

AACR 2026

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Spatial biology and deep immune profiling



Don't miss these presentations and posters

Title	Speaker	Topic	Date, Time, Location	Technology
Mass cytometry talks at AACR 2026				
Abstract 1296: Integrated Single Cell Spatial Multi-Omics Landscape of WHO Grades 2-4 Diffuse Gliomas Identifies Locoregional Metabolomic Correlates of Glioma Plasticity and Proliferation	Ene, C.I., UT MD Anderson Cancer Center, Houston, TX	Integrative Computational Approaches	April 19 4:05–4:20 pm Room 30 – Upper Level	IMC™
Abstract 1297: ADTnorm Enables Scalable and Interpretable Single Cell Proteomics Integration Across Technologies for Incorporating Historical Cancer Data	Zheng, Y., UT MD Anderson Cancer Center, Houston, TX	Integrative Computational Approaches	April 19 4:20–4:35 pm Room 30 – Upper Level	CytoF™
Abstract 6743: Peripheral Immune Profiling from the DIET Trial – a Randomized Double Blinded Dietary Intervention Study in Melanoma Patients Receiving Immunotherapy	Daniel, C.R., UT MD Anderson Cancer Center, Houston, TX	Immunotherapy: Mechanisms and Responses	April 21 3:20–3:35 pm Room 28 – Upper Level	CytoF
Abstract 6752: Mapping the Spatial Organisation of B Cells and Immune Signalling in TNBC to Characterise Response to Immunotherapy	Ahmad, L., University of Cambridge, Cambridge, UK	Spatial Biomarkers at Single-Cell Resolution: Mapping Tumor Ecosystems with Proteomics, Transcriptomics, and AI	April 21 3:20–3:35 pm Ballroom 6 B – Upper Level	IMC

Title	Topic	Time	Technology
April 19 posters			
Abstract 795: Integrating Spatial Transcriptomics and Imaging Mass Cytometry™ for Multi-Omic Mapping of Hepatocellular Carcinoma	Spatial multi-omics	2:00–5:00 pm	IMC
Abstract 797: Integrating Hematoxylin and Eosin Histology with Multiplexed Imaging Mass Cytometry for Spatial Proteomic Profiling of Antibody-Drug Conjugate Targeted Biomarkers	Spatial multi-omics	2:00–5:00 pm	IMC
Abstract 802: Multi-Omic Profiling Maps the Immune Multicellular Environment of Renal Cell Carcinoma	Spatial multi-omics	2:00–5:00 pm	IMC
Abstract 1221: Imaging Mass Cytometry of Pelareorep Treated Early Breast Cancer Samples Reveals Developing Tertiary Lymphoid Structures	Spatial profiling	2:00–5:00 pm	IMC
Abstract 1218: Development of a Proximity Ligation Imaging Mass Cytometry Platform for Spatially Resolved Immune Checkpoint Analysis	Spatial profiling	2:00–5:00 pm	IMC
Abstract 812: Spatial Architecture of Head and Neck Squamous Cell Carcinoma (SCCHN): An IMMucan/EORTC Analysis	Spatial profiling	2:00–5:00 pm	IMC

Title	Topic	Time	Technology
April 19 posters continued			
Abstract 661: Rapid CAR T Testing in an <i>Ex Vivo</i> Platform that Maintains Passage-Zero Patient Tumor Tissues and Their Native Immunosuppressive Microenvironment	Intracellular and functional profiling	2:00–5:00 pm	CyTOF
Abstract 637: CyTOF Analysis of Heterogeneity Between Ewing Sarcoma Cell Lines <i>In Vitro</i> and <i>In Vivo</i>	Cell and immune profiling	2:00–5:00 pm	CyTOF
Abstract 55: Differentiation State and Immune Interaction Contribute to Drug Response in AML	Cell and immune profiling	2:00–5:00 pm	CyTOF
April 20 posters			
Abstract 2083: Spatial Profiling Reveals Distinct Immune Microenvironments in Early Vs Late Onset Colorectal Cancer	Spatial profiling	9:00 am–12:00 pm	IMC
Abstract 2261: Deciphering the Role of Macrophages in the Development of Pancreatic Ductal Adenocarcinoma	Spatial profiling	9:00 am–12:00 pm	IMC
Abstract 2012: Spatial Proteomic Profiling of Metabolic and Cell Signaling Heterogeneity in Breast Cancer Tumor Microenvironment Using Imaging Mass Cytometry	Spatial profiling	9:00 am–12:00 pm	IMC, CyTOF
Abstract 1551: Intratumoral Biodegradable Nanofluidic Platform for Localized Multimodal Immunotherapy Enhances Tumor Eradication and Immune Memory	Multi-omics with CyTOF technology	9:00 am–12:00 pm	IMC, CyTOF
Abstract 2442: Baseline Single-Cell Mass Distributions Correlate with Clinical Response to Acalabrutinib, Venetoclax, and Obinutuzumab in Mantle Cell Lymphoma	Cell and immune profiling	9:00 am–12:00 pm	CyTOF
Abstract 2569: Particle Therapy, ATM and PD-1 Inhibition for pMMR Rectal Cancer	Cell and immune profiling	9:00 am–12:00 pm	CyTOF
Abstract 3760: Spatial Immune Signatures Predict Outcomes in HPV-Positive Oropharyngeal Cancer: Results of a Clinical Trial	Spatial profiling	2:00–5:00 pm	IMC
Abstract 3431: Neutrophil-Like Monocytes (NeuMos) with High Levels of CXCL2 Expression Orchestrate Systemic Granulopoiesis and Drive Immunotherapy Resistance in TNBC	Myeloid cell profiling in mouse models	2:00–5:00 pm	CyTOF
Abstract 3786: Peripheral Immune Signature of Dostarlimab in Addition to Standard of Care Definitive Radiation in Patients with Medically Inoperable Endometrial Cancer	Identifying clinical biomarkers	2:00–5:00 pm	CyTOF
Abstract 2883: Divergent Gut Microbial Communities are Linked to Differences in Baseline Immune Profiles, Tumor Features and ICI Outcomes in Melanoma	Intracellular and functional profiling	2:00–5:00 pm	CyTOF
Abstract 2835: Leveraging Radiation Inducible Surface Protein Targets for Tumor Microenvironment Reprogramming	Cell and immune profiling	2:00–5:00 pm	CyTOF
Abstract 3512: High-Precision Carbon Ion Radiotherapy Elicits Effective <i>In Situ</i> Tumor Vaccination and Durable Antitumor Immunity	Cell and immune profiling	2:00–5:00 pm	CyTOF
Abstract 2837: Enhanced Tumor Immune Cell Infiltration and Antigen Presentation After Carbon Ion Radiotherapy Correlates with Curative Outcomes	Cell and immune profiling	2:00–5:00 pm	CyTOF
April 21 posters			
Abstract 4968: Comprehensive Multi-Omic Profiling of the Tumor-Immune Microenvironment Using Xenium Transcriptomics and Hyperion™ XTI Imaging Mass Cytometry	Spatial multi-omics	9:00 am–12:00 pm	IMC
Abstract 4251: Th7R Cells: CD4+ T-Cell Partners that Drive T _H 1-Mediated Antitumor Immunity in the Tumor Microenvironment	Spatial profiling	9:00 am–12:00 pm	IMC
Abstract 4240: Differential Impact of Short and Long-Term Hypoxia on Effector T Cell Dysfunction	Spatial profiling	9:00 am–12:00 pm	IMC

Title	Topic	Time	Technology
April 21 posters continued			
Abstract 5199: uPAR-Targeting CAR-NK Cells Enhance Cytotoxicity Against Acute Myeloid Leukemia	CAR-NK cell therapies	9:00 am–12:00 pm	CyTOF
Abstract 5206: Mitochondrial Remodeling Sustains CAR-NK Stemness for Superior Tumor Control	CAR-NK cell therapies	9:00 am–12:00 pm	CyTOF
Abstract 5197: Metabolically Supercharged NK Cells Engineered with Adenoviral E4ORF-1	CAR-NK cell therapies	9:00 am–12:00 pm	CyTOF
Abstract 4931: Development of a CyTOF Panel for Macrophage Polarization and Functional Assessment Under Treatment Conditions	Myeloid cell profiling in mouse models	9:00 am–12:00 pm	CyTOF
Abstract 4913: Single-Cell Intercellular CRISPR Screen Reveals Stromal Regulators of Colorectal Cancer Plasticity	Patient-derived organoid profiling	9:00 am–12:00 pm	CyTOF
Abstract 4288: Use of a 50-Marker Mass Cytometry Intracellular Cytokine Staining Panel Reveals Unforeseen Functional Diversity Within Cell Therapy Products and Unmasks Potential Efficacy ‘Saboteurs’	Intracellular and functional profiling	9:00 am–12:00 pm	CyTOF
Abstract 4990: Single-Cell Mass Cytometry Reveals T-Cell Exhaustion in Sentinel Nodes of ER+ Breast Cancer Without Histological Detectable Metastases	Intracellular and functional profiling	9:00 am–12:00 pm	CyTOF
Abstract 4514: Development and Validation of a CyTOF Assay for Measuring Phosphoproteins in AML Blast Cell Populations in Whole Blood From AML Patients	Intracellular and functional profiling	9:00 am–12:00 pm	CyTOF
Abstract 5194: Oncolytic Virus Infected Tumors Drive AP-1 and IRF Signaling in NK Cells to Sustain Anti Tumor Activity	Cell and immune profiling	9:00 am–12:00 pm	CyTOF
Abstract 6663: Integrated Spatial Transcriptomic and Proteomic Profiling Reveals Tumor-Immune Niches Driving Heterogeneity and Resistance in Clear Cell Renal Cell Carcinoma	Spatial multi-omics	2:00–5:00 pm	IMC
Abstract 5519: SOMaC: An Interpretable and Generalizable Framework for Integrating and Clustering Multimodal Spatial Omics to Resolve Cell States and Immune Niches in Cancer	Spatial profiling	2:00–5:00 pm	IMC
Abstract 6040: Targeting EP3+FAP+ Stromal Reprogramming Uncovers a Therapeutic Vulnerability in Early Recurrent Hepatocellular Carcinoma	Spatial profiling	2:00–5:00 pm	IMC
Abstract 6213: Single Cell Imaging Uncovers a Coordinated Tumor-Immune-Stroma Spectrum with Genomic Associations in Pancreatic Ductal Adenocarcinoma	Spatial profiling	2:00–5:00 pm	IMC
Abstract 5850: Novel Platinum Nanotherapeutics Reprogram the Tumor Microenvironment to Potentiate Cancer Immunotherapy	Spatial profiling	2:00–5:00 pm	IMC
Abstract 6158: Senescent Tumor-Associated Macrophages Promote Peritoneal Metastatic Niche Formation in Gastric Cancer	Myeloid cell profiling in mouse models	2:00–5:00 pm	CyTOF
Abstract 6623: Stem Cell Transdetermination is a Targetable Driver of Therapeutic Response to Neoadjuvant Chemoradiotherapy in Rectal Cancer	Patient-derived organoid profiling	2:00–5:00 pm	CyTOF
Abstract 6124: TIM3+Tumor Associated M2 Macrophages Impair Antitumor T Cell Immunity and Promote Gastric Cancer Progression and Peritoneal Metastasis	Multi-omics with CyTOF technology	2:00–5:00 pm	CyTOF
Abstract 6456: Pan-Tumor Investigation of Peripheral Biomarkers of Excellent Response to Anti-PD(L)1-Based Therapy	Identifying clinical biomarkers	2:00–5:00 pm	CyTOF
Abstract 5695: CyTOF Analysis of Targeted Therapy in Addition to Standard of Care Against Ewing Sarcoma Tumor Subpopulations	Cell and immune profiling	2:00–5:00 pm	CyTOF
Abstract 6715: Safety, Tolerability, and Early Immune Responses in the Safety Run-In of an HER2 Multi-Epitope Vaccine Combined with T-DM1 in Residual HER2-Positive Breast Cancer	Cell and immune profiling	2:00–5:00 pm	CyTOF

Title	Topic	Time	Technology
April 21 posters continued			
Abstract 6541: Time-of-Day of First Checkpoint Inhibitor Dose Influences Clinical Outcomes and Immune Responses in Hepatocellular Carcinoma	Cell and immune profiling	2:00–5:00 pm	CyTOF
Abstract 5697: EZH2 Inhibition Upregulates GD2 to Enhance Anti-GD2 Immunotherapy in Ewing Sarcoma	Cell and immune profiling	2:00–5:00 pm	CyTOF
Abstract 6051: Pancreatic Tumor Expressed Growth Factors Activate a Neural-Like Program in Human Fibroblasts Which is Associated with Poor Prognosis	Cell and immune profiling	2:00–5:00 pm	CyTOF
Abstract 6569: Single-Cell Transcriptomics Reveal Functional Interaction Between CD4+ T Cells and B Cells Driving the Activated Peripheral Immune Phenotype in Healthy Women Living with Germline Pathogenic BRCA1 Variants	Cell and immune profiling	2:00–5:00 pm	CyTOF
April 22 posters			
Abstract 7505: Single-Cell Transcriptomics Identifies Distinct EPCAM-Low and EPCAM-Negative Epithelial Populations with Aggressive Phenotypes in Hormone-Receptor Positive Breast Cancer	Spatial multi-omics	9:00 am–12:00 pm	IMC
Abstract 7159: Antitumor Activity of Avaren-Fc, a Novel High-Mannose-Glycan-Targeting Immunotherapy, in Ovarian Cancer	Spatial profiling	9:00 am–12:00 pm	IMC, CyTOF
Abstract 7196: Detection of Radiopharmaceuticals and Their Cold Surrogates by Imaging Mass Cytometry Enables Assessment of Single-Cell Functional Response, Therapeutic Biodistribution, and Modulation of the Immune Microenvironment	Radiopharmaceutical therapies	9:00 am–12:00 pm	IMC
Abstract 7789: ACM-CpG, a Polymersome-Delivered TLR9 Agonist, Elicits Rapid and Broad Immune Activation in a Phase I Trial for Advanced Solid Tumors	Multi-omics with CyTOF technology	9:00 am–12:00 pm	CyTOF
Abstract 7723: Implementation of a Novel Immune Monitoring Strategy for Multicenter Clinical Trials to Enable Equity in Cancer Prognosis for Individuals from Remote Settings of Australia	Identifying clinical biomarkers	9:00 am–12:00 pm	CyTOF
Abstract 6956: A 61-Parameter CyTOF Panel for Comprehensive Profiling of Human PBMC to Characterize Immune Activation, Checkpoint Expression and Cytokine Signatures with Applications in Cancer Immunology	Intracellular and functional profiling	9:00 am–12:00 pm	CyTOF
Abstract 7421: Palmatine Modulates Tumor Microenvironment and Improves Gemcitabine Efficacy in PDAC Via HOXA10-STAT3 Axis Suppression	Cell and immune profiling	9:00 am–12:00 pm	CyTOF
Abstract 7953: Engineered IL7/IL15 Secreting iPSC-Derived Mesenchymal Stromal Cells Convert the Immunosuppressive into Immune-Activated Tumor Microenvironments (TME) and Potentiate Antitumor Immunity	Cell and immune profiling	9:00 am–12:00 pm	CyTOF

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