

**AACR Virtual Special Conference: The Evolving Tumor Microenvironment in Cancer
Progression; Mechanisms and Emerging Therapeutic Opportunities
In Association with the Tumor Microenvironment (TME) Working Group**

Conference Cochairs

Yibin Kang, Princeton University, Princeton, New Jersey

Sheila A. Stewart, Washington University in St. Louis, St. Louis, Missouri

Valerie M. Weaver, University of California, San Francisco, San Francisco, California

Five-minute (5 slide max) audio poster short talks in a single poster session will be released at the start of the conference and available on-demand throughout

****Presentations will be prerecorded. Presentation times are as follows: Keynote (20 minutes and 10 minutes for live Q&A); other invited presentations (15 minutes and 10 minutes for live Q&A), short talks selected from proffered abstracts (5 minutes and 5 minutes for live Q&A), and 2 minute lightning poster highlight talks (2 minutes, no Q&A)****

Monday, January 11, 2021

9:30 AM-10:00 AM

Opening Keynote Address

Welcome and Introduction by Conference Cochairs Yibin Kang, Princeton University, Princeton, NJ, Sheila A. Stewart, Washington University in St. Louis, St. Louis, MO, and Valerie M. Weaver, University of California, San Francisco, San Francisco, CA

Deconvoluting the tumor microenvironment to enhance immunotherapy

Jeffrey W. Pollard, University of Edinburgh, Edinburgh, Scotland

10:00 AM-10:15 AM

Break

10:15 AM-12:00 PM

Plenary Session 1: The Therapy-Treated Tumor Microenvironment: Impact on the Preneoplastic versus Premetastatic Niche

Session Chair: Carmen Bergom, Washington University School of Medicine, St. Louis, MO

10:15 AM-10:40 AM

Targeting senescence heterogeneity against therapy-resistant cancer

Peter L.J. De Keizer, University Medical Center Utrecht, Utrecht, The Netherlands

10:40 AM-11:05 AM

Radiotherapy effects on tumor microenvironment

Silvia C. Formenti, Weill Cornell Medicine, New York, NY

11:05 AM-11:30 AM

Genetic variants in the tumor microenvironment alter radiation responses in breast cancer

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Carmen Bergom

- 11:30 AM-11:55 AM **Immune escape during breast tumor progression**
Kornelia Polyak, Dana-Farber Cancer Institute, Boston, MA
- 11:55 AM-11:57 AM **Paclitaxel-induced collagen IV drives local invasion in the post-chemotherapy tumor microenvironment in triple-negative breast cancer†**
Jackson Fatherree, Tufts University, Medford, MA
- 11:57 AM-12:00 PM **The therapeutically inflamed tumor microenvironment drives melanoma progression†**
Andrew Bradshaw, University of Pittsburgh, Pittsburgh, PA
- 12:00 PM-12:15 PM Break**
- 12:15 PM-2:10 PM Plenary Session 2: The Organ-Specific Metastatic Niches: They Are Not All Created Equal**
Session Chair: Rosandra N. Kaplan, National Cancer Institute Center for Cancer Research, Bethesda, MD
- 12:15 PM-12:40 PM **Metastasis initiating cells and ecosystems**
Joan Massagué, Memorial Sloan Kettering Cancer Center, New York, NY
- 12:40 PM-1:05 PM **TBD**
Rosandra N. Kaplan
- 1:05 PM-1:30 PM **Age-related stromal changes drive tumorigenesis**
Sheila A. Stewart, Washington University in St. Louis, St. Louis, MO
- 1:30 PM-1:55 PM **Dact1 biomolecular condensates regulate TGF β and Wnt signaling dynamics in bone metastasis**
Yibin Kang, Princeton University, Princeton, NJ
- 1:55 PM-2:05 PM **The splanchnic mesenchyme during fetal development is the major source of pancreatic cancer associated fibroblasts***
Lu Han, Medical University of South Carolina, Charleston, SC
- 2:05 PM-2:07 PM **Endothelin-1 drives invadopodia and cross-talk with submesothelial matrix invasion cell through ILK†**
Ilenia Masi, IBPM Institute of Molecular Biology and Pathology, CNR National Research Council of Italy, Rome, Italy

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- 2:07 PM-2:10 PM **Immune suppression established by postpartum liver involution promotes liver metastasis**
Alexandra Quackenbush, Oregon Health and Science University, Portland, OR
- 2:10 PM-2:25 PM Break**
- 2:25 PM-4:00 PM Plenary Session 3: The Immune Tumor Microenvironment: Blood-Derived versus Tissue-Resident**
Session Chair: Michel DuPage, University of California at Berkeley, Berkeley, CA
- 2:25 PM-2:50 PM **How opposing roles of interferon and pattern recognition receptor signaling in the TME influence immunotherapy**
Andy J. Minn, Abramson Family Cancer Research Institute, University of Pennsylvania, Philadelphia, PA
- 2:50 PM-3:15 PM **Targeting the tumor microenvironment to improve response to immunotherapy**
David G. DeNardo, Washington University School of Medicine, St. Louis, MO
- 3:15 PM-3:40 PM **Engineering precision cancer immunotherapy**
Michel DuPage
- 3:40 PM-3:50 PM **STAT3 in cancer-associated fibroblasts promotes an immunosuppressive tumor microenvironment in PDAC***
Julia Lefler, Medical University of South Carolina, Charleston, SC
- 3:50 PM-3:53 PM **Tumor-intrinsic gain of function p53 R172H mutation drives accumulation of neutrophils in the pancreatic tumor microenvironment that promotes resistance to immunotherapy†**
Despina Siolas, NYU Langone Medical Center, New York, NY
- 3:53 PM-3:56 PM **NK cells from prostate cancer patients acquire a pro-angiogenic phenotype and polarize macrophages towards a M2-like/TAM subset†**
Adriana Albini, IRCCS MultiMedica, Milan, Italy
- 3:56 PM-4:00 PM **Mapping the evolution of T cell states during response and resistance to adoptive cellular therapy†**
Pavan Bachireddy, Dana-Farber Cancer Institute, Boston, MA
- 4:00 PM-4:15 PM Break**

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- 4:15 PM-5:50 PM** **Plenary Session 4: The Tumor Microenvironment Drives Tumor Cell Fate**
Session Chair: Cyrus M. Ghajar, Fred Hutchinson Cancer Research Center, Seattle, WA
- 4:15 PM-4:40 PM** **Homeostatic hematopoietic stem cell niches control the dormancy of breast cancer DCCs in the bone marrow**
Julio A. Aguirre-Ghiso, Icahn School of Medicine at Mount Sinai, New York, NY
- 4:40 PM-5:05 PM** **Overcoming immune evasion of dormant, disseminated tumor cells**
Cyrus M. Ghajar
- 5:05 PM-5:30 PM** **Niche-dependent control of tumor cell dormancy**
Peter Croucher, Garvin Institute of Medical Research, Darlinghurst, NSW, Australia
- 5:30 PM-5:40 PM** **Fibroblast plasticity driven by Prrx1 interferes the tumor cells - tumor microenvironment crosstalk towards a more aggressive pancreatic ductal adenocarcinoma***
Karin Feldmann, Technical University of Munich, Munich, Germany
- 5:40 PM-5:42 PM** **Stromal BCAT1 drives branched-chain ketoacid dependency in stromal-rich PDAC tumours†**
Deepak Nagrath, University of Michigan, Ann Arbor, MI
- 5:42 PM-5:45 PM** **Pleiotrophin drives pro-metastatic immune niche within breast tumor microenvironment†**
Debolina Ganguly, UT Southwestern Medical Center, Dallas, TX
- 5:45 PM-5:47 PM** **Pharmacological blockade of platelet-CysLT1 receptor counteracts platelet protumoral action and prevents breast cancer cell metastasis to bone and lungs†**
Lou Saier, INSERM, Lyon, France
- 5:47 PM-5:50 PM** **The prolyl isomerase PIN1 plays a critical role in fibroblast plasticity to impact pancreatic cancer†**
Ellen Langer, Oregon Health and Science University, Portland, OR

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Tuesday, January 12, 2021

9:30 AM-10:50 AM	Plenary Session 5: Systemic Drivers of Progression: Aging to Obesity <i>Session Chair: Marco Demaria, ERIBA, University Medical Center Groningen, Groningen, The Netherlands</i>
9:30 AM-9:55 AM	Cellular senescence in cancer therapy: Friend or foe? Marco Demaria
9:55 AM-10:20 AM	Age against the machine: How the aging microenvironment governs tumor progression Ashani Weeraratna , Johns Hopkins Bloomberg School of Public Health, Baltimore, MD
10:20 AM-10:45 AM	Linking obesity-associated inflammation with cancer metastasis Daniela Quail , McGill University, Montreal, QC, Canada
10:45 AM-10:50 AM	Endocrine-exocrine signaling is a driver of obesity-associated pancreatic ductal adenocarcinoma Mandar Muzumdar , Yale University, New Haven, CT
10:50 AM-11:05 AM	Break
11:05 AM-1:15 PM	Plenary Session 6: Tumor Progression: Mechano-Signaling and Control <i>Session Chair: Claudia Fischbach-Teschl, Cornell University, Ithaca, NY</i>
11:05 AM-11:30 AM	Collagen mineralization and its role in breast cancer bone metastasis Claudia Fischbach-Teschl
11:30 AM-11:55 AM	Mechanics, multinucleation, and metastasis Celeste M. Nelson , Princeton University, Princeton, NJ
11:55 AM-12:20 PM	Leader cell function in tumor collective invasion Greg D. Longmore , Washington University School of Medicine, St. Louis, MO
12:20 PM-12:45 PM	TBD Valerie M. Weaver , University of California, San Francisco, San Francisco, CA
12:45 PM-12:55 PM	NetrinG1's pro-tumor role on stroma-derived extracellular vesicles in pancreatic cancer*

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Kristopher Raghavan, Fox Chase Cancer Center, Philadelphia, PA

12:55 PM-1:05 PM

The dynamic tumor microenvironment: Oncostreams are self-organizing structures that modulate glioma progression and treatment*

Andrea Comba, University of Michigan Medical School, Ann Arbor, MI

1:05 PM-1:07 PM

Extracellular matrix stiffness regulates cellular response to anticancer drugs in breast and lung cancer cells†

Atul Bharde, Savitribai Phule Pune University, Pune, India

1:07 PM-1:10 PM

Overcoming chemotherapy resistance in triple negative breast cancer via targeting lysyl oxidase (LOX)†

Ozgur Sahin, University of South Carolina, College of Pharmacy, Columbia, SC

1:10 PM-1:12 PM

Mechanosurveillance eliminates disseminated cancer cells by sensing their mechanical compliance†

Ekrem Emrah Er, University of Illinois at Chicago, Chicago, IL

1:12 PM-1:15 PM

ECM mechanical and metabolic architecture during early ductal invasions: Integrating in silico modeling, histology-based machine learning and mechanobiology†

Katarzyna Rejniak, Moffitt Cancer Center, Tampa, FL

1:15 PM-1:30 PM

Break

1:30 PM-3:15 PM

Plenary Session 7: The Systemic Tumor Microenvironment

Session Chair: Shizhen Emily Wang, University of California, San Diego, San Diego, CA

1:30 PM-1:55 PM

TIME and Age: Impact of age on the tumor immune microenvironment and response to therapy

Sandra S. McAllister, Brigham and Woman's Hospital, Boston, MA

1:55 PM-2:20 PM

Tumor exosome and exomere biomarkers for early cancer detection

David C. Lyden, Weill Cornell Medicine, New York, NY

2:20 PM-2:45 PM

Local and systemic effects of cancer-secreted extracellular miRNA

Shizhen Emily Wang

2:45 PM-2:55 PM

Infiltration of TRPV1+ nerves influences the ovarian cancer immune landscape*

Hunter Reavis, University of Pennsylvania, Philadelphia, PA

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- 2:55 PM-3:05 PM **Lymph node colonization promotes distant tumor metastasis through the induction of systemic tumor-specific immunosuppression***
Nathan Reticker-Flynn, Stanford University, Palo Alto, CA
- 3:05 PM-3:08 PM **The perivascular niche protects ALK+ lymphoma cells from ALK inhibition through the CCL19/21-CCR7 axis†**
Claudia Voena, University of Turin, Turin, Italy
- 3:08 PM-3:11 PM **The synaptic protein netrin G1 ligand (NGL-1) modulates the immunosuppressive environment in pancreatic cancer†**
Débora Vendramini Costa, Fox Chase Cancer Center, Philadelphia, PA
- 3:11 PM-3:15 PM **Cancer associated fibroblasts in the tumor microenvironment maintain ovarian cancer stem cells through non-canonical Wnt5a signaling†**
Yiming Fang, Indiana University School of Medicine, Bloomington, IN
- 3:15 PM-3:30 PM Break**
- 3:30 PM-4:35 PM Plenary Session 8: Longitudinal Monitoring of the Elusive Tumor Cells**
Session Chair: Matthew F. Krummel, University of California, San Francisco, San Francisco, CA
- 3:30 PM-3:55 PM **Activating a collaborative innate-adaptive immune response to control metastasis**
Mikala Egeblad, Cold Spring Harbor Laboratory, Cold Spring Harbor, NY
- 3:55 PM-4:20 PM **The tumor microenvironment in 5 dimensions**
Matthew F. Krummel
- 4:20 PM-4:30 PM **Tumor-cell-intrinsic transcriptional and epigenetic regulation of EGFR underlies the heterogeneity of immune infiltration and response to immunotherapy in pancreatic cancer***
Jinyang Li, University of Pennsylvania, Philadelphia, PA
- 4:30 PM-4:32 PM **Targeting AXL favors an anti-tumorigenic tumor microenvironment that enhances immunotherapy responses by decreasing HIF-1a levels in cancer cells†**
Marie-Anne Goyette, Clinical Research Institute of Montreal, Montreal, QC, Canada
- 4:32 PM-4:35 PM **The AML microenvironment catalyzes a step-wise evolution to gilteritinib resistance†**

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Sunil Joshi, Oregon Health and Sciences University Knight Cancer Institute, Portland, OR

4:35 PM-4:50 PM

Break

4:50 PM-5:20 PM

Closing Keynote Address

Introduction and Closing by Conference Cochairs Yibin Kang, Princeton University, Princeton, NJ, Sheila A. Stewart, Washington University in St. Louis, St. Louis, MO, and Valerie M. Weaver, University of California, San Francisco, San Francisco, CA

Cancer and aging: Rival demons?

Judith Campisi, Buck Institute for Research on Aging, Novato, CA

*Short talk from proffered abstract

†Lightning talk from proffered abstract, not eligible for CME credit