The UCSF Spine Symposium is an annual two-day event emphasizing pioneering trends in diagnostic and therapeutic strategies for patients suffering from spinal disorders. This course is designed to be interactive with talks given by leaders in the spine community. All lectures are followed by case discussions aimed at highlighting key issues in breakthrough treatments. The course is designed for neurosurgeons, orthopedists, nurses, physical therapists, physiatrists, anesthesiologists, and pain specialists as well as primary care providers.

The purpose of this course is to increase competence and improve clinical practice in the management of patients with spinal pathologies. Attendees will be better equipped to:

- Evaluate and treat spinal pain in a cost effective and reliable manner based on recently published guidelines;
- Identify appropriate indications for surgery of the painful, degenerated spine and identify the appropriate surgical approach based on recently published guidelines;
- Evaluate and treat lumbar degenerative disease and deformity in a cost effective manner and avoid perioperative complications by identifying risk factors that may predispose to morbidity;
- Determine pain management strategies for patients with spine-related pain;
- Increase utilization and competence with NASS spinal stenosis guidelines and the AANS-CNS cervical spine guidelines;
- Provide physical exams that include a process to identify lower extremity pain that dissipates while sitting and exacerbates with standing or walking;
- Identify spinal instability related to spinal tumors and formulate surgical treatment plans to deal with neurological deficits and pain in spine oncology patients based on recently published guidelines.

Parc 55 San Francisco – a Hilton Hotel
San Francisco, CA

ACCREDITATION
The University of California, San Francisco School of Medicine (UCSF) is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians. UCSF designates this live activity for a maximum of 13.00 AMA PRA Category 1 Credits™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

This CME activity meets the requirements under California Assembly Bill 1195, continuing education and cultural and linguistic competency.

Pain Management and End-of-Life Care
The approved credits shown above include a maximum of 4.75 credits toward meeting the requirement under California Assembly Bill 487, Pain Management and End-of-Life Care.

Nurses
For the purpose of recertification, the American Nurses Credentialing Center accepts AMA PRA Category 1 Credit™ issued by organizations accredited by the ACCME.

Physician Assistants
American Academy of Physician Assistants accepts category 1 credit from AOACCME, Prescribed credit from AAFP, and AMA PRA Category 1 Credit™ from organizations accredited by the ACCME.
### GENERAL INFORMATION
Advance registration closes at 10:00 am on Thursday, May 30, 2019. On-site registration fees will apply after advance registration closes.

### HOW TO ENROLL
#### Early Bird Rates prior to 2/28/18
<table>
<thead>
<tr>
<th>Tuition</th>
<th>Physicians</th>
<th>$395 by 2/28/19</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Nurses/Pharmacists/Advanced Health Professionals/Residents/Fellows</td>
<td>$475 after 2/28/19</td>
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<tr>
<td></td>
<td></td>
<td>$300/2/28/19</td>
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<tr>
<td></td>
<td></td>
<td>$375 after 2/28/19</td>
</tr>
</tbody>
</table>

*Beginning on 5/30/19, registration will be $50 additional.

Payment can be made by American Express, Visa, MasterCard or check.

### REFUND POLICY
Cancellations received in writing before May 30, 2019 will be refunded, less a $100 administrative fee. No refunds will be made on cancellations received after May 30, 2019.

### FRIDAY, MAY 31, 2019

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>Speaker(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:00 am</td>
<td>Registration and Continental Breakfast</td>
<td></td>
</tr>
<tr>
<td>7:55</td>
<td>Welcome and Introduction</td>
<td>Shane Burch, MD / Praveen Mummaneni, MD</td>
</tr>
<tr>
<td>8:00</td>
<td>P Back Pain Phenotypes</td>
<td>Conor O’Neill, MD</td>
</tr>
<tr>
<td>8:20</td>
<td>P Sacroiliac Joint Pain: Current Concepts</td>
<td>Alan Dang, MD</td>
</tr>
<tr>
<td>8:40</td>
<td>P Imaging Pathophysiology of Low Back and Radicular Pain</td>
<td>Vinil Shah, MD</td>
</tr>
<tr>
<td>9:00</td>
<td>P Treatment of Spinal Pain: Role of Shared Decision-making</td>
<td>Sibel Deviren, MD</td>
</tr>
<tr>
<td>9:20</td>
<td>Guest Lecture Introduction</td>
<td>Shane Burch, MD</td>
</tr>
<tr>
<td>9:25</td>
<td>P Changing the Back Pain Culture: An Insurers’ Perspective</td>
<td>Brian D. Justice, DC</td>
</tr>
<tr>
<td>9:55</td>
<td>Question and Answer Session</td>
<td></td>
</tr>
<tr>
<td>10:25</td>
<td>Coffee Break</td>
<td></td>
</tr>
<tr>
<td>10:45</td>
<td>P Frailty and Spine Pain</td>
<td>Shane Burch, MD</td>
</tr>
<tr>
<td>11:05</td>
<td>The Appropriate Use of Surgery for Spinal Disorders</td>
<td>Sigurd Berven, MD</td>
</tr>
<tr>
<td>11:25</td>
<td>Awake TLIF</td>
<td>Praveen Mummaneni, MD</td>
</tr>
<tr>
<td>11:45</td>
<td>Guest Lecture Introduction</td>
<td>Praveen Mummaneni, MD</td>
</tr>
<tr>
<td>11:50</td>
<td>20 Years’ Experience in Adult Spinal Deformities</td>
<td>Christopher I. Shaffrey, MD</td>
</tr>
<tr>
<td>12:20</td>
<td>Question and Answer Session</td>
<td></td>
</tr>
<tr>
<td>12:40</td>
<td>Lunch in Exhibit Hall</td>
<td></td>
</tr>
<tr>
<td>1:40</td>
<td>Update on Occipital Nerve Stimulation</td>
<td>Lines Jacques, MD</td>
</tr>
<tr>
<td>2:00</td>
<td>P Non-operative Management of Facet Mediated Pain</td>
<td>Patricia Zheng, MD</td>
</tr>
<tr>
<td>2:20</td>
<td>Opioid Free Anesthesia for Major Spinal Surgery</td>
<td>Jeremy Lieberman, MD</td>
</tr>
<tr>
<td>2:40</td>
<td>Guest Lecture Introduction</td>
<td>Shane Burch, MD</td>
</tr>
<tr>
<td>2:45</td>
<td>P Robotic Assisted Spine Surgery for the Treatment of Pain in the Adult Degenerative and Deformed Spine</td>
<td>Ronald A. Lehman, Jr., MD</td>
</tr>
<tr>
<td>3:15</td>
<td>Case Presentations</td>
<td></td>
</tr>
</tbody>
</table>

### 14TH ANNUAL UCSF SPINE SYMPOSIUM

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>Speaker(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4:15 pm</td>
<td>Adjourn</td>
<td></td>
</tr>
<tr>
<td>4:15-5:30 pm</td>
<td>Wine Tasting Reception in Exhibit Hall</td>
<td></td>
</tr>
</tbody>
</table>

### REGISTER VIA:
- **Online:** cme.ucsf.edu
- **Mail:** Complete course registration form and send with payment to: UCSF Office of CME 3333 California Street, Suite 450 San Francisco, CA 94118
- **Fax:** Fax completed registration form to: (415) 502-1795 (be sure to include your credit card number)
- **Phone:** To register by phone or to inquire about registration status, please call UCSF’s CME Registration Office at (415) 476-5808. Please check our website for up-to-date information on the course: cme.ucsf.edu
- **On-Site Registration:** Generally we are able to accommodate on-site registration at our courses, however pre-registration is preferred to ensure that we have adequate course materials.
<table>
<thead>
<tr>
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<th>Speaker(s)</th>
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</thead>
<tbody>
<tr>
<td>7:00 am</td>
<td>Registration and Continental Breakfast</td>
<td></td>
</tr>
<tr>
<td>8:00</td>
<td>Advances in Spinal Cord Injury Treatment</td>
<td>Sanjay Dhall, MD</td>
</tr>
<tr>
<td>8:20</td>
<td>Cervical Spine Radiographic Parameters</td>
<td>Lee Tan, MD</td>
</tr>
<tr>
<td>8:40</td>
<td>Guest Lecture Introduction</td>
<td>Praveen Mummaneni, MD</td>
</tr>
<tr>
<td>8:45</td>
<td>Cervical Sagittal Balance: A Biomechanical Perspective Can Improve Treatment of Patients with Chronic Neck Pain</td>
<td>Avinash G. Patwardhan, MD</td>
</tr>
<tr>
<td>9:15</td>
<td>Spinal Column Shortening for Adult Tethered Cord Syndrome</td>
<td>Dean Chou, MD</td>
</tr>
<tr>
<td>9:35</td>
<td>Coffee Break</td>
<td></td>
</tr>
<tr>
<td>9:55</td>
<td>Vertebral Column Resection in the Treatment of Spinal Malignant and Infectious Etiologies</td>
<td>Aaron Clark, MD</td>
</tr>
<tr>
<td>10:15</td>
<td>Back Pain: Which Patients Benefit From Surgery</td>
<td>Alekos Theologis, MD</td>
</tr>
<tr>
<td>10:35</td>
<td>Guest Lecture Introduction</td>
<td>Praveen Mummaneni, MD</td>
</tr>
<tr>
<td>10:40</td>
<td>Surgical Management of Pain from Adjacent Level Disease Following Cervical Fusion</td>
<td>Domagoj Coric, MD</td>
</tr>
<tr>
<td>11:10</td>
<td>Question and Answer Session</td>
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<tr>
<td>11:30</td>
<td>Case Presentations</td>
<td></td>
</tr>
<tr>
<td>12:30 pm</td>
<td>Luncheon</td>
<td></td>
</tr>
<tr>
<td>2:00</td>
<td>Pain After Adult Deformity Surgery</td>
<td>Lionel Metz, MD</td>
</tr>
<tr>
<td>2:20</td>
<td>Case Presentations</td>
<td>Keven Taliaferro, MD</td>
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<tr>
<td></td>
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<td>Patrick Dermarkarian, MD</td>
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<tr>
<td></td>
<td></td>
<td>Roman Trimba, MD</td>
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<tr>
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<td>Ratnesh Mehra, MD</td>
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<tr>
<td></td>
<td></td>
<td>Leslie C. Robinson, MD</td>
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<tr>
<td>3:20</td>
<td>Question and Answer Session</td>
<td></td>
</tr>
<tr>
<td>4:00 pm</td>
<td>Adjourn</td>
<td></td>
</tr>
</tbody>
</table>

**Conference Location**

Enjoy San Francisco's renowned attractions such as the historic cable cars, shopping in Union Square, or visit San Francisco's culinary hub at the Ferry Building.

The Parc 55 San Francisco is just steps from Union Square and the Theatre District and centrally located to many of San Francisco's famed sights such as the Embarcadero waterfront and Fisherman's Wharf. A block of guestrooms has been reserved at the special UCSF conference rate of $239/night. You are urged to make your reservations early. The cut-off date is May 9, 2019, or until the group room block is filled. After this date, rooms will be provided on a space-available basis only. To make hotel reservations please call 415-771-1400 and identify yourself as a member of this UCSF conference to receive the special rate. You can also reserve your hotel rooms on-line by visiting the course webpage on our website at cme.ucsf.edu and clicking on the reservations link in the Travel & Lodging section.

By staying at the host hotel, you help UCSF meet its contractual obligations and keep registration fees reasonable.

**Rental Car**

Hertz is offering special rates for participants of this conference; simply call 800-654-2240 and refer to convention number #03BW0138. You may also make reservations at www.hertz.com. Advance reservations are recommended.

**Air Transportation**

UCSF has negotiated special fares with United Airlines for our course attendees. You may use the following code to book on your own:

- United – www.united.com code: ZFM5163540
- UCSF has also negotiated special hotel rates. You can also visit the course webpage on our website at cme.ucsf.edu and find direct links for Hertz and United in the Travel & Lodging section.
COURSE DIRECTORS
Shane Burch, MD
Associate Professor of Orthopaedic Surgery
University of California, San Francisco

Praveen V. Mummaneni, MD
Joan O'Reilly Endowed Professor
Vice Chair, Department of Neurosurgery; Director, Cervical Spine Surgery; Director: Minimally Invasive Spine Surgery
Co-director: UCSF Spine Center
University of California, San Francisco

Lionel Metz, MD
Assistant Professor of Orthopaedic Surgery
University of California, San Francisco

SPECIAL GUEST FACULTY
Domagoj Coric, MD
Chief of Neurosurgery, Carolinas Medical Center, Charlotte, NC
President, Southern Neurosurgical Society

Brian D. Justice, DC
Medical Director, Excellus BlueCross BlueShield, Rochester, NY

Ronald A. Lehman, Jr., MD
Professor of Orthopaedic Surgery, Columbia University Medical Center, New York, NY
Director of Degenerative & Minimally Invasive Spine Surgery
Co-Director, Adult and Pediatric Comprehensive Spine Fellowship
Director, Clinical Spine Research
Co-Director, Clinical Research

Avinash Patwardhan, PhD
Professor of Orthopaedic Surgery, Loyola University Medical Center, Chicago, IL
Director, Student Musculoskeletal Research

Christopher I. Shaffrey, MD, FACS
Chief, Spine Division, Duke University School of Medicine, Durham, NC

COURSE FACULTY
(University of California, San Francisco unless indicated)

Sigurd Berven MD
Professor of Orthopaedic Surgery

Dean Chou, MD
Professor of Neurological Surgery

Aaron Clark, MD, PhD
Assistant Professor of Neurological Surgery

Alan Dang, MD
Assistant Professor of Orthopaedic Surgery

Patrick Dermarkarian, MD
Spine Fellow

Sibel Deviren, MD
Professor, Department of Orthopaedic Surgery

Sanjay Dhall, MD
Associate Professor of Neurological Surgery

Line Jacques, MD
Professor of Neurological Surgery, Director of Peripheral Nerve and Pain

David J. Lee, MD
Professor of Anesthesia and Perioperative Care

COURSE FACULTY (CONT’D)

Jeremy Lieberman, MD
Professor and Chief, Division of Spine Anesthesia

Ratnesh Mehra, MD
Spine Fellow

Conor O’Neill, MD
Professor of Orthopaedic Surgery

Leslie C. Robinson, MD
Spine Fellow

Vini Shah, MD
Assistant Professor of Radiology

Lee Tan, MD
Assistant Professor of Radiology

Kevin Taliaferro, MD
Spine Fellow

Alekos Theologis, MD
Spine Fellow

Roman Trimbba, MD
Spine Fellow

Patricia Zheng, MD
Assistant Professor of Orthopaedic Surgery

0569
University of California, San Francisco
3333 California Street, Suite 450
San Francisco, CA 94118

For more information or to register online visit our website at cme.ucsf.edu. You may also reach us by calling the Office of CME at (415) 476-4251 or emailing info@ocme.ucsf.edu.
REGISTRATION
14th ANNUAL UCSF SPINE SYMPOSIUM (MOR19003)
May 31–June 1, 2019
Parc 55 San Francisco – a Hilton Hotel • San Francisco, CA

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San Francisco, CA 94118
Fax: (415) 502-1795

Online registration: cme.ucsf.edu
Registration Information: (415) 476-5808
Course Information: (415) 476-4251

□ Dr. □ Ms. □ Mr. □ Mrs. □ Mx.

LAST NAME
FIRST
M.I.

DEGREE
SPECIALTY

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STATE
ZIP

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FAX

EMAIL

Address Label Code Letter (see address label: example, A, B, C, D, etc.) _______________________

Would you like to be on our priority email list? □ Yes □ No

Date of birth to be used as OCME registrant number: _____ / _____ / XX

Month Day

Please indicate if you have any special needs: _________________________________________

Registration Fees (Receipt/Confirmation will be mailed within two to four weeks):

By 2/28/19
□ $395 Physicians
After 2/28/19
□ $475 Physicians

By 2/28/19
□ $300 Nurses/Pharmacists/Advanced Health Practitioners/Residents/Fellows
After 2/28/19
□ $375 Nurses/Pharmacists/Advanced Health Practitioners/Residents/Fellows

*Beginning on 5/30/19, registration will be $50 additional.

Check enclosed payable to UC Regents

Please charge my credit card: □ Visa □ MasterCard □ AmEx for $ _________________________

CARD # ___________ / ___________ / ___________

NAME ON CARD (PLEASE PRINT)

AUTHORIZED SIGNATURE

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Please check our website for up to date information on the course: cme.ucsf.edu

Parc 55 San Francisco – a Hilton Hotel
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San Francisco, CA 94102
(415) 392-8000
www.parc55hotel.com

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