2nd Annual Spinal Navigation, Emerging Technologies and Systems Integration Course
Saturday, December 9, 2017
at the Seattle Science Foundation

AGENDA

7:30am          Breakfast & Registration

7:45am – 7:55am  What is the Seattle Science Foundation?
Rod J. Oskouian, Jr., M.D.

7:55am – 8:10am  Welcome, Introductions, Course Overview and Survey
J. Patrick Johnson, MD and Doniel Drazin, M.D.

Part 1: Image Guided Spine Surgery (Chair: J. Patrick Johnson, M.D.)

8:10am – 8:30am  Cost Effectiveness of Navigation
John Street, M.D., Ph.D.
Objectives:
• Indicate the benefits of navigation
• Interpret the cost effectiveness of navigation in case studies
• Demonstrate where navigation is not cost effective

8:30am – 8:50am  Radiation Exposure and the CONS of Image-Guided Spine Surgery
Jens Chapman, M.D.
• Illustrate the concerns with radiation exposure to the provider and the patient
• Indicate the average level of exposure to the patient with common procedures and image guidance systems
• Utilize methods to avoid unnecessary exposure

8:50am – 9:10am  Are Indications Needed or Just Navigate Everything?
J. Patrick Johnson, M.D.
Objectives:
• Discriminate when and why navigation is needed.
• Indicate the reasons navigation is not needed
• Identify methods for doing surgery without navigation

9:10am – 9:30am  Spine Trauma Navigation: Key Concepts
Terrence Kim, M.D.
Objectives:
• Indicate when navigation is beneficial in spine trauma
• Demonstrate the pitfalls of using navigation in spine trauma
• Visualize anatomic considerations in the trauma setting that make navigation use beneficial and/or not helpful

9:30am – 9:50am  Navigation in Spinal Deformity: Pearls
David W. Polly, Jr., M.D.
Objectives:
• Indicate the benefits of navigation with spinal deformity cases
• Review the pitfalls of relying on navigation only for spinal deformity cases
• Practice using navigation in the clinical setting on a spinal deformity procedure

9:50am – 10:10am  Navigating the Cervical Spine: Considerations of the Anatomy
John Street, M.D., Ph.D.
Objectives:
• Indicate the benefits of knowing your anatomy in the cervical spine
• Illustrate anatomic anomalies to consider in the cervical spine
• Review what navigation modalities are most effective for surgery in the cervical spine

10:10am – 10:20am  Break & Exhibits

Part 2: Emerging Technologies (Chairs: Doniel Drazin, M.D. & Rod Oskouian, Jr., M.D.)

10:20am – 10:35am  Live Demo – Robotic Exoscope in Spine Surgery
Rod Oskouian, Jr., M.D.
Objectives:
• Illustrate a live demonstration of a exoscope in spine surgery
• Indicate the benefits of using a exoscope system for surgery
• Identify when exoscope is not beneficial in spine surgery

10:35am – 10:55am  Image-Guided Open Navigation Platform For Spinal Surgery
Adetokunbo A. Oyelese, M.D., Ph.D., FAANS
Objectives:
• Illustrate the appropriateness and application of the image-guided open navigation
• Indicate the benefits of using the image-guided open navigation for spinal surgery
• Identify when image-guided open navigation is not beneficial in spine surgery

10:55am – 11:15am  Minimally Invasive Techniques Using Image-Guided Surgery (IGS)
Hoan Tran, M.D.
Objectives:
• Illustrate the appropriateness and application of minimally invasive surgery using IGS
• Indicate the benefits of using minimally invasive techniques and IGS
• Identify when minimally invasive surgery with IGS is not beneficial in spine surgery

11:15am – 11:35am  Robotic Assisted Spine Surgery
Anand Veeravagu, M.D.
Objectives:
• Indicate when robotic assisted spine surgery is beneficial in spine
• Demonstrate the pitfalls of using robotics in spine surgery population
• Delineate the pros and cons that make robotics use beneficial and/or not helpful

11:35am – 11:55am  Enhancing Intraoperative Efficiencies and Accuracy While Minimizing Intraoperative Radiation with Patient-Specific 3D Printed Guides
George Frey, M.D.
Objectives:
• Indicate when a patient specific 3D printed guide can be beneficial in spine
• Demonstrate the pitfalls of using a patient specific 3D printed guides in spine surgery
• Delineate the pros and cons that make 3D printed guides beneficial and/or not helpful
*Deep Guha, M.D.*  
**Objectives:**  
- Illustrate the appropriateness and application of machine-vision image guided surgery  
- Indicate the benefits of using the machine-vision image guided surgery  
- Identify when machine-vision image guided surgery is not beneficial in spine surgery

12:15pm – 12:30pm  **Break & Pick Up Lunch**

12:30pm – 1:15pm  **Awake at the Wound**  
*(working lunch)*  
*David Hanscom, M.D. and David Elaimy*  
**Objectives:**  
- Illustrate the possibilities in treatment with pain management  
- Predict future trends in treatment with regards to this therapy  
- Discriminate potential shortcomings of this treatment modality

**Part 3: Systems Integration (Chair: Ken Catchpole, M.D.)**

1:15pm – 1:35pm  **Human Factors and Systems Integration in Spine Surgery**  
*Ken Catchpole, Ph.D.*  
**Objectives:**  
- Demonstrate the negatives of system integration in spine surgery  
- Illustrate how human factors play a critical role including training and implementation  
- Predict the future benefits of systems integration in spine surgery

1:35pm – 1:55pm  **Principles of LEAN and the Toyota Production System to Spine Surgery**  
*Rajiv Sethi, M.D.*  
**Objectives:**  
- Display the principles of LEAN  
- Demonstrate how the LEAN principles can apply to spine surgery  
- Indicate potential challenges with LEAN with regards to spine surgery

1:55pm – 2:15pm  **Prehab and the DOCC Process**  
*David Hanscom, M.D.*  
**Objectives:**  
- Display the principles of the DOC process  
- Demonstrate how the DOCC process can apply to spine surgery  
- Indicate potential challenges with DOCC with regards to spine surgery

**Part 4: Hands-on Experience**

2:15pm – 2:30pm  **Technology/Lab Station preview**  
*Doniel Drazin, M.D.*  
**Objective:**  
- Preview each lab station and what the technology is that is being highlighted

2:30pm – 4:30pm  **Hands-on BioSkills Lab Rotations (15 minute rotations)**  
**Objectives:**  
- Demonstrate use of spinal imaging guidance systems  
- Practice using robotic surgical systems in spine surgery  
- Perform cadaveric procedures utilizing both image guidance and robotics
Station 1
Image-Guided Open Navigation Platform
Adetokunbo A. Oyelese, M.D., Ph.D., FAANS

Station 2
Minimally Invasive + Percutaneous + PSIS Pin
Terrence Kim, M.D. & David W. Polly, Jr., M.D.

Station 3
Minimally Invasive + Percutaneous
Hoan Tran, M.D.

Station 4
Robotics In Spine Surgery
Anand Veeravagu, M.D.

Station 5
Exoscopes In Spine Surgery: Robotics
Rod Oskouian, Jr., M.D. & Jordan Amadio, M.D.

Station 6
Exoscopes In Spine Surgery: 3D
Doniel Drazin, M.D.

Station 7
Machine-Vision Image Guided Surgery
Deep Guha, M.D.

Station 8
Robotic Applications In Spine Surgery
Michel Lefranc, M.D.

Station 9
3D Printed Guide Navigation
George Frey, M.D.

Station 10
Lumbar Navigation
TBD

4:30pm Adjourn
Jordhan Amadio, M.D.  
Neurosurgeon  
Emory University School of Medicine  
Atlanta, Georgia

Ken Catchpole, Ph.D.  
Professor of Clinical Practice and Human Factors  
Medical University of South Carolina  
Charleston, South Carolina

Jens Chapman, M.D.  
Complex Spine Surgeon  
Swedish Neuroscience Institute  
Seattle, Washington

Doniel Drazin, M.D.  
Course Chair  
Neurosurgeon  
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David Elaimy  
Athletics Coach  
University of Washington  
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Englewood, Colorado

Deep Guha, M.D.  
Neurosurgeon  
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Toronto, Ontario, Canada

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Director, Institute for Spinal Disorders  
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Assistant Program Director,  
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Professor, Chief of Spine Surgery  
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Director of Integrated Ambulatory Spine Program  
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