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

\textit{111In}-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

\textit{Coffee break provided by the generous support of Bristol-Myers Squibb}

*Short talks from proffered papers
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. Bhujwalla, 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 [18F]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 13C 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 \(^{18}\text{F-NFTG} \) positron emission tomography***
Timothy Witney, Imperial College London, London, United Kingdom

*Short talks from proffered papers
Program

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

\(^{99}\text{m} \text{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
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