The recent FDA approvals of Provenge® as the first therapeutic cancer vaccine and Ipilimumab® as the first monoclonal antibody that blocks negative immune regulation are landmark achievements that highlight substantive progress in cancer immunology. These novel treatments derive from the cumulative insights of basic and translational scientists into the mechanisms of protective tumor immunity in cancer patients. Advances in genetic, cellular and biochemical technologies have dramatically increased our understanding of the pathways through which the host responds to cancer. Tumor-host interactions in the microenvironment are increasingly recognized to play a critical role in determining disease inhibition or promotion. This meeting will bring together leading cancer immunologists to discuss:

- Most recent insights into immune recognition, regulation, tumor escape and therapeutic manipulation;
- Emerging areas of cancer metabolism and material science engineering that relate to cancer immunology;
- Integration of basic and clinical aspects of tumor immunity.

The concurrent meeting on Antibodies as Drugs will underscore the increasing connections between these fields, and potentially accelerate the development of new cancer immunotherapies.

**Plenary Session Topics:**

- Tumor Targeting – From Understanding Mechanisms to New Targeting Agents (Joint)
- Tumor Microenvironment
- Engineering and Immunotherapy
- Cancer Vaccines
- Adoptive Cellular Therapy
- Metabolism and Cancer
- Immunomodulatory Antibody Therapies (Joint)
- Anti-Cancer Antibodies

**Abstract & Scholarship Deadline:** September 25, 2012

**Late-Breaking Abstract Deadline:** October 25, 2012

**Early Registration Deadline:** November 27, 2012

**Note:** Scholarships are available to students and postdoctoral fellows and require a brief application and submission of an abstract. Short talk speakers will also be selected from abstracts. Early registration saves US$150 on later fee. Information shown is subject to possible change. Please visit meeting website for the most up-to-date program information.
SUNDAY, JANUARY 27

Welcome and Keynote Address (J4)
* Glenn Dranoff, Novartis Institutes for BioMedical Research, USA

James P. Allison, University of Texas MD Anderson Cancer Center, USA

Checkpoint Blockade

Welcome and Keynote Address (J3)
* Paul Carter, Genentech, Inc., USA

* Andreas G. Plückthun, University of Zürich, Switzerland

Jeffrey V. Ravetch, Rockefeller University, USA

Solving the Antibody Paradox

MONDAY, JANUARY 28

Tumor Targeting - From Understanding Mechanisms to New Targeting Agents (Joint)

* Dario Neri, ETH Zürich, Switzerland

Karl Dane Wittrup, Massachusetts Institute of Technology, USA

Synergistic Antibody and Cytokine Effects in Cancer Immunotherapy

Kerry A. Chester, University College London Cancer Institute, UK

Antibody-Targeted Nanoparticles for Cancer Treatment

Erkki Ruoslahti, Sanford-Burnham Medical Research Institute, USA

Increasing Extravasation with Peptides

Anna M. Wu, University of California, Los Angeles, USA

Engineered Antibodies for Molecular Imaging of Cancer

Henry B. Lowman, CytomX, USA

Short Talk: Probody™ Therapeutics: A New Class of Proteolytically Activated Antibodies

Workshop 1: Emerging Antibody Generation Methods (J3)

* James D. Marks, University of California, San Francisco, USA

Filippa Fleetwood, Royal Institute of Technology, Sweden

Surface Display of a Single-Domain Antibody Library on Gram-Positive Bacteria

Christian Kunz, MorphoSys AG, Germany

The Role of HuCAL in the Discovery of Lead Antibodies with a Unique MoA

Audrey D. McConnel, AnaptysBio, Inc., USA

High Affinity Humanized Antibodies without Making Hybridomas; Immunization Paired with Mammalian Cell Display and in vitro Somatic Hypermutation

Amandeep K. Gakhil, Sutro Biopharma, USA

A New Method for Direct Selection of Synthetic Antibody Fragments on Cell Surface Targets from a Phage-Displayed Library

E-Chiaig Lee, Kymab, UK

Development of a Next-Generation in vivo mAb Discovery Platform

Hiroshi Hamana, University of Toyama, Japan

Rabbit ISSAC (Rabbit Immunospot Array Assay on a Chip) Allows for the Rapid Generation of Rabbit Monoclonal Antibodies with High Affinity

Kai Zhu, Schrodinger Inc., USA

Ab initio Structure Prediction of the Antibody Hypervariable H3 Loop

Tumor Microenvironment (J4)

* James P. Allison, University of Texas MD Anderson Cancer Center, USA

Wolf-Hervé Fridman, Cordeliers Research Centre, France

The Immune Microenvironment of Primary and Metastatic Human Tumors

Robert D. Schreiber, Washington University School of Medicine, USA

Cancer Immunoeediting: Antigens, Mechanisms and Implications for Cancer Immunotherapy

Nikhil S. Joshi, Yale University School of Medicine, USA

Short Talk: Effector Regulatory T Cell Differentiation during Autochthonous Mouse Lung Adenocarcinoma Development

Drew M. Pardoll, Johns Hopkins University School of Medicine, USA

Inflammation and Cancer

Payloaded Antibodies for Cancer Treatment (J3)

* Peter D. Senter, Seattle Genetics Inc., USA

Empowered Antibodies for Cancer Therapy

Dario Neri, ETH Zürich, Switzerland

Armed Antibodies for Vascular Targeting

Paul G. Polakis, Genentech, Inc., USA

Antibody Drug Conjugates for the Treatment of Cancer

Brian J. Agnew, Thermo Fisher Scientific, USA

Short Talk: Site-Selective Antibody Labeling without Engineering: Answering Unmet Needs in Antibody Payload Conjugation

Poster Session 1

TUESDAY, JANUARY 29

Engineering and Immunotherapy (J4)

* Suzanne L. Topalian, Johns Hopkins University School of Medicine, USA

David J. Mooney, Harvard University, USA

Polymer Scaffolds for immunotherapy

Darrell J. Irvine, Massachusetts Institute of Technology, USA

Interfacing Nanoparticle Drug Carriers with Lymphocytes to Enhance Cellular Immunotherapy

Carl H. June, University of Pennsylvania, USA

Engineered T Cells for Adoptive Therapy
KEYSTONE SYMPOSIA
on Molecular and Cellular Biology

Cancer Immunology and Immunotherapy (J4)
Scientific Organizers: Glenn Dranoff, Carl H. June and Suzanne L. Topalian
Sponsored by Bayer USA Foundation and Bristol-Myers Squibb Company. Supported by an educational donation provided by Amgen.

Antibodies as Drugs (J3)
Scientific Organizers: Paul Carter and Andreas G. Plückthun
January 27-February 1, 2013 • Fairmont Hotel Vancouver • Vancouver, British Columbia, Canada
Sponsored by AbbVie Inc., Astellas Pharma Inc. and Genentech, Inc. Supported by an educational donation provided by Amgen.


Hollie J. Jackson, Memorial Sloan Ketter Cancer Center, USA
Short Talk: Expansion and Modification of Umbilical Cord Blood T Cells with a Chimeric Antigen Receptor and IL-12

Sheena N. Smith, University of Zurich, Switzerland
Short Talk: Engineering Designer T Cell Receptors through the Use of Single-Chain T Cell Receptor Scaffolds

Laurence J. N. Cooper, ZIOPHARM Oncology, Inc., USA
Sleeping Beauty Transposition for Engineered T Cells

Antibodies in Infectious Diseases (J3)
Antonio Lanzavecchia, Institute for Research in Biomedicine, Switzerland
Human Antibodies to Infectious Disease Targets

* Dennis R. Burton, The Scripps Research Institute, USA
Broadly Neutralizing Antibodies to Identify Vaccine Targets on HIV

Gary J. Nabel, Sanofi, USA
Broadly Neutralizing Antibodies to HIV: A Model for Prevention and Treatment of an Infectious Disease

Erica Ollmann Saphire, The Scripps Research Institute, USA
Antibodies Against the Filoviruses

George Georgiou, University of Texas at Austin, USA
Proteomic Deconvolution of the Human Serological IgG Repertoire in Vaccine Evaluation and Antibody Discovery

Cancer Vaccines (J4)
* Carl H. June, University of Pennsylvania, USA
Cornelia Liu Trimble, Johns Hopkins University School of Medicine, USA
Tissue T Cells in HPV Disease

Cornelis J. M. Melief, Leiden University Medical Center & ISA Pharmaceuticals BV, Netherlands
Chemo-Immunotherapy of High Risk HPV Infections

Mariëtte Griffioen, Leiden University Medical Center, Netherlands
Short Talk: Intercellular Transfer of Natural HLA Class II Ligands Is Mediated by Full Length Proteins with Abundant Cellular Expression that Are Sequestered and Secreted into Microvesicles

David H. Kirn, Jennerex, USA
Targeted Oncolytic and Immunotherapeutic Viruses: Emerging Multi-Mechanistic Biologies for Cancer

New Technologies for Generating Proteins with Novel Functions (J3)
* Andreas G. Plückthun, University of Zürich, Switzerland
David Baker, University of Washington, USA
Computational Protein Design and Protein Therapeutics
Andrew D. Ellington, University of Texas at Austin, USA
Rational Engineering of Antibodies for Affinity and Stability
Julia Shifman, Hebrew University of Jerusalem, Israel
Computational Design of Protein-Protein Interactions

Romain Rouet, University of California, Berkeley, USA
Short Talk: Stability Engineering of Human Antibody Therapeutics

Poster Session 2

WEDNESDAY, JANUARY 30

Adaptive Cellular Therapy (J4)
* Laurence Zitvogel, Institut Gustave Roussy, France
Stanley R. Riddell, Fred Hutchinson Cancer Research Center, USA
Chimeric Antigen Receptor Design and T Cell Subsets in Adoptive Therapy

Kazuhiro Kakimi, University of Tokyo Hospital, Japan
Short Talk: Autologous gammagamma T Cell Transfer Therapy for the Treatment of Solid Cancer

Nicholas P. Restifo, NCI, National Institutes of Health, USA
Memory T Cells Precede Effector Cells: Why it Matters for ACT

Catherine M. Bollard, Children’s National Health System, USA
T Cell Therapies for EBV+ Lymphomas – Where Have We Come From and Where Are We Going?

Yanxia Guo, Bristol Myers Squibb, USA
Short Talk: Retinoic Acid-Rich Microenvironment Provides Clonal Survival Cues for Tumor and Bacteria-Specific CD8+ T Cells

Robert S. Negrin, Stanford University, USA
Immunobiology of Allogeneic Hematopoietic Cell Transplantation

Modulating the Activity of Growth Factor Receptors (J3)
* Karl Dane Wittrup, Massachusetts Institute of Technology, USA
Ermanno Ghisard, University of Pavia, Italy
Structure/Function and Therapeutic Targeting of HGF/SF and MET

Andreas G. Plückthun, University of Zürich, Switzerland
Engineering Receptor Ligands for Powerful Cellular Responses

Yosef Yarden, Weizmann Institute of Science, Israel
Antibodies to EGFR Family as Drugs

Carlos F. Barbas III, The Scripps Research Institute, USA
Multifunctional and Multi-Specific Antibodies: Single-Protein Combination Therapeutics

Klaus Koefoed, Symphogen A/S, Denmark
Short Talk: In vitro Comparison of EGFR/Her3 Targeting Antibody Mixtures and Bispecific MEHD945A Analogue Shows More Efficacious Inhibition by Mixtures, Even Under Conditions Mimicking Cancer Resistance

Poster Session 3

Workshop: Advances in Cancer Immunology (J4)
* Wolf-Hervé Fridman, Cordeliers Research Centre, France
Sally Amos, BC Cancer Agency, Canada
Human Bilateral Breast Cancer: A Unique Opportunity to Examine Behaviors of Tumor-Infiltrating Lymphocytes

* Session Chair † invited but not yet accepted
Program current as of January 27, 2019. Program subject to change. Meal formats are based on meeting venue. For the most up-to-date details, visit www.keystonesymposia.org/13J4 and www.keystonesymposia.org/13J3.
Workshop 2: Enhancing Effector Functions and Extending Half-Life (J3)

"Henry B. Lowman, CytomX, USA
Improving PK and Cholesterol Lowering by a pH-Sensitive Anti-PCS9-Antibody

Javier Chaparro-Riggers, Rina-Pfizer Inc., USA
Improving PK and Cholesterol Lowering by a pH-Sensitive Anti-PCS9-Antibody

Metabolism and Cancer (J4)

"Stanley R. Riddell, Fred Hutchinson Cancer Research Center, University of Washington, USA
Role of Type 1 IFN and dsRNA Sensors in the T Cell-Dependent Efficacy of Chemotherapy

Laurence Zitvogel, Institut Gustave Roussy, France
Role of Type 1 IFN and dsRNA Sensors in the T Cell-Dependent Efficacy of Chemotherapy

Vincenzo Bronte, University of Verona, Italy
Myeloid Derived Suppressor Cells

George C. Prendergast, Lankenau Institute for Medical Research, USA
IDO Pathways and Targeting

Courtney Crane, University of Washington, USA
Short Talk: Tumor Derived Lactate Dehydrogenase Drives Innate Immune Cell Crosstalk in Patients

Bispecific and Multispecific Targeting Agents (J3)

"Paul Carter, Genentech, Inc., USA
Kaspar Binz, Molecular Partners, Switzerland
Exploiting Novel Therapeutic Mechanisms Using Multi-Specific DARPinns

James D. Marks, University of California, San Francisco, USA
Development and Mechanism of Action of mAb Combinations that Potently Neutralize Botulinum Neurotoxin

Lutz Jerumus, MedImmune LLC, UK
A Novel Multi-Mechanistic Monoclonal Antibody Format for Treating Pseudomonas aeruginosa Infections

Immunomodulatory Antibody Therapies (Joint)

"George J. Weiner, University of Iowa, USA
Suzanne L. Topalian, Johns Hopkins University School of Medicine, USA
PD-1 Blockade in Cancer Therapy

Li Wang, Medical College of Wisconsin, USA
Short Talk: Targeting a Novel Immune Checkpoint Protein VISTA Alters Tumor Microenvironment and Synergizes with Cancer Vaccine to Eradicate Established Melanoma

Nils Lonberg, Bristol-Myers Squibb, USA
Development Hurdles for Immuno-Oncology Antibody Drugs

Johannes vom Berg, University of Zürich, Switzerland
Short Talk: Local Interleukin-12 in Combination with Systemic Checkpoint Blockade Leads to T-Cell Dependent Rejection of Advanced Stage Glioma

Patrick A. Baeuerle, Amgen Research (Munich) GmbH, Germany
Immunotherapy with BiTE® Antibodies: Lessons Learned from Blinatumomab

Bent Jakobsen, Immunocore Ltd., UK
IMCgp100: A Bispecific TCR Anti-CD3 Fusion for the Treatment of Malignant Melanoma

Anti-Cancer Antibodies (J4)

"Nils Lonberg, Bristol-Myers Squibb, USA
George J. Weiner, University of Iowa, USA
Therapeutic Mechanisms of Monoclonal Antibodies
Timo K. van den Berg, Sanquin Blood Supply, Netherlands
Short Talk: CD47-SIRPalpha Interactions Form a Barrier for Antibody-Mediated Tumor Cell Destruction by Phagocytes

Ronald P. DeMatteo, Memorial Sloan-Kettering Cancer Center, USA
Combined Immunologic and Molecular Therapy for Cancer

Glenn Dranoff, Novartis Institutes for BioMedical Research, USA
Therapy-Induced Antibody Responses

Challenges and New Opportunities with Antibody Drugs (J3)
*Kerry A. Chester, University College London Cancer Institute, UK
Ryan J. Watts, Denali Therapeutics Inc, USA
Engineering Bispecific Blood-Brain Barrier Crossing Antibodies
Leo James, MRC Laboratory of Molecular Biology, UK
Intracellular Immunity and TRIM21

Sripad Ram, University of Texas Southwestern Medical Center, USA
Short Talk: Multifocal Plane Microscopy Reveals Novel Intracellular Trafficking Pathways at the Blood-Brain Barrier with Implications to Antibody Delivery to the Brain

FRIDAY, FEBRUARY 1
Departure