OVERVIEW
The concept of ‘big data’ is gaining major importance within the field of oncology but remains poorly defined and underimplemented in radiation oncology. One major barrier is the very definition of the term, especially in the context of a wide variety of types and sources of data in a technical but medically oriented field such as radiation oncology. The term ‘big data’ may connote technically complex data streams related to radiation planning or delivery, large-scale screening or data-seeking assays aimed at predicting or influencing anticancer effects, or the process of capturing and organizing workflow and process-oriented data and forming analytical structures or tools around them. In radiation oncology, the challenge is how to adapt current infrastructures to maximize returns from the “era of big data” and how to make these data translate into meaningful clinical practice that will assist in clinical decision making and benefit the individual patient.

At the end of this activity, attendees should be able to:
• Give at least three specific examples of the term ‘big data.
• Discuss potential benefits of ‘big data’ processes in their application to several anatomic sites.
• Cite evidence of the emergence of ‘big data’ in medical oncology, radiology, and radiation oncology.
• Identify at least two appropriate clinical scenarios for combining immunotherapy and radiotherapy.
• Optimize imaging protocols to maximize the quality of care in a radiation oncology practice.
• Name at least two specific anatomic landmarks important for contouring in several anatomic sites.

GENERAL INFORMATION
Advanced registration closes one (1) business day prior to start of course.

HOW TO ENROLL
Tuition: $600 Practicing Physicians
$500 All others
Payment can be made by Visa, MasterCard, AmEx or check.
REGISTER VIA:
Online: cme.ucsf.edu
Mail: Complete course registration form and send with payment to: UCSF Office of CME P.O. Box 45368 San Francisco, CA 94145
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) 478-5808

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.

REFUND POLICY
Cancellations received in writing before the first day of the course will be refunded, less a $75 administrative fee. No refunds will be made on cancellations received after that date.

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 St. Regis Hotel is just steps from Union Square and the Theatre District. A block of guestrooms has been reserved at the special UCSF conference rate of $389/night. You are urged to make your reservations early. The cut off date is January 15, 2017, or until the group room block is filled.

St. Regis 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 15.75 AMA PRA Category 1 Credits™. Physician should only claim 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.
SA-CME credits will be offered for case-based learning sessions

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

Physician Assistants: AAFP accepts category 1 credit from AOACCME, Prescribed credit from AAFP, and AMA PRA Category 1 Credit™ from organizations accredited by the ACCME.

Pharmacy: The California Board of Pharmacy accepts as continuing professional education those courses that meet the standard of relevance to pharmacy practice and have been approved for AMA PRA Category 1 Credit™.
FRIDAY, FEBRUARY 3, 2017
1:00 pm  Opening Remarks  Sue Yom, MD, PhD, MAS

**GENITOURINARY • MODERATOR: ALEXANDER GOTTSCHALK, MD, PhD**

<table>
<thead>
<tr>
<th>Time</th>
<th>Topic</th>
<th>Speaker</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:05</td>
<td>Rational Selection for Surveillance</td>
<td>Matthew Cooperberg, MD, MPH</td>
</tr>
<tr>
<td>1:25</td>
<td>PET Imaging for Prostate Cancer</td>
<td>Thomas Hope, MD</td>
</tr>
<tr>
<td>1:50</td>
<td>GU Case-Based Learning*</td>
<td>Albert Chang, MD, Matt Cooperberg, MD, Felix Feng, MD, Alexander Gottschalk, MD, PhD, Thomas Hope, MD</td>
</tr>
</tbody>
</table>

**THE J FRANZ BUSHCKE LECTURE**

<table>
<thead>
<tr>
<th>Time</th>
<th>Topic</th>
<th>Speaker</th>
</tr>
</thead>
<tbody>
<tr>
<td>2:30</td>
<td>Introduction</td>
<td>Catherine Park, MD</td>
</tr>
<tr>
<td>2:40</td>
<td>Optimizing Radiation-Induced Prostate Cancer Cell Death: Targeted Enhancement of DNA Injury</td>
<td>Theodore DeWeese, MD</td>
</tr>
</tbody>
</table>

**BREAST • MODERATOR: TRACY SHERERTZ, MD**

<table>
<thead>
<tr>
<th>Time</th>
<th>Topic</th>
<th>Speaker</th>
</tr>
</thead>
<tbody>
<tr>
<td>3:50</td>
<td>Predicting Local Recurrence Through Molecular Diagnostics</td>
<td>Hope Rugo, MD</td>
</tr>
<tr>
<td>4:10</td>
<td>Updates in Breast Imaging for Screening, Upfront Staging and Follow-up</td>
<td>Heather Greenwood, MD</td>
</tr>
<tr>
<td>4:30</td>
<td>Breast Radiology/Contouring Review</td>
<td>Heather Greenwood, MD, Tracy Sherertz, MD</td>
</tr>
<tr>
<td>4:50</td>
<td>Breast Case-Based Learning *</td>
<td>Panel: Tracy Sherertz, MD, Heather Greenwood, MD, Cathy Park, MD, Hope Rugo, MD</td>
</tr>
</tbody>
</table>

5:30 pm  Adjourn

SATURDAY, FEBRUARY 4, 2017
7:30 am  Continental Breakfast
8:00  Announcements  Martina Descovich, PhD

**CNS • MODERATOR: JEAN NAKAMURA, MD**

<table>
<thead>
<tr>
<th>Time</th>
<th>Topic</th>
<th>Speaker</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:10</td>
<td>Towards a Predictive Treatment Planning Approach for Brain Tumors</td>
<td>Olivier Morin, PhD</td>
</tr>
<tr>
<td>8:30</td>
<td>Going Hytec with a New Icon: Image-Guided Hypofractionated Gamma Knife Radiosurgery</td>
<td>Lijun Ma, PhD</td>
</tr>
<tr>
<td>8:50</td>
<td>CNS Case-Based Learning *</td>
<td>Panel: Steve Braunstein, MD, Jenny Clarke, MD, Shannon Fogh, MD, Penny Sneed, MD, Leo Sugrue, MD, Philip Theodosopoulos, MD</td>
</tr>
</tbody>
</table>

9:50  Break

**THE THEODORE L. PHILLIPS LECTURE • TIMOTHY SOLBERG, PHD**

<table>
<thead>
<tr>
<th>Time</th>
<th>Topic</th>
<th>Speaker</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:10</td>
<td>Introduction</td>
<td>Theodore Phillips,, MD</td>
</tr>
<tr>
<td>10:05</td>
<td>Converting on the Promise of Personalized Cancer Medicine</td>
<td>David Jaffray, MD</td>
</tr>
</tbody>
</table>

**BIG DATA • MODERATOR : TIMOTHY SOLBERG, PHD**

<table>
<thead>
<tr>
<th>Time</th>
<th>Topic</th>
<th>Speaker</th>
</tr>
</thead>
<tbody>
<tr>
<td>11:10</td>
<td>Introduction</td>
<td>Timothy Solberg, PhD</td>
</tr>
<tr>
<td>11:15</td>
<td>Interpretable Machine Learning Algorithms: A Scalpel for the Physician</td>
<td>Gilmer Valdes, PhD</td>
</tr>
<tr>
<td>11:35</td>
<td>Translating Big Data to Precision Medicine</td>
<td>Marina Sirota, PhD</td>
</tr>
<tr>
<td>11:55</td>
<td>Interrogating High-Throughput Data to Develop Predictive Classifiers of Response to Radiation or Androgen Deprivation for Prostate Cancer</td>
<td>Felix Feng, MD, PhD</td>
</tr>
<tr>
<td>12:15</td>
<td>Big Data Panel Summary/Discussion</td>
<td>Timothy Solberg, PhD</td>
</tr>
<tr>
<td>12:30</td>
<td>Lunch</td>
<td></td>
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</tbody>
</table>

**OPTIONAL LUNCH AND LEARN: RADIOBIOLOGY • MARY HELEN BARCELLOS-HOFF, PHD**

<table>
<thead>
<tr>
<th>Time</th>
<th>Topic</th>
<th>Speaker</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:00</td>
<td>Updates in Radiobiology at UCSF</td>
<td>Mary Helen Barcellos-Hoff, PhD</td>
</tr>
</tbody>
</table>
**SATURDAY, FEBRUARY 4, 2017 (CONT’D)**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Speaker(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:30</td>
<td>Radiation for Pancreas Cancer</td>
<td>Mekhail Anwar, MD, PhD</td>
</tr>
<tr>
<td>1:45</td>
<td>Surgery in Multidisciplinary Management of Pancreatic Cancer</td>
<td>Kimberly Kirkwood, MD</td>
</tr>
<tr>
<td>2:00</td>
<td>Modern Systemic Therapy and New Frontiers in Pancreatic Cancer</td>
<td>Andrew Ko, MD</td>
</tr>
<tr>
<td>2:15</td>
<td>Management of Hepatobiliary Tumors</td>
<td>Mary Feng, MD</td>
</tr>
<tr>
<td>2:30</td>
<td>GI Case-Based Learning *</td>
<td>Panel: Mekhail Anwar, MD, PhD, Mary Feng, MD, Kim Kirkwood, MD, Andrew Ko, MD</td>
</tr>
<tr>
<td>3:20</td>
<td>Break</td>
<td></td>
</tr>
<tr>
<td>3:40</td>
<td>MRI Sim and Novel MR Sequences</td>
<td>Atchar Sudhyadhom, PhD</td>
</tr>
<tr>
<td>3:55</td>
<td>PETCT for Prediction of Outcomes</td>
<td>Wendy Hara, MD</td>
</tr>
<tr>
<td>4:10</td>
<td>Head and Neck Contouring/Imaging Review</td>
<td>Alina Uzelac, MD, PhD, Mieke Van Zante, MD</td>
</tr>
<tr>
<td>4:30</td>
<td>Head and Neck Case-Based Learning *</td>
<td>Panel: Sue Yom, MD, PhD, Alain Algazi, MD, Sarah Arron, MD, PhD, MAS, Josephine Chen, PhD, Patrick Ha, MD, Wendy Hara, MD, Alina Uzelac, MD</td>
</tr>
</tbody>
</table>

**5:30-7:30 pm**  
ALL ATTENDEES’ RECEPTION

**SUNDAY, FEBRUARY 5, 2017**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Speaker(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:30 am</td>
<td>Continental Breakfast</td>
<td></td>
</tr>
<tr>
<td>8:00</td>
<td>Announcements</td>
<td>Sue Yom, MD, PhD, MAS</td>
</tr>
<tr>
<td>8:05</td>
<td>Lung Cancer Pathology and the Staging System</td>
<td>Kirk Jones, MD</td>
</tr>
<tr>
<td>8:25</td>
<td>Advances in Targeted Therapy and Immunotherapy for Lung Cancer</td>
<td>Matt Gubens, MD</td>
</tr>
<tr>
<td>8:45</td>
<td>Advanced Radiation Techniques for Lung Cancer</td>
<td>Adam Garsa, MD</td>
</tr>
<tr>
<td>9:05</td>
<td>Lung Cancer Imaging/Contouring Review</td>
<td>David Naeger, MD, Adam Garsa, MD</td>
</tr>
<tr>
<td>9:25</td>
<td>Thoracic Case-Based Learning *</td>
<td>Panel: Adam Garsa, MD, Martina Descovich, PhD, Alexander Gottschalk, MD, PhD, Matt Gubens, MD, Kirk Jones, MD, David Naeger, MD, Sue Yom, MD, PhD, MAS</td>
</tr>
<tr>
<td>10:05</td>
<td>Break</td>
<td></td>
</tr>
<tr>
<td>10:25</td>
<td>Advances in Gynecologic Oncology</td>
<td>Lee-May Chen, MD</td>
</tr>
<tr>
<td>10:45</td>
<td>Multi-modality Imaging in Gynecological Cancer</td>
<td>Liina Poder, MD</td>
</tr>
<tr>
<td>11:15</td>
<td>GYN Case-Based Learning *</td>
<td>Panel: Tracy Sherertz, MD, I-Chow (Joe) Hsu, MD, Lee-May Chen, MD, Jyoti Mayadev, MD, Liina Poder, MD, Timothy Solberg, PhD</td>
</tr>
<tr>
<td>11:55</td>
<td>Closing Remarks</td>
<td></td>
</tr>
<tr>
<td>12:00 pm</td>
<td>Adjourn</td>
<td></td>
</tr>
</tbody>
</table>

* Self-assessment CME credits offered
COURSE DIRECTORS
Timothy Solberg, PhD
Professor and
Chief of Physics, UCSF
Radiation Oncology
Sue Yom, MD, PhD, MAS
Associate Professor, UCSF Radiation Oncology

VISITING FACULTY
Wendy Hara, MD
Assistant Professor, Department of Radiation Oncology, Stanford University
Jyoti Mayadev, MD
Assistant Professor, Department of Radiation Oncology, University of California Davis

THE THEODORE L. PHILLIPS LECTURE
David Jaffray, PhD
Professor and Chief of Physics, Department of Radiation Oncology, Princess Margaret Hospital

THE J. FRANZ BUSCHKE LECTURE
Theodore DeWeese, MD
Professor and Chair, Department of Radiation Oncology, Johns Hopkins School of Medicine

UCSF COURSE FACULTY
Alain Algazi, MD
Associate Professor, Department of Medicine, Hematology/Oncology
Mekhail Anwar, MD, PhD
Assistant Professor
Sarah Arron, MD, PhD, MAS
Associate Professor, Department of Dermatology
Mary Helen Barcellos-Hof, PhD
Professor and Director of Radiobiology
Steve Braunstein, MD, PhD
Assistant Professor
Albert Chang, MD, PhD
Assistant Professor
Josephine Chen, PhD
Associate Professor

COURSE FACULTY (CONT’D)
Lee-May Chen, MD
Professor, Department of Obstetrics, Gynecology, and Reproductive Sciences
Jennifer Clarke, MD
Assistant Professor, Department of Neurological Surgery
Matthew Cooperberg, MD, MPH
Associate Professor, Department of Urology
Martina Descovich, PhD
Associate Professor
Felix Feng, MD, PhD
Associate Professor
Mary Feng, MD
Associate Professor
Shannon Fogh, MD
Assistant Professor
Alexander Gottschalk, MD, PhD
Professor
Heather Greenwood, MD
Assistant Professor, Department of Radiation Oncology
Matthew Gubens, MD
Assistant Professor, Department of Medicine, Hematology/Oncology
Patrick Ha, MD
Professor, Department of Otolaryngology, Head and Neck Surgery
Thomas Hope, MD
Assistant Professor, Department of Radiology
I-Chow (Joe) Hsu, MD
Professor
Kirk Jones, MD
Professor, Departments of Pathology and Laboratory Medicine
Kimberly Kirkwood, MD
Professor, Department of Surgery
Andrew Ko, MD
Professor, Department of Medicine
Lijun Ma, PhD
Professor, UCSF Radiation Oncology

COURSE FACULTY (CONT’D)
Olivier Morin, PhD
Assistant Professor, UCSF Radiation Oncology
David Naeger, MD
Associate Professor, Department of Radiology
Jean Nakamura, MD
Associate Professor
Catherine Park, MD
Professor and Chair
Theodore Phillips, MD
Professor Emeritus
Llina Poder, MD
Professor, Department of Radiology
Hope Hugo, MD
Professor, Department of Medicine, Hematology/Oncology
Tracy Sherrertz, MD
Assistant Professor
Marina Sirotova, PhD
Assistant Professor, Department of Pediatrics
Patricia (Penny) Sneed, MD
Professor
Atchar Sudhyadhom, PhD
Assistant Professor
Leo Sugrue, MD
Assistant Professor, Department of Radiology
Philip Theodosopoulos, MD
Professor, Department of Neurological Surgery
Alina Uzelac, MD
Assistant Professor, Department of Radiology
Gilmer Valdes, PhD
Assistant Professor, UCSF Radiation Oncology
Annemieke van Zante, MD, PhD
Associate Professor, Department of Pathology
U.C.S.F. RADIATION ONCOLOGY UPDATE:
PRACTICAL DECISIONS IN THE ERA OF BIG DATA
February 3-5, 2017
St. Regis Hotel • San Francisco, California

Mail to: U.C.S.F. Office of CME
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Fax: (415) 502-1795

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

☐ Dr. ☐ Ms. ☐ Mr. ☐ Mrs.

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Month Day

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

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