



CSRS 43rd Annual Meeting
 December 3 - 5, 2015
 Manchester Grand Hyatt Hotel
 San Diego, CA
 Program Chairs – *Zoher Ghogawala, MD & Rick C. Sasso, MD*
 President – *Alan S. Hilibrand, MD*

Revised 9-3-15

Thursday, Dec 3, 2015
 Seaport Ballrooms FGH

7:00–7:10 am	Welcome and Announcements <i>Zoher Ghogawala, MD and Rick C. Sasso, MD</i>
7:11–7:59 am	Session I: MYELOPATHY
Moderators:	<i>Ronald A. Lehman, Jr., MD and Thomas A. Zdeblick, MD</i>
7:11–7:17 am Presentation #1	Is Preoperative Duration of Symptoms a Significant Predictor of Functional Status and Quality of Life Outcomes in Patients Undergoing Surgery for the Treatment of Degenerative Cervical Myelopathy? <i>Lindsay Tetreault, HBSc; Branko Kopjar, MD, PhD; Paul M. Arnold, MD; Michael G. Fehlings, MD, PhD</i>
7:18–7:24 am Presentation #2	Laminoplasty Versus Laminectomy and Fusion to Treat Cervical Spondylotic Myelopathy: Outcomes of the Prospective Multicenter Aospine North America and International CSM Studies <i>Carlo Santaguida, MD; Michael G. Fehlings, MD, PhD; Branko Kopjar, MD, PhD; Paul M. Arnold, MD; Helton Defino, MD; Shashank Kale, MD; S. Tim Yoon, MD, PhD; Giuseppe Barbagallo, MD; Ronald Bartels, MD, PhD; Qiang Zhou, MD; Alexander R. Vaccaro, III, MD, PhD</i>
7:25–7:31 am Presentation #3	Clinical Outcome of Cervical Laminoplasty and Postoperative Radiological Change for Cervical Myelopathy with Degenerative Spondylolisthesis <i>Akinobu Suzuki, MD, PhD; Koji Tamia, MD; Hidetomi Terai, MD, PhD; Masatoshi Hoshino, MD, PhD; Hiromitsu Toyoda; Sho Dohzono, MD; Shinji Takahashi, MD; Kazunori Hayashi, MD; Hiroaki Nakamura, MD</i>
7:32–7:38 am Presentation #4	Cervical Anterolisthesis is a Significant Poor Predictor of Neurologic Outcomes in Patients with Cervical Spondylotic Myelopathy following Cervical Laminoplasty <i>Takeshi Oichi, MD; Yasushi Oshima, MD, PhD; Yuki Taniguchi, MD, PhD; Yoshitaka Matsubayashi, MD; Hirotaka Chikuda, MD, PhD; Katsushi Takeshita, MD, PhD; Sakae Tanaka, MD, PhD</i>
7:39–7:45 am Presentation #5	Physical Signs and Clinical Features of Elderly Patients with Cervical Myelopathy: Comparison of 3 Different Age Groups in 100 Consecutive Operative Cases <i>Takahiko Hamasaki, MD</i>
7:46–7:59 am	Discussion
8:00–8:48 am	Session II: ECONOMICS/VALUE
Moderators:	<i>Robert F. Heary, MD and John M. Rhee, MD</i>
8:00–8:06 am Presentation #6	Cost Effectiveness of Operative Vs. Non-Operative Treatment of Geriatric Type-II Odontoid Fracture <i>Daniel R. Barlow, MS; Brendan T. Higgins, MD, MS; Elissa Ozanne, PhD; Anna N. A. Tosteson, ScD; Adam M. Pearson, MD, MS</i>
8:07–8:13 am Presentation #7	Cost Utility Analysis of Anterior Cervical Discectomy and Fusion for Degenerative Spine Disease in Elderly Population <i>Silky Chotai, MD; Scott L. Parker, MD; J. Alex Sielatycki, MD; Ahilan Sivaganesan, MD; Harrison F. Kay, BS; Joseph B. Wick, BA; Matthew J. McGirt, MD; Clinton J. Devin, MD</i>

8:14–8:20 am Presentation #8	Determining the Drivers of Cost for Elective Anterior Cervical Discectomy and Fusion for Cervical Degenerative Disease <i>Silky Chotai, MD; Ahilan Sivaganesan, MD; Scott L. Parker, MD; Aaronson Oran, MD; Joseph Cheng, MD; Matthew J. McGirt, MD; Clinton J. Devin, MD</i>
8:21–8:27 am Presentation #9	Where do True Cost Savings Exist following Elective Surgery for Degenerative Spine Disease? <i>Silky Chotai, MD; Scott L. Parker, MD; Ahilan Sivaganesan, MD; David Stonko, BS, MS; Matthew J. McGirt, MD; Clinton J. Devin, MD</i>
8:28–8:34 am Presentation #10	Impact of Obesity on Cost per Quality Adjusted Life Years Gained following Anterior Cervical Discectomy and Fusion in Elective Degenerative Pathology <i>Silky Chotai, MD; J. Alex Sielatycki, MD; Ahilan Sivaganesan, MD; Scott L. Parker, MD; Harrison F. Kay, BS; Kevin R. O'Neill, MD; Matthew J. McGirt, MD; Clinton J. Devin, MD</i>
8:35–8:48 am	Discussion
8:49–9:37 am Moderators:	Session III: ARTHROPLASTY <i>Justin S. Smith, MD, PhD and Jack E. Zigler, MD</i>
8:49–8:55 am Presentation #11	Cost Utility Analysis of the Cervical Artificial Disc versus Fusion for the Treatment of Two-Level Symptomatic Degenerative Disc Disease: 5 Year Follow-Up <i>Jared D. Ament, MD, MPH; Zhuo Yang, MSc; Pierce D. Nunley, MD; Marcus Stone, PhD; Kee D. Kim, MD</i>
8:56–9:02 am Presentation #12	Seven-Year Cost-Effectiveness of Cervical Disc Replacement versus Anterior Cervical Discectomy and Fusion – Results from Investigational Device Exemption and Post-Approval Studies of Prodisc®-C Total Disc Replacement <i>Kristen E. Radcliff, MD; Jason H. Lerner, PT, MBA, MSc; Thierry Bernard, MS; Chao Yang, MD; Jack E. Zigler, MD</i>
9:03–9:09 am Presentation #13	Comparison of One and Two-Level Treatment with Cervical Disc Arthroplasty or Anterior Cervical Discectomy and Fusion through Five-Year Follow-Up <i>Scott L. Blumenthal, MD; Michael S. Hisey, MD; Hyun W. Bae, MD; Jack E. Zigler, MD</i>
9:10–9:16 am Presentation #14	The Positive Effect of Continued Motion of a Cervical Artificial Disc Replacement on Radiographic Adjacent Level Degeneration at 7 Year Follow-Up <i>Jeffrey M. Spivak, MD; Jack E. Zigler, MD; Michael E. Janssen, DO; Bruce V. Darden, II, MD; Kristen E. Radcliff, MD</i>
9:17–9:23 am Presentation #15	Cervical Total Disc Replacement and Anterior Cervical Discectomy and Fusion have Similar Short-Term Complication Rates <i>Bryce A. Basques, MD; Adam M. Lukasiewicz, MSc; Matthew L. Webb, AB; Andre M. Samuel, BBA; Daniel D. Bohl, MD, MPH; Junyoung Ahn, BS; Jason O. Toy, MD; Kern Singh, MD; Jonathan N. Grauer, MD</i>
9:24–9:37 am	Discussion
9:38–10:03 am	Break Exhibit Hall in Seaport Ballrooms ABCD
10:04–10:52 am Moderators:	Session IV: BASIC SCIENCE <i>Sanford E. Emery, MD, MBA and Jonathan N. Grauer, MD</i>
10:04–10:10 am Presentation #16	Total Disc Replacement using Tissue-Engineered Intervertebral Discs: In Vivo Outcome in a Canine Model. <i>Yu Moriguchi, MD, PhD; Jorge Mojica Santiago, BS; Peter Grunert, MD; Rodrigo Navarro, MD, MSc; Thamina Khair, BA; Lawrence J. Bonassar, PhD; Roger Härtl, MD</i>
10:11–10:17 am Presentation #17	Cervical Intervertebral Disc and Paraspinal Muscle Deconditioning following Long-Duration Spaceflight and 30-Day Recovery <i>Jacquelyn A. Holt; Robert M. Healey, BS, MBA; Brandon R. Macias, PhD; Alan R. Hargens, PhD; Jeffrey C. Lotz, PhD; Douglas G. Chang, MD, PhD</i>

10:18–10:24 am Presentation #18	Transplantation of Human IPS Cell-Derived Oligodendrocyte Precursor Cells Enriched Neural Stem/Progenitor Cells in Chronic and Subacute Spinal Cord Injury <i>Soya Kawabata, MD; Akio Iwanami, MD, PhD; Jun Koyama, MD, PhD; Morito Takano, MD, PhD; Yuko Numasawa, MD, PhD; Go Itakura, MD, PhD; Yoshiomi Kobayashi, MD, PhD; Shinsuke Shibata, MD, PhD; Hideyuki Okano, MD, PhD; Morio Matsumoto, MD, PhD; Masaya Nakamura, MD, PhD</i>
10:25–10:31 am Presentation #19	Altered Forelimb Neural Circuitry Associated with Impaired Manual Dexterity in Cervical Spondylotic Myelopathy (CSM) <i>Kajana Satkunendrarajah, PhD; Spyridon K. Karadimas, MD, PhD; Michael G. Fehlings, MD, PhD</i>
10:32–10:38 am Presentation #20	Evaluation of Vancomycin Powder on Bone Healing in a Rat Spinal Arthrodesis Model <i>Marco C. Mendoza, MD; Kevin A. Sonn, MD; Abhishek S. Kannan, BS; Sharath Bellary, MD; Sean M. Mitchell, BS; Gurmit Singh, BS; Christian Park, BS; Chawon Yun, PhD; Anjan Ghosh; Stuart R. Stock, PhD; Erin L. Hsu, PhD; Wellington K. Hsu, MD</i>
10:39–10:52 am	Discussion
10:53–10:58 am	Special Projects Committee Report Cervical Radiculopathy: Assessment of Clinical Outcomes and Cost-effectiveness of Operative and Non-operative Treatment <i>Zoher Ghogawala, MD; Jonathan N. Grauer, MD; James S. Harrop, MD; Alan S. Hilibrand, MD; Jeffery A. Rihn, MD</i>
10:59–11:04 am	Special Projects Committee Report Review of Cervical Myelopathy Evidence and Clinical Guideline Development <i>Michael G. Fehlings, MD, PhD</i>
11:05–11:07 am	Discussion
11:08 am–12:10 pm Moderators:	Highlighted Poster Presentations I <i>Todd J. Albert, MD and Alexander R. Vaccaro, III, MD, PhD</i>
11:08–11:28 am	Outcomes:
11:08–11:10 am Presentation #21 P	Return to Work Rates after Single Level Cervical Fusion Surgery for Degenerative Disc Disease Compared to Fusion for Radiculopathy in Workers' Compensation Setting. <i>Mhamad Faour, MD; Joshua T. Anderson, BS; Uri M. Ahn, MD; Nicholas U. Ahn, MD</i>
11:11–11:13 am Presentation #22 P	Does Depression or Anxiety affect Patient-Reported Outcomes and Satisfaction following Operative Treatment for Cervical Myelopathy or Radiculopathy? <i>Harrison F. Kay, BS; Silky Chotai, MD; Joseph B. Wick, BA; David P. Stonko, MS; Matthew J. McGirt, MD; Clinton J. Devin, MD</i>
11:14–11:16 am Presentation #23 P	The Profile of a Smoker and its Impact on Outcomes after Cervical Spine Surgery <i>Raul A. Vasquez-Castellanos, MD; Silky Chotai, MD; Joseph B. Wick, BA; David P. Stonko, BS, MS; Joseph S. Cheng, MD, MS; Clinton J. Devin, MD; Anthony L. Asher, MD; Matthew J. McGirt, MD</i>
11:17–11:19 am Presentation #24 P	Patient-Specific Factors Predicting Dissatisfaction after Elective Surgery for Degenerative Spine Diseases <i>Sheyan J. Armaghani, MD; Silky Chotai, MD; Ahilan Sivaganesan, MD; Scott L. Parker, MD; J. Alex Sielatycki, MD; David Stonko, BS, MS; Matthew J. McGirt, MD; Clinton J. Devin, MD</i>
11:20–11:22 am Presentation #25 P	Clinical Obesity in Total Disc Replacement and Anterior Cervical Discectomy and Fusion Patients through Five Years Follow-Up <i>Todd J. Albert, MD; Domagoj Coric, MD; Han Jo Kim, MD; Elizabeth Roensch, BS; Kyle Marshall, BS; Kristen E. Radcliff, MD</i>
11:23–11:28 am	Discussion
11:29–11:49 am	Spinal Cord Injury:

11:29-11:31 am Presentation #26 P	Classifying Injury Severity and Predicting Neurologic Outcome after Acute Human Spinal Cord Injury with Cerebrospinal Fluid Biomarkers. <i>Brian K. Kwon, MD, PhD; Femke Streijger, PhD; Nader Fallah, PhD; Scott Paquette, MD, MEd; John Street, MD, PhD; Charles G. Fisher, MD, MPH; Marcel F. Dvorak, MD</i>
11:32-11:34 am Presentation #27 P	Functional Assessment of Local Versus Distal Transplantation of Human Neural Stem Cells following Chronic Spinal Cord Injury <i>Ivan Cheng, MD; Michael Githens, MD; Tyler Johnston, MD; R. Lane Smith, PhD</i>
11:35-11:37 am Presentation #28 P	Intrathecal Administration of Recombinant Human Hepatocyte Growth Factor for Acute Spinal Cord Injury: Road from Bench to Clinical Trial and Future Perspective <i>Kazuya Kitamura, MD, PhD; Akio Iwanami, MD, PhD; Hiroki Iwai, MD, PhD; Jun-ichi Yamane, MD, PhD; Kanehiro Fujiyoshi, MD; Yoshiaki Toyama, MD; Morio Matsumoto, MD, PhD; Hideyuki Okano; Masaya Nakamura, MD</i>
11:38-11:40 am Presentation #29 P	Preexisting Severe Cervical Spinal Cord Compression is a Significant Risk Factor for Developing Severe Paralysis in Patients with Traumatic Cervical Spinal Cord Injury without Bone Injury: A Retrospective Cohort Study <i>Takeshi Oichi, MD; Yasushi Oshima, MD, PhD; Rentaro Okazaki, MD, PhD; Seiichi Azuma, MD</i>
11:41-11:43 am Presentation #30 P	Defining Central Cord Syndrome: Does Neurology or Injury Morphology Provide Better Discrimination of Neurological Outcomes? <i>Jérôme Paquet, MD; Vanessa K. Noonan; Brian K. Kwon, MD; Eve C. Tsai, MD, PhD; Sean Christie, MD; Carly S. Rivers, PhD; Henry Ahn, MD; Najmedden Attabib, MD; Christopher S. Bailey, MD; Brian Drew, MD; Michael G. Fehlings, MD, PhD; Joel A. Finkelstein, MD; Daryl R. Fournay, MD; R. John Hurlbert, MD, PhD; Stefan Parent, MD; Marcel F. Dvorak, MD</i>
11:44-11:49 am	Discussion
11:50 am-12:10 pm	OccipitoCervical Junction:
11:50-11:52 am Presentation #31 P	Vertebral Artery Course for Occipital Condyle Screw Fixation <i>Ho Jin Lee, MD; Jae Taek Hong, MD, PhD</i>
11:53-11:55 am Presentation #32 P	Minimum 5-Year Follow-Up Results for Occipitocervical Fusion Using the Screw-Rod System in Craniocervical Instability <i>Kei Ando, MD; Shiro Imagama, MD, PhD; Naoki Ishiguro MD, PhD</i>
11:56-11:58 am Presentation #33 P	Accurate and Simple Screw Insertion Procedure with Patient-Specific Screw Guide Templates for Posterior C1-C2 Fixation <i>Taku Sugawara, MD, PhD; Shuichi Kaneyama, MD, PhD; Masatoshi Sumi, MD, PhD</i>
11:59 am-12:01 pm Presentation #34 P	Subaxial Cervical Sagittal Alignment Following C1-C2 Fusion For Atlanto-Axial Osteoarthritis <i>Daniel G. Kang, MD; Ronald A. Lehman, Jr., MD; Scott C. Wagner, MD; K. Daniel Riew, MD</i>
12:02-12:04 pm Presentation #35 P	The Pathomechanisms of Dysphagia after Occipitospinal Fusion - Kinematic Analysis by Videofluoroscopic Swallowing Study <i>Shuichi Kaneyama, MD, PhD; Masatoshi Sumi, MD, PhD; Koichi Kasahara, MD, PhD; Aritetsu Kanemura, MD, PhD; Masato Takabatake, MD; Akihiro Koh, MD; Hiroaki Hirata, MD, PhD</i>
12:05-12:10 pm	Discussion

12:11-1:11 pm	Non-Member Lunch	Seaport Ballrooms ABCD
12:11-1:11 pm	Member Lunch	Betsy ABC

1:12-1:59 pm	Session V: RESEARCH SESSION
Moderator:	John M. Rhee, MD
1:12-1:28 pm	Announcement of 2015 ~ 21st Century Premier Donor Research Grant Winners
	21st Century Research and Education Grants
	Seed Starter Research and Education Grants

Resident Fellow Research and Education Grants

1:29–1:30 pm	Introduction – Research Grant Updates
1:31–1:36 pm	<u>21st Century Research and Education Grant</u> The Effects of Peri-Operative Steroids on Dysphagia following Anterior Cervical Spine Surgery: A Randomized, Prospective, Double-Blind Study <i>Sanford E. Emery, MD, MBA, John C. France, MD, Scott D. Daffner, MD</i>
1:37–1:42 pm	Chemokine-Directed Homing of Peripheral Blood Mobilized Stem Cells to Enhance Cervical Spine Fusion <i>Kevin C. Baker, PhD; Daniel K. Park, MD; Jeffrey S. Fischgrund, MD</i>
1:43–1:48 pm	<u>Seed Starter Grants</u> Can Human Mesenchymal Stem Cells Prevent or “Rescue” Intervertebral Disc Cells from the Inflammatory Changes Associated with Disc Degeneration? <i>Christopher K. Kepler, MD, MBA; D. Greg Anderson, MD; Dessislava Z. Markova, PhD; John D. Koerner, MD</i>
1:49–1:54 pm	Disc Regeneration: Evaluation of Growth and Differentiation Factor-5 (GDF-5; BMP14) Production and Expression Pathways in Human Disc Cells Exposed to Proinflammatory Cytokines <i>Helen E. Gruber, PhD; James H. Norton, PhD; Edward N. Hanley, Jr., MD</i>
1:55–2:05 pm	Discussion

2:06–2:54 pm	Session VI: COMPLICATIONS
Moderators:	<i>Mitchel B. Harris, MD and James S. Harrop, MD</i>
2:06–2:12 pm Presentation #36	Does the Timing of Pre-Operative Epidural Steroid Injection affect Infection Risk after ACDF or Posterior Cervical Fusion? <i>Jourdan M. Cancienne, MD; Brian C. Werner, MD; Anuj Singla, MD; Hamid Hassanzadeh, MD; Frank H. Shen, MD; Adam L. Shimer, MD</i>
2:13–2:19 pm Presentation #37	Is Obesity Correlated with Increased Complications following Cervical Surgery for Degenerative Conditions? <i>John A. Sielatycki, MD; Silky Chotai, MD; David P. Stonko, BS, MS; Joseph B. Wick, BS; Harrison F. Kay, BS; Kevin R. O'Neill, MD, MS; Clinton J. Devin, MD</i>
2:20–2:26 pm Presentation #38	Complications of Iliac Crest Bone Graft in Cervical Spine Surgery <i>M. Leslie Golden, MD; Steven K. Leckie, MD; John G. Heller, MD</i>
2:27–2:33 pm Presentation #39	Does the Use of Intrawound Vancomycin Decreases the Risk of Surgical Site Infection after Elective Spine Surgery? – A Multicenter Analysis <i>Clinton J. Devin, MD; Alexander R. Vaccaro, III, MD, PhD; Matthew J. McGirt, MD; Silky Chotai, MD; Jim A. Youssef, MD; Douglas G. Orndorff, MD; Paul M. Arnold, MD; Anthony K. Frempong-Boadu, MD; Isador H. Lieberman, MD, MBA; Hiram Hedayat, MD; Charles L. Branch, Jr., MD; Jeffrey C. Wang, MD; Robert E. Isaacs, MD; Kristen E. Radcliff, MD; Joshua C. Patt, MD; Kristen R. Archer, MD</i>
2:34–2:40 pm Presentation #40	Recurrent Laryngeal Nerve Palsy after Cervical Spine Surgery – A Multicenter Study <i>Ziya L. Gokaslan, MD; Mohamad Bydon, MD; Jay Won Rhee, MD; Rafael D. De la Garza Ramos, MD; Zachary A. Smith, MD; Wellington K. Hsu, MD; Sheeraz A. Qureshi, MD, MBA; Samuel K. Cho, MD; Evan O. Baird, MD; Thomas E. Mroz, MD; Michael G. Fehlings, MD, PhD; Paul M. Arnold, MD; K. Daniel Riew, MD</i>
2:41–2:54 pm	Discussion

2:55–3:25 pm	Break	Exhibit Hall in Seaport Ballrooms ABCD
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3:26–4:27 pm	Introduction of Henry H. Bohlman Presidential Guest Speaker – Alan S. Hilibrand, MD Henry H. Bohlman Presidential Guest Lecture – Charles Krauthammer, MD
4:14–4:27 pm	Discussion

4:28–5:16 pm Moderators:	Session VII: DIAGNOSTICS <i>Louis G. Jenis, MD and Joseph R. O'Brien, MD, MPH</i>
4:28–4:34 pm Presentation #41	Predictive Risk Factors of Cervical Spine Instabilities in Rheumatoid Arthritis: A Prospective Minimum 10-Year Multicenter Cohort Study <i>Yoshiki Terashima, MD; Takashi Yurube, MD, PhD; Hiroaki Hirata, MD, PhD; Daisuke Sugiyama, MD, PhD; Masatoshi Sumi, MD, PhD</i>
4:35–4:41 pm Presentation #42	Morbidity Rate and Risk Factors of Cervical Lesions in Rheumatoid Arthritis Patients under Current Pharmacological Treatment Paradigm <i>Takashi Kaito, MD, PhD; Hiroyasu Fujiwara, MD; Takahiro Makino, MD, DMSc; Masafumi Kashii, MD, PhD; Yusuke Sakai, MD; Kazuo Yonenobu, MD, DMSc</i>
4:42–4:48 pm Presentation #43	Prevalence and Imaging Characteristics of Asymptomatic and Symptomatic Spondylotic Cervical Spinal Cord Compression in General Population <i>Josef Bednarik, MD, PhD; Miloš Kerkovský, MD, PhD; Zdenek Kadanka, MD, PhD; Zdenek Kadanka, Jr., MD; Ivana Kovalová; Barbora Jakubcová</i>
4:49–4:55 pm Presentation #44	What is the Most Accurate Radiographic Anterior Cervical Fusion Criteria? <i>Kwang-Sup Song, MD; K. Daniel Riew, MD</i>
4:56–5:02 pm Presentation #45	Circulating MicroRNAs Reflect Neural Dysfunction in Patients with Cervical Spondylotic Myelopathy: Implications for a Novel Biomarker of Disease Pathobiology <i>Alex Laliberte, MSc; Spyridon K. Karadimas, MD, PhD; Sukhvinder K. Kalsi-Ryan, BScPT, MSc, PhD; Aria Nouri, MD; Eric M. Massicotte, MD; Michael G. Fehlings, MD, PhD</i>
5:03–5:16 pm	Discussion
5:16 pm	Adjourn
5:20–7:20 pm	Welcome Reception Exhibit Hall in Seaport Ballrooms ABCD

Friday, Dec 4, 2015
Seaport Ballrooms FGH

7:00–7:10 am	Welcome and Announcements <i>Zoher Ghogawala, MD and Rick C. Sasso, MD</i>
7:11–7:59 am Moderators:	Session VIII: ANTERIOR CERVICAL SURGERY TBD
7:11–7:17 am Presentation #46	What is the Fate of the Pseudarthrosis Detected at 1 Year after Anterior Cervical Discectomy and Fusion? <i>Jae Hwan Cho, MD; Jung-Ki Ha, MD; Choon Sung Lee, MD, PhD; Chang Ju Hwang, MD; Sunghun Choi, MD; Chul Gie Hong, MD; Youn-Suk Joo, MD; Dong-Ho Lee, MD, PhD</i>
7:18–7:24 am Presentation #47	ACDF with Total En Bloc Resection of Uncinate in Foraminal Stenosis of the Cervical Spine; Comparison with Conventional ACDF <i>Kyung-Soo Suk, MD, PhD; Hak-Sun Kim, MD, PhD; Seong-Hwan Moon, MD, PhD; Hwan-Mo Lee, MD, PhD; Jae-Ho Lee, MD; Sung-Yub Jin, MD; Pierre M. Mella, MD</i>
7:25–7:31 am Presentation #48	Predictors of Extended Hospital Stay after Cervical Disc Replacement or Anterior Cervical Discectomy and Fusion: Results from 1,004 Patients in an FDA Trial. <i>S. Tim Yoon, MD, PhD; Aaron J. Greenberg, MD; Praveen V. Mummaneni, MD</i>
7:32–7:38 am Presentation #49	Effect of Inclusion of Asymptomatic Spondylotic Levels on Adjacent Segment Disease following ACDF <i>Caleb J. Behrend, MD; Paul W. Millhouse, MD; Vismay Thakkar, MD; Alexander R. Vaccaro, III, MD, PhD; Alan S. Hilibrand, MD; Todd J. Albert, MD</i>

7:39–7:45 am Presentation #50	Adjacent Segment Range of Motion does not Increase 2-Years after Single-Level Cervical Arthrodesis <i>William Anderst, PhD; Tyler West; William F. Donaldson, III, MD; Joon Yung Lee, MD; James D. Kang, MD</i>
7:46–7:59 am	Discussion
8:00–8:48 am Moderators:	Session IX: DYSPHAGIA TBD
8:00–8:06 am Presentation #51	Prospective Comparison of Dysphagia following Anterior Cervical Discectomy and Fusion (ACDF) with and without rhBMP-2. <i>Michael R. Murray, MD; Steven K. Leckie, MD; Bradley W. Moatz, MD; Adam J. Schell, MD; Ajay Premkumar, BS; John G. Heller, MD</i>
8:07–8:13 am Presentation #52	Influence of the Neck Postural Change on Cervical Spine Motion and Angle during Swallowing <i>Jun Young Kim, MD; Il Sup Kim, MD, PhD; Yun Hyuk Kim, PhD; Sung Hoon Im, MD; Jae Taek Hong, MD, PhD</i>
8:14–8:20 am Presentation #53	The Effects of Perioperative Steroids on Dysphagia following Anterior Cervical Spine Surgery: A Randomized, Prospective, Double-Blind Study <i>Sanford E. Emery, MD, MBA; John C. France, MD; Scott D. Daffner, MD; Gerald R. Hobbs, PhD</i>
8:21–8:27 am Presentation #54	Impact of Local Intraoperative Steroid Application on Patient-Reported Swallow Function following an Anterior Cervical Discectomy and Fusion: Preliminary Results <i>Junyoung Ahn, BS; Junho Ahn, BS; Daniel D. Bohl, MD, MPH; Ehsan Tabaraee, MD; Gabriel Duhancioglu, MS; Rahul Kamath, MS; Daniel J. Johnson, BS; Dustin H. Massel, BS; Kern Singh, MD</i>
8:28–8:34 am Presentation #55	The Effect of Local Intraoperative Steroid Administration on the Rate of Post-Operative Dysphagia Following ACDF: A National Database Study of 245,754 Patients <i>Jourdan M. Cancienne, MD; Brian C. Werner, MD; Anuj Singla, MD; Hamid Hassanzadeh, MD; Frank H. Shen, MD; Adam L. Shimer, MD</i>
8:35–8:48 am	Discussion
8:49–8:54 am	Introduction of CSRS President - Robert F. Heary, MD
8:55–9:25 am	PRESIDENTIAL ADDRESS - Alan S. Hilibrand, MD
9:26–9:56 am	Break Exhibit Hall in Seaport Ballrooms ABCD
9:57–10:45 am Moderators:	Session X: MYELOPATHY II TBD
9:57–10:03 am Presentation #56	The Application of a Novel Sensitive Gait Assessment Method to Optimize the Evaluation of Patients with Degenerative Cervical Myelopathy <i>Sukhvinder K. Kalsi-Ryan, BScPT, MSc, PhD; Alex Laliberte, MSc; Spyridon K. Karadimas, MD, PhD; Eric M. Massicotte, MD; Mohammed Farid Shamji, MD, PhD; Michael G. Fehlings, MD, PhD</i>
10:04–10:10 am Presentation #57	Surgical Decompression in an Experimental Model of Cervical Spondylotic Myelopathy induces a Neuroinflammatory Response: Implications for Perioperative Clinical Management <i>Pia M. Vidal, BS, PhD; Spyridon K. Karadimas, MD, PhD; Antigona Uldreaj, BA; Stefania Forner, PhD; Alex Laliberte, MSc; Michael G. Fehlings, MD, PhD</i>
10:11–10:17 am Presentation #58	The Fall and Fracture Risk of Medicare Patients with Cervical Myelopathy <i>Daniel J. Blizzard, MD, MS; Michael A. Gallizzi, MD, MS; Charles Sheets, PT; Colin T. Penrose, BA, BS; Robert E. Isaacs, MD; Christopher R. Brown, MD</i>
10:18–10:24 am Presentation #59	Minimum Clinically Important Difference (MCID) of the JOA Score and 10-Second Test in Cervical Myelopathy Disorders <i>Eiji Wada, MD</i>

10:25–10:31 am Presentation #60	The Minimum Clinically Important Difference of the modified Japanese Orthopaedic Association Scale in Patients with Degenerative Cervical Myelopathy <i>Lindsay Tetreault, HBSc; Branko Kopjar, MD; Pierre Cote, DC, PhD; Aria Nouri, MD; Michael G. Fehlings, MD, PhD</i>
10:32–10:45 am	Discussion
10:46–11:34 am Moderators:	Session XI: OUTCOMES TBD
10:46–10:52 am Presentation #61	The Association Between Preoperative Mental Distress and Patient Reported Outcome in Patients Treated Surgically for Cervical Radiculopathy. <i>Martin Skeppholm, MD, PhD; Claes Olerud, MD, PhD</i>
10:53–10:59 am Presentation #62	PROMIS Physical Function: A Better Patient Reported Outcome Measure in Cervical Spine Patients <i>Darrel S. Brodke, MD; Brandon D. Lawrence, MD; W. Ryan Spiker, MD; Ashley M. Neese, BS; Man Hung, PhD</i>
11:00–11:06 am Presentation #63	Outcomes and Complications of Fusions from the Cervical Spine to the Pelvis: Series of 46 Cases with Average 2.7 Year Follow Up <i>Sravisht Iyer, MD; Han-Jo Kim, MD; Alexander A. Theologis, MD; Venu M. Nemani, MD, PhD; Todd J. Albert, MD; Lawrence G. Lenke, MD; Shane Burch, MD; Oheneba Boachie-Adjei, MD; Vedat Deviren, MD; Themistocles S. Protopsaltis, MD; Justin S. Smith, MD, PhD; Justin K. Scheer, BS; Jun Mizutani, MD; Eric O. Klineberg, MD; Christopher P. Ames, MD</i>
11:07–11:13 am Presentation #64	Impact of Adverse Events on Clinical Outcome: Results through Five-Year Follow-Up <i>Michael S. Hisey, MD; Donna D. Ohnmeiss, MD, Dr.Med; Hyun W. Bae, MD; Jack E. Zigler, MD</i>
11:14–11:20 am Presentation #65	Quality of Life and General Health following Elective Surgery for Cervical Spine Pathologies: Determining Valid and Responsive Metric of Health State Utility <i>Silky Chotai, MD; Scott L. Parker, MD; Ahilan Sivaganesan, MD; J. Alex Sielatycki, MD; Joseph B. Wick, BA; Matthew J. McGirt, MD; Clinton J. Devin, MD</i>
11:21–11:34 am	Discussion
11:35–11:43 am	2015 CSRS North America Traveling Fellowship Report <i>Themistocles S. Protopsaltis, MD; Kern Singh, MD</i>
11:44–11:49 am	Preview CSRS 2016 Annual Meeting in Toronto, Ontario, Canada <i>Michael G. Fehlings, MD, PhD</i>
11:50–11:55 am	Preview CSRS Asia Pacific Section 2016 Annual Meeting in Seoul, Korea <i>Jin Sup Yeom, MD, PhD</i>
11:56 am–12:01 pm	Preview CSRS European Section 2016 Annual Meeting in Prague, Czech Republic <i>Bengt I. Lind, MD, PhD</i>
12:01 pm	Adjourn



ADDITIONAL REGISTRATION FEE REQUIRED ~ CME ACCREDITED SYMPOSIA

Optional Luncheon Programming

Friday, Dec 4, 2015

12:30–2:30 pm Moderator:	Myelopathy Session - Open Case Presentation: “Ask the Experts” – Seaport Ballroom E K. Daniel Riew, MD
12:30-12:35 pm	Introduction - K. Daniel Riew, MD
12:30-1:15 pm	Lunch Service
12:36-12:37 pm	Case presentations - Rick C. Sasso, MD
12:38-12:48 pm	Discussion by panelists
12:49-12:50 pm	Case solution - Rick C. Sasso, MD
12:51-12:56 pm	Discussion by panelists, audience
12:57-12:58 pm	Case presentations - Zoher Ghogawala, MD
12:59-1:09 pm	Discussion by panelists
1:10-1:11 pm	Case solution - Zoher Ghogawala, MD
1:12-1:17 pm	Discussion by panelists, audience
1:18-1:19 pm	Case presentations - Alan S. Hilibrand, MD
1:20-1:30 pm	Discussion by panelists
1:31-1:32 pm	Case solution - Alan S. Hilibrand, MD
1:33-1:38 pm	Discussion by panelists, audience
1:39-1:40 pm	Case presentations - Michael G. Fehlings, MD, PhD
1:41-1:51 pm	Discussion by panelists
1:52-1:53 pm	Case solution - Michael G. Fehlings, MD, PhD
1:54-1:59 pm	Discussion by panelists, audience
2:00-2:01 pm	Case presentations - K. Daniel Riew, MD
2:02-2:12 pm	Discussion by panelists
2:13-2:14 pm	Case solution - K. Daniel Riew, MD
2:15-2:20 pm	Discussion by panelists, audience
2:21-2:30 pm	Final comments, questions - K. Daniel Riew, MD

Register online at

<https://ebus.csr.org/default.aspx?tabid=164&productid=434>

ADDITIONAL REGISTRATION FEE REQUIRED – CME ACCREDITED SYMPOSIA**Optional Dinner Programming****Friday, Dec 4, 2015**

6:00 –8:00 pm	Deformity Session - Open Case Presentations: “Ask the Experts” – Seaport Ballroom E
Moderator:	Alexander R. Vaccaro, III, MD, PhD
6:00-6:05 pm	Introduction - Alexander R. Vaccaro, III, MD, PhD
6:00-6:45 pm	Dinner Service
6:06-6:13 pm	Case presentation 1 - Robert F. Heary
6:14-6:17 pm	Discussion by panelists, audience
6:18-6:25 pm	Case presentation 2 - Robert F. Heary
6:26-6:29 pm	Discussion by panelists, audience
6:30-6:37 pm	Case presentation 3 - Jens R. Chapman, MD
6:38-6:41 pm	Discussion by panelists, audience
6:42-6:49 pm	Case presentation 4 - Jens R. Chapman, MD
6:50-6:53 pm	Discussion by panelists, audience
6:54-7:01 pm	Case presentation 5 - Kazuhiro Chiba, MD, PhD
7:02-7:05 pm	Discussion by panelists, audience
7:06-7:13 pm	Case presentation 6 - Kazuhiro Chiba, MD, PhD
7:14-7:17 pm	Discussion by panelists, audience
7:18-7:25 pm	Case presentation 7 - Paul A. Anderson, MD
7:26-7:29 pm	Discussion by panelists, audience
7:30-7:37 pm	Case presentation 8 - Paul A. Anderson, MD
7:38-7:41 pm	Discussion by panelists, audience
7:42-7:49 pm	Case presentation 9 - K. Daniel Riew, MD
7:50-7:53 pm	Discussion by panelists, audience
7:54-8:01 pm	Case presentation 10 - K. Daniel Riew, MD
8:02-8:05 pm	Discussion by panelists, audience
8:06-8:14 pm	Final comments, questions - Alexander R. Vaccaro, III, MD, PhD
8:15 pm	Adjourn

7:00–7:05 am **Welcome and Announcements**
Zoher Ghogawala, MD and Rick C. Sasso, MD

7:06–7:54 am **Session XII: TRAUMA**
Moderators: **TBD**

7:06–7:12 am **Cervical Facet Dislocations in the Pediatric Population: A Report of 21 Cases at a Level 1**
Presentation #66 **Trauma Center from 2004-2014**
Alireza K. Anissipour, DO; Carlo Bellabarba, MD; Richard J. Bransford, MD

7:13–7:19 am **Comparison of the Vacuum Mattress Versus the Spine Board Alone for Immobilization of the**
Presentation #67 **Cervical Spine Injured Patient: A Biomechanical Cadaveric Study**
Mark L. Prasarn, MD; Per Kristian Hyldmo, MD; MaryBeth Horodyski, PhD; Glenn R. Rechtine, II, MD

7:20–7:26 am **The Incidence and Associated Risk Factors of Cervical Spine Epidural Hematoma following**
Presentation #68 **Adult Trauma**
Pedro A. Ricart, MD, MS; Ravi Verma, MD, MBA; Steven J. Fineberg, MD; Kyle Fink; David E. Asprinio, MD; Louis F. Amorosa, MD

7:27–7:33 am **Dens Fractures Displacement is Dependent on the Sagittal Alignment of the Subaxial Cervical**
Presentation #69 **Spine Rather than the Force of Injury**
Jung U. Yoo, MD; Sabina R. Blizzard, BA; Natalie L. Zusman, BS; Matthew S. Shinseki, BS; Marcel W. Betsch, MD; Bala Krishnamoorthy, PhD

7:34–7:40 am **Risk Factors for Dysphagia in Acute Cervical Spinal Cord Injury**
Presentation #70 *Tetsuo Hayashi, MD, PhD; Takeshi Maeda, MD, PhD; Hiroaki Sakai, MD; Yuichiro Morishita, MD, PhD; Keiichiro Shiba, MD, PhD*

7:41–7:54 am **Discussion**

7:55–8:55 am **Symposium II: COMPLICATIONS**
Moderator: **Mitchel B. Harris, MD**

7:55–8:02 am **TBD**

8:03–8:10 am **TBD**

8:11–8:18 am **TBD**

8:19–8:26 am **TBD**

8:27–8:33 am **TBD**

8:34–8:41 am **TBD**

8:42–8:55 am **Discussion**

8:56–9:43 am **Session XIII: MYELOPATHY III**
Moderators: **TBD**

8:56–9:02 am **Does Age affect Surgical Outcomes in Patients with Degenerative Cervical Myelopathy?:**
Presentation #71 **Results from the Prospective, Multicenter AOSpine International Study in 479 Patients**
Hiroaki Nakashima, MD; Lindsay Tetreault, HBSc; Narihito Nagoshi, MD, PhD; Aria Nouri, MD; Michael G. Fehlings, MD, PhD

9:03–9:09 am **A Clinical Prediction Rule for Functional Outcomes in Patients Undergoing Surgery for Severe**
Presentation #72 **Degenerative Cervical Myelopathy: Analysis of an International Prospective Multicentre Dataset of 254 Subjects**
Lindsay Tetreault, HBSc; Branko Kopjar, MD; Pierre Cote, DC, PhD; Paul M. Arnold, MD; Michael G. Fehlings, MD, PhD

9:10–9:16 am Presentation #73	Signal Intensity Ratio on Magnetic Resonance Imaging and Neurological Status as Prognostic Factors in Patients with Cervical Compressive Myelopathy <i>Jun Jae Shin, MD, PhD</i>
9:17–9:23 am Presentation #74	Clinical Outcomes following Surgical Management of Coexistent Parkinson's Disease and Cervical Stenosis with Myelopathy <i>Roy Xiao, BA; Jacob A. Miller, BS; Daniel Lubelski, MD; Thomas E. Mroz, MD; Edward C. Benzel, MD; Ajit A. Krishnaney, MD; Andre Machado, MD, PhD</i>
9:24–9:30 am Presentation #75	Symptomatic Lumbar Spinal Stenosis Increases the Risk of Spondylotic Cervical Spinal Cord Compression and Cervical Spondylotic Myelopathy <i>Josef Bednarik, MD, PhD; Blanka Adamova, MD, PhD; Miloš Kerkovský, MD, PhD; Ivana Kovalová; Zdenek Kadanka, Jr., MD; Zdenek Kadanka, MD, PhD</i>
9:31–9:44 am	Discussion
9:45–9:49 am	Announcement of Poster Award Winners
9:50–9:55 am	Presentation of CSRS Medallion to Robert F. Heary, MD
9:56–10:11 am	BREAK Seaport Ballroom Foyer
10:12–11:00 am Moderators:	Session XIV: DEFORMITY TBD
10:12–10:18 am Presentation #76	Variations in Sagittal Alignment Parameters Based on Age: A Prospective Study of Normal Patients using EOS Imaging <i>Sravisht Iyer, MD; Lawrence G. Lenke, MD; Venu M. Nemani, MD, PhD; Michael Fu, MD; Grant D. Shifflett, MD; Todd J. Albert, MD; Brenda A. Sides, MA; Lionel N. Metz, MD; Matthew E. Cunningham, MD, PhD; Han-Jo Kim, MD</i>
10:19–10:25 am Presentation #77	Cervical Deformity Surgery does not Result in Acute Post-Operative Dysphagia: Preliminary Results from a Prospective Cervical Deformity Study <i>Han-Jo Kim, MD; Sravisht Iyer, MD; Justin S. Smith, MD; Michael P. Kelly, MD; Michael F. O'Brien, MD; Munish C. Gupta, MD; Todd J. Albert, MD; Themistocles S. Protopsaltis, MD; Gregory M. Mundis, MD; Peter G. Passias, MD; Eric O. Klineberg, MD; Christopher P. Ames, MD; International Spine Study Group</i>
10:26–10:32 am Presentation #78	Cervical Kyphosis does not Imply Cervical Deformity: Predicting Cervical Curvature Required for Horizontal Gaze Based on Spinal Global Alignment and Thoracic Kyphosis <i>Bassel G. Diebo, MD; Jonathan H. Oren, MD; Matthew A. Spiegel, BA; Shaleen Vira, MD; Elizabeth M. Tanzi, NP; Barthelemy Liabaud; Renaud Lafage, MS; Jensen K. Henry, BA; Themistocles S. Protopsaltis, MD; Thomas J. Errico, MD; Frank J. Schwab, MD; Virginie C. Lafage, PhD</i>
10:33–10:39 am Presentation #79	Does Spinopelvic Alignment Change after Cervical Laminoplasty in Patients with Cervical Spondylotic Myelopathy? <i>Jun Ouchida; Yasutsugu Yukawa, MD, PhD; Masaaki Machino, MD</i>
10:40–10:46 am Presentation #80	Changes in Sagittal Cervical Alignment after Posterior Spinal Fusion for Adolescent Idiopathic Scoliosis: An Evaluation of 141 Patients <i>Joshua M. Pahys, MD; Jahangir K. Asghar, MD; Alexander A. Theologis, MD; Suken A. Shah, MD; Patrick J. Cahill, MD; Amer F. Samdani, MD; Christopher P. Ames, MD</i>
10:47–11:00 am	Discussion
11:01 am–12:13 pm Moderators:	Highlighted Poster Presentations II TBD
11:01–11:24 am	Surgical Techniques:
11:01–11:03 am Presentation #81 P	540° Cervical Realignment Procedure for Extensive Cervical OPIL with Kyphotic Deformity <i>Sang-Hun Lee, MD, PhD; Ki-Tack Kim, MD; Jung-Hee Lee, MD; Kyung-Chung Kang; Sang-Phil Hwang, MD; Soo-Jin Jang, MD</i>

11:04-11:06 am Presentation #82 P	Regional Thoracic and Lumbar Sagittal Cobb Angle Changes and UIV Determine Evolution of Cervical Alignment after ASD Surgery: Series of 171 Patients with 2 Year Follow Up <i>Brian J. Neuman, MD; Amit Jain, MD; Daniel M. Sciubba, MD; Eric O. Klineberg, MD; Han Jo Kim, MD; Luke P. Zebala, MD; Gregory M. Mundis, MD; Virginie C. Lafage, PhD; Peter G. Passias, MD; Renaud Lafage, MS; Themistocles S. Protopsaltis, MD; D. Kojo Hamilton; Justin K. Scheer, BS; Christopher P. Ames, MD; ISSG</i>
11:07-11:09 am Presentation #83 P	Are Collapsed Cervical Discs Amenable to Total Disc Arthroplasty? Analysis of Prospective Clinical Study Results Wwth 2-Year Follow-Up <i>Avinash G. Patwardhan, PhD; Gerard Carandang, MS; Leonard I. Voronov, PhD; Robert M. Havey, BS; Gary Paul; Carl Lauryssen, MD; Domagoj Coric, MD; Thomas A. Dimmig, MD; David B. Musante, MD</i>
11:10-11:12 am Presentation #84 P	Can C3 Laminectomy reduce Interlaminar Bony Fusion and Preserve Cervical Range of Motion after Cervical Laminoplasty? <i>Dong-Ho Lee, MD, PhD; Jung-Ki Ha, MD; Jae Hwan Cho, MD; Choon Sung Lee, MD, PhD; Chang Ju Hwang, MD; Sunghun Choi, MD; Chul Gie Hong, MD; Youn-Suk Joo, MD</i>
11:13-11:15 am Presentation #85 P	Is it “In” or “Out”? The Optimal Fluoroscopic Views for Intraoperative Determination of Proper Lateral Mass Screw Placement <i>Sangbum Kim, MD, PhD; John M. Rhee, MD; Kun Young Park, MD; Chulmin Kim, PhD</i>
11:16-11:18 am Presentation #86 P	An Approach to Primary Tumors of the Upper Cervical Spine with Total Spondylectomy using a Combined Approach: Our Experience with 19 Cases <i>Feng Wei, MD; Zhongjun Liu, MD, PhD; Xiaoguang Liu, MD, PhD; Liang Jiang; Genting Dang; Peter G. Passias, MD; Miao Yu; Fengliang Wu; Lei Dang</i>
11:19-11:24 am	Discussion
11:25-11:48 am	Quality:
11:25-11:27 am Presentation #87 P	Collar Fixation is not Mandatory after Cervical Laminoplasty – A Randomized Controlled Study <i>Tetsuro Hida, MD; Yoshito Sakai, PhD; Kenyu Ito; Shiro Imagama, MD</i>
11:28-11:30 am Presentation #88 P	Missing Data May Invalidate Spine Surgery Database Studies <i>Bryce A. Basques, MD; Andre M. Samuel, BBA; Matthew L. Webb, AB; Adam M. Lukasiewicz, MSc; Daniel D. Bohl, MD, MPH; Junyoung Ahn, BS; Kern Singh, MD; Jonathan N. Grauer, MD</i>
11:31-11:33 am Presentation #89 P	Iatrogenic Instability at the Supra-Adjacent Level of Posterior Cervical Instrumentation Constructs for Cervical Laminectomies: A Biomechanical Analysis <i>Sina Pourtaheri, MD; Andrew T. Healy, MD; Daniel Lubelski, MD</i>
11:34-11:36 am Presentation #90 P	Characteristics of Residual Symptoms following Laminoplasty in Diabetic Patients with Cervical Spondylotic Myelopathy: A Prospective Cohort Study in 505 Patients with Cervical Spondylotic Myelopathy <i>Masaaki Machino, MD; Yasutsugu Yukawa, MD, PhD; Shiro Imagama, MD, PhD</i>
11:37-11:39 am Presentation #91 P	Number of Operative Levels Minimally Impacts Risk for Adverse Events following an Anterior Cervical Decompression and Fusion <i>Daniel D. Bohl, MD, MPH; Junyoung Ahn, BS; Dustin H. Massel, BS; Daniel J. Johnson, BS; Bryce A. Basques, MD; Kern Singh, MD</i>
11:40-11:42 am Presentation #92 P	Most 30-day Readmissions after Anterior Cervical Discectomy and Fusion are not due to Surgical Site-related Issues: An Analysis of 10,006 Patients <i>Andre M. Samuel, BBA; Jason O. Toy, MD; Michael C. Fu, MD; Adam M. Lukasiewicz, MSc; Matthew L. Webb, AB; Daniel D. Bohl, MPH; Bryce A. Basques, BS; Todd J. Albert, MD; Jonathan N. Grauer, MD</i>
11:43-11:48 am	Discussion
11:49 am-12:12 pm	Cervical Myelopathy:
11:49-11:51 am Presentation #93 P	The Efficacy and Safety of Additional Posterior Foraminotomy Performed with Laminoplasty for Cervical Spondylotic Myeloradiculopathy <i>Jae Hwan Cho, MD; Choon Sung Lee, MD, PhD; Chang Ju Hwang, MD; Sunghun Choi, MD; Chul Gie Hong, MD; Youn-Suk Joo, MD; Dong-Ho Lee, MD, PhD</i>

11:52-11:54 am Presentation #94 P	Quality of Life and Functional Outcomes after Surgical Decompression in Patients with Cervical Ossification of the Posterior Longitudinal Ligament: Results from the Prospective, Multicenter AOSpine International Study on 479 Patients <i>Hiroaki Nakashima, MD; Lindsay Tetreault, HBSc; Narihito Nagoshi, MD, PhD; Aria Nouri, MD; Michael G. Fehlings, MD, PhD</i>
11:55-11:57 am Presentation #95 P	The Modified Japanese Orthopaedic Association Scale: Establishing Criteria for Mild, Moderate and Severe Disease in Patients with Degenerative Cervical Myelopathy <i>Lindsay Tetreault, HBSc; Aria Nouri, MD; Anoushka Singh, PhD; Ronald HMA Bartels, MD, PhD; Branko Kopjar, MD; Paul M. Arnold, MD; Michael G. Fehlings, MD, PhD</i>
11:58 am-12:00 pm Presentation #96 P	What Happens to the Disc Bulge after Posterior Laminectomy and Fusion in Patients with Cervical Myelopathy? <i>Saankritya Ayan, MD; Jonathan Morris, MD; Manal Abouelrigal, MD; Woojin Cho, MD, PhD; Alok D. Sharan, MD</i>
12:01-12:03 pm Presentation #97 P	Anterior Decompression with Fusion Vs. Posterior Decompression with Fusion for Massive Cervical Ossification of Posterior Longitudinal Ligament with 50% Canal Occupying Ratio or More: Retrospective Multi-Center Study <i>Toshitaka Yoshii, MD, PhD; Takashi Hirai, MD, PhD; Satoshi Sumiya, MD; Tsuyoshi Kato, MD, PhD; Shigenori Kawabata, MD, PhD; Atsushi Okawa, MD, PhD; Kenichi Shinomiya, MD, PhD</i>
12:04-12:06 am Presentation #98 P	Is it Necessary to Extend a Multilevel Posterior Cervical Decompression and Fusion to the Upper Thoracic Spine? <i>Gregory D. Schroeder, MD; Christopher K. Kepler, MD, MBA; Mark F. Kurd, MD; Loren B. Mead, BS; Kristen Nicholson, PhD; Christie E. Stawicki, BS; Priyanka Kumar, BS; Paul W. Millhouse, MD; Kristen E. Radcliff, MD; Jeffery A. Rihn, MD; D. Greg Anderson, MD; Alan S. Hilibrand, MD; Alexander R. Vaccaro, III, MD, PhD</i>
12:07-12:12 pm	Discussion
12:13–12:17 pm	Closing Remarks - Robert F. Heary, MD
12:17 pm	Adjourn

[Online room reservations](#) available at the Manchester Grand Hyatt in San Diego, CA.



Poster Catalog

E-posters listed by category

Advanced Techniques

- E-poster #1 **Efficacy of Posterior Segmental Decompression Surgery for Pincer Mechanism in Cervical Akihito Minamide, MD, PhD;** Munehito Yoshida, MD, PhD; Hiroshi Yamada, MD, PhD; Hiroshi Hashizume, MD, PhD; Yukihiro Nakagawa, MD, PhD; Hiroshi Iwasaki, MD, PhD; Shunji Tsutsui, MD, PhD; Hiroyuki Oka, MD, PhD

Anterior Cervical Surgery

- E-poster #2 **Efficacy of a Short Plate with an Oblique Screw Trajectory for Anterior Cervical Plating: A Comparative Study with a Two-Year Minimum Follow-Up.**
Jong-Hwa Park, MD; Seung-Jae Hyun, MD, PhD; Chang-Hyun Lee, MD; **Ki-Jeong Kim, MD, PhD;** Jin S. Yeom, MD, PhD
- E-poster #3 **Prolonged Weakness affects Recovery of Motor Function Following Anterior Cervical Discectomy and Fusion**
Ronald Huang, MD; David Beck, MD; Andrew G. Park, MD; Alan S. Hilibrand, MD
- E-poster #4 **Factors Associated with Morbidity and Mortality in Adults Undergoing Cervical Corpectomy.**
Dante M. Leven, DO, PT; Branko Skovrlj, MD; Parth Kothari, BS; Jeremy Steinberger, MD; Javier Z. Guzman Tejero, BS, MD; Nathaniel J. Lee, BS; John I. Shin, MD; John M. Caridi, MD; Samuel K. Cho, MD
- E-poster #5 **Clinical Outcomes Following Anterior Cervical Hybrid Surgery Using Total Disc Replacement Combined With Anterior Cervical Fusion At The Adjacent Segment**
Roger W. Rogers, DO; **Scott L. Blumenthal, MD;** Richard D. Guyer, MD; Jack E. Zigler, MD; Donna D. Ohnmeiss, Dr.Med.

Basic Science

- E-poster #6 **Safety Assessment of NSCS Induced from Human PBMC-Derived IPS Cells for Transplantation Therapy for Spinal Cord Injury**
Keiko Sugai, MD; Tomoko Shofuda; Ryuji Fukuzawa; Hayato Fukusumi; Miho Isoda; Shigeki Ohta; Jun Kohyama; Akio Iwanami, MD, PhD; Morio Matsumoto; Yonehiro Kanemura; Hideyuki Okano; Masaya Nakamura, MD
- E-poster #7 **Programmed Freeze/Thaw Method Dramatically Improved Cell Viability of IPS Cell-Derived Neural Stem Cells for Clinical Application in Spinal Cord Injury**
Yuichiro Nishiyama; Akio Iwanami, MD, PhD; Jun Kohyama; Go Itakura, ATC, BA, BOC, BOCO, BOCF; Yoshiomi Kobayashi, MD, PhD; Soraya Nishimura, MD, PhD; Hiroki Iwai, MD, PhD; Morio Matsumoto; Hideyuki Okano; Masaya Nakamura, MD
- E-poster #8 **Cervical Spinal Cord Injury Modifies Distal Lumbar Locomotor Central Pattern Generator (CPG)**
Spyridon K. Karadimas; Kajana Satkunendrarajah, PhD; Mohamad Khazaei, PhD; Simon Gosgnach, PhD; Michael G. Fehlings, MD, PhD

Biomechanics

- E-poster #9 **An In Vitro Evaluation of Sagittal Alignment in the Cervical Spine after Insertion of Supraphysiologic Lordotic Implants**
Donald J. Blaskiewicz, MD; Patrick Han, MD; Jeffrey E. Harris, MS; Alexander W. Turner, PhD; Gregory M. Mundis, MD
- E-poster #10 **The Location Of Instant Center Of Rotation In The Cervical Spine During In Vivo Dynamic Flexion-Extension**
Kwang Sup Song, MD; Seong Hwan Kim, MD; Jae Jun Yang, MD; Seung Bum Koo, PhD

Cervical Arthroplasty

- E-poster #11 **Arthroplasty and ACDF Compared to ACDF Alone for Two- and Three-Level Cervical Disc Disease**
Jin Young Kim, MD; K. Daniel Riew, MD

Cervical Fusion

- E-poster #12 **Intraoperative Correction of the O-C2 Angle Can Prevent Dysphagia and/or Dyspnea after Occipitocervical Fusion Surgery**
Keita Nakayama, MD; Tetsuya Abe, MD, PhD; Kengo Fujii, MD; Kosei Miura, MD; Masaki Tatsumura, MD, PhD; Masashi Yamazaki, MD
- E-poster #13 **Does Cervical Sagittal Alignment Correlate with Outcomes following Anterior Cervical Surgery?**
John A. Sielatycki, MD; Sheyan Armaghani, MD; Arnold Silverberg, BS; Matthew J. McGirt, MD; Clinton J. Devin, MD; Kevin R. O'Neill, MD, MS
- E-poster #14 **Outcome of Correction Surgery using Pedicle Screw for Cervical Kyphosis Exclusive of Ankylosing Spondylitis**
Hiroshi Miyamoto, MD; T. Ikeda; Kazuki Hashimoto; Masao Akagi
- E-poster #15 **Cervical Spine Fusion: 16-Year Trends in Epidemiology, Indications, and Bone Morphogenetic Protein Utilization by Surgical Approach**
Lukas P. Lampe, MD; Alexander P. Hughes, MD; Peter Derman, MD, MBA; Janina Kueper; Ting Jung Pan, MPH; Federico P. Girardi, MD; Todd J. Albert, MD; Stephen Lyman, PhD
- E-poster #16 **Preoperative Nomograms Predicting Patient-Specific Cervical Spine Surgery Clinical and Quality of Life Outcomes**
Daniel Lubelski, MD; Vincent Alentado, BS; Michael Shriver, BS; Amy Nowacki, PhD; Kalil G. Abdullah, MD; Michael P. Steinmetz, MD; Edward C. Benzel, MD; Thomas E. Mroz, MD
- E-poster #17 **Comparison of Long Term (5-Yr) Reoperation Rates and Outcomes of Long Fusions to the Cervico-Thoracic Junction: Multi-Level ACDF with BMP-2 Vs. Posterior Fusions**
Nicole Record, DO; Michael Faloon, MD, MS; Ki Soo Hwang, MD; Kumar G. Sinha, MD; Kimona Issa, MD; Conor Dunn, MS; Arash Emami, MD

Complications

- E-poster #18 **Risk Factors and Functional Outcomes of Re-Intubation after Anterior Cervical Spine Surgery: Results from AOSpine North America Multicenter Study on 8,887 Patients**
Narihito Nagoshi, MD; Michael G. Fehlings, MD, PhD; Hiroaki Nakashima, MD; Lindsay Tetreault, HBSc; K. Daniel Riew, MD; Zachary A. Smith, MD; Wellington K. Hsu, MD; Chadi Tannoury, MD; Tony Tannoury, MD; Vincent C. Traynelis, MD; Paul M. Arnold, MD; Thomas E. Mroz, MD; Anthony DeGiacomo, MD; Bruce C. Jobse, MS; Eric M. Massicotte, MD
- E-poster #19 **The Incidence of an Epidural Hematoma following Cervical Spine Surgery**
Gregory D. Schroeder, MD; Alan S. Hilibrand, MD; Paul M. Arnold, MD; David E. Fish, MD, MPH; Jeffrey C. Wang, MD; Zachary A. Smith, MD; Wellington K. Hsu, MD; Ziya L. Gokaslan, MD; Robert E. Isaacs, MD; Adam Kanter, MD; Thomas E. Mroz, MD; Ahmad Nassr, MD; Rick C. Sasso, MD; Michael G. Fehlings, MD, PhD; Zorica Buser, PhD; Mohamad Bydon, MD; Elizabeth Lord, MD; Emily C. Nguyen, MD; K. Daniel Riew, MD
- E-poster #20 **A Multi-Center Study of the Presentation, Treatment, and Outcomes of Cervical Dural Tears**
Kevin R. O'Neil, MD; Michael G. Fehlings, MD, PhD; Thomas E. Mroz, MD; Zachary A. Smith, MD; Wellington K. Hsu, MD; Adam Kanter, MD; Michael P. Steinmetz, MD; Paul M. Arnold, MD; Praveen V. Mummaneni, MD; Dean Chou, MD; Ahmad Nassr, MD; Sheeraz A. Qureshi, MD, MBA; Samuel Cho, MD; Evan Baird, MD; Justin S. Smith, MD, PhD; Chadi Tannoury, MD, Tony Tannoury, MD, Ziya L. Gokaslan, MD; Robert A. Hart, MD; Robert E. Isaacs, MD; Rick C. Sasso, MD; David B. Bumpass, MD; Mohamad Bydon, MD; Mark Corriveau, MD; Anthony DeGiacomo, MD; Adeeb Derakhshan, BS; Bruce C. Jobse, MS; Daniel Lubelski, MD; Sungho Lee, MD; Eric M. Massicotte, MD; Jonathan Pace, MD; Gabriel Smith, MD; Khoi Than, MD; K. Daniel Riew, MD
- E-poster #21 **Hospital-Acquired Pneumonia Occurs in 20.5% of Cervical Spinal Cord Injury Patients and is Associated with Poor Inpatient Outcomes: An Analysis of 5,198 Patients in the National Trauma Data Bank**
Andre M. Samuel, BBA; Pablo J. Diaz-Collado, MD; Michael C. Fu, MD; Adam M. Lukaszewicz, MSc; Matthew L. Webb, AB; Daniel D. Bohl, MPH; Bryce A. Basques, BS; Jonathan N. Grauer, MD

Deformity	
E-poster #22	Predictive Model for Cervical Alignment Outcomes following Surgical Correction of Adult Spinal Deformity Peter G. Passias, MD; Cheongeun Oh, PhD; Cyrus Jalai, BS; Nancy Worley, BS; Renaud Lafage, MS; Justin K. Scheer, BS, Eric O. Klineberg, MD; Robert A. Hart, MD; Han Jo Kim; Justin S. Smith, MD, PhD; Virginie C. Lafage; PhD; Christopher P. Ames, MD; ISSG
E-poster #23	Extent of Proximal Fusion Correlates with Worse Clinical Outcomes in Cervical to Pelvis Fusions Han Jo Kim, MD; Sravisht Iyer, MD; Alexander A. Theologis, MD; Todd J. Albert, MD; Lawrence G. Lenke, MD; Vedat Deviren, MD; Venu M. Nemani, MD, PhD; Oheneba Boachie-Adjei, MD; Shane Burch, MD; Jun Mizutani, MD; Eric O. Klineberg, MD; Themistocles S. Protopsaltis, MD; Justin S. Smith, MD, PhD; Justin K. Scheer, BS; Christopher P. Ames, MD
Diagnostics	
E-poster #24	A Novel Radiographic Indicator of Developmental Cervical Stenosis Phillip H. Horne MD, PhD; Lukas P. Lampe MD; Joseph T. Nguyen, MPH; Richard J. Herzog MD; Todd J. Albert MD
E-poster #25	A Novel Comprehensive MRI Classification System for Cervical Foraminal Stenosis Sang-Hun Lee, MD, PhD; So-Young Park, MD; Ki-Tack Kim, MD; Sang-Phil Hwang, MD; Soo-Jin Jang, MD; Jeffrey C. Wang, MD
Economics/Value	
E-poster #26	The Total Cost to the Healthcare System for the Treatment of Cervical Myelopathy Gregory D. Schroeder, MD; Mark F. Kurd, MD; Kristen E. Radcliff, MD; Jason W. Savage, MD; Jeffery A. Rihn, MD; D. Greg Anderson, MD; Alan S. Hilibrand, MD; Alexander R. Vaccaro, MD, PhD; Christopher K. Kepler, MD, MBA
Laminoplasty	
E-poster #27	Sagittal Imbalance Might Be a Risk Factor of Increasing Post Laminoplasty Kyphosis Yoshitaka Suzuki, MD; Tetsuya Ohara, MD; Taichi Tsuji, MD; Tosiki Saito; Ayato Nohara, MD; Ryoji Tauchi, MD; Noriaki Kawakami, MD
Myelopathy	
E-poster #28	A 30-Meter Walking Test as a Measure of Cervical Spondylotic Myelopathy Severity: Test Characteristics and Results from Two Multicenter Cohort Studies Parker E. Bohm, BA, BS; Michael G. Fehlings, MD, PhD; Branko Kopjar, MD, PhD; Paul M. Arnold, MD
E-poster #29	Disability and Impairment of the Upper Limb and How they Define the Patient with Degenerative Cervical Myelopathy (DCM). Sukhvinder K. Kalsi-Ryan, BScPT, MSc, PhD; Jerri M. Clout, BS; Pouya Rostami, BS; Eric M. Massicotte, MD, Mohammed F. Shamji, MD; Michael G. Fehlings, MD, PhD
New Technologies	
E-poster #30	Noninvasive Evaluation By Magnetospinography Of Electrophysiological Activity In The Cervical Spine After Peripheral Nerve Stimulation In Humans Satoshi Sumiya, MD; Shigenori Kawabata, PhD; Tsuyoshi Yamada, Toshitaka Yoshii, Tsuyoshi Kato, MD, PhD; Atsushi Okawa
Other	
E-poster #31	Risk and Cost of Reoperation after Single Level Posterior Cervical Foraminotomy: A Large Database Study Arash J. Sayari, BS; Alexander Tuchman, MD; Jeremiah R. Cohen, BS; John C. Liu MD; Frank L. Acosta, MD; Mark J. Spoonamore, MD; Thomas C. Chen, MD, PhD; Patrick C. Hsieh, MD, MSc; Zorica Buse, PhD; Jeffrey C. Wang, MD
E-poster #32	Over 10-Year Aggravation of Cervical Spine Instabilities in Rheumatoid Arthritis: A Prospective Cohort Study of Outpatients Hiroaki Hirata, MD, PhD; Takashi Yurube, MD, PhD; Masatoshi Sumi, MD, PhD; Yoshiki Terashima, MD

E-poster #33	Operative Treatment in Patients with Suboccipital Spinal Metastasis: Is a Posterior Approach Alone Enough? <i>Panya Luksanapruksa, MD; Jacob M. Buchowski, MD, MS; David B. Bumpass, MD; Neill M. Wright, MD</i>
Outcomes	
E-poster #34	The Effects of Anticoagulation or Antiplatelet Agents in Cervical Spine Surgery Patients <i>Jong-Hyun Ko, MD; Ju Rang Lee, MD; Kyung-Jin Song, MD</i>
E-poster #35	Morbidity and Mortality Associated with Transoral Approaches to the Cervical Spine <i>Jeremy Steinberger, MD; Dante M. Leven, DO, PT; Branko Skovrlj, MD; Nathan J. Lee, BS; Parth Kothari, BS; Javier Z. Guzman; John I. Shin, MD; John M. Caridi, MD; Samuel K. Cho, MD</i>
E-poster #36	Preoperative Functional Status as a Predictor of Morbidity and Mortality following Elective Cervical Spine Surgery <i>Shobhit V. Minhas, MD; Aditya S. Mazmudar, BA; Alpesh A. Patel, MD</i>
E-poster #37	Stability of Clinical Outcome Measures following Anterior Cervical Spine Surgery <i>Donna D. Ohnmeiss, Dr.Med; Richard D. Guyer, MD; Jack E. Zigler, MD; Scott L. Blumenthal, MD</i>
E-poster #38	Does Patient Satisfaction Reflect Quantitative Pain and Function Measurements in Cervical Spine Surgery? <i>Kristen E. Radcliff, MD; Domagoj Coric, MD; Han Jo Kim, MD; Elizabeth Roensch, BS; Kyle Marshall, BS; Todd J. Albert, MD</i>
E-poster #39	Identifying Predictors of Upper Body Post-Operative Pain and Disability Improvement in Surgical Cervical Spine Radiculopathic Patients <i>Peter G. Passias, MD; Kristen E. Radcliffe, MD; Robert E. Isaacs, MD; Kristina Bianco, BA; Cyrus M. Jalai, BA; Nancy J. Worley, BA; Paul M. Arnold, MD; Patrick C. Hsieh, MD, MSc; Alexander R. Vaccaro, III, MD; Michael C. Gerling, MD</i>
E-poster #40	Validation of Patient-Reported Outcomes Measurement Information System (PROMIS) Computer Adaptive Tests (CATS) in Cervical Spine Surgery <i>Alpesh A. Patel, MD; Surabhi Bhatt, BS; Wellington K. Hsu, MD; Jason W. Savage, MD</i>
Spinal Cord Injury	
E-poster #41	MRI Prognostic Factors for Ambulatory Ability after Spinal Cord Injury Without Bony Injury (SCIWOBI) <i>Miki Komatsu, MD, PhD; Kota Suda, MD; Satoko Matsumoto, MD; Chikara Ushiku, MD; Katsuhisa Yamada, MD</i>
E-poster #42	Mechanism of Injury Vs. AOSpine Classification: Is the Setting/Environment in which the Injury Occurs or the Morphology of the Spinal Column Injury the Better Predictor of Severity of Spinal Cord Injury? <i>Marcel F. Dvorak, MD; Nader Fallah, PhD; Vanessa K. Noonan; Charles G. Fisher, MD, MPH; Brian K. Kwon, MD; John Street, MD, PhD; F. Cumhur Öner; Alexander R. Vaccaro, III, MD</i>
Surgical Issues	
E-poster #43	Incidence of and Risk Factors for Incorrect Level Needle Localization during Anterior Cervical Discectomy and Fusion Surgery <i>Deepak Reddy, MD; David T. Endriga, MD; Eric M. Kiskaddon, MD; Steven D. Glassman, MD; Kelly R. Bratcher, RN, CCRP; Katlyn E. McGraw, BA; Leah Y. Carreon, MD, MSc</i>
Trauma	
E-poster #44	ASIA Impairment Scale Predicts the Need for Tracheostomy after Cervical Spinal Cord Injury. <i>Benjamin R. Childs, BS; Timothy A. Moore, MD; John J. Como, MD, MPH; Heather A. Vallier, MD</i>
E-poster #45	Clearing the C-Spine in Obtunded Trauma Patients Based on Admission CT: A Prospective Randomized Trial <i>Christopher P. O'Boynick, MD; Timothy M. Lonergan, MD; Howard M. Place, MD</i>

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