**Thursday, November 20, 2014**

6:45 am Breakfast / Exhibit Viewing / Registration

7:30 Welcome & Course Overview David Skaggs, MD

7:35 **Session 1: Pulmonary & Basic Science**

***Moderators: Lindsay Andras, MD & Burt Yaszay, MD***

7:35 What a Pediatric Spine Surgeon Needs to Know about Pulmonology Greg Redding, MD

7:55 Discussion

8:05 Are Current EOS Treatments Really Better than Fusion or Natural History Benny Dahl, MD

for Pulmonary Function?

8:20 Genetic Basis of EOS and the Developing Spine: The Somite Clock Benjamin A. Alman, MD

and Mouse Models

8:30 Discussion

8:45 Interdependent Relationship between the Thorax and Lung: The Impact Brian Snyder, MD

of Thoracic Deformity on Respiratory Function

8:55 Discussion

9:05 Evolving Treatment Options for EOS: Is Growth Modulation of the Spine the Answer? Eric Wall, MD

9:15 Discussion

9:25 Refreshment Break & Exhibit Viewing

9:45 **Session 2: Free Papers**

***Moderators: Stefan Parent, MD PhD & Jeff Sawyer, MD***

9:45 Free Paper #1: Content of Metal Ions in the Blood and tissues after Implantation of Titanium

Growth-Guidance Sliding LSZ-4D Device for Early Onset Scoliosis Treatment

*Elena Lukina; Aleksandr Laka, PhD; Mikhail Kollerov; Mykhamad Sampiev; Paul Wagstaff; Peter Mason; Wai Weng Yoon; Hilali Noordeen; Gordon Blunn*

9:49 Free Paper #2: Guided Growth System (ggs) in the Treatment of Early Onset Scoliosis - 5 Years Follow-up

*Michal Latalski, Ass Prof. MD PhD; Marek Fatyga, MD PhD; Krzysztof Kołtowski, MD; Anna Danielewicz-Bromberek, MD; Piotr Menarowicz, MD*

9:53 Free Paper #3: Sliding-Growing Rod Technique for Management of Early-Onset Scoliosis

*Meric Enercan; Mutlu Cobanoglu; Sinan Kahraman; Bahadir H. Gokcen; Sinan Yilar; Erden Erturer; Cagatay Ozturk; Azmi Hamzaoglu*

9:57 Discussion

10:05 Free Paper #4: Growing Segmental Spinal Instrumentation: How Much Do They Grow?

*Sam Rosenfeld, M.D.; Benjamin Smith, D.O.*

10:09 Free Paper #5: Real Time Robotic Assisted Telemedicine Surgical Collaboration between Ukraine and the US

*Richard M. Schwend, MD; Andriy Mezentsev, MD; Dmytro Petrenko, MD; Alec Hermanson, BA; Matthew Altrich, BA; Morgan Waller; Robert Rinaldi, MD; Ronald Nicholis, MD*

10:13 Free Paper #6: The Effectiveness of Pre-operative Halo-gravity Traction (hgt) in Early Onset Scoliosis (eos) and Severe Kyphoscoliosis: Clinical and Radiographic Study

*Norberto M. Ventura Gómez, MD, PhD; Ana M. Ey Batlle, MD; Imma Vilalta Vidal, MD; Augusto A. Covaro, MD; Juan J. Mazzeo, MN; Junichi Yamane, MD, PhD; Melisa Stitzman Wengrowicz, MD*

10:17 Discussion

10:25 Free Paper #7 Spinal Growth In Normal Children Between 3 And 11 Years Old Using 3D Reconstruction: A Longitudinal Study.

*Patrick Tohmé; Léonie Tremblay; Marjolaine Roy-Beaudry, MSc; Marie Beauséjour, PhD; Hubert Labelle, MD; Stefan Parent, MD, PhD*

10:29 Free Paper #8: Coupled Symmetry and Pattern of Rib Growth in the Growing Human

*Richard M. Schwend; John Schmidt, PhD; Laurel C. Blakemore, MD; Julie L. Reigrut, MS; Behrooz Akbarnia*

10:33 Free Paper #9: Growth Patterns of the Neurocentral Synchondrosis (NCS) in Immature and Growing Vertebra

*Richard M. Schwend; Laurel C. Blakemore, MD; John A. Schmidt, PhD; Behrooz Akbarnia, MD*

10:37 Discussion

10:45 Free Paper #10: Does Initial Cast Correction Predict Treatment Success for Infantile Scoliosis?

*Jaime A. Gomez, MD; Alexandra Grzywna, BS; Lawrence Karlin, MD; Patricia Miller, MS; John Emans, MD; Michael Glotzbecker, MD*

10:49 Free Paper #11: Effectiveness of Serial Derotational Casting for Treatment of Children with Early Onset Scoliosis

*Anny Hsu, MD; Hiroko Matsumoto, PhDc; Mark Sullivan, BA; Evan Trupia, BS; Benjamin Roye, MD, MPH; David P. Roye, MD; Michael G. Vitale, MD, MPH*

10:53 Free Paper #12: Radiographic Parameters Correlating with Success of Mehta Cast Utilization in Infantile Idiopathic Scoliosis

*Hamid Hassanzadeh; Sreeharsha V. Nandyala; Blaine Manning; Amit Jain; Kim W. Hammerberg*

10:57 Discussion

11:05 Free Paper #13: Pulmonary Pressures Substantially Change during Derotational Casting for Early Onset Scoliosis

*David M. Farrington; Rafael López-Lobato; Marta García-Santigosa; Ángela Tatay-Díaz; José María López-Puerta*

11:09 Free Paper #14: Surgeon Experience Does Not Reduce Complications Associated with VEPTR Surgery in Early Onset Scoliosis

*John T. Smith, MD; Man Hung, Ph.D; Jessica Morgan; Heather Fillerup*

11:13 Free Paper #15: Offset Layered Closure May Reduce Wound Infections in EOS Surgery

*Alexandra M. Grzywna, BA; Michael P. Glotzbecker, MD; John B. Emans, MD*

11:17 Discussion

11:25 Free Paper #16: A Multicenter Retrospective Cohort Analysis of Infection Characteristics and Rates with VEPTR Surgery: A Retrospective Cohort Analysis

*Sumeet Garg; Micaela Cyr, BA; Michael Glotzbecker, MD; Patrick Carry, BA; John T. Smith, MD; Jeff Sawyer, MD; Joshua Pahys, MD; Scott Luhmann, MD; John M. Flynn, MD; Ron El-Hawary, MD; Michael Vitale, MD; Tricia St. Hilaire, MPH; Children's Spine Study Group*

11:29 Free Paper #17: Superior Extension of Upper Instrumented Level in Distraction Based Surgery: A Surrogate for Clinically Significant PJK

*Ron El-Hawary, MD, MSc, FRCSC; John Heflin, MD; Nadim Joukhadar, BSc; Mohamad Yasin, MD; David Skaggs, MD; Children's Spine Study Group*

11:33 Free Paper #18: Proximal Junctional Kyphosis in Surgically Treated Young Children With Scoliosis: Incidence, Risk Factors, and Management

*Bangping Qian, MD; Xu Sun, MD.; Yong Qiu, MD*

11:47 Discussion

11:55 Free Paper #19: The Etiology of Thoracic Insufficiency Syndrome in Neuromuscular Scoliosis Based on Quantitative Dynamic Lung MRI (QdMRI)

*Robert M. Campbell, MD; Jay Udupa, PhD; Jack Flynn, MD; Hank Mayer, MD; Michael Nance, MD; Howard Panitch, MD; Wei-Hsun Wang, MD; Yubing Tong, PhD; Ivy Wu, PhD; Kieth Baldwin, MD; Joseph McDonough, Masters in Bioengineering; Andrew Mong, MD*

11:59 Free Paper #20: Diminished PFT's in Growing Rod Graduates despite Improved Thoracic Height and Curve Correction

*Charles E. Johnston, MD; Dong-phuong Tran, MS; Anna McClung, RN*

12:03 Free Paper #21: Serial Measures of Lung and Inspiratory Muscle Function in Children with Early Onset Scoliosis

*Gregory J. Redding, MD; Megan Roth, PhD; Walter Krengel, MD; Klane White, MD; Viviana Bompadre, PhD; John Waldhausen, MD; Ajeya Joshi, MD*

12:07 Discussion

12:15 Lunch

12:45 pm **Company Supported Workshops (non-CME)**

1:45 Walking Break

1:50 **Session 3: Ribs & Other Issues**

***Moderator: Brian Snyder, MD***; ***Muharrem Yazici, MD***

1:50 Proximal Junctional Kyphosis in EOS Ron El-Hawary, MD, MSc, FRCS

2:00 What We Have Learned About the Child's Ribs from Osteology Studies Rick Schwend, MD

2:10 Biomechanical and Clinical Evaluation of Rib Anchors Richard Gross, MD

2:20 Discussion

2:30 Cervicothoracic Scoliosis David Skaggs, MD

2:40 Criteria for Avoiding Need of Final Fusion Paul Sponseller, MD

2:50 Lifetime Achievement Award & Keynote Address Bob Campbell, MD

3:05 Discussion

3:15 Refreshment Break & Exhibit Viewing

3:30 **Session 4: Free Papers & Local Welcome**

***Moderators: Laurel Blakemore, MD & Tenner Guillaume, MD***

3:30 Free Paper #22: Spine Growth Modulation using Titanium Clip/screw Device: Vertebral and Disc Height Changes at 1 Year

*Donita I. Bylski-Austrow, PhD; Nana A. Entsuah; David L. Glos; Joseph E. Reynolds; Eric J. Wall, MD*

3:34 Free Paper #23: Changes in the Vertebral Growth Plate after Surgical Correction of Scoliosis in Animal Model

*Michal Latalski, Ass Prof. MD PhD; Marek Fatyga, MD PhD*

3:38 Free Paper #24: Prospective FDA IDE Clinical Safety Trial of a Scoliosis Growth Modulation Clip/Screw Device: 18-Month Results

*Eric J. Wall, MD; Joseph E. Reynolds; Jain V. Jain, MD; Donita I. Bylski-Austrow, PhD; George H. Thompson, MD; Paul Samuels, MD; Sean J. Barnett; Alvin H. Crawford, MD*

3:42 Discussion

3:50 Free Paper #25: Unilateral Thoracic Nerve Neurotomy Causes Rib Cage Torsion and Idiopathic-Like Thoracic Scoliosis

*Xiaobin Wang, M.D., PhD; Hong Zhang, M.D.; Dan Sucato, M.D., MS*

3:54 Free Paper #26: Anterior Vertebral Body Tethering for Immature Adolescent Idiopathic Scoliosis: One-Year Results on the First 32 Patients

*Amer Samdani; Robert J. Ames, BA; Jeff S. Kimball, BS; Joshua M. Pahys, MD; Harsh Grewal, MD; Glenn J. Pelletier, MD; Randal R. Betz, MD*

3:58 Free Paper #27: Cervical Deformity and Instability Occur Early but Require Surveillance in Loeys-Dietz Syndrome

*Paul Sponseller, MD; Sara Fuhrhop, MD; Mark McElroy, BS*

4:02 Discussion

4:10 Local Host Welcome/Things to Do in Warsaw Daniel Zarzycki, MD

4:15 Local Topic: Warsaw History & Culture TBD

4:35 **Ask the Faculty Case Discussions and Receptions**

Room 1: Unique or innovative solutions to unusual problems –

Drs. Akbarnia, Blakemore, Marks

Room 2: Troublesome complications with or without solutions –

Drs. Skaggs, Noordeen, Johnston

Room 3: Unsolved problems still in need of answers/suggestions –

Drs. Emans, Lenke, Mundis

5:30 - Additional Reception Time

6:15

**Friday, November 21, 2014**

7:00 am Breakfast / Exhibit Viewing

**7:30 Company Supported Workshops (non-CME)**

8:30 Walking Break

**8:35 Session 5: Free Papers**

***Moderators: Charlie Johnston, MD & Jean-Luc Jouve, MD***

8:35 Free Paper #28: Dual Growing Rod: Traditional Vs Magnetic Systems In The Treatment Of Infantile Scoliosis

*Tiziana Greggi; Elena Maredi; Francesco Lolli; Francesco Vommaro; Kostantinos Martikos; Andrea Baioni; Antonio Scarale; Stefano Giacomini; Mario Di Silvestre*

8:39 Free Paper #29: Magnetically Controlled Growing Rod Technique in 33 Patients with Early Onset Scoliosis - Preliminary Results

*Karsten Ridderbusch, MD; Ralf Stuecker, MD; Martin Rupprecht, MD; Philip Kunkel, MD; Christian Hagemann, MD*

8:43 Free Paper #30: How much do Remote Magnetic Expandable Devices Truly Expand. A Radiographic Evaluation of the Magec System

*Daniel J. Rolton, FRCS (Tr+Orth); Chrishnan Thakar, FRCS (Tr+Orth); Colin Nnadi, FRCS (Tr+Orth)*

8:47 Discussion

8:55 Free Paper #31: Ultrasound Technique Monitoring the Lengthening of Magnetically Controlled Growing Rods

*Luca F. Colombo, Pediatric Orthopaedic; Francesco Motta; Andrea Righini, Radiologist*

8:59 Free Paper #32: Complications of Magnetically-controlled Growing Rod Surgery: Multicentre Study of 26 Patients with Medium-term Follow-up

*Kenneth M. Cheung; Jason Pui Yin Cheung, MBBS (HK), MMedSc; Kenny Kwan, BMBCh(Oxon), FRCSEd(Ortho); John Ferguson, FRACS; Colin Nnadi, MBBS, FRCS; Ahmet Alanay, MD; Muharrem Yazici, MD; Gokhan H. Demirkiran, MD; Ilkka J. Helenius, MD, PhD; Behrooz A. Akbarnia, MD*

9:03 Free Paper #33: Validation of True Spine Length Radiographic Measurements

*Alan J. Spurway, MASc; Chukwudi Chukwunyerenwa; Waleed Kishta; Ron El-Hawary, MD, MSc, FRCSC*

9:07 Discussion

9:15 Free Paper #34: Choosing Distal Instrumentation Level in Growing Rod Surgery - Where to Stop?

*Senol Bekmez; Gokhan Demirkiran; Ozgur Dede; Peter Sturm; Muharrem Yazici*

9:19 Free Paper #35: Pelvic Anchor Outcomes in Growing Rod Constructs: An Analysis of Patients with a Minimum of 4 Years of Post-Operative Follow-Up

*Jaysson T. Brooks, MD; Amit Jain, MD; Francisco Sanchez Perez-Grueso, MD; David L. Skaggs, MD, MMM; George H. Thompson, MD; Behrooz A. Akbarnia, MD; Paul D. Sponseller, MD, MBA; Growing Spine Study Group*

9:23 Free Paper #36: Does the “Law of Diminishing Returns” Apply to Guided Growth Shilla Constructs?

*Lindsay M. Andras, MD; Haleh Badkoobehi, MD; Alexander Broom, BA; Richard E. McCarthy, MD; David Skaggs, MD, MMM; Growing Spine Study Group*

9:27 Discussion

9:35 Free Paper #37: Prospective Study Comparing the Effects of Proximal Rib Anchors versus Proximal Spine Anchors: Examining Complications, Curve Correction, and Quality of Life

*Michael G. Vitale, MD, MPH; Mark Sullivan, BA; Evan Trupia, BS; Hiroko Matsumoto, PhDc; Sumeet Garg, MD; John Flynn, MD; Peter F. Sturm, MD; Francisco Sanchez Perez-Grueso, MD; The Children's Spine Study Group; The Growing Spine Study Group; David P. Roye, MD*

9:39 Free Paper #38: Defining Parasol Rib Deformity in Hypotonic Neuromuscular Scoliosis: Is There a Difference Between Rib-Based and Spine-Based Instrumentation?

*Kristin S. Livingston, MD; David Zurakowski, PhD; Brian Snyder, MD PhD*

9:43 Free Paper #39: Thoracic Volume Modeling of Growing Spine Interventions in Early Onset Scoliosis

*David M. Matson; Charles Ledonio, MD; David W. Polly, Jr., MD; Kristin England, MD; Jeff Pawelek, BS; Behrooz A. Akbarnia, MD*

9:47 Discussion

9:55 Refreshment Break / Exhibit Viewing

10:15 **Session 6: Miscellaneous**

***Moderator: Michael Glotzbecker, MD; Francisco Perez-Grueso, MD***

10:15 The 3 Most Influential Papers Over the Last 10 Years and How They Charles Johnston, MD Changed My Approach to EOS

10:25 The 3 Most Influential Papers Over the Last 10 Years and How They Paul Sponseller, MD

Changed My Approach to EOS

10:35 The 3 Studies That Should Be Done Over the Next Few Years to Help Michael Vitale, MD

Us Improve the Care of Children with EOS

10:45 Discussion

11:05 Efficacy of Preoperative Halo-Gravity Traction in Severe Scoliosis Bangping Qian, MD

11:20 Infection Prevention after Surgery for EOS… Where Are We in 2014? Michael Glotzbecker, MD

11:35 Discussion

11:50 Lunch

12:50 pm **Session 7: Free Papers**

***Moderators: Stephan Parent, MD & Rick Schwend, MD***

12:50 Free Paper #40: Defining Pre-operative Age and Deformity Magnitude Cut-offs for the Initiation of Surgical Treatment with Dual Growing Rods

*Vidyadhar V. Upasani, MD; Kevin C. Parvaresh, MD; Jeff Pawelek; Patricia E. Miller, MS; George H. Thompson, MD; David L. Skaggs, MD, MMM; John B. Emans, MD; Michael P. Glotzbecker, MD; Growing Spine Study Group*

12:54 Free Paper #41: Performing a Definitive Fusion in Juvenile CP Patients is a Good Surgical Option

*Burt Yaszay; Paul D. Sponseller; Suken A. Shah; Jahangir Asghar; Firoz Miyanji; Amer F. Samdani; Carrie E. Bartley; Peter O. Newton*

12:58 Free Paper #42: Can a “No Final Fusion” Produce Equal Results to Final Fusion After Growing Rod Treatment?

*Amit Jain, MD; Paul D. Sponseller, MD, MBA; Urvij Modhia, MD; Suken A. Shah, MD; George H. Thompson, MD; Jeff B. Pawelek; Behrooz A. Akbarnia, MD; Growing Spine Study Group*

1:02 Discussion

1:10 Free Paper #43: Flexible Growing Rods: Polymer Rods Provide Stability to Skeletally Immature Spines

*Donita I. Bylski-Austrow, PhD; David L. Glos; Max F. Carvalho, MD; Anne C. Bonifas; Matthew T. Coombs; Peter F. Sturm, MD*

1:14 Free Paper #44: Staged Insertion of Growing Rods in Severe Scoliosis, Does it Prevent Fixation Failure?

*Sebastiaan Schelfaut, MD; Jennifer Dermott, PT; Reinhard Zeller, MD, ScD, FRCSC*

1:18 Free Paper #45: The Effect of Growth Friendly Surgery on Coronal and Sagittal Plane Spine Growth in Idiopathic Scoliosis

*Chukwudi K. Chukwunyerenwa, MD, MCh,FRCSC; Charles Johnston, MD; Anna M. McClung, BSN, RN; Luke Gauthier, MD; Alan J. Spurway, MASc; Ron El-Hawary, MD, MSc, FRCSC*

1:22 Discussion

1:30 **Session 8: Masters’ Tips & Tricks**

***Moderators: Behrooz Akbarnia, MD & Michael Vitale, MD***

1:30 MCGR Technique: Economics of Growing Rod Surgery David Polly, MD

1:35 Master’s Technique: How Much to Distract at Initial Implant Colin Nnadi, MD

and Subsequent Surgeries

1:40 Master’s Technique: What Technique and How Often We Should Do Hilali Noordeen, MD

Lengthening

1:45 Discussion

1:55 Master’s Technique: Why I Use Rib Anchors for Proximal Fixation in David Skaggs, MD

Distraction Based Implants

2:05 Master’s Technique: Optimizing Nutrition Charles Johnston, MD

2:15 Discussion

2:25 Master’s Technique: PRSS Qibin Ye, MD

2:35 Discussion

2:40 Stretch Break

2:55 Master’s Technique: “S” Rods to Pelvis in Distraction-based Implants – John Smith, MD

Why, When, and How?

2:57 Master’s Technique: Pelvic Screws in Distraction-based Implants – Paul Sponseller, MD

Why, When, and How?

3:04 Discussion

3:14 Master’s Technique: VCR & Growing Rods Larry Lenke, MD

3:21 Master’s Technique: Vertebral Bar Excision Deszoe Jeszensky, MD

3:28 Master’s Technique: MCGR Karsten Ridderbusch, MD

3:35 Discussion

3:45 Adjourn