

| Sunday, January 13, 2019 | |
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| 6:00 a.m. | Registration and Breakfast |
| 6:55 a.m. | Introduction to the Course |
| Trauma | |
| 7:00 a.m. | Management of Traumatic Craniocervical Instability <i>Ahmad Nassr, M.D.</i> |
| 7:20 a.m. | Medical Management of Whiplash Disorder <i>Randy A. Shelerud, M.D.</i> |
| 7:40 a.m. | Spine Trauma Care over the next decade <i>Alex R. Vaccaro, M.D., Ph.D., M.B.A</i> |
| 8:00 a.m. | Inpatient Rehabilitation After Spinal Cord Injury <i>Ronald K. Reeves, M.D.</i> |
| 8:20 a.m. | Advances in the Treatment of Spinal Cord Injury: The Interface of Biology and Engineering <i>Michael J. Yaszemski, M.D.</i> |
| 8:40 a.m. | Q & A |
| 9:00 a.m. | Break |
| Osteoporosis | |
| 9:20 a.m. | Medication Management of Strategies for Fragility Fractures <i>Daniel L. Hurley, M.D.</i> |
| 9:40 a.m. | Management of odontoid fractures in the elderly <i>Mohamad Bydon, M.D.</i> |
| 10:00 a.m. | Advances in the Surgical Treatment of Patients with Osteoporosis: the Interface of Biology and Engineering <i>Ahman Nassar, M.D.</i> |
| 10:20 a.m. | Medical Management of Compressions Fractures <i>Cara C. Prideaux M.D.</i> |
| 10:40 a.m. | Surgical Complications with Osteoporosis <i>Brett A. Freedman, M.D.</i> |
| 11:00 a.m. | Q & A |
| 11:20 a.m. | Break |
| Spine Curve Ball | |
| 11:40 a.m. | Orientation & Case 1 |
| Keynote | |
| 11:50 a.m. | Physician Burn-Catastrophic or Opportunity for Positive Change <i>Alex R. Vaccaro, M.D., Ph.D., M.B.A</i> |
| 12:30 p.m. | Adjourn |

| Monday, January 14, 2019 | |
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| 6:00 a.m. | Breakfast Roundtable |
| Spine Pain | |
| 7:00 a.m. | The Real Natural History of Low Back Pain <i>Cara C. Prideaux, M.D.</i> |
| 7:20 a.m. | Is Chiropractic Useful in Radiculopathy? <i>Paul W. Hodges, M.D., Ph.D.</i> |
| 7:40 a.m. | How to Prescribe Opioids and Stay out of Trouble <i>Sarah J. Crane, M.D.</i> |
| 8:00 a.m. | Spinal Injection Options for Low Back Pain <i>Mark Friedrich B. Hurdle, M.D.</i> |
| 8:20 a.m. | You Have the Back of an 80 Year Old <i>Greg S. Peterson, M.D.</i> |
| 8:40 a.m. | Q & A |
| 9:00 a.m. | Break |
| Tumor | |
| 9:20 a.m. | Primary and Metastatic Spine Tumors – Epidemiology, Management <i>Steven I. Robinson, M.B.B.S.</i> |
| 9:40 a.m. | Diagnosis, Management and Outcome of Intradural Spinal Malignancy <i>William Richard Marsh, M.D.</i> |
| 10:00 a.m. | Medical Oncologic Treatment of Spinal Malignancies and Outcomes <i>Steven I. Robinson, M.B.B.S.</i> |
| 10:20 a.m. | Complex Spinal-Pelvic Reconstruction After Sacral Resection <i>Ahman Nassr, M.D.</i> |
| 10:40 a.m. | 3D Printing <i>Jonathan M. Morris, M.D.</i> |
| 11:00 a.m. | Q & A |
| 11:20 a.m. | Break |
| Spine Curve Ball | |
| 11:40 a.m. | Case 2 |
| Keynote | |
| 11:50 a.m. | Motor Control <i>Paul W. Hodges, M.D., Ph.D.</i> |
| 12:30 p.m. | Adjourn |

| Tuesday, January 15, 2019 | |
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| 6:00 a.m. | Breakfast Roundtable |
| Trauma | |
| 7:00 a.m. | Classification of Cervicothoracic Trauma |
| 7:20 a.m. | Complications Happen: What 30 Years of Spine Surgery has Taught Me? <i>Bradford L. Currier, M.D.</i> |
| 7:40 a.m. | Image Guidance in Spine Surgery <i>William J. Richardson, M.D.</i> |
| 8:00 a.m. | Three-Dimensional Holography as an Application for Intraoperative Imaging in Adult <i>Jamal McClendon, Jr., M.D.</i> |
| 8:20 a.m. | Updates Biofilm <i>Paul A. Anderson, M.D.</i> |
| 8:40 a.m. | Q & A |
| 9:00 a.m. | Break |
| General Spine | |
| 9:20 a.m. | Discitis & Vertebral Osteomyelitis <i>Douglas R. Osmon, M.D.</i> |
| 9:40 a.m. | Updates in Pediatric Scoliosis <i>Jamal McClendon, Jr., M.D.</i> |
| 10:00 a.m. | Spinal Injection Options in Lumbar Radiculopathy <i>Mark Friedrich B. Hurdle, M.D.</i> |
| 10:20 a.m. | <i>Paul W. Hodges, M.D., Ph.D.</i> |
| 10:40 a.m. | Updates in Sacroiliac Disease <i>William W. Cross, III, M.D.</i> |
| 11:00 a.m. | Q & A |
| 11:20 a.m. | Break |
| Spine Curve Ball | |
| 11:40 a.m. | Case 3 |
| Keynote | |
| 11:50 a.m. | Bone Health Optimization <i>Paul A. Anderson, M.D.</i> |
| 12:30 p.m. | Adjourn |

| Wednesday, January 16, 2019 | |
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| 6:00 a.m. | Breakfast Roundtable |
| Spinal Stenosis | |
| 7:00 a.m. | What is the Differential Diagnosis with Suspected Cervical Myelopathy? <i>Kathleen M. McEvoy, M.D, Ph.D.</i> |
| 7:20 a.m. | Is There a Role for Physical Therapy in Lumbar Radiculopathy or Spinal Stenosis? <i>Jeffrey S. Brault, D.O.</i> |
| 7:40 a.m. | Patient with Cervical Stenosis: When to Leave Alone? <i>Kathleen M. McEvoy, M.D, Ph.D.</i> |
| 8:00 a.m. | Update on Vertebroplasty and Kyphoplasty <i>Jonathan M. Morris, M.D.</i> |
| 8:20 a.m. | Epidermal Lipomatosis <i>Greg S. Peterson, M.D.</i> |
| 8:40 a.m. | Q & A |
| 9:00 a.m. | Break |
| General Spine | |
| 9:20 a.m. | Electromyography: What the Surgeon Needs to Know <i>Ruple S. Laughlin, M.D.</i> |
| 9:40 a.m. | Quality Improvement in Spine Surgery <i>Paul A. Anderson, M.D.</i> |
| 10:20 a.m. | Degenerative Spondylolisthesis <i>Jon Lurie, M.D., M.S.</i> |
| 10: 40 a.m. | How Durable is Surgery From Lumbar Spinal Stenosis <i>Ahmad Nassr, M.D.</i> |
| 11:00 a.m. | Q & A |
| 11:20 a.m. | Break |
| Spine Curve Ball | |
| 11:40 a.m. | Case 4 |
| Keynote | |
| 11:50 a.m. | Professionalism and a Climate of Safety <i>William J. Richardson, M.D.</i> |
| 12:30 p.m. | Adjourn |

| Thursday, January 17, 2019 | |
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| 6:00 a.m. | Breakfast Roundtable |
| Deformity | |
| 7:00 a.m. | Adult Spinal Deformity Treatment <i>Jeremy L. Fogelson, M.D.</i> |
| 7:20 a.m. | Focal Decompression and Limited Fusion for Adult Deformity <i>Mark A. Pichelmann, M.D.</i> |
| 7:40 a.m. | Proximal Junctional Kyphosis <i>Brett A. Freedman, M.D.</i> |
| 8:00 a.m. | Value (Money's Worth?) <i>Arjun S. Sebastian, M.D.</i> |
| 8:40 a.m. | Adult Deformity Case Presentations and Panel Discussion <i>Ahmad Nassr, M.D.</i> |
| 9:00 a.m. | Break |
| General Spine | |
| 9:20 a.m. | Pain Rehab Center: Who to Send? <i>J. Michael Bostwick, M.D.</i> |
| 9:40 a.m. | Blurred Boundaries: The Therapeutics and Politics of Medical Marijuana <i>J. Michael Bostwick, M.D.</i> |
| 10:00 a.m. | Complications of Pharmacologic Treatment of Osteoporosis <i>Daniel L. Hurley, M.D.</i> |
| 10:20 a.m. | Neuropathic Pain Meds Old and New <i>Keith A. Bengtson, M.D.</i> |
| 10:40 a.m. | Complementary Medicine Options for Back Pain Treatment <i>Ralph E. Gay, M.D., D.C., M.S.</i> |
| 11:00 a.m. | Q & A |
| 11:20 a.m. | Break |
| Spine Curve Ball | |
| 11:40 a.m. | Case 4 |
| Keynote | |
| 11:50 a.m. | Diagnosis of Spinal Stenosis <i>Jon Lurie, M.D., M.S.</i> |
| 12:30 p.m. | Adjourn |