An AACR Special Conference in Cancer Research

Tumor-body Interactions: The Roles of Micro- and Macroenvironment in Cancer

in association with the Tumor Microenvironment (TME) Working Group

November 17-20, 2024 | Westin Copley Place | Boston, MA

CURRENT AS OF 11/19/2024*

Conference Cochairs:

Mikala Egeblad, Johns Hopkins University, Baltimore, MD
Neta Erez, Tel Aviv University, Tel Aviv, Israel
Sergei Grivennikov, Cedars-Sinai Medical Center, Los Angeles, California
Ilaria Malanchi, The Francis Crick Institute, London, England

[R] REMOTE PRESENTATION

*** Short-talk from proffered abstracts**

CONFERENCE PROGRAM

SUNDAY, NOVEMBER 17

Registration

4:00 pm-8:00 pm | Essex Foyer

Welcome and Introduction

6:00 pm-6:15 pm | Essex

Mikala Egeblad, Johns Hopkins University, Baltimore, MD
Neta Erez, Tel Aviv University, Tel Aviv, Israel
Sergei Grivennikov, Cedars-Sinai Medical Center, Los Angeles, CA
Ilaria Malanchi, The Francis Crick Institute, London, England

Opening Keynote Address

6:15 pm- 7:00 pm | Essex

6:15-6:20 p.m.	**Introduction of keynote speaker** Ilaria Malanchi, The Francis Crick Institute, London, England
6:20-7:00 p.m.	**A Complex TiME: how the aging tumor immune microenvironment drives tumor progression** Ashani T. Weeraratna, John Hopkins University, Baltimore, Maryland *CME-eligible*

Lightning Talks
7:00 pm-7:30 pm | Essex
Session Chair: Sergei Grivennikov (Cedars-Sinai)
CME-eligible

- Amelie Daugherty-Lopes, National Cancer Institute, Bethesda, Maryland
- Jin Suk Park, Memorial Sloan Kettering Cancer Center, New York, New York
- Katherine Cummins, University of Pennsylvania, Philadelphia, Pennsylvania
- Stanislav Drapela, H. Lee Moffitt Cancer Center & Research Institute, Tampa, Florida
- Xueqian Zhuang, Memorial Sloan Kettering Cancer Center, New York, New York
- Lucie Malbeteau, Princess Margaret Cancer Center, Toronto, Canada
- Nil Grunberg, Imperial College London, London, United Kingdom
- Maxwell Hamilton, Vanderbilt University, Nashville, Tennessee
- Ryan Roberts, Nationwide Children's Hospital/The Ohio State University, Columbus, Ohio
- Jiayu Ye, Washington University in St. Louis, St. Louis, Missouri

Poster Session A / Reception
7:30 pm-9:00 pm | Staffordshire

MONDAY, NOVEMBER 18

Continental Breakfast
7:00 am-8:00 am | St. George CD

Breakfast Career Development Roundtables
7:00 am-8:00 am | St. George AB

- NCI- opportunities, priorities, challenges
- Navigating your academic career path in basic science
- Science is a team effort: Making collaborative research work for you
- Building effective mentor-mentee relationships
- Meet the AACR editors

Plenary Session 1: Organ-Specific Microenvironments and Metastasis
8:00 am-10:00 am| Essex
Session Chairs: Andrew White (Cornell U.) and Ilaria Malanchi (Francis Crick Institute)
CME-eligible

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8:00-8:30 a.m. **Understanding and overcoming the numbers game that underlies disseminated tumor cell immune evasion**
Cyrus M. Ghajar, Fred Hutch Cancer Center, Seattle, Washington

8:30-8:45 a.m. **An immunomodulatory crosstalk between cancer cells and the hepatic microenvironment underlies mutant estrogen receptor-driven breast cancer-to-liver metastasis***
Sunny Das, Whitehead Institute for Biomedical Research, MIT, Cambridge, MA

8:45-9:15 a.m. **Cancer induced tissue regeneration and metastasis**
Ilaria Malanchi, The Francis Crick Institute, London, United Kingdom

9:15-9:45 a.m. **Dissecting plasticity during colorectal cancer metastasis**
Karuna Ganesh, Memorial Sloan-Kettering Cancer Center, New York, New York

9:45-10:00 a.m. **Lymph node colonization reprograms lymphocyte responses to generate systemic tolerance and promote distant metastasis***
Nathan Reticker-Flynn**,** Stanford University, Stanford, CA

Break
10:00 am-10:30 am | Essex Foyer

Plenary Session 2: Systemic Macroenvironment and Metastasis: Effects of Aging and Stress
10:30 am-12:30 pm| Essex
Session Chairs: Xue-Yan He (Washington U.) and Jan Kitajewski (UIC)
CME-eligible

10:30-11:00 a.m. **Chronic stress causes breast cancer metastasis via neutrophil-mediated changes to the microenvironment**
Mikala Egeblad, Johns Hopkins University, Baltimore, Maryland

11:00-11:30 a.m. **Understanding the immune macroenvironment to improve outcomes for older breast cancer patients**
Sandra S. McAllister, Brigham and Women's Hospital, Boston, MA

11:30-11:45 a.m. **Sex-dependent changes in the aged melanoma tumor microenvironment influence metastasis and therapeutic responses***
Yash Chhabra, Fox Chase Cancer Center, Philadelphia, PA

11:45-12:15 p.m. **Respiratory viral infection promotes the awakening and outgrowth of dormant metastatic breast cancer cells in lungs**
James V. DeGregori, University of Colorado Anschutz Medical Campus, Aurora, CO

12:15-12:30 p.m. **Age-induced chronic accumulation of glucocorticoids drives therapy resistance in lung cancer***
Devesh Raizada, Moffitt Cancer Center, Tampa, FL

Lunch on Own
12:30 pm-2:30 pm

Plenary Session 3: The metabolic microenvironment, including immune metabolism
2:30 pm-4:30 pm | Essex
Session Chairs: Hubert Pakula (Weill Cornell) and Subhamoy Dasgupta (Roswell Park CCC)
CME-eligible

2:30- 3:00 p.m. **Microbes and cytokines regulating tumor microenvironment and metastasis**
Sergei Grivennikov, Cedars-Sinai Medical Center, Los Angeles, California

3:00-3:15 p.m. **Urinary tract infection-induced host response promotes mammary tumorigenesis via TIMP-dependent stromal activation and expansion of tumor initiating basal-luminal cells.***
Camila O. Dos Santos, Cold Spring Harbor Laboratory, Laurel Hollow, NY

3:15-3:45 p.m. **Modulating amino acid cross talk between cancer and the host to improve diagnosis and therapy**
Ayelet Erez, Weizman Institute of Science, Rehovot, Israel

3:45-4:00 p.m. **Arginine dependent immuno-metabolic reprogramming by metabolic enzyme PFKFB4 underpins breast tumor immune tolerance***
Subhamoy Dasgupta, Roswell Park Comprehensive Cancer Center

4:00-4:30 p.m. **Metabolic networks in the tumor microenvironment**
Costas Lyssiotis, University of Michigan, Ann Arbor, MI

Break
4:30 pm-5:00 pm | Essex Foyer

Plenary Session 4: Metabolic Macroenvironment: Obesity and Cancer Cachexia
5:00 pm-7:00 pm | Essex
Session Chairs: Jason Pitarresi (U. Mass) and Sabina Sangaletti (Istituto Nazionale dei Tumori)
CME-eligible

5:00- 5:30 p.m.	**Intratumoral immune cells and their role in cancer cachexia** Marcus DaSilva Gonsalves, New York University, New York, NY
5:30-5:45 p.m.	**Pancreatic cancer cachexia is mediated by tumor-derived PTHrP*** Jason R. Pitarresi, University of Massachusetts Chan Medical School, Holden, MA
5:45-6:15 p.m.	**Understanding how diet changes specific metabolic pathways that impair anti-tumor immunity** Lydia Lynch, Princeton University, Princeton, NJ
6:15-6:30 p.m.	**Cross-talk between metastatic cells and host systems: Neutrophil metabolic adaptation, immune profiling, and systemic metabolic shifts in tumor progression and cachexia*** Blanca Majem, Institute for Research in Biomedicine (IRB Barcelona), Barcelona, Spain
6:30-7:00 p.m.	**Targeting cachexia in metastatic disease** Swarnali Acharya, Columbia University, New York, NY

Lightning Talks
7:00 pm-7:15 pm | Essex
Session Chair: Neta Erez (Tel Aviv U.)
CME-eligible

- Jaye Gardiner, Fox Chase Cancer Center, Philadelphia, Pennsylvania
- Katarzyna Chojnacka, Cedars-Sinai Medical Center, Los Angeles, California
- Ailen Garcia-Santillan, Virginia Commonwealth University, Richmond, Virginia
- Kelly Kersten, Sanford Burnham Prebys Medical Discovery Institute, La Jolla, California
- Jennifer Loza, Yale University, New Haven, Connecticut

Poster Session B / Reception
7:15 pm-8:45 pm | Staffordshire

TUESDAY, NOVEMBER 19

Continental Breakfast
7:00 am-8:00 am | St. George CD

Breakfast Career Development Roundtables
7:00 am-8:00 am | St. George AB

- Coping with rejection and burnout in science
- Lab management: Balancing success and failure while promoting equity and inclusion in your career and teams
- Navigating challenges and opportunities for women in research
- Career transitions in industry
- Meet the AACR editors

Plenary Session 5: Stromal Changes as Tissue Becomes Tumor: The Expanding Functions of TME Components
8:00 am-10:30 am | Essex
Session Chairs: Marcus Ruscetti (U Mass Chan Medical School) and Donna Senger (McGill U.)
CME-eligible

8:00-8:30 a.m.	**Stromal and immune plasticity shape the metastatic microenvironment** Neta Erez, Tel Aviv University, Tel Aviv, Israel
8:30-9:00 a.m.	**Unraveling pancreatic tumor defenses: inside the stromal orchestra with the HOST-Factor** Edna Cukierman, Fox Chase Cancer Center, Philadelphia, Pennsylvania
9:00-9:15 a.m.	**FMRP upregulation in cancer: Implicating FMRP-expressing cancer-associated fibroblasts in immune evasion*** Simge Yucel, Swiss Federal Institute of Technology Lausanne (EPFL), Lausanne, Switzerland
9:15-9:45 a.m.	**Stromal beta3 integrin in cancer progression: Converging stories, and relevance to ethnic diversity** Kairbaan Hodivala-Dilke, Cancer Research UK, London, United Kingdom
9:45-10:00 a.m.	**TRPV1+ sensory innervation as a novel driver of ovarian cancer progression*** Matthew Knarr, University of Pennsylvania, Philadelphia, PA

10:00-10:30 a.m. **Vascular control of metastasis**
Hellmut Augustin, Heidelberg University & German Cancer Research Center (DKFZ) Heidelberg, Germany

Break
10:30 am-11:00 am | Essex Foyer

Plenary Session 6: Multicellular Interactions within Tumor Immune Microenvironments
11:00 pm-1:00 pm | Essex
Session Chairs: Eleonora Dondossola (MD Anderson) and Veronique Giroux (Université de Sherbrooke)
CME-eligible

11:00-11:30 a.m. **Inflammation and cancer: from basic mechanisms to therapeutic targets**
Lisa Coussens, Oregon Health and Science University, Portland, Oregon

11:30-11:45 a.m. **Efferocytic macrophage promotes pancreatic cancer liver metastasis***
Yuliana Astuti, University of Liverpool, Liverpool, England

11:45-12:15 p.m. **Determinants of B cell fate and function in cancer**
Yulia Pylayeva-Gupta, University of North Carolina, Chapel Hill, Chapel Hill, North Carolina

12:15-12:30 p.m. **KRAS mutation-specific effects on the tumor immune microenvironment drive tumor progression in pancreatic cancer***
Despina Siolas, Weill Cornell Medicine, New York, NY

12:30-1:00 p.m. **Regulation of EMT tumor states by stromal cells**
Cedric Blanpain, Free University of Brussels, Brussels, Belgium

Lunch on own
1:00 pm-2:30 pm

Plenary Session 7: Inflammation, The Immune Microenvironment, and the Systemic Interface
2:30 pm-4:30 pm | Essex
Session Chairs: Mikala Egeblad (Johns Hopkins U.) and Kelly Kersten (Sanford Burnham Prebys Medical Discovery Institute)
CME-eligible

2:30-3:00 p.m.	**Deciphering the mechanisms of neutrophil immune response in bone metastatic prostate cancer** Leah M. Cook, National Institute of Health, Bethesda, MD
3:00-3:15 p.m.	**Senescent cells promote prostate cancer immune suppression and progression that can be reversed by senolytic therapy*** Marcus Ruscetti, University of Massachusetts Chan Medical School, Worcester, Massachusetts
3:15-3:30 p.m.	**Degradation of extracellular trap DNA sustains anti-tumor immune responses in breast cancer*** Sabina Sangaletti, Fondazione IRCCS Istituto Nazionale dei Tumori, Milan, Italy
3:30-3:45 p.m.	**A vagal sensory-to-sympathetic axis restrains anti-tumor immunity*** Chengcheng Jin, University of Pennsylvania, Philadelphia, PA
3:45-4:15 p.m.	**Dissecting how breast tumors hijack myelopoiesis to promote metastasis** Karin E. de Visser, Netherlands Cancer Institute, Amsterdam, Netherlands
4:15-4:30 p.m.	**DNA associated with EVs is uniquely chromatinized and prevents metastasis by enhancing anti-tumor immunity*** Inbal Wortzel, Weill Cornell Medicine, New York, NY

Lightning Talks
4:30 pm-5:00 pm | Essex
CME-eligible
Session Chair: Ilaria Malanchi (Francis Crick Institute)

- Zhenghan Wang , Memorial Sloan Kettering Cancer Center, New York, New York
- Xiao Han, Johns Hopkins University School of Medicine, Baltimore, Maryland
- Young Sun Lee, Memorial Sloan Kettering Cancer Center, New York, New York
- Dakota Okwuone, University of Kansas Medical Center, Kansas City, Kansas
- Sumedha Pareek, University of Texas MD Anderson Cancer Center, Houston, Texas
- Chia-Hsin Hsu, Cornell University, Ithaca, New York
- Emma Wrenn, Seattle Children's Research Institute, Seattle, Washington

Poster Session C/ Reception
5:00 pm-6:30 pm | Staffordshire

WEDNESDAY, NOVEMBER 20

Continental Breakfast
7:00 am-8:00 am | St. George's CD

Plenary Session 8: Microbiome and Immune Therapy
8:00 am-10:15 am | Essex
Session Chairs: Chengcheng Jin (U. Penn) and Sergei Grivennikov (Cedars-Sinai)
CME-eligible

8:00- 8:30 a.m.	**Mapping tumor-infiltrating microbes: Their role in modulating the tumor microenvironment from microniches to single cells** Susan Bullman, University of Texas MD Anderson Cancer Center, Houston, TX
8:30- 8:45 a.m.	**Adiponectin inhibits high-fat diet feeding-induced tumor growth through restoration of anti-tumor activity of exhausted-CD8+ T cells*** Kem Nguyen, Yeungnam University, Daegu, Korea **[R]**
8:45- 9:00 a.m.	**Sepsis-induced inflammation alters natural killer cell-mediated surveillance of liver metastasis*** Nicole Sivetz, Cold Spring Harbor Laboratory, Laurel Hollow, NY
9:00- 9:30 a.m.	**Targeting the gut microbiome for cancer immunotherapy** Giorgio Trinchieri, National Institute of Health, Bethesda, MD
9:30- 9:45 a.m.	**Early changes to the colon tumor microenvironment during benign-to-malignant transition*** Peter M.K. Westcott, Cold Spring Harbor Laboratory, Laurel Hollow, NY

Break
9:45 am-10:15 am | Essex Foyer

Plenary Session 9: Therapy-Induced Changes in Organ-Specific Microenvironment and Therapeutic Strategies for Targeting the TME
10:15 am-12:30 pm | Essex
Session Chairs: Neta Erez (Tel Aviv U.) and Michael Feigin (Roswell Park CCC)
CME-eligible

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10:15- 10:45 a.m.	**Targeting cancer in an extreme microenvironment** Adrienne Boire, Memorial Sloan Kettering Cancer Center, New York, NY
10:45- 11:00 a.m.	**Anti-metastatic immunotherapy discovery using ex vivo lung tissue cultures and high-throughput single-cell chemical transcriptomics*** Chris McGinnis, Stanford University, Stanford, CA
11:00- 11:30 a.m.	**Age-related stromal changes drive breast cancer tumor progression** Sheila A. Stewart, Washington University School of Medicine, St. Louis, MO
11:30- 12:00 p.m.	**Implicit order, disease, and cancer** Garry P. Nolan, Stanford University School of Medicine, Stanford, CA **[R]**
12:00- 12:15 p.m.	**Inflammation-induced mechanotransduction is necessary and sufficient to create pre-cancerous squamous lung metaplasias and necessary to drive progression to dysplasia*** Thea Tlsty, University of California San Francisco, San Francisco, CA

Closing Remarks
Neta Erez (Tel Aviv U.)
12:15 p.m.