

***12th Annual
Multimodal Treatment of Spinal Tumors Course***

**Saturday, May 21, 2022**

**Syllabus**

**DISTINGUISHED FACULTY**

|  |  |
| --- | --- |
| **Jens R. Chapman, M.D.****Course Co-Chair**Complex Spine SurgeonSwedish Neuroscience InstituteSeattle, Washington | **Ehud Mendel, M.D., M.B.A., FACS** *(virtual)***Course Co-Chair**Executive Vice-Chair & Professor, NeurosurgeryDirector of Spine & Spine Oncology ProgramYale School of Medicine & Simlow Cancer HospitalNew Haven, Connecticut |
| **Rod J. Oskouian, Jr., M.D.****Course Co-Chair**Chief of SpineDirector, Spine Fellowship ProgramSwedish Neuroscience InstituteSeattle, Washington |
| **Amir Abdul-Jabbar, M.D.**Orthopaedic SurgeonSwedish Neuroscience InstituteSeattle, Washington | **Yi An, M.D.** *(virtual)*Assistant Professor, Radiation OncologyChief, Spine & Genitourinary Radiotherapy ProgramYale School of MedicineNew Haven, Connecticut |
| **Mark H. Bilsky, M.D.** *(virtual)*William E. Snee Endowed ChairVice Chairman of Clinical Affairs, NeurosurgeryMemorial Sloan Kettering Cancer CenterNew York, New York | **Steve Braunstein, M.D., Ph.D.** *(virtual)*Radiation OncologistUniversity o California San FranciscoSan Francisco, California |
| **Glen David, M.D.**Interventional Pain SpecialistSwedish Neuroscience InstituteSeattle, Washington | **Michael Galgano, M.D.** *(virtual)*Spinal Oncology & Deformity SurgeryAssistant Professor of NeurosurgeryUniversity of North CarolinaChapel Hill, North Carolina |
| **Luis Kolb, M.D.** *(virtual)*NeurosurgeonYale School of MedicineNew Haven, Connecticut | **Maxwell Laurans, M.D., M.B.A.** *(virtual)*Assistant Professor of NeurosurgeryVice President, Surgical ServicesYale School of MedicineNew Haven, Connecticut |
| **Ilya Laufer, M.D.** *(virtual)*Director, Spine Tumor ProgramNYU LangoneNew York, New York | **Ian E. McCutcheon, M.D.** *(virtual)*Professor of NeurosurgeryMD Anderson Cancer CenterHouston, Texas |
| **Laurence D. Rhines, M.D.** *(virtual)*Professor and DirectorSpine Tumor ProgramMD Anderson Cancer CenterHouston, Texas | **Daniel Sciubba, M.D.** *(virtual)*Professor & Chair, Northwell Dept. of NeurosurgeryProfessor, Johns Hopkins University School of MedicineBaltimore, Maryland |
| **John E. Shin, M.D.** *(virtual)*Kingdon-Saylor Family Endowed Chair in Spine NeurosurgeryDirector, Spine Oncology & Spinal Deformity SurgeryMass General Neurosurgery | Harvard Medical SchoolBoston, Massachusetts | **Alekos Theologis, M.D.**Assistant Professor, SpineUniversity of California San FranciscoSan Francisco, California |
| **Yoshiya (Josh) Yamada, M.D.** *(virtual)*Co-Chief, Multi-Disciplinary Spine Tumor SvcMemorial Sloan Kettering Cancer CenterNew York, New York |  |

**Surgical Demonstrations Supported by Swedish Neuroscience Institute Spine Fellows**

**AGENDA**

**7 a.m. Registration & Breakfast**

**7:30 a.m. Welcome and Course Introduction**

 *Jens R. Chapman, M.D., Rod J. Oskouian, Jr., M.D., and Ehud Mendel, M.D., M.B.A.*

**SESSION 1: METASTATIC TUMORS****7:35 a.m.** **Surgical Management of Spinal Metastasis** *(virtual)*

 *Ilya Laufer, M.D.*

***Objectives:***

* Identify indications for surgery and stereotactic body radiotherapy
* Outline surgical options for treatment of spinal metastases

**7:55 a.m.** **Q&A**

**8 a.m. Live Demonstration Broadcast from BioSkills Lab No. 1**

 **Percutaneous Spinal Fixation with Fenestrated Screws with Cement**

*Rod J. Oskouian, Jr., M.D. & Jared Cook, D.O.*

***Objectives:***

* Summarize how to increase pull-out strength of screw with cement
* Outline potential complications of hardware failure
* Discuss increasing fixation options for tumor reconstruction

**8:45 a.m. Myelopathy and An Unknown Primary: Do You Need A Diagnosis to Treat?** *(virtual)*

 *Mark H. Bilsky , M.D.*

 ***Objectives:***

* Summarize the rationale for urgent surgical decompression in patients with myelopathy or cauda equina syndrome in the setting of an unknown primary
* Describe the rationale for urgent surgery even for radio/chemosensitive tumors such as myeloma and lymphoma
* Outline the rationale for urgent surgery even for primary bone tumors

**9:05 a.m. Q&A**

**9:10 a.m. What’s New in Radiosurgery for Spine Tumors?** *(virtual)*

*Yoshiya (Josh) Yamada, M.D.*

* Describe the outcomes of spine radiosurgery for chordomas
* Outline the rationale for spine radiosurgery for back pain
* Explain the radiosurgery for spine metastases from prospective trials

**9:30 a.m. Q&A**

**9:35 a.m. Break & Exhibits** *(not for CME credit)*

**9:45 a.m. Radiosurgical Management of Spinal Metastasis** *(virtual)*

 *Yi An, M.D.*

 ***Objectives:***

* Define the role of the radiation oncologist in specialty care coordination for patients with spinal metastasis
* Describe the approach to determination of primary cancer in spinal metastasis patients
* Outline the concepts of targeted medical therapy of spinal metastasis

**10:05 a.m. Q&A**

 **10:10 a.m.Vertebroplasty/Kyphoplasty/Ablation Indications for Patients with Spine Tumors**

 *Amir Abdul-Jabbar, M.D.*

 ***Objectives:***

* Describe the indications for spine radiosurgery vs. conventional radiation treatments
* Outline the side effects of radiation and how they affect our patients

**10:25 a.m. Q&A**

**10:30 a.m. Live Demonstration Broadcast from BioSkills Lab No. 2**

 **Ablation for Spinal Tumors (Kyphoplasty vs. Vertebroplasty)**

 *Glen David, M.D. & Yevgeniy Freyvert, M.D.*

 ***Objectives:***

* Compare and contrast when one should perform a vertebroplasty or a kyphoplasty
* Outline the different types of cement to be used in both a kyphoplasty and vertebroplasty

**SESSION 2: PRIMARY BONE TUMORS**

**11 a.m. Surgical Management of Primary Malignant Bone** **Tumors** *(virtual)*

*Laurence D. Rhines, M.D.*

 ***Objectives:***

* Recognize the difference in management between metastatic and primary tumors of the spine
* Describe the role of en bloc resection in the management of primary bone tumors

**11:20 a.m. Q&A**

**11:25 a.m. Interdisciplinary Considerations in Multimodal Spinal Tumor Treatment**

*Alekos Theologis, M.D. & Steve Braunstein, M.D., Ph.D.*

 ***Objectives:***

* Describe the UCSF multidisciplinary therapy concept for spinal tumors and metastasis
* Outline the dosimetric impact of implant material (Carbon/PEEK vs. Titanium)
* Explain how surgeon decisions can unlock radiotherapeutic therapy options

**11:40 a.m. Q&A**

**11:45 a.m.****Surgical Management of Lumbosacral Primary Bone Tumors** *(virtual)*

 *Ehud Mendel, M.D., M.B.A.*

 ***Objectives:***

* Identify current diagnosis and treatment of sacral tumors
* Illustrate indications for operative & non-operative treatment of primary sacral tumors

 **12:05 p.m. Q&A**

**12:10 p.m. Break, Exhibits & Pick-up Lunch** *(not for CME credit)*

**SESSION 3: OTHER TOPICS**

**12:20 p.m. Live Demonstration Broadcast from BioSkills Lab No. 3** *(working lunch)*

 **Spinal Reconstruction with Radiolucent, Artifact Reducing Carbon/PEEK Implants** *Alekos Theologis, M.D. & Nathan Pratt, M.D.*

 ***Objectives:***

* Outline intraoperative handling of Carbon/PEEK implants
* Describe considerations of material choice and implant positioning for adjuvant

radiation therapy

* List the MIS and open stabilization techniques for spinal tumors and metastasis

**12:50 p.m. Surgeon as CEO of the Operating Room: Complication Avoidance in
 Spine Tumor Surgery** *(virtual)*

*Maxwell Laurans M.D., M.B.A.*
 ***Objectives:***

* Appreciate that a detailed surgical plan is critical to avoiding complications
* Describe how an interdisciplinary approach can minimize additional risks
* Summarize how relying on pattern and processes effectively minimizes unintended errors

**1:10 p.m. Q&A**

**1:15p.m. How to Determine Stability in Spinal Tumors?** *(virtual)*

 *Daniel Sciubba, M.D., M.B.A.*

 ***Objectives:***

* Identify factors associated with spinal instability from tumors
* Share case examples of instability
* Integrate principles of tumor instability into practice

**1:35 p.m. Q&A**

**1:40 p.m. Live Demonstration Broadcast from BioSkills Lab No. 4**

 **Novel Approaches for the Treatment of Spine Fractures**

 *Rod J. Oskouian, Jr., M.D. & Jerry Robinson, M.D.*

 ***Objectives:***

* Outline the height restoration technique
* Compare the bilateral vs. unilateral approach
* Compare & contrast the following techniques: kyphoplasty; vertebroplasty; Intervertebral fraction reduction and fixation

**2:10 p.m. Deformity Correction in the Set-Up of Spine Tumors** *(virtual)*

*Luis Kolb, M.D.*

 ***Objectives:***

* Identify common spinal deformities associated with tumor
* Outline treatment strategies for spinal tumors

**2:30 p.m. Q&A**

**2:35 p.m. Break & Exhibits** *(not for CME credit)*

**2:45 p.m. Live Demonstration Broadcast from BioSkills Lab No. 5**

 **Laminectomy Techniques and Principles with Multi-Rod Constructs in
 Spinal Reconstruction**

 *Jens R. Chapman, M.D. & Zac Tataryn, M.D.* ***Objectives:***

* Describe techniques to effectively decompress posterior thoracolumbar spine
* Outline the indications for mutli rod constructs
* Describe strategies to effectively create mutli rod constructs

**3:30 p.m. Augmented Reality for Spine Tumor Resection** *(virtual)*

*John E. Shin, M.D.*

 ***Objectives:***

* Recognize the challenges of arthrodesis and reconstruction after resection of primary spinal tumors
* Evaluate the feasibility and applicability of augmented reality in spine tumor surgery.
* Highlight the advantages of augmented reality-based computer navigation in surgery planning and execution

 **3:50 p.m. Q&A**

**3:55 p.m. Spinal Cord Tumors: Surgery for Intradural Tumors** *(virtual)*

 *Ian E. McCutcheon, M.D.*

***Objectives:***

* Outline surgical techniques for removal of spinal cord tumors
* Explain the steps in diagnosing spinal cord tumors
* Summarize the surgical anatomy of the spinal cord

**4:15 p.m. *Q&A***

**4:20p.m.Spine Tumors Case Presentations** *(virtual)*

 *Michael Galgano, M.D.*

 ***Objectives:***

* Describe the differential diagnosis of both vertebral column and intradural spinal tumors
* Appreciate the technical nuances in the surgical management of spinal tumors

**4:40 p.m. Q&A**

**4:45 p.m. Course Wrap Up**

**4:50 p.m. Adjourn**

**Surgical Demonstrations Supported by Swedish Neuroscience Institute Spine Fellows**

Jared Cook, D.O., Yevgeniy Freyvert, M.D., Nathan Pratt, M.D.,

Jerry Robinson, M.D., & Zac Tataryn, M.D.

**Acknowledgements**

The Planning Committee gratefully acknowledges support for this conference from the following:

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| **Educational Grant**Globus MedicalIcotecMedical Device Business Services, Inc.MedtronicStryker | **Exhibit Support**Globus Medical Icotec | **In-Kind Support**Globus MedicalIcotecMedical Device Business Services, Inc.MedtronicStryker |

**Planning Committee**

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| **Jens R. Chapman, M.D.**Swedish Neuroscience InstituteSeattle, Washington | **Ehud Mendel, M.D., M.B.A., FACS** Yale School of Medicine & Simlow Cancer HospitalNew Haven, Connecticut |
| **Amir Abdul-Jabbar Chapman, M.D.**Swedish Neuroscience InstituteSeattle, Washington | **Jens R. Chapman, M.D.**Swedish Neuroscience InstituteSeattle, Washington |
| **Jonathan Plümer, M.D.**Swedish Neuroscience InstituteSeattle, Washington | **Linda Sahlin**Seattle Science Foundation Seattle, Washington |

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**Identifying and Resolving Conflicts of Interest**

**Purpose:** The information provided addresses several requirements of the ACCME to help **ensure purpose** in CME activities. Everyone in a position to control the content of a CME activity must disclose all relevant financial relationships with commercial interests to the CME provider. This information must be disclosed to participants prior to the beginning of the activity. Also, CME providers must resolve current conflicts of interest prior to the educational activity.

**Definitions: “Financial relationships”** are those relationships in which the individual benefits by receiving a salary, royalty, intellectual property rights, consulting fee, honoraria for promotional speakers’ bureau, ownership interest (e.g., stocks, stock options or other ownership interest, excluding diversified mutual funds), or other financial benefit. Financial benefits are usually associated with roles such as employment, management position, independent contractor (including contracted research), consulting, speaking and teaching, membership on advisory committees or review panels, board membership, and other activities from which remuneration is received, or expected. ACCME considers relationships of the person involved in the CME activity to include financial relationships of a spouse or partner.

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The ACCME defines **“relevant financial relationships”** as financial relationships in any amount occurring within the past 12 months that create a conflict of interest.

**CME Activity Planning Committee Members:** I If a conflict of interest exists, the Planning Committee member must withdraw from the Planning Committee unless the conflict can be resolved. Resolution may be made by one of the following methods: (1) Peer review of CME content will be conducted at another oversight level to assure no commercial bias exists; (2) Change in focus of course so the activity does not include information related to products or services about which the planning committee member has a conflict; (3) Severing relationship(s) between the member and any related commercial interest; (4) Others to be determined by SSF CME Committee.

**CME Activity Presenter:** When a conflict of interest exists, the Planning Committee must address the conflict by one of the following methods: (1) Review content to be presented by speaker in advance to assure content balance; (2) Change topic so the presentation is not related to products or services where a conflict exists; (3) Select a different presenter without any related commercial interest; (4) Include presentations by other faculty to provide an overall balance to the content of the course; (5) Limit or specify the sources for recommendations that the presenter can use. Each speaker is required to give a balanced, evidence-based presentation based on published research. No conclusions or recommendations without external validation may be made by a speaker with a conflict of interest.

**Faculty Disclosure Summary**

The following planners and presenters, in the past 24 months, have/had a financial relationship with a commercial interest: *(S = Speaker; P = Planner)* **Mark Bilsky, M.D.** (S): Royalties: Globus Medical, DePuy

**Jens Chapman, M.D.** (S): Consultant: Globus Medical

**Glen David, M.D.** (S). Consultant: Medtronic

**Michael Galgano, M.D.** (S): Consultant: Medtronic

**Ilya Laufer, M.D.** (S): Consultant: Medtronic, DePuy Synthes: Royalties: Globus, SpineWave: Advisory Board: OnPoint Surgical

**Maxwell Laurans, M.D., MBA** (S): Stockholder: Nomad Health: Board Member: Nomad Health

**Rod J. Oskouian, Jr. M.D.** (S): Consultant: Atec, Blue Ocean Sine, DePuy Synthes, Globus Medical, SeaSpine, Stryker; Royalties: Stryker, Globus Medical

**Daniel Sciubba, M.D.** (S): Consultant: Baxter, Stryker, Medtronic, DePuy Synthes; Ownership Interest: Augmedics, BioPhy; Speaker: Northwell Health Organization

**John Shin, M.D.** (S): Consultant: DePuy, NuVasive, ATEC, Carbofix, Stryker; Grant/Research: AO Spine, NuVasive; Editorial Boards: Spine, Neurospine, Neurosurgery, Journal of Neurosurgery, Spine

**Alekos Theologis, M.D.** (S): Consultant: DePuy Spine, Alphatec, Surgalign, Ulrich, Stryker, Restor3D, SpineArt, Icotec; Royalties: Atec Spine; Board: Ulrich, Restor3D

**Yoshiya (Josh) Yamada, M.D.** (S): Consultant: University of Wollongang, BrainLab; Research: Varian Medical Systems; Royalties: Cherdoma Foundation

The following planners and presenters, in the past 24 months, have/had no financial relationship with a commercial interest: *(S = Speaker; P = Planner)*

**Amir Abdul-Jabbar, M.D.** (P)(S)

**Yi An, M.D.** (S)

**Steven Braunstein, M.D.** (S)

**Luis Kolb, M.D.** (S)

**Ehud Mendel, M.D.** (P) (S)

**Jonathan Plümer, M.D.** (P)

**Laurence Rhines, M.D.** (S)
**Linda Sahlin** (P)

All planners and presenters attested that their content suggestions and/or presentation(s) will provide a balanced view of therapeutic options and will be entirely free of promotional bias. All presentations have been reviewed by a planner with no conflicts of interest to ensure that the content is evidence-based and unbiased.