, MD, PhD; Kota Watanabe, MD, PhD; Kazuya Kitamura; Yuta Shiono, MD; Ken Ishii, MD; Masaya Nakamura, MD; Morio Matsumoto, MD; Narihito Nagoshi</td>
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<td>7:23–7:28 am</td>
<td>What is the Role of Gait Analysis in the Evaluation of Walking Disturbance in the Cervical Myelopathy Patients? A Comparison Between Pre- and Post-Operative Data in Surgically Treated Cervical Myelopathy Patients&lt;br&gt;Nam Ik Cho, MD; Jae Hwan Cho, MD; Jung-Ki Ha, MD; Chang Ju Hwang, MD, PhD; Choon Sung Lee, MD, PhD; Dong-Ho Lee, MD, PhD</td>
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<td>7:29–7:34 am</td>
<td>Two-Year Surgical Outcomes of Patients with Cervical Myelopathy: An Analysis of the Impact of Patient Characteristics, Operative Data, and Preoperative Nonoperative Treatment Modalities&lt;br&gt;Peter G. Passias, MD; Kristen E. Radcliff, MD; Paul M. Arnold, MD; Samantha Horn, BA; Gregory W. Poorman, BA; Anthony J. Boniello, BS; Sun Yang, BA; Alexander R. Vaccaro, MD, PhD, MBA; Michael C. Gerling, MD</td>
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<td>7:35–7:48 am</td>
<td>Discussion</td>
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<td>7:49–8:26 am</td>
<td>Session II: Motion Preservation&lt;br&gt;Moderators: Darren R. Lebl, MD, MBA and Praveen V. Mummaneni, MD</td>
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<td>7:49–7:54 am</td>
<td>Facet Joint Osteoarthritis Progress After Insertion of Artificial Disc Replacement: A Five-Year Follow-Up of a Prospective Randomized Controlled Study&lt;br&gt;Anna MacDowall, MD; Martin Skeppholm, MD, PhD; Claes Olerud, MD, PhD</td>
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<td>7:55–8:00 am</td>
<td>Long-Term Outcomes of Arthroplasty for Cervical Myelopathy vs. Radiculopathy, and Arthroplasty vs. Arthrodesis for Cervical Myelopathy&lt;br&gt;Jeffrey R. McConnell, MD; Matthew F. Gornet, MD; K. Daniel Riew, MD; Todd H. Lanman, MD; J. Kenneth Burkus, MD</td>
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<td>8:01–8:06 am</td>
<td>Comparison of 7-Year Results of One-Level vs. Two-Level Cervical Disc Arthroplasty and Anterior Cervical Fusion&lt;br&gt;Jeffrey R. McConnell, MD; Todd H. Lanman, MD; Matthew F. Gornet, MD; J. Kenneth Burkus, MD</td>
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<td>8:07–8:12 am</td>
<td>Single-Level Cervical Arthrodesis Increases Adjacent Segment Midrange Motion&lt;br&gt;William Anderst, PhD; Tyler West; William Donaldson, MD; Joon Yung Lee, MD; James Kang, MD</td>
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<td>8:13–8:26 am</td>
<td>Discussion</td>
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<td>8:27–9:04 am</td>
<td>Session III: Cervical Deformity I</td>
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<td>8:27–8:32 am</td>
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<td>8:51–9:04 am</td>
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<td>9:05–9:35 am</td>
<td>Break</td>
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<td>9:36–10:13 am</td>
<td>Session IV: Trauma</td>
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<td>9:36–9:41 am</td>
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<td>9:54–9:59 am</td>
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<td>10:00–10:13 am</td>
<td>Discussion</td>
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<td>10:14–10:18 am</td>
<td>Special Presentation</td>
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<td>10:19–10:24 am</td>
<td>Introduction of Presidential Guest Speaker</td>
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<td>11:16–11:25 am</td>
<td>Discussion</td>
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<td>11:25 am</td>
<td>Adjourn to Industry Workshops</td>
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11:30 am–1:30 pm Workshop 1: Medtronic: Prestige LP™ Cervical Disc System: Long Term Data, Two-Level Indication, and New Streamlined Instruments

11:30 am–1:30 pm Workshop 2: K2M: A 360 Review of Cervical Solutions featuring Balance™ ACS

11:30 am–1:30 pm Workshop 3: NuVasive: Cervical Alignment Matters™: Emerging Techniques to Restore Global Alignment with Computer-assisted Surgery

11:30 am–1:30 pm Workshop 4: Stryker: Evidence Based Biomaterials in Spine

11:30 am–1:30 pm Workshop 5: Zimmer Biomet: An Interactive Debate on Myelopathy in the Multilevel Cervical Patient: Motion Preservation, Fusion and Everything in Between

11:30 am–1:30 pm Workshop 6: Globus Medical Inc.: Laminectomy vs. Laminoplasty, A Retrospective Analysis on Outcomes

1:35–2:30 pm Symposium: How the Experts Deal with Adverse Events - Prevention, Identification and Management
   
   Moderator: Darrel S. Brodke, MD
   
   Panel - Paul A. Anderson, MD; Bradford L. Currier, MD; John G. Heller, MD; K. Daniel Riew, MD

2:17–2:30pm Discussion

2:31–2:51 pm Break

2:52–3:41 pm Session V: Anterior Surgery I
   
   Moderators: Paul M. Arnold, MD and Mark L. Prasarn, MD

2:52–2:57 pm Presentation #18
   
   Return to Play After Anterior Cervical Discectomy and Fusion in Professional Athletes
   
   Robert G. Watkins IV, MD; David Chang, MD; Robert G. Watkins III, MD

2:58–3:03 pm Presentation #19
   
   Does Local Intraoperative Corticosteroids Delivered in a Gel-Matrix Minimize Dysphagia Following Anterior Discectomy and Fusion (ACDF): A Preliminary Analysis of an Ongoing Double Blinded Randomize Controlled Trial (RCT)
   
   Daniel H. Stein, BS; Han Jo Kim, MD; Darren R. Lebl, MD; Russel C. Huang, MD; Shari T. Jawetz, MD; Virginie Lafage, PhD; Okezie K. Aguwa, MD; Todd J. Albert, MD

3:04–3:09 pm Presentation #20
   
   Preliminary Results: Cervical Degenerative Disc Disease and Subclinical Discitis: Cause or Contaminant?
   
   Amit Bhandutia, MD; Luke Brown, MD, MBA; Eve Hoffman, MD; Eugene Koh, MD, PhD; Kelley Banagan, MD; Steven Ludwig, MD; Daniel Gelb, MD

3:10–3:15 pm Presentation #21
   
   
   Do-Yon Hwang, MD; Dong-Ho Lee, MD, PhD; Jae Hwan Cho, MD; Chang Ju Hwang, MD, PhD; Choon Sung Lee, MD, PhD; Sae Min Hwang, MD

3:16–3:21 pm Presentation #22
   
   CT Scan: Always Necessary for the Preoperative Planning in the Cervical Spine Surgery?
   
   Seungjin Choi, MD; Kyung-Soo Suk, MD; Hak-Sun Kim, MD; Seong-Hwan Moon, MD; Hwan-Mo Lee, MD; Jae-Ho Yang, MD; Michael Nelson Perez Lim, MD; Sung-Jin Park, MD; Adrian Alaras, MD

3:22–3:27 pm Presentation #23
   
   Prevalence, Progression, Clinical Implications, and Risk Factors of Heterotopic Ossification After Cervical Total Disc Replacement at 7 Years
   
   Pierce D. Nunley, MD; David A. Cavanaugh, MD; Eubulus J. Kerr III, MD; Phillip Andrew Utter, MD; Peter G. Campbell, MD; Kelly A. Frank, MS; Marcus B. Stone, PhD

3:28–3:41 pm Discussion

3:42–4:30 pm Session VI: Myelopathy II
   
   Moderators: Themistocles S. Protopsaltis, MD and Masatoshi Sumi, MD, PhD

3:42–3:47 pm Presentation #24
   
   Comparison of Anterior and Posterior Surgery for Degenerative Cervical Myelopathy – An MRI-Based Propensity Score-Matched Analysis Using Data from the Prospective Multicenter AOSpine CSM North America and International Studies
   
   So Kato, MD; Aria Nouri, MD, MSc; Dongjin Wu, MD; Satoshi Nori, MD, PhD; Michael G. Fehlings, MD, PhD
3:48–3:53 pm Presentation #25
Do Laminoplasty Conducted by Junior Surgeons Affect Clinical Outcomes for the Treatment of Cervical Spondylotic Myelopathy? – Comparison Between Board- and Non Board-Certified Spine Surgeons
Narito Nagoshi, MD, PhD; Akio Iwanami, MD, PhD; Norihiro Isogai, MD; Masayuki Ishikawa, MD, PhD; Kenya Nojiri, MD, PhD; Nobuyuki Fujita, MD, PhD; Mitsuru Yagi, MD, PhD; Kota Watanabe, MD, PhD; Takashi Tsuji, MD, PhD; Kensi Daimon, MD; Ken Ishii, MD, PhD; Masaya Nakamura, MD, PhD; Morio Matsumoto, MD, PhD; Junichi Yamane, MD, PhD

3:54–3:59 pm Presentation #26
A Comparative Study for Cervical Spondylotic Myelopathy with One- or Two-Level Lesions—Anterior Cervical Disectomy with Fusion vs. Selective Laminoplasty
Kenichi Sakai, MD, PhD; Toshitaka Yoshii, Atsuyuki Kawabata, MD; Yu Matsukura, Tsuyoshi Yamada, Takashi Hirai, Yoshiyasu Arai, MD, PhD; Astushi Okawa

4:00–4:05 pm Presentation #27
Comparison of Surgical Outcomes Between Open-Door, Double-Door Laminoplasty, and Selective Laminectomy with Muscle Preservation for Cervical Spondylotic Myelopathy: A Multicenter Study of 881 Cases
Junichi Yamane, MD, PhD; Akio Iwanami, MD; Hitoshi Kono, MD; Tokunaga Shigeyuki, MD, PhD; Mitsuru Yagi, MD, PhD; Nobuyuki Fujita; Kota Watanabe, MD, PhD; Norihiro Isogai, MD; Satoshi Suzuki, MD, PhD; Yoshiomi Kobayashi, MD, PhD; Ken Ishii, MD; Masaya Nakamura, MD; Morio Matsumoto, MD; Narhito Nagoshi, MD

2nd Place Resident/Fellow Research Award Winner
Investigating the Utility of Intra-Operative Neurophysiological Monitoring for Anterior Cervical Discectomy and Fusion: Analysis of Over 140,000 Cases from a National Inpatient Dataset
Jetan H. Badhiwala, MD; Farshad Nassiri, MD; Christopher D. Witw, MD, MSc; Alireza Mansouri, MD, MSc; Saleh A. Almenawer, MD, MSc; Leodante da Costa, MD, MSc; Michael G. Fehlings, MD, PhD; Jefferson R. Wilson, MD, PhD

3rd Place Resident/Fellow Research Award Winner
Comparison of Preoperative and Postoperative Cervical Lordosis in Patients Undergoing Cervical Laminoplasty - Effect of C3 Laminectomy
Philip M. Sinatra, MD; Colleen Peters, MA; Steven J. McAnany, MD; Michael P. Kelly, MD; Lukas P. Zobala, MD

4:12–4:17 pm Presentation #29
Comparison of Preoperative and Postoperative Cervical Lordosis in Patients Undergoing Cervical Laminoplasty - Effect of C3 Laminectomy
Philip M. Sinatra, MD; Colleen Peters, MA; Steven J. McAnany, MD; Michael P. Kelly, MD; Lukas P. Zobala, MD

4:18–4:30 pm Discussion

4:30-6:30 pm Welcome Reception Exhibit Hall–Grand Ballroom

7:00–7:10 am Welcome and Announcements
Louis G. Jenis, MD

7:11–7:54 am Session VII: Posterior Surgery
Moderators: James S. Harrop, MD, FAANS and Clifford B. Tribus, MD

7:11–7:16 am Presentation #30
A Comparative Study Between Two Types of Cervical Laminoplasty on the Deep-Extensor Volume and Axial Neck Pain-Minimum Two-Year Follow-Up Results
Feifei Zhou, MD; Yu Sun, MD

7:17–7:22 am Presentation #31
The Correlation Between Cervical Alignment and Posterior Cervical Muscle Fatty Infiltration at Baseline in Cervical Deformity Patients
Peter G. Passias, MD; Charles Wang, BS; Gregory W. Poorman, BA; Samantha Horn, BA; Han Jo Kim, MD; Virginie LaFage, PhD; Michael C. Gerling, MD

7:23–7:28 am Presentation #32
Increase in Cervical Lordosis Decreases Postoperative Neck Pain After Laminectomy and Fusion
Anthony M. DiGiorgio, DO, MHA; Darryl Lau, MD; Ethan A. Winkler, MD, PhD; Khoi Than, MD; Andrew Chan, MD; Dean Chou, MD; Praveen V. Mummaneni, MD

7:29–7:34 am Presentation #33
A Prospective Cohort Study of Postoperative Spinal Epidural Hematoma After Cervical Laminoplasty
Kenichi Sakai, MD, PhD; Toshitaka Yoshii, MD, PhD; Atsuyuki Kawabata, MD; Yu Matsukura; Tsuyoshi Yamada, MD, PhD; Takashi Hirai, MD, PhD; Yoshiyasu Arai, MD, PhD; Astushi Okawa, MD, PhD
7:35–7:40 am  Presentation #34
Long-Term Fate of C3-7 Arthrodesis: 4-Level ACDF vs. Cervical Laminectomy and Fusion
*Colin W. Niezgoda, PA; John K. Houten, MD, FAANS*

7:41–7:54 am  Discussion

7:55–8:38 am  Session VIII: Cervical Deformity II

**Moderators:**
Howard S. An, MD and Sheeraz A. Qureshi, MD, MBA

What is a Right Distal Fusion Level for Prevention of Sagittal Imbalance in Multilevel Posterior Cervical Spine Surgery; C7 or T1?

Seungjin Choi, MD; *Kyung-Soo Suk, MD; Hak-Sun Kim, MD; Hwan-Mo Lee, MD; Seong-Hwan Moon, MD; Jae-Ho Yang, MD; Michael Lim, MD; Sung-Jin Park, MD; Adrian, Alaras, MD*

**3rd Place Clinical Research Award Winner**

Distal Junctional Kyphosis (DJK) After Cervical Deformity Surgery: Analysis with in-Construct Measurements

Themistocles S. Protopsaltis, MD; Jared C. Tishelman, BA; Subaraman Ramchandran, MD; Renaud Lafage, Justin S. Smith, MD; Han Jo Kim, MD; Peter G. Passias, MD; Gregory M. Mundis, MD; D. Kojo Hamilton, MD; Munish C. Gupta, MD; Robert A. Hart, MD; Robert Shay Bess, MD; Christopher I. Shaffrey, MD; Christopher P. Ames, MD; International Spine Study Group

8:01–8:06 am  Presentation #36
Distal Cervical Deformity Classification Modifier Grades Correlate to Clinical Improvement and Likelihood of Reaching Mcid in Multiple Metrics: Series of 73 Patients with 1-Year Follow-Up

Samanta R. Horn, BA; Peter G. Passias, MD; Gregory W. Poorman, BA; Virginie Lafage, PhD; Justin Smith, MD; Christopher P. Ames, MD; Frank J. Schwab, MD; Christopher I. Shaffrey, MD; Samantha R. Horn, BA; Charles Wang, BA; Robert Hart, MD; Douglas C. Burton, MD; Renaud Lafage; Robert Shay Bess, MD; *Daniel M. Sciubba, MD; International Spine Study Group*

8:07–8:12 am  Presentation #37

Peter G. Passias, MD; Gregory W. Poorman, BA; Virginie LaFage, PhD; Justin Smith, MD; Christopher P. Ames, MD; Frank J. Schwab, MD; Christopher I. Shaffrey, MD; Samantha R. Horn, BA; Charles Wang, BA; Robert Hart, MD; Douglas C. Burton, MD; Renaud Lafage; Robert Shay Bess, MD; *Daniel M. Sciubba, MD; International Spine Study Group*

8:13–8:18 am  Presentation #38
High C2-T3 Sagittal Imbalance is an Independent Predictor of Recurrent Proximal Junctional Kyphosis

Shan-Jin Wang; Okezie K. Aguwa, MD; Christopher I. Shaffrey, MD; Gregory M. Mundis, MD; Richard A. Hostin, MD; Douglas C. Burton, MD; Christopher P. Ames, MD; Eric O. Klineberg, MD; Renaud Lafage, Justin S. Smith, MD; Peter G. Passias, MD; Frank J. Schwab, MD; Virginie Lafage, PhD; *Han Jo Kim, MD; International Spine Study Group*

8:19–8:24 am  Presentation #39
Improvement in Ames-ISSG Cervical Deformity Classification Modifier Grades Correlate to Clinical Improvement and Likelihood of Reaching Mcid in Multiple Metrics: Series of 73 Patients with 1-Year Follow-Up

Samanta R. Horn, BA; Peter G. Passias, MD; Renaud Lafage; Justin S. Smith MD; Gregory W. Poorman, BA; Bassel G. Diebo, MD; Christopher I. Shaffrey, MD; *Daniel M. Sciubba, MD; Eric O. Klineberg, MD; Themistocles S. Protopsaltis, MD; Frank J. Schwab, MD; Robert Shay Bess, MD; Virginie Lafage, PhD; Christopher P. Ames, MD; International Spine Study Group*

8:25–8:38 am  Discussion

8:39–8:47 am  2017 CSRS European Traveling Fellowship Report

Ahmad Nassr, MD

8:48–8:53 am  Preview CSRS 2018 Annual Meeting in Scottsdale, AZ

*TBD*

8:54–8:59 am  Preview CSRS Asia Pacific Section 2018 Annual Meeting in New Dehli, India

Kuniyoshi Abumi, MD

9:00–9:05 am  Preview CSRS European Section 2018 Annual Meeting in Lisbon, Portugal

Ronald H M A Bartels, MD, PhD

9:06–9:36 am  BREAK  Exhibit Hall–Grand Ballroom

9:37–10:39 am  Session IX: HIGHLIGHT POSTER PRESENTATIONS

**Moderators:**
Ahmad Nassr, MD and John M. Rhee, MD

**Diagnostics/Imaging**

Increased Signal Intensity of the Spinal Cord on T2-Weighted Magnetic Resonance Images and Correlation with Cervical Sagittal Alignment and the Severity of Spinal Cord Compression

Bang-Ping Qian, MD; Ji-Chen Huang, MD; Xin-Kun Cheng, MD; Yong Qiu, MD; Yang Yu, MD
9:40–9:42 am  Presentation #41  
Congenital Cervical Spine Stenosis in a Global Cohort of Patients with Degenerative Cervical Myelopathy: A Report Based on a MRI Diagnostic Criterion  
**Aria Nouri, MD, MSc; Allan Martin, MD; Satoshi Nori, MD; Michael G. Fehlings, MD, PhD**

**Best Clinical Poster Award Winner**

9:43–9:45 am  Presentation #42  
A 20-Year Prospective Longitudinal Study on Degeneration of the Cervical Spine Using MRI in Volunteers  
**Kenshi Daimon, MD; Hirokazu Fujiwara, MD, PhD; Yuji Nishiwaki, MD, PhD; Eijiro Okada, MD, PhD; Kenya Nojiri, MD, PhD; Masahiko Watanabe, MD, PhD; Hiroyuki Katoh, MD, PhD; Kentaro Shimizu, MD, PhD; Hiroko Ishihama, MD; Nobuyuki Fujita, MD, PhD; Takashi Tsuji, MD, PhD; Masaya Nakamura, MD, PhD; Morio Matsumoto, MD, PhD; Kota Watanabe, MD, PhD**

9:46–9:48 am  Presentation #43  
Does the Sagittal Alignment of the Cervical Spine Have an Impact on Disc Degeneration? 20-Year Follow-Up of Asymptomatic Volunteers  
**Eijiro Okada, MD, PhD; Kenshi Daimon, MD; Hirokazu Fujiwara, MD, PhD; Yuji Nishiwaki, MD, PhD; Kenya Nojiri, MD, PhD; Masahiko Watanabe, MD, PhD; Hiroyuki Katoh, MD, PhD; Kentaro Shimizu, MD, PhD; Hiroko Ishihama, MD; Nobuyuki Fujita, MD, PhD; Takashi Tsuji, MD, PhD; Masaya Nakamura, MD, PhD; Morio Matsumoto, MD, PhD; Kota Watanabe, MD, PhD**

9:49–9:51 am  Presentation #44  
The Many Faces of the Japanese Orthopedic Association (JOA) Score: An Outcome Measure with Face Validity for Assessment of Patients with Cervical Spondylotic Myelopathy  
**Julio C. Furlan, MD, MBA, MSc, PhD, FRCP; B. Catharine Craven, BA, MD, MSc, FRCP**

9:52–9:57 am  Discussion

9:58–10:00 am  Presentation #45  
The Effectiveness of Local Autogenous Bone Dust as an Implantation Filler in Anterior Cervical Discectomy and Fusion  
**Sae Min Hwang, MD; Dong-Ho Lee, MD, PhD; Jae Hwan Cho, MD; Chang Ju Hwang, MD, PhD; Choon Sung Lee, MD, PhD; Do-yon Hwang, MD; Sung Hoo Kim, MD**

10:01–10:03 am  Presentation #46  
Safety and Efficacy of a Novel Anterior Decompression Technique (Vertebral Body Sliding Osteotomy) for Ossification of Posterior Longitudinal Ligament of the Cervical Spine  
**Chul Gie Hong, MD; Jae Hwan Cho, MD; Chang Ju Hwang, MD, PhD; Choon Sung Lee, MD, PhD; Jung-Ki Ha, MD; Dong-Ho Lee, MD**

10:04–10:06 am  Presentation #47  
Dose Additional Uncinate Resection Increase Pseudarthrosis Following Anterior Cervical Discectomy and Fusion?  
**Jong-Min Baik, MD; Jae Hwan Cho, MD; Youn-Suk Joo, MD; Chang Ju Hwang, MD; Choon Sung Lee, MD, PhD; Dong-Ho Lee, MD**

10:07–10:09 am  Presentation #48  
Sulfated Glycopeptide Nanostructures Scaffold for Spinal Arthrodesis  
**Gurmit Singh, BS; Sungsoo S. Lee, PhD; Timmy Fymer, PhD; Mark T. McClendon, PhD; Andrew D. Schneider, MD, Karina M. Katchko, BS; Danielle S. Chun, MD; Joseph A. Weiner, BS; Ralph W. Cook, BS; Sameer Singh, BS; Soyoen Jeong, MS; Chawon Yun, PhD; Samuel I. Stupp, PhD; Erin L. Hsu, PhD; Wellington K. Hsu, MD**

10:10–10:12 am  Presentation #49  
Surgical Site Drains and Postoperative Complications Following Posterior Cervical Spine Surgery: A Multicenter Retrospective Study  
**Daniel B. Herrick; Joseph E. Tennenbaum; Marc Mankarious; Sagar Vallab; Eitan Fleischman; Swamy Kurra, MBBS; Shane M. Burke, MD; Marie Roguski, MD; Thomas E. Mroz, MD; William F. Lavelle, MD; Jeffrey E. Florman, MD; Ron I. Riesenburger, MD**

10:13–10:18 am  Discussion

10:19–10:21 am  Presentation #50  
Cost-Utility Analysis of Cervical Deformity Surgeries Using One-Year Outcome  
**Gregory W. Poorman, BA; Peter G. Passias, MD; Rabia Qureshi, BS; Hamid Hassanzadeh, MD; Michael P. Kelly, MD; Richard A. Hostin, MD; Christopher P. Ames, MD; Justin S. Smith, MD; Virginie LaFage, PhD; Douglas C. Burton, MD; Robert Shay Bess, MD; Christopher I. Shaffrey, MD; Frank J. Schwab, MD; Munish C. Gupta, MD; International Spine Study Group**

10:22–10:24 am  Presentation #51  
Preparing for Bundled Payments in Cervical Spine Surgery: Do We Understand the Influence of Patient, Hospital, and Procedural Factors on the Cost and Length of Stay?  
**Andrew J. Pugely, MD; Cameron Barton, MD; Comron Saifi, MD; Yubo Gao, PhD**

Program is tentative; times & topics may change
10:25–10:27 am Presentation #52
What are the Costs of Cervical Radiculopathy in the Year Prior to Anterior Cervical Discectomy and Fusion?
*Cameron Barton, MD; Nicholas Bedard, MD; Comron Saifi, MD; Andrew J Pugely, MD*

10:28–10:30 am Presentation #54
The Medico-Legal Landscape of Spine Surgery: How Do Surgeons Fare?
*Melvin C. Makhni, MD, MBA; Paul J. Park, MD; Comron S. Saifi, MD; Jon-Michael Caldwell, MD; Alex Ha, MD; Ronald A. Lehman Jr., MD; Mark Weidenbaum, MD*

10:31–10:39 am Discussion

10:40–11:23 am Session X: Spinal Cord
*Moderators: Michael C. Gerling, MD and Christopher I. Shaffrey, MD*

10:40-10:45 am Presentation #55
Physical Performance Decreases in the Early Stage of Cervical Myelopathy Before the Myelopathic Signs Appear: The Wakayama Spine Study
*Keiji Nagata, MD; Noriko Yoshimura, MD, PhD; Hiroshi Hashizume, MD; Yuyu Ishimoto; Hiroshi Yamada, MD; Akihito Minamide; Shigeyuki Muraki; Munehito Yoshida, MD*

10:46-10:51 am Presentation #56
Enhancement of Neurological Recovery and Attenuation of Inflammation in Cervical Spondylotic Myelopathy with Intravenous IgG
*Wen Ru Yu, MD; Pia Maria Vidal, PhD; Anna Maria Badner, BS; Michael G. Fehlings, MD, PhD*

10:52-10:57 am Presentation #57
Neural Stem Cell Mediated Recovery Is Enhanced by Chondroitinase ABC Pretreatment in Chronic Cervical Spinal Cord Injury
*Hidenori Suzuki, MD, PhD; Christopher S. Ahuja, MD; Narihito Nagoshi, MD, PhD; Toshihiko Taguchi, MD, PhD; Michael G. Fehlings, MD, PhD*

10:58-11:03 am Presentation #58
Does Spinal Cord Compression Status Affect Pre- and Post-Operative Neurological Conditions?
*Takanori Niimura, MD; Hisanori Mihara, MD; Yasunori Tatara, MD*

11:04-11:09 am Presentation #59
Multiparametric Quantitative MRI Detects Tissue Injury in Asymptomatic Cervical Spinal Cord Compression
*Allan R. Martin, MD; Benjamin De Leener, MSc; Julien Cohen-Adad, PhD; David W. Cadotte, MD, PhD; Aria Nourt, MD, MSc; Jefferson R. Wilson, MD, PhD; David J. Mikulis, MD, PhD; Howard Ginsberg, MD, PhD; Michael G. Fehlings, MD, PhD*

11:10-11:23 am Discussion

11:24–11:29 am Introduction of CSRS President
*Jeffrey C. Wang, MD*

11:30-12:00 pm PRESIDENTIAL ADDRESS
*Darrel S. Brodke, MD*

12:02–1:05 pm Non-Member Lunch

12:02–1:05 pm Member Lunch *Location: Atlantic Ballroom*

1:06–1:09 pm Session XI: Complications
*Moderators: Jeffrey S. Fischgrund, MD and Timothy A. Moore, MD*

1:06-1:11 pm Presentation #60
Predicting the Occurrence of Complications Following Corrective Cervical Deformity Surgery: Analysis of a Prospective Multicenter Database Using Predictive Analytics
*Peter G. Passias, MD; Cheongeun Oh, PhD; Samantha R. Horn, BA; Jessica Lavery, MS; Han Jo Kim, MD; D. Kojo Hamilton, MD; Daniel M. Sciubba, MD; Brian J. Neuman, MD; Aaron J. Buckland, MD; Gregory W. Poorman, BA; Themistocles S. Protopsaltis, MD; Eric O. Klineberg, MD; Christopher P. Ames, MD; Justin S. Smith, MD; Virginie Lafage, PhD; International Spine Study Group*

1:12-1:17 pm Presentation #61
Risk Factor Analysis of Postoperative Subaxial Cervical Alignment Change Following Upper Cervical Fixation
*Jae Taek Hong, MD, PhD*
1:17-1:22 pm Presentation #62
The Risk Factor Analysis of Change of Intraoperative Neurophysiologic Monitoring During Cervical Open-Door Laminoplasty
Sanghyun Han, MD; Seung-Jae Hyun, MD, PhD; Ki-Jeong Kim, MD, PhD; Kyung Seok Park, MD, PhD

1:23-1:28 pm Presentation #63
What is the Best Available Patient-Reported Outcome Measure for Dysphagia in Cervical Spine Surgery? A Comparison of the Eating Assessment Tool (EAT-10) and SWAL-QOL
Tyler J. Jenkins, MD; Surabhi Bhatt, BS; Kern Singh, MD; Wellington K. Hsu, MD; Alpesh A. Patel, MD

1:29-1:34 pm Presentation #64
Etiology and Surgical Strategies of Reoperation After Cervical Laminoplasty
Yanbin Zhao, MD; Yu Sun, MD

1:35–1:40 pm Presentation #65
Prevention of Pseudoarthrosis in Multilevel ACDF with Individual Level Plate Fixation vs. Single Long Plate
Richard A. Hynes, MD; Devin K. Datta, MD

1:41-1:53 pm Discussion

1:54-2:04 pm Special Projects Committee Report
Jeffrey A. Rihn, MD

2:05-3:11 pm Session XII: RESEARCH SESSION
Moderators: Zoher Ghogawala, MD, FACS

2:05–2:15 pm Announcement—2017 Research Grant Winners

2:16–2:17 pm Introduction—Research Grant Updates

2:18–2:23 pm 2016 Medtronic Analysis of the Human Serum Proteome in Cervical Radiculopathy Patients to Predict Who Will Fail Conservative Treatment and Require Surgery
Steven M. Presciutti, MD

2:24–2:29 pm Does Psychological Distress Impact the Clinical Outcomes in Patients Undergoing Cervical Spine Surgery, and Should We Intervene? A Prospective, Blind and Placebo-Controlled Trial
Peter G. Passias, MD

2:30–2:35 pm 2016 CSRS 21st Century Research and Education Grants Resveratrol as a Therapeutic to Reverse the Adverse Effects of Cigarette Smoke on Bone
Wellington K. Hsu, MD

2:36–2:41 pm Exploration for Novel Molecular Biomarkers of Acute Spinal Cord Injury
Masao Koda, MD

2:42–2:47 pm 2016 Seed Starter Grants Loss of Range of Motion Following Cervical Fusion: Effect on Activities of Daily Living Kinematics and Patient Satisfaction
Kevin M. Bell, PhD

Hamid Hassanzadeh, MD

2:54–3:11 pm Discussion

3:11 pm Adjourn

Saturday, Dec 2, 2017

7:00–7:05 am Welcome and Announcements
Louis G. Jenis, MD

7:06–7:49 am Session XIII: Anterior Surgery II
Moderators: Kazuhiro Chiba, MD, PhD and Timothy A. Garvey, MD
7:06–7:11 am
Presentation #66
1st Place Clinical Research Award Winner
The Real Costs of ACDF: A Time-Driven Activity-Based Costing Analysis
Gregory D. Schroeder, MD; Alan S. Hilibrand, MD; Christopher K. Kepler, MD, MBA; Kristen J. Nicholson, PhD; Christie Stawicki, BS; Jonathan Paul, BS; Priyanka Kumar, BS; Douglas Hollem, MD; Hamadi Murphy, MD, Mark F. Kurfd, MD, Barret I. Woods, MD, Kristen E. Radcliff, MD; D. Greg Anderson MD; Alexander R. Vaccaro, MD, PhD, MBA; Jeffery A. Rihn MD

7:12–7:17 am
Presentation #67
1st Place Resident/Fellow Research Award Winner
Favorable Prognosis for Significant Preoperative Upper Extremity Weakness Following Elective Anterior Cervical Discectomy and Fusion
Arjun S. Sebastian, MD; Scott C. Wagner, MD; Patrick B. Morrisey, MD; Ian D. Kaye, MD; Alan S. Hilibrand, MD; Alexander Vaccaro, MD, PhD, MBA; Christopher K. Kepler, MD MBA

7:18–7:23 am
Presentation #68
Comparison of Neck Pain and Complications of Stand-Alone vs. Conventional Plate and Interbody Fusion
Christian Fisahn, MD; Shiveindra Jeyamohan, MD; Marc Moisi, MD; Fernando Alonso, MD; Daniel C. Norvell, PhD; R. Shane Tubbs, PhD; Rod J. Oskouian, MD; Thomas A. Schildhauer, MD; Jens R. Chapman, MD

7:24–7:29 am
Presentation #69
Is Two-Level Cervical Disc Replacement More Cost-Effective than Anterior Cervical Discectomy and Fusion at 7-Years?
Robert K. Merrill, BS; Steven J. McAnany, MD; Todd J. Albert, MD; Sheeraz A. Qureshi, MD

7:30–7:35 am
Presentation #70
Impact of Body Mass Index on Surgical Outcomes, Narcotic Consumption, and Costs Following Anterior Cervical Discectomy and Fusion
Ankur S. Narain, BA; Fady Y. Hijji, MD; Brittany E. Haws, BS; Krishna T. Kudaravalli, BS; Kelly H. Yom, BA; Jonathan Markowitz, BS; Kent Singh, MD

7:36–7:49 am
Discussion

7:50-8:45 am
Moderator: Louis G. Jenis, MD
Symposium: Eight Unique Tips and Pearls for Cervical Spine Surgeons
Panel – Frank J. Eismont, MD; Jeffrey S. Fischgrund, MD; Robert F. Heary, MD; Rick Sasso, MD; Christopher I. Shaffrey, MD; Alexander R. Vaccaro, MD, PhD, MBA; Jeffrey C. Wang, MD; Thomas A. Zdeblick MD

8:33–8:45 am
Discussion

8:50–9:33 am
Session XIV: Outcomes
Moderators: Bruce V. Darden II, MD and R. Alden Milam, IV, MD

8:50–8:55 am
Presentation #71
Clinical and Radiographic Outcomes of Patients with Cervical Deformity Secondary to Thoracolumbar Proximal Junctional Kyphosis
Peter G. Passias, MD; Samantha R. Horn, BA; Gregory W. Poorman, BA; Alan H. Daniels, MD; D. Kojo Hamilton, MD; Daniel M. Scuibba, MD; Justin S. Smith, MD; Christopher I. Shaffrey, MD; Renaud Lafage; Virginie Lafage, PhD; Christopher P. Ames, MD; Gregory Mundis, MD; Robert Eastlack, MD; Frank J. Schwab, MD; International Spine Study Group

8:56–9:01 am
Presentation #72
The Relationship Between Improvements in Myelopathy and Sagittal Realignment in Cervical Deformity Surgery
Brian J. Neuman, MD
Peter G. Passias, MD; Samantha R. Horn, BA; Subaraman Ramchandran, MD; Douglas C. Burton, MD; Themistocles S. Protopsaltis, MD; Renaud Lafage; Virginie Lafage, PhD; Gregory W. Poorman, BA; Justin S. Smith, MD; Christopher P. Ames, MD; Christopher I. Shaffrey, MD; Han Jo Kim, MD; Alexandra Soroceanu, MD; Eric O. Klineberg, MD; International Spine Study Group

9:02–9:07 am
Presentation #73
Cost-Effectiveness Analysis of Intraoperative Corticosteroid Administration in Anterior Cervical Discectomy and Fusion for Degenerative Disease
Juneyoung L. Yi, MD; Brandon K. Bellows, PharmD, MD; Tyler J. Jenkins, MD; Alpesh A. Patel, MD; Enrica F. Bissos, MD, MPH

9:08–9:13 am
Presentation #74
Is There a Preoperative Morphine Equianalgesic Dose that Predicts Ability to Achieve a Clinically Meaningful Improvement Following Spine Surgery?
Joseph B. Wick, BA; Ahilan Sivaganesan, MD; Silky Chotai, MD; Kristin R. Archer, PhD, DPT; Samuel L. Posey, BS; Parker T. Evans, BS; Joel R. Campbell, MD; Clinton J. Devin, MD
9:14–9:19 am Presentation #75
The Natural History of Acute Cervical Radicular Pain
William J. Beckworth, MD; Benjamin Abramoff, MD; Laura Ward, Jacob Lee, DO; Marly Dows-Martinez, S. Tim Yoon, MD, PhD

9:20–9:33 am Discussion

9:34–9:38 am Announcement of Poster Award Winners

9:39–9:44 am Presentation of CSRS Medallion to Jeffrey C. Wang, MD

9:45–10:00 am BREAK

10:01–10:44 am Session XV: Surgical Outcomes
Moderators: Michael D. Daubs, MD and Michael G. Fehlings, MD, PhD

10:01–10:06 am Presentation #76
2nd Place Clinical Research Award Winner
The Impact Of Local Steroid Application on Dysphagia Following an Anterior Cervical Discectomy and Fusion: Preliminary Results of a Prospectively, Randomized, Single Blind Trial
Ankur S. Narain, BA; Fady Y. Hijji, MD; Brittany E. Haws, BS; Benjamin C. Mayo, MD; Dustin H. Massel, MD; Kelly H. Yom, BA; Krishna T. Kudaravalli, BS; Khaled Aboushaala, MD; Kern Singh, MD

10:07–10:12 am Presentation #77
Do Cervical Spine Surgery Patients Recall Their Preoperative Status? A Cohort Study of Recall Bias in Patient-Reported Outcomes
M. Tayseer Shamaa, MBBS; Ilyas S. Aleem, MD, MSc, FRCSC; Bradford L. Currier, MD; Michael J. Yaszemski, MD, PhD; Heidi Poppendeck; Paul M. Huddleston, MD; Jason Eck, DO, MS; John Rhee, MD; Mohamad Bydon, MD; Brett Freedman, MD; Ahmad Nassr, MD

10:13–10:18 am Presentation #78
The Impact of Preoperative Depression on Hospital Consumer Assessment of Healthcare Providers and Systems (Hcahps) Survey Results in a Cervical Spine Surgery Setting
Jay M. Levin, BA; Joseph E. Tanenbaum, BA; Thomas E. Mroz, MD; Michael P. Steinmetz, MD

10:19–10:24 am Presentation #79
Psychosocial Risk Factors for Chronic Opioid Use After Single-Level Cervical Fusion for Radiculopathy: A Workers’ Compensation Population
Mhamad Faour, MD; Joshua T. Anderson, MD; Uri M. Ahn, MD; Nicholas U. Ahn, MD

10:25–10:30 am Presentation #80
The Impact of Multiple Patient-Reported Allergies on Clinical Outcomes After Anterior Cervical Discectomy and Fusion
Douglas L. Nestorovski, MD; Steven J. McAnany, MD; Michael P. Kelly, MD; Colleen M. Peters, MA; Lukas P. Zebala, MD

10:31–10:44 am Discussion

10:45–12:11 pm Session XVI: HIGHLIGHT POSTERS II
Moderators: Robert F. Heary, MD and Rick Sasso, MD

10:45–10:47 am Presentation #81
DEFORMITY
Impact of Obesity on Radiographic Alignment and Short-Term Complications After Surgical Treatment of Adult Cervical Deformity
Peter G. Passias, MD; Gregory W. Poorman, BA; Samantha R. Horn, BA; Alan H. Daniels, MD; D. Kojo Hamilton; Daniel M. Sciubba, MD; Justin S. Smith, MD; Brian J. Neuman; Christopher I. Shaffrey, MD; Virginie LaFage, PhD; Renaud Lafage; Christopher P. Ames, MD; Robert A. Hart, MD; Alex Soroceanu, MD; Gregory M. Mundis, MD; Robert K. Eastlack, MD; International Spine Study Group

10:48–10:50 am Presentation #82
Predictive Model for Distal Juncational Kyphosis After Cervical Deformity Surgery
Peter G. Passias, MD; Gregory W. Poorman, BA; Thermistocles S. Protopsaltis, MD; Samantha R. Horn, BA; Bassel G. Diebo, MD; Christopher P. Ames, MD; Justin S. Smith, MD; Virginie LaFage, PhD; Renaud Lafage, Eric O. Klineberg, MD; Christopher I. Shaffrey, MD; Robert Shay Bess, MD; Frank J. Schwab, MD; International Spine Study Group

10:51–10:53 am Presentation #83
Identifying Sources of Improvement of Axial Pain in Corrective Cervical Deformity Surgery
Peter G. Passias, MD; Gregory W. Poorman, BA; Samantha R. Horn, BA; Eric O. Klineberg, MD; Christopher I. Shaffrey, MD; Virginie LaFage, PhD; Thermistocles S. Protopsaltis, MD; Christopher P. Ames, MD; Justin S. Smith, MD; Gregory M. Mundis, MD; Brian J. Neuman, MD; Robert A. Hart, MD; Douglas C. Burton, MD; International Spine Study Group
10:54–10:56 am
Presentation #84
Sagittal Alignment Parameters Associated with Adjacent Segment Pathology After Anterior Cervical Discectomy and Fusion
Justin C. Paul, MD; Bryce A. Basques, MD; Philip K. Louie, MD; Arya Varthi, MD; Jonathan Markowitz, BS; Steve Heidt, BS; Sumender Sharma, MS; Edward J. Goldberg, MD; Howard S. An, MD

10:57–10:59 am
Presentation #85
Predictive Model for Achieving a Good Overall Outcome at One-Year Following Surgical Correction of Adult Cervical Deformity
Alan H. Daniels, MD
Peter G. Passias, MD; Cheongeun Oh, PhD; Samantha R. Horn, BA; Gregory W. Poorman, BA; Renaud Lafage, MS; Bassel G. Diebo, MD; Justin K. Scheer, MD; Justin S. Smith MD; Christopher I. Shaffrey, MD; Themistocles S. Protopsaltis, MD; Han Jo Kim, MD; Robert A. Hart MD; Virginie Lafage, PhD; Christopher P. Ames, MD; International Spine Study Group

11:00–11:13 am
Discussion

MYELOPATHY III

11:14–11:16 am
Presentation #86
The Relationship Between MRI Signal Intensity Changes, Clinical Presentation, and Surgical Outcome in Degenerative Cervical Myelopathy: Analysis of a Global Cohort
Aria Nouri, MD, MSc; Allan Martin, MD; So Kato, MD; Lauren Riehm; Michael G. Fehlings, MD, PhD

11:17–11:19 am
Presentation #87
Correlation of Radiographic Outcomes and Quality of Life for Multilevel Cervical Spondylotic Myelopathy
Heath Patrick Gould, MD; Kelsey C. Goon, BS; Emily Hu, BA; Joseph E. Tanenbaum; BA; Colin Haines; Don K. Moore, MD; Thomas E. Mroz, MD

11:20–11:22 am
Presentation #88
Brain Changes in Functional Connectivity and Anatomies in Patients with Cervical Myelopathy: A Resting-State Functional MRI Study
Junichi Kushioka, MD; Takashi Kaito, MD, PhD; Shota Takenaka, MD, PhD; Takahiro Makino, MD, MSc; Yusuke Sakai; Hisashi Tanaka, MD; Yoshiyuki Watanabe, MD; Shigeyuki Kan, Masahiko Shibata, MD, PhD

11:23–11:25 am
Presentation #89
Monitoring for Myelopathic Progression with Multiparametric Quantitative MRI
Allan R. Martin, MD; Benjamin De Leener; Julien Cohen-Adad; Sukhinder Kalsi-Ryan, BSc PT, MSc, PhD; David W. Cadotte, MD; Jefferson R. Wilson, FRCS, MD, PhD; Aria Nouri, MD, MSc; David J. Mikulis, MD; Howard Ginsberg, MD; Eric M. Massicotte, MD; Michael G. Fehlings, MD, PhD

11:26–11:28 am
Presentation #90
Brain Connectivity Can be a Novel Predictor for Neurological Improvement in Patients with Cervical Myelopathy
Takashi Kaito, MD, PhD; Shota Takenaka, MD, DMSc; Takahiro Makino, MD, DMSc; Yusuke Sakai, MD; Junichi Kushioka, MD; Hisashi Tanaka, MD; Yoshiyuki Watanabe, MD, PhD; Shigeyuki Kan, PhD; Masahiko Shibata, MD

11:29–11:42 am
Discussion

COMPLICATIONS

11:43–11:45 am
Presentation #91
Risk Factors for Inpatient Morbidity and Mortality After One- and Two-Level ACDF
Ashley Rogerson, MD; Jessica Aidlen, MD; Andrew Mason, MS; Ayal Pierce, BS; David Tybor, PhD; Matthew Salzler, MD

11:46–11:48 am
Presentation #92
Bleeding vs. Clotting Complications After Cervical Spine Surgery: An Analysis of 207,794 Patients
Haroutioun H. Boyajian, MD; Olumuyiwa A. Idowu, BA; William P. Mosenthal, MD; Edwin Ramos, MD; Lewis L. Shi, MD; Michael J. Lee, MD

11:49–11:51 am
Presentation #93
Does Screw Density Affect the Revision Rate of a Multilevel Posterior Cervical Decompression and Fusion
Gregory D. Schroeder, MD; Christopher K. Kepler, MD, MBA; Kristen J. Nicholson, PhD; Mark F. Kurd, MD; Alan S. Hillbrand, MD; Loren Mead, BS; Brittany Moliver, BS; Hamadi Murphy, MD; Barret I. Woods, MD; Kristen E. Radcliff, MD; Jeffrey A. Rihn, MD, D. Greg Anderson, MD; Alexander R. Vaccaro, MD, PhD, MBA

11:52–11:54 am
Presentation #94
Neurological Complications and Recovery Rates in Adult Cervical Deformity Surgery
Han Jo Kim, MD; Hongda Bao, MD; Christopher I. Shaffrey, MD; Justin S. Smith, MD; Michael P. Kelly, MD; Munish Gupta, MD; Todd J. Albert, MD; Themistocles S. Protopsaltis, MD; Gregory M. Mundis, MD; Peter G. Passias, MD; Eric O. Klineberg, MD; Virginie Lafage, PhD; Christopher P. Ames, MD; International Spine Study Group
11:55–11:57 am  The Rothman Index as a Predictor of Post-Discharge Adverse Events After Elective Spine Surgery
Presentation #95  Ryan P. McLynn, BS; Jonathan J. Cui, BS; Nathaniel T. Ondeck, BS; David R. Swanson, MS; Blake N. Shultz, BA; Patawut Bovonratwet, BS; Arya Varthi, MD; Jonathan N. Grauer, MD

11:58–12:11 pm  Discussion

12:12–12:13 pm  Closing Remarks  
Louis G. Jenis, MD

12:14 pm  Adjourning Notices  
Jeffrey C. Wang, MD