

# Conference Program

**Wednesday, February 27**

**1:00 p.m.-3:00 p.m.      Concurrent Educational Sessions 1 and 2**

**Concurrent Educational Session 1: Imaging Therapeutic Response**

Randle Ballroom D

**Imaging therapeutic response with PET**

Wolfgang A. Weber, Memorial Sloan-Kettering Cancer Center, New York, NY

**Assessing and monitoring therapeutic response of breast cancer and cervical cancer with FDG-PET**

Farrokh Dehdashti, Mallinckrodt Institute of Radiology, Washington University, St. Louis, MO

**Imaging the role of the immune system during oncogene-induced tumorigenesis**

Dean W. Felsher, Stanford University School of Medicine, Stanford, CA

**MRI to assess breast cancer response to treatment: Experience in the I-SPY/ACRIN trials**

Nola M. Hylton, University of California, San Francisco, CA

**Concurrent Educational Session 2: Emerging Technologies**

Randle Ballroom E

**Cerenkov luminescence imaging: A new tool for molecular imaging?**

Simon R. Cherry, University of California, Davis, CA

**Targeted microbubbles: Ultrasound contrast agents for molecular imaging**

Alexander L. Klibanov, University of Virginia, Charlottesville, VA

**Imaging glutaminolysis in cancer**

Hank F. Kung, University of Pennsylvania, Philadelphia, PA

**Mouse lung cancer co-clinical trials**

Kwok-Kin Wong, Dana-Farber Cancer Institute, Boston, MA

**3:30 p.m.-5:30 p.m. Concurrent Educational Sessions 3 and 4**

**Concurrent Educational Session 3: In Vivo Studies of Cancer Biology at Cellular Resolution**

Randle Ballroom D

**Photoacoustic tomography: Ultrasonically breaking through the optical diffusion limit**

Lihong Wang, Washington University, St. Louis, MO

**Optical imaging at the nanometer scale: Studies of molecular structures and interactions**

Alexandros Pertsinidis, Memorial Sloan-Kettering Cancer Center, New York, NY

**Molecular endoscopy for detection of neoplasia in the digestive tract**

Thomas D. Wang, University of Michigan, Ann Arbor, MI

**Cancer imaging to overcome delivery barriers and validate “omic” targets in vivo**

Jan E. Schnitzer, PRISM, San Diego, CA

**Concurrent Educational Session 4: Multimodal Imaging: Challenges and Opportunities in Cancer Discovery and Treatment – Supported by the World Molecular Imaging Society (WMIS)**

Randle Ballroom E

*Session Chairperson: Juri T. Gelovani, Wayne State University, Detroit, MI*

**MR metabolic imaging: Challenges and opportunities in cancer**

Sabrina M. Ronen, University of California, San Francisco, CA

**Molecular receptor imaging with integrated MR and optical**

Brian W. Pogue, Thayer School of Engineering at Dartmouth, Hanover, NH

**Multimodal cancer imaging: Roles of the optical imaging**

Hisataka Kobayashi, National Cancer Institute, Bethesda, MD

**5:30 p.m.-7:00 p.m. Dinner on Own**

**7:00 p.m.- 8:00 p.m. Opening Keynote Session**

Randle Ballroom D/E

**Welcome Remarks**

**Keynote Address**

**Hallmarks of cancer: From concepts to therapy (and imaging)**

Douglas Hanahan, Swiss Institute for Experimental Cancer Research, Lausanne, Switzerland

**8:00 p.m.-9:30 p.m. Welcome Reception**

Randle Foyer/Terrace

## Thursday, February 28

**7:00 a.m.-8:00 a.m.**      **Continental Breakfast**  
Randle Foyer/Terrace

**8:00 a.m.-10:00 a.m.**      **Plenary Session 1: Visualizing the Cancer Stem Cell**  
Randle Ballroom D/E  
*Session Chairperson: Carolyn J. Anderson, University of Pittsburgh School of Medicine, Pittsburgh, PA*

**Cancerous stem cells with genomic instability: The best vehicle with the best engine for cancer**

Eric Lagasse, University of Pittsburgh School of Medicine, Pittsburgh, PA

**Imaging the cancer stem cell marker AC133**

Gabriele Niedermann, University of Freiburg, Freiburg, Germany

**In vivo imaging of the hematopoietic stem cell niche**

Charles P. Lin, Massachusetts General Hospital, Boston, MA

**<sup>111</sup>In-360 mAb modified with nuclear localization signal containing peptides specific for the leukemic stem cell phenotype CD123+CD131- for leukemia detection and Auger electron radioimmunotherapy\***

Jeffrey V. Leyton, University of Toronto, Toronto, ON, Canada

**10:00 a.m.-10:30 a.m.**      **Break**  
Randle Ballroom A/B/C

*Coffee break provided by the generous support of Bristol-Myers Squibb*

\*Short talks from proffered papers

## Program

**10:30 a.m.-12:30 p.m. Plenary Session 2: Imaging the Tumor Microenvironment, Stroma, and Metastatic Niche**

Randle Ballroom D/E

*Session Chairperson: Zena Werb, UCSF Helen Diller Family Comprehensive Cancer Center, San Francisco, CA*

**Imaging contributions to the microenvironment to chemoresistance**

Mikala Egeblad, Cold Spring Harbor Laboratory, Cold Spring Harbor, NY

**Imaging the tumor microenvironment: An ever-changing landscape**

Zaver M. Bhujwala, Johns Hopkins University School of Medicine, Baltimore, MD

**A critical evaluation of methods for imaging tumor hypoxia**

Mark W. Dewhirst, Duke University Medical Center, Durham, NC

**Molecular imaging of the premetastatic niche in the lungs of a metastatic mouse model of breast cancer\***

Wissam Beaino, University of Pittsburgh, Pittsburgh, PA

**12:30 p.m.-2:30 p.m. Poster Session A with Lunch**

Randle Ballroom A/B/C

**2:30 p.m.-4:00 p.m. Short Talks from Proffered Abstracts  
Junior Investigator Session**

Randle Ballroom D/E

**A novel diagnostic strategy for PET to define the clinical significance of the magnitude of target inhibition for therapies suppressing PI3K pathway signaling in renal cell carcinoma\***

Michael G. Doran, Memorial Sloan-Kettering Cancer Center, New York, NY

**Imaging secreted proteases in metastatic prostate cancer using novel human antibodies\***

Aaron M. LeBeau, University of California, San Francisco, CA

**Imaging apoptosis with positron emission tomography: Bench-to-bedside development of the caspase-3/7-specific radiotracer [<sup>18</sup>F]ICMT-11\***

Quang-De Nguyen, Comprehensive Cancer Imaging Centre Imperial College London, London, United Kingdom

**Optical detection of viable tumor cells in liquid biopsies and their therapy in body fluids with oncolytic vaccinia virus\***

Huiqiang Wang, Genelux Corp., San Diego, CA

**An improved noninvasive imaging method for the assessment of changes in tumor microstructure using temporal diffusion spectroscopy MRI\***

Junzhong Xu, Vanderbilt University, Nashville, TN

\*Short talks from proffered papers

**4:15 p.m.-6:15 p.m. Plenary Session 3: Imaging Immune Cell Migration and Function In Vivo**  
 Randle Ballroom D/E  
*Session Chairperson: Christopher H. Contag, Stanford University School of Medicine, Stanford, CA*

**Imaging cancer and the immune response with positron emission tomography**  
 Owen N. Witte, University of California, Los Angeles, CA

**Imaging the role of the immune system during oncogene-induced tumorigenesis**  
 Dean W. Felsher, Stanford University School of Medicine, Stanford, CA

**FLT-PET imaging for early identification of antigen-specific immune responses in cancer patients**  
 Jolanda de Vries, Nijmegen Centre for Molecular Life Sciences, Nijmegen, The Netherlands

**Novel probe for noninvasive detection of tumor-associated inflammation\***  
 Brooke Helfer, Celsense Inc., Pittsburgh, PA

**6:15 p.m. Evening on Own**

**Friday, March 1**

**7:00 a.m.-8:00 a.m. Continental Breakfast**  
 Randle Foyer/Terrace

**8:00 a.m.-10:00 a.m. Plenary Session 4: Cancer Metabolism and Tumor Physiology**  
 Randle Ballroom D/E  
*Session Chairperson: Steven M. Larson, Memorial Sloan-Kettering Cancer Center, New York, NY*

**Metabolic imaging in cancer: What should we look for?**  
 Ralph J. DeBerardinis, UT Southwestern Medical Center, Dallas, TX

**The emerging role of hyperpolarized <sup>13</sup>C MR in cancer imaging**  
 John Kurhanewicz, University of California, San Francisco, CA

**Imaging abnormal metabolism in cancer: Association with an altered tumor microenvironment, immunological dysfunction, and a propensity to develop metastases**  
 Ronald G. Blasberg, Memorial Sloan-Kettering Cancer Center, New York, NY

**Noninvasive imaging of tumor glycogen storage by <sup>18</sup>F-NFTG positron emission tomography\***  
 Timothy Witney, Imperial College London, London, United Kingdom

\*Short talks from proffered papers

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**10:00 a.m.-10:30 a.m.**      **Break**  
Randle Ballroom A/B/C

**10:30 a.m.-12:30 p.m.**      **Plenary Session 5: Innovative Therapies Guided by Imaging**  
Randle Ballroom D/E  
*Session Chairperson: Kimberly A. Kelly, University of Virginia, Charlottesville, VA*

**Expediting translation of optical imaging into the clinic**  
Go van Dam, University Medical Center Groningen, Groningen, The Netherlands

**Imaging of oncolytic viral therapies of cancer**  
Stephen H. Thorne, University of Pittsburgh Cancer Institute, Pittsburgh, PA

**Image-guided siRNA and miRNA therapies**  
Anna V. Moore, Massachusetts General Hospital, Charlestown, MA

**<sup>99m</sup>Tc-etarfolatide (EC20) SPECT imaging for the identification of ovarian and non-small cell lung cancer patients who are most likely to benefit from folate-receptor targeted agent vintafolide (EC145)\***  
Phillip H. Kuo, University of Arizona, Tucson, AZ

**Image-guided treatment of pancreatic cancer using Cathepsin E-activatable prodrug\***  
Ching-hsuan Tung, The Methodist Hospital Research Institute-Weill Cornell Medical College, Houston, TX

**12:30 p.m.-2:00 p.m.**      **Lunch on Own/Free Time**

**2:00 p.m.- 4:00 p.m.**      **Plenary Session 6: Can Imaging Refine the “Omics of Cancer”?**  
Randle Ballroom D/E  
*Session Chairperson: David R. Piwnica-Worms, Washington University School of Medicine, St. Louis, MO*

**Cancer genomic and systems heterogeneity: Characterization and challenges**  
David R. Piwnica-Worms

**Radiomics: Informing cancer heterogeneity**  
Robert J. Gillies, H. Lee Moffitt Cancer Center and Research Institute, Tampa, FL

**Predictive computational models of cancer metabolism at the genome scale**  
Jason Papin, University of Virginia, Charlottesville, VA

**Molecular-genetic imaging of prostate cancer\***  
Akrita Bhatnagar, Johns Hopkins University, Baltimore, MD

\*Short talks from proffered papers

**4:15 p.m.-5:15 p.m. Debate and Panel Discussion**  
Randle Ballroom D/E  
*Session Chairperson: Jason S. Lewis, Memorial Sloan-Kettering Cancer Center, New York, NY*

**Clinical hyperpolarized MR in vivo – Pros and cons, human feasibility and limits**

**Discussants:**

John Kurhanewicz, University of California, San Francisco, CA  
Thomas F. Budinger, Lawrence Berkeley National Laboratory, Berkeley, CA

**5:15 p.m.-7:00 p.m. Poster Session B and Reception**  
Randle Ballroom A/B/C

**7:00 p.m. Evening on Own**

## Saturday, March 2

**7:00 a.m.-8:00 a.m. Continental Breakfast**  
Randle Foyer/Terrace

**8:00 a.m.-10:00 a.m. Plenary Session 7: Imaging Signal Transduction and Developmental Pathways in Cancer**  
Randle Ballroom D/E  
*Session Chairperson: Hisataka Kobayashi, National Cancer Institute, Bethesda, MD*

**Visualizing spatiotemporal dynamics of multicellular cell-cycle progression**  
Atsushi Miyawaki, RIKEN Brain Science Institute, Wako, Saitama, Japan

**Can mouse cancer models improve clinical medicine?**  
David A. Tuveson, Cold Spring Harbor Laboratory, Cold Spring Harbor, NY

**Imaging signaling pathways and tumor-stromal interactions in cancer metastasis**  
Yibin Kang, Princeton University, Princeton, NJ

\*Short talks from proffered papers

## Program

**10:00 a.m.-10:15 a.m.**

**Break**

Randle Ballroom A/B/C

**10:15 a.m.-12:15 p.m.**

**Plenary Session 8: Infectious Agents and Cancer:  
Understanding Cancer Causes and Converting into  
Cancer Cures**

Randle Ballroom D/E

*Session Chairperson: Martin G. Pomper, Johns Hopkins Kimmel  
Comprehensive Cancer Center, Baltimore, MD*

**Location, location, location: Visualizing interactions between *Helicobacter pylori* and the  
epithelium of the gastric glands**

Manuel R. Amieva, Stanford University, Palo Alto, CA

**Tumor-targeted oncolytic adenovirus and monitoring of its replication in vivo**

Masato Yamamoto, University of Minnesota, Minneapolis, MN

**Ligand-directed therapy and molecular imaging based on in vivo phage display  
technology**

Renata Pasqualini, The University of Texas MD Anderson Cancer Center, Houston, TX

**Closing Remarks/Departure**