Conference Program

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

Concurrent Educational Session 1: Imaging Genomics and Big Data
Legends Ballroom 1-2

Imaging genomics, imaging-omics, and big data
Rivka R. Colen, The University of Texas MD Anderson Cancer Center, Houston, TX

Radiomics and radiogenomics
Robert J. Gillies, Moffitt Cancer Center and Research Institute, Tampa, FL

How big data and big analytics will change the clinical practice of radiology and nuclear medicine
Eliot Siegel, University of Maryland, Baltimore, MD

Radiogenomics: Imaging and big data
Michael D. Kuo, University of California, Los Angeles, CA

Concurrent Educational Session 2: Interrogation of Innovative Therapeutic Strategies
Legends Ballroom 3-4

Nanoparticle cancer therapeutics: From concept to clinic
Mark E. Davis, California Institute of Technology, Pasadena, CA

New frontiers: Combining molecular imaging and nanomedicine to light up and selectively destroy cancer
Tayyaba Hasan, Harvard Medical School/Massachusetts General Hospital, Boston, MA

Title to be announced
Naomi Halas, Rice University, Houston, TX

Targeted radiotherapy: Current status and new directions
Carolyn J. Anderson, University of Pittsburgh Medical Center, Pittsburgh, PA

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

Concurrent Educational Session 3: Challenges and Innovations of Mouse Models of Cancer
Legends Ballroom 1-2

Opportunities and needs for molecular imaging in melanoma
Michael A. Davies, The University of Texas MD Anderson Cancer Center, Houston, TX

The development and imaging of advanced cancer models
Scott K. Lyons, Cold Spring Harbor Laboratories, Cold Spring Harbor, NY

Mouse models to study sensitivity and resistance to targeted therapies in lung cancer
Katerina A. Politi, Yale Cancer Center, New Haven, CT

Approaches to study tumor-stroma interactions through imaging in mouse models of cancer
Mikala Egeblad, Cold Spring Harbor Laboratory, Cold Spring Harbor, NY

Concurrent Educational Session 4: Novel Molecular Imaging Ligands
Legends Ballroom 3-4

Title to be announced
Kimberly A. Kelly, University of Virginia, Charlottesville, VA

New ligands for molecular imaging
Kathlynn C. Brown, SRI International, Harrisonburg, VA

Radiotracers for imaging tumor cell proliferation and quiescence with PET
Robert H. Mach, University of Pennsylvania, Philadelphia, PA

Title to be announced
Eric O. Aboagye, Imperial College London, London, United Kingdom

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

7:00 p.m.-8:00 p.m.   **Opening Keynote Session**
                            Legends Ballroom 1-4

Welcome Remarks

Keynote Address:
Targeting PI3K for cancer therapy
Lewis C. Cantley, Sandra and Edward Meyer Cancer Center at Weill Cornell Medical College, New York, NY

8:00 p.m.-9:30 p.m.   **Welcome Reception**
                            Legends Ballroom 5-6

7:00 a.m.-8:00 a.m. **Continental Breakfast**
Abbey Road Foyer

8:00 a.m.-9:30 a.m. **Plenary Session 1: Immunotherapy and Imaging**
Legends Ballroom 1-4

Immune biology of allogeneic transplantation
Robert S. Negrin, Stanford University School of Medicine, Stanford, CA

Imaging immune responses in cancer therapy
Anna M. Wu, David Geffen School of Medicine at UCLA, Los Angeles CA

The synthetic biology of CAR T cells
Michael C. Jensen, Seattle Children's Research Institute, Seattle, WA

9:30 a.m.-10:00 a.m. **Break**
Abbey Road Foyer

10:00 a.m.-10:45 a.m. **Distinguished Lecture**
Legends Ballroom 1-4

Building molecules to image and treat cancer
Roger Y. Tsien, University of California, San Diego, CA

10:45 a.m.-12:30 p.m. **Plenary Session 2: Theranostics and Companion Diagnostics**
Legends Ballroom 1-4

Imaging and theranostics in prostate cancer
Martin G. Pomper, Johns Hopkins Kimmel Comprehensive Cancer Center, Baltimore, MD

Advancing personalized nuclear medicine by THERANOSTICS of prostate cancer using Ga-68 and Lu-177 labeled PSMA small molecules
Richard P. Baum, Zentralklinik, Germany

Molecular imaging for drug development and selection of targeted treatment in advanced disease
E. G. Elisabeth de Vries, University Medical Centre Groningen, Groningen, the Netherlands

Near infrared photoimmunotherapy: Basis, applications, and beyond*
Hisataka Kobayashi, National Cancer Institute Center for Cancer Research, Bethesda, MD

12:30 p.m.-2:30 p.m. **Poster Session A / Lunch**
The Edge

*Short talks from proffered papers.

2:30 p.m.-4:00 p.m.   **Plenary Session 3: Short Talks from Proffered Papers**
Legends Ballroom 1-4

Characterization of magnetotactic bacteria as MRI cell labeling and tracking agents*
Kimberly Brewer, Stanford University, Stanford, CA

[68Ga]MLN6907 first-in-class in vivo imaging of Guanylyl Cyclase C (GCC) in subcutaneous xenografts*
Daniel Bradley, Takeda Pharmaceutical Company Limited, Cambridge, MA (not eligible for CME credit)

[18F]-FDG-PET as an early response predictor in a HER-2 overexpressing, trastuzumab-resistant breast cancer model treated with targeted PI3K/Akt/mTOR drugs*
Yanina Dockx, The Molecular Imaging Center Antwerp, Wilrijk, Belgium

64Cu-, 68Ga-, and 177Lu-LLP2A conjugates for imaging and treatment of very late antigen-4 (VLA-4)*
Jessie Nedrow, University of Pittsburgh, Pittsburgh, PA

Irradiation of normal tissues stimulates tumor cell migration*
Marjan Rafat, Stanford University, Stanford, CA

A clinically translatable wide-field fluorescence fiberscope and dual-axis confocal microscope to visualize dysplastic epithelial surfaces: Use of a cathepsin-specific probe in a model of colon cancer*
Stephan Rogalla, Stanford University, Stanford, CA

4:15 p.m.-6:15 p.m.   **Plenary Session 4: Image-Guided Therapy**
Legends Ballroom 1-4

Tumor Paint molecular imaging agents for intraoperative guidance in solid tumor surgeries
James M. Olson, Fred Hutchinson Cancer Research Center, Seattle, WA

Molecular imaging guided therapy and applications in radiation oncology
Christina Tsien, University of Michigan, Ann Arbor, MI

Title to be announced
Nancy Lee, Memorial Sloan Kettering Cancer Center, New York, NY

Tumor-specificity of Cetuximab-IRDye800 for surgical navigation in squamous cell cancer*
Eben Rosenthal, University of Alabama at Birmingham, Birmingham, AL

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

*Short talks from proffered papers.

7:00 a.m.-8:00 a.m.   **Continental Breakfast**
Abbey Road Foyer

8:00 a.m.-10:00 a.m.   **Plenary Session 5: Cancer Imaging and Early Diagnostics**
Legends Ballroom 1-4

Intravital lineage tracing to study dynamics of tumor growth and metastasis
Anoek Zomer, Hubrecht Institute, Utrecht, The Netherlands

Title to be announced
Christopher H. Contag, Stanford University, Stanford, CA

Molecular imaging targets for epithelial cancer stem cells
Michael F. Clarke, Stanford University, Stanford, CA

Gd-EOB-DTPA-enhanced MRI and AFP predict prognosis of early-stage hepatocellular carcinoma: Molecular features of MRI images and their clinical utilities*
Taro Yamashita, Kanazawa University Hospital, Kanazawa, Japan

10:00 a.m.-10:30 a.m.   **Break**
Abbey Road Foyer

10:30 a.m.-12:30 p.m.   **Plenary Session 6: Imaging Tumor Metabolism and Metabolomics**
Legends Ballroom 1-4

New methods for assessing cellular metabolic heterogeneity
Melissa Skala, Vanderbilt University, Nashville, TN

Utilizing hyperpolarized MR to interrogate real-time tumor metabolism in vivo
Kayvan Keshari, Memorial Sloan Kettering Cancer Center, New York, NY

Metabolic heterogeneity of cancer cells in culture and in vivo
Ralph DeBerardinis, UT Southwestern Medical Center, Dallas, TX

Zaprinast inhibits glutaminase and growth of glutamine-addicted cells*
Yi Rao, The University of Texas MD Anderson Cancer Center, Houston, TX

Effects of lactate dehydrogenase A knockdown and biguanides treatment on the aggressiveness of murine breast tumors in immunocompetent mice*
Inna Serganova, Memorial Sloan Kettering Cancer Center, New York, NY

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

*Short talks from proffered papers.

2:00 p.m.-4:00 p.m.   **Plenary Session 7: Clinical Trials: How Imaging Can Inform Design**
Legends Ballroom 1-4

Molecular imaging as a cancer biomarker in clinical trials
David A. Mankoff, University of Pennsylvania, Philadelphia, PA

Clinical applications of quantitative imaging in planning and assessing cancer therapies
Richard L. Wahl, Johns Hopkins Univ. School of Medicine, Baltimore, MD

Design of clinical trials and approaches to prediction and assessment of response
Anthony F. Shields, Barbara Ann Karmanos Cancer Inst., Wayne State, Detroit, MI

The theranostic somatostatin receptor antagonist pair ^{68}Ga-OPS202/177Lu-OPS201 is superior to the agonist pair ^{68}Ga-DOTA-TATE/177Lu-DOTA-TATE: A preclinical and clinical phase I/II study*
Guillaume Nicolas, University Hospital Basel, Basel, Switzerland

4:15 p.m.-5:15 p.m.   **Panel Discussion: Prostate Cancer Imaging**
Legends Ballroom 1-4

Moderators: Anna M. Wu, David Geffen School of Medicine at UCLA, Los Angeles CA, and Jason S. Lewis, Memorial Sloan Kettering Cancer Center, New York, NY

Panelists:
Hebert Alberto Vargas, Memorial Sloan Kettering Cancer Center, New York, NY
Gabe Canales, Blue Cure Foundation, Houston, TX
Michael J. Morris, Memorial Sloan Kettering Cancer Center, New York, NY
Martin G. Pomper, Johns Hopkins Kimmel Comprehensive Cancer Center, Baltimore, MD

5:15 p.m.-7:00 p.m.   **Poster Session B and Reception**
The Edge

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

*Short talks from proffered papers.

STATE-OF-THE-ART MOLECULAR IMAGING IN CANCER BIOLOGY AND THERAPY

7:00 a.m.-8:00 a.m.   **Continental Breakfast**
Abbey Road Foyer

8:00 a.m.-10:00 a.m.   **Plenary Session 8: Tumor Microenvironment and Inflammation**
Legends Ballroom 1-4

Inflammation and cancer: Immune cells as targets for anti-cancer therapy
Lisa M. Coussens, OHSU Knight Cancer Institute, Portland, OR

Targeting the stroma in pancreas cancer: The unexpected outcome
Valerie LeBleu, The University of Texas MD Anderson Cancer Center, Houston, TX

Intravital imaging reveals how BRaf inhibition generates drug-tolerant microenvironments
Erik Sahai, Cancer Research UK, London, United Kingdom

Intravital imaging of monocyte regulation of tumor metastasis in the lung*
Richard Hanna, La Jolla Institute for Allergy and Immunology, La Jolla, CA

Imaging the tumor microenvironment of metastasis reveals the sites of transient blood vessel permeability and tumor cell intravasation*
Allison Harney, Albert Einstein College of Medicine, Bronx, NY

10:00 a.m.-10:15 a.m.   **Break**
Abbey Road Foyer

10:15 a.m.-12:15 p.m.   **Plenary Session 9: Exosomes and Imaging Opportunities**
Legends Ballroom 1-4

Imaging extracellular vesicles/RNA as tactics in glioblastoma progression
Xandra O. Breakefield, Massachusetts General Hospital, Boston, MA

Metastasis-promoting functions of tumor-derived exosomes
Yibin Kang, Princeton University, Princeton, NJ

Functional contribution of fibroblasts, fibrosis, and exosomes in pancreas cancer
Raghu Kalluri, The University of Texas MD Anderson Cancer Center, Houston, TX

*Short talks from proffered papers.

STATE-OF-THE-ART MOLECULAR IMAGING IN CANCER BIOLOGY AND THERAPY