



Join Keystone Symposia  
for the 2016 conference on:

# Cancer Vaccines: Targeting Cancer Genes for Immunotherapy

March 6–10, 2016

Fairmont Chateau Whistler | Whistler, British Columbia | Canada

Scientific Organizers:

A. Karolina Palucka, Hyam I. Levitsky and Laurence Zitvogel

Joint with the conference on *Antibodies as Drugs*

*The challenge for next-generation vaccines is to resolve the discrepancy between the immune and clinical efficacy measured by the rate of cancer rejection. The future immunotherapy of cancer lies in combination approaches targeting T cells as well as cancer genes to combat underlying inflammation. Spectacular progress has been made in these two parallel fields, i.e., cancer genomics and genetics and tumor immunology. It is time now to link these fields to enable the linking of genetic alterations with the type of immune response. The meeting will therefore host cancer geneticists, cancer biologists, experts in cancer antigen presentation, tumor immunologists and vaccinologists. It will discuss the immunological basis for therapeutic cancer vaccines and how the current understanding of cancer genomics, antigen presentation and T cell biology might enable development of next-generation curative therapies for patients with cancer.*

*Session Topics:*

- Antigens
- Antigen-Presenting Cells
- Priming Effector T Cells
- Reprogramming T Cell Memory
- Cancer Vaccines
- Antibodies for Checkpoint Blockade (Joint)
- Antibodies as Co-Factors (Joint)
- Workshop 1: Different Classes and Formulations of Tumor Antigens
- Workshop 2: Vehicles for Vaccination
- Workshop 3: Peptides as Vaccines



Submitting an abstract is a great way of participating in the conference through poster presentation and possible selection for a short talk.

*Scholarship & Discounted Abstract Deadline: Nov 5, 2015*

*Abstract Deadline: Dec 8, 2015*

*Discounted Registration Deadline: Jan 7, 2016*

For additional details, visit [www.keystonesymposia.org/16X1](http://www.keystonesymposia.org/16X1).

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## Cancer Vaccines: Targeting Cancer Genes for Immunotherapy (X1)

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## Antibodies as Drugs (X2)

Scientific Organizers: Peter D. Senter, Anna M. Wu, Alan J. Korman and Karl Dane Wittrup

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### SUNDAY, MARCH 6

#### Arrival and Registration

### MONDAY, MARCH 7

#### Welcome and Keynote Session (X1)

\***A. Karolina Palucka**, The Jackson Laboratory for Genomic Medicine, USA

**Ronald N. Germain**, NIAID, National Institutes of Health, USA  
*Visualizing and Deconstructing Immune Responses in situ*

**Sebastian Amigorena**, Institut Curie, France  
*Regulation of Antigen Cross Presentation and Anti Tumor Immune Responses*

#### Welcome and Keynote Session (X2)

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

**Rakesh K. Jain**, Massachusetts General Hospital and Harvard Medical School, USA  
*Reengineering the Tumor Microenvironment to Enhance Cancer Treatment: Bench to Bedside*

**Andreas G. Plückthun**, University of Zürich, Switzerland  
*Protein Engineering Approaches to New Biologicals*

#### Antigens (X1)

\***A. Karolina Palucka**, The Jackson Laboratory for Genomic Medicine, USA

**Cornelis J. M. Melief**, Leiden University Medical Center & ISA Pharmaceuticals BV, Netherlands  
*Synergy of Therapeutic Vaccination against HPV16 Oncogenic Proteins and Standard Chemotherapeutics*

**Victor H. Engelhard**, University of Virginia, USA  
*Phosphopeptides Displayed by MHC Molecules as New-Generation Cancer Vaccine Targets*

#### Getting Antibodies to Where They Need to Go (X2)

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

**James M. Olson**, Fred Hutchinson Cancer Research Center, USA  
*Micro Needle Technologies for Intratumoral Drug Delivery and Combination Screening*

**Alison M. Betts**, Pfizer, Inc., USA  
*PK/PD Modeling for Macromolecular Drug Delivery*

**Richard Tavaré**, University of California, Los Angeles, USA  
*Short Talk: Noninvasive Detection of Tumor-Infiltrating Lymphocytes using Anti-CD8 Immuno-PET: Impact of Protein Dose*

#### Poster Session 1

##### Workshop 1: Molecular Vaccines (X1)

\***Darrell J. Irvine**, Massachusetts Institute of Technology, USA

\***Yvette van Kooyk**, Vrije University Medical Center, Netherlands

**Tomasz Ahrends**, Netherlands Cancer Institute, Netherlands  
*Combined CD27-Costimulation and PD-1-Inhibition Recapitulates CD4+ T-cell Help in Therapeutic Vaccination Against Cancer*

**Suresh de Silva**, Heat Biologics Inc., USA  
*Combination Immunotherapy: T-cell Costimulation (OX40L, TL1A, 4-1BBL and ICOSL) Secreted Locally by Gp96-Ig Vaccines, Elicits Robust Antigen-Specific, Memory T Cell Responses and Tumor Elimination*

**Christa I. DeVette**, University of Oklahoma Health Sciences Center, USA  
*Development of Tools to Evaluate Anti-tumor Immunity*

**James Moon**, University of Michigan, USA  
*Nanodisc-Based Peptide Vaccines for Personalized Cancer Immunotherapy*

**Geoffrey Lynn**, National Institutes of Health, USA  
*Self-Assembling Nanoparticles Codelivering Peptide Neoantigens and TLR-7/8 Agonists Enhance the Breadth and Potency of Anti-Tumor Immunity*

**Naveen Mehta**, Massachusetts Institute of Technology, USA  
*Utilizing Protein Carriers to Engineer Cancer Vaccines with Improved Potency*

**Kristen Radford**, University of Queensland, Australia  
*Targeting Antigen to Human CD141+ Dendritic Cells via CLEC9A in vitro and in vivo Confers Effective Cross-Presentation to CD8+ T Cells*

##### Workshop 1: Novel Constructs (X2)

\***Dennis R. Benjamin**, Seattle Genetics Inc., USA

**Jonathan H. Davis**, Bristol-Myers Squibb, USA  
*Synergy Generates Picomolar Potency and a High Resistance Barrier in Combnectin, a Novel Trispecific HIV-1 Entry Inhibitor with Clinical Promise*

**Eric Hatterer**, NovImmune.SA, Switzerland  
*Characterizing the Preclinical Candidate, NI-1701, a CD47 Targeting Bispecific Antibody in Development for the Treatment of B Cell Lymphomas and Leukemias*

**Paul A. Moore**, MacroGenics, USA  
*MGD009, a B7-H3 x CD3 Bispecific Dual-Affinity Re-Targeting (DART®) Molecule Directing T Cells to Solid Tumors*

**Marijn A. Gillissen**, Aimm Therapeutics / AMC, Netherlands  
*Donor-Derived B Cells Produce Potent AML-Specific Antibodies that Recognize a Novel Tumor-Specific Antigen and Mediate Graft-Versus-Leukemia Immunity*

**Yu-Sang Sabrina Yang**, Massachusetts Institute of Technology, USA  
*Targeting Immunomodulators to Lymphocytes Via Amphiphilic Gold Nanocarriers*

**Travis Young**, California Institute for Biomedical Research, USA  
*Antibody-based Control of CAR-T Cell Therapy*

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### Antigen-Presenting Cells (X1)

\***Jacques F. Banchereau**, The Jackson Laboratory for Genomic Medicine, USA

**Julie Magarian Blander**, Weill Cornell Medicine, Cornell University, USA

*Regulation of Antigen Cross-presentation in Dendritic Cells*

**A. Karolina Palucka**, The Jackson Laboratory for Genomic Medicine, USA

*Dendritic Cells as Cancer Vaccines*

**Matthew F. Krummel**, University of California, San Francisco, USA

*T Cell-Antigen Presenting Dynamics in the Tumor Microenvironment*

**Brian J. Francica**, Aduro Biotech, USA

*Short Talk: Radio-resistant Stromal Cells Initiate the Innate Response to Cyclic Dinucleotides*

### Engineering Antibody Function (X2)

\***Alison M. Betts**, Pfizer, Inc., USA

**Margaret Ellen Ackerman**, Dartmouth College, USA

*Evolution of Antibodies for Optimized Effector Function Activities*

**Jeanette H.W. Leusen**, University Medical Center Utrecht, Netherlands

*IgA as Alternative Therapeutic Antibody: Combination with IgG, Half-Life Extension and More*

**Sarel J. Fleishman**, Weizmann Institute of Science, Israel

*De novo Design of Novel Protein Functions*

**Paul W. H. I. Parren**, Leiden University Medical Center, Netherlands

*Functional Aspects of Antigen- and Fc-Dependent IgG Hexamer Formation*

## TUESDAY, MARCH 8

### Priming Effector T Cells (X1)

\***Sebastian Amigorena**, Institut Curie, France

**Victor Appay**, INSERM U1135 - CIMI, France

*Impaired Induction of High-Quality Effector CD8+ T-Cells in Old Humans*

**Luca Gattinoni**, NCI, National Institutes of Health, USA

*Generation of Long-Lived Cancer Antigen-Specific CD8+ T Cell Memory*

**Pamela S. Ohashi**, Princess Margaret Cancer Centre, Canada

*Novel Subsets Involved in T Cell Anti-Tumor Immunity*

**Ugur Sahin**, BioNTech AG, Germany

*Exploiting Antiviral Immune Mechanisms for Cancer Immunotherapy*

**Dixon Dorand**, Case Western Reserve University, USA

*Short Talk: Cyclin Dependent Kinase 5 (CDK5) Controls PD-L1*

*Expression via Phosphorylation of IRF2BP2 in Murine Medulloblastoma and CDK5 Deficiency Results in CD4+ Dependent T-Cell Rejection*

**Alison Taylor**, University of Cambridge, UK

*Short Talk: Glycogen Synthase Kinase 3 Inhibition Blocks PD-1 Expression via Increased Tbet Expression for Enhanced CD8+ Cytolytic T-Cell Responses*

### B Cell Biology and Antibody Repertoires (X2)

\***David A. Scheinberg**, Memorial Sloan Kettering Cancer Center, USA

**George Georgiou**, University of Texas at Austin, USA

*Systematic Characterization and Comparative Analysis of Antibody Repertoires*

**Pavel Tolar**, Francis Crick Institute, UK

*EMBO Young Investigator Lecture: Regulation of Antibody Responses by B Cell Mechanical Activity*

**Laura M. Walker**, Adimab LLC, USA

*Rapid and Large-Scale Isolation of Potent Neutralizing Antibodies from a Survivor of the 2014 Ebola Virus Outbreak*

**Paul A. Ramsland**, RMIT University, Australia

*Short Talk: Unanticipated Global Changes in IgG1 from Mutation of FcRn Binding Site Residues*

**Sai T. Reddy**, ETH Zurich, Switzerland

*Short Talk: Correlations of Antibody Response Phenotype to Genotype Revealed by Molecular Amplification Fingerprinting*

### Workshop 2: Cell-Based Vaccines (X1)

\***Robert A. Seder**, NIAID, National Institutes of Health, USA

\***Masaki Terabe**, NCI, National Institutes of Health, USA

**Andres Alloatti**, Institut Curie, France

*Dissecting Cross-Presentation in Dendritic Cells: Who, How and Why?*

**Anja C. Bloom**, NCI, National Institutes of Health, USA

*INT230-6 Administered Intratumorally Converts Tumor to an Endogenous Vaccine in Mouse Colon Cancer*

**Agamemnon Antoniou Epenetos**, Imperial College London, UK

*Creation of Biological Microparticles from Mesenchymal Stem Cell (MSC) to Deliver Vaccines and other Therapeutics such as Proteins or Nucleic Acids*

**Simon Heidegger**, Klinikum Rechts der Isar, Technical University Munich, Germany

*Activation of the Cytosolic RNA Receptor RIG-I in Tumor and Immune Cells Triggers Efficient Anti-Tumor Immunity and Synergizes with Checkpoint Blockade*

**Kavya Rakhra**, Massachusetts Institute of Technology, USA

*Combination Immunotherapy of an Autochthonous Murine Lung Cancer Model Expressing Human CEA as a Tumor-Associated Self-Antigen*

**Yvette van Kooyk**, Vrije University Medical Center, Netherlands

*Vaccines Facilitating Cross-Presentation for the Induction of Tumor-Immunity Overcoming Tumor Induced Suppression*

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**Megan C. Wise**, Inovio Pharmaceuticals, USA  
*Various forms of CD40L Encoded as an Immune Plasmid Adjuvant Generate Unique Anti-HPV DNA Vaccine Induced Responses*

### Reprogramming T Cell Memory (X1)

\***Victor Appay**, INSERM U1135 - CIMI, France

**Rafi Ahmed**, Emory University School of Medicine, USA  
*Features of Memory CD8+ T Cells in Chronic Infection*

**Nicholas P. Restifo**, NCI, National Institutes of Health, USA  
*Lineage Relationship of Effector and Memory T Cells*

**Jonathan D. Powell**, Johns Hopkins University School of Medicine, USA  
*Targeting Immunometabolism as a Means of Enhancing Immunotherapy*

**Madhusudhanan Sukumar**, NCI, National Institutes of Health, USA  
*Short Talk: Mitochondrial Membrane Potential Identifies Cells with Enhanced Stemness for TCR and CAR based Adoptive Immunotherapy of Cancer*

### Novel Antibody Constructs (X2)

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

**David A. Scheinberg**, Memorial Sloan Kettering Cancer Center, USA  
*Drugging Intracellular Targets with Vaccines and Human Therapeutic TCR Mimic Antibodies*

**Dennis R. Benjamin**, Seattle Genetics Inc., USA  
*Antibody Drug Conjugates for Cancer Therapy*

**Birgit Schoeberl**, Novartis Institutes for BioMedical Research, USA  
*Multispecific Antibody Therapeutics Derived from Systems Biology and Computational Modeling*

**John C. Williams**, Beckman Research Institute at City of Hope, USA  
*Functionalization of MAbs Using Mechanical Bonds*

### Poster Session 2

#### WEDNESDAY, MARCH 9

##### Cancer Vaccines (X1)

\***Cornelis J. M. Melief**, Leiden University Medical Center & ISA Pharmaceuticals BV, Netherlands

**Laurence Zitvogel**, Institut Gustave Roussy, France  
*Molecular Mechanisms of Cancer Antigen Presentation at the Tumor Site*

**Thomas W. Dubensky, Jr.**, Tempest Therapeutics, USA  
*Insights from *Listeria monocytogenes* for the Development of Vector- and Small Molecule-Based Cancer Immunotherapy Strategies*

**Howard L. Kaufman**, Replimune Group Inc, USA  
*Advances in Oncolytic Virus Immunotherapy*

**Sandra Demaria**, Weill Cornell Medical College, USA  
*In situ Vaccination by Radiation Therapy*

**Rupert Kenefeck**, Immunocore Ltd., UK  
*Short Talk: Overcoming Immune Regulation to Kill Cancers: ImmTAC Targeting and Checkpoint Inhibition*

##### Targeted Delivery for Imaging and Therapy (X2)

\***Alan J. Korman**, Bristol-Myers Squibb, USA

**Anna M. Wu**, University of California, Los Angeles, USA  
*Detecting Tumor and Immune Cell Responses to Therapy Using ImmunoPET*

**Katherine A. Vallis**, University of Oxford, UK  
*Antibody-Based Radiotherapy and Radiodetection of Cancer*

**Colin E. Correnti**, Fred Hutchinson Cancer Research Center, USA  
*Tumor Paint and Penetrating Peptide Drug Conjugates*

**Jacob Petersburg**, University of Minnesota, USA  
*Short Talk: Utilizing Prosthetic Antigen Receptors (PARs) for Anti-EpCAM Cell-directed Immunotherapy*

**David T. Rodgers**, Calibr, USA  
*Short Talk: Antibody Based Switches Control the Activation and Targeting of CAR T Cells for B Cell Malignancies*

##### Workshop 2: Novel Designs and Therapeutics (X2)

\***Margaret Ellen Ackerman**, Dartmouth College, USA

**Hamid Bassiri**, Children's Hospital of Philadelphia, USA  
*Novel Invariant Natural Killer T Cell-Based Immunotherapies for Cancer*

**Hanke Matlung**, Sanquin Research and Landsteiner Laboratory, Netherlands  
*Neutrophils Kill Antibody-Opsonized Cancer Cells by Trogoptosis*

**Sheena N. Smith**, University of Zurich, Switzerland  
*Targeted Adenoviral Delivery of Protein-Based Therapeutics to the Tumor Microenvironment*

**Michael W. Munks**, Oregon Health & Science University, USA  
*Major Histocompatibility Class I - Antibody Fusion Proteins (pMHC-IgGs) that Link B16 Melanoma Cells to Cytomegalovirus-Specific CD8 T Cells Control B16 Melanoma in vivo*

**Huafeng Xu**, D.E. Shaw Research LLC, USA  
*Divergent Sequences Stabilize Similar Antigen-Binding Conformations in the Affinity Maturation of a Broadly Neutralizing Influenza Antibody Lineage*

**David P. Humphreys**, UCB Pharma, UK, UK  
*Statistical Design for Effector Function Engineering of Hexameric Fc Domains*

**Andre BH Choo**, Bioprocessing Technology Institute, Singapore  
*Glycan: A Sweet Opportunity for Antibody Discovery*

##### Antibodies for Checkpoint Blockade (Joint)

\***Madhav V. Dhodapkar**, Yale School of Medicine, USA

**Alan J. Korman**, Bristol-Myers Squibb, USA  
*Antitumor Activity of Immunomodulatory Antibodies*

**Suzanne L. Topalian**, Johns Hopkins University School of Medicine, USA  
*PD-1 Blockade in Cancer Therapy: Mechanism-Based Biomarkers and New Frontiers*

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**John J. Miles**, QIMR Berghofer Medical Research Institute, Australia  
*CD96/TIGIT/DNAM Pathway and Tumor Rejection*

### Poster Session 3

#### THURSDAY, MARCH 10

##### Antibodies as Co-Factors (Joint)

- \***Laurence Zitvogel**, Institut Gustave Roussy, France  
**Madhav V. Dhodapkar**, Yale School of Medicine, USA  
*Harnessing Host Response to Premalignancy in Prevention of Cancer*  
**Carl G. Figdor**, Radboud University Medical Center, Netherlands  
*Dendritic Cell Based Cancer Immunotherapy*  
**Ira Mellman**, Genentech, Inc., USA  
*The Mechanistic Basis of Cancer Immunotherapy*  
**Nina Bhardwaj**, Icahn School of Medicine at Mount Sinai, USA  
*Modulation of Innate Immunity in Cancer*  
**Kelly D. Moynihan**, Third Rock Ventures, USA  
*Short Talk: Eradication of Large Established Tumors by Combination Immunotherapy Engaging Innate and Adaptive Immunity*  
**Rony Dahan**, Rockefeller University, USA  
*Short Talk: Improved Therapeutic Activity of Agonistic, Human Anti-CD40 Monoclonal Abs by Selective FcγR-Engagement*

##### Workshop 3: Peptides as Vaccines (X1)

- \***Robert D. Schreiber**, Washington University School of Medicine, USA  
**Anne-Mette Bjerregaard**, Technical University of Denmark, Denmark  
*MuPeXI: A Tool for Prediction of Neo-Epitopes from Tumor Sequencing Data*  
**Gustav Gaudernack**, Ultimovacs AS/Norwegian Radium Hospital, Norway  
*UV1 – A Second-Generation, Peptide-Based, Therapeutic Cancer Vaccine (TCV) Targeting the Reverse Transcriptase Subunit of Human Telomerase (hTERT)*  
**Matthew M. Gubin**, Washington University in St. Louis, USA  
*Tumor-Specific Mutant Antigens in Cancer Immunotherapy*  
**Bruno Laugel**, Institut De Recherche Servier, France  
*Safety Assessment of DNA Methyl Transferase Inhibitors in Combination with NY-ESO T-cell Therapy.*  
**Aizea Morales Kastresana**, NCI, National Institutes of Health, USA  
*Optimization of Extracellular Vesicle Labels for NanoFACS*  
**Hideho Okada**, University of California, San Francisco, USA  
*Novel and Shared Neoantigen for Glioma T Cell Therapy Derived from Histone 3 Variant H3.3 K27M Mutation*  
**Jeffrey Ward**, Washington University School of Medicine, USA  
*Tumor Mutant Antigen-Specific CD8+ T-cells Require CD4+ T-cell Help to Induce Tumor Regression*  
**Klaus Früh**, Oregon Health & Science University, USA  
*CMV-induced MHC-II and MHC-E-Restricted CD8+ T Cells: A Role in Cancer Immunotherapy*

\***Hyam I. Levitsky**, , USA

**Jacques F. Banchereau**, The Jackson Laboratory for Genomic Medicine, USA  
*Genomics of Human Immune Response*

**Robert D. Schreiber**, Washington University School of Medicine, USA  
*Cancer-Specific Mutations as Tumor Rejection Antigens*

**Catherine Ju-Ying Wu**, Dana-Farber Cancer Institute, USA  
*Targeting Tumor Neoantigens: Developing Personalized Cancer Vaccines*

##### Antibodies for the Treatment of Infectious Diseases (X2)

- Leo James**, MRC Laboratory of Molecular Biology, UK  
*Intracellular Antibody Immunity and the Cytosolic Fc Receptor TRIM21*  
**Carole A. Bewley**, National Institutes of Health, USA  
*Antibody-like Properties and Functions of Antiviral Carbohydrate Binding Proteins*

##### The Human Vaccines Project: A Roadmap to Effective Cancer Vaccine and Immunotherapeutic Development (X1)

\***A. Karolina Palucka**, The Jackson Laboratory for Genomic Medicine, USA

**Theodore Schenkelberg**, Human Vaccines Project, USA

##### Meeting Wrap-Up: Outcomes and Future Directions (Organizers) (X2)

#### FRIDAY, MARCH 11

##### Departure

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### Linking Cancer Genetics and Genomics with Immunity (X1)