

**9th Mayo Clinic Symposium on Tumor Microenvironment
and Immuno-Oncology Crosstalk:**
From Translational Research to Precision Therapy: Integration of Novel Technologies

**December 9th -11th, 2022
Omni Amelia Island Resort, Florida**

Friday, December 9, 2022

- 7:00 a.m.** **Continental Breakfast and Registration**
- 8:00 a.m.** **Section I: Welcome and Introduction**
Cheryl L. Willman, M.D., Director, Mayo Clinic Comprehensive Cancer
Tushar Patel, M.D., Mayo Clinic Jacksonville
Asher Chanan-Khan, M.D., Mayo Clinic Jacksonville
- 8:10 a.m.** **Pre-Plenary Assessment Utilizing Audience Response**
Dev Mukhopadhyay, Ph.D., Mayo Clinic Jacksonville
- 8:20 a.m.** **Section II: Tumor Microenvironment crosstalk and cancer stemness**
Chair: Panagiotis Z. Anastasiadis, Ph.D., Mayo Clinic Jacksonville
- 8:30 a.m. Glioblastoma microenvironment and stem cells
Alfredo Quiñones-Hinojosa, M.D., Mayo Clinic Jacksonville
- 8:50 a.m. Discussion
- 8:55 a.m. Extracellular vesicles in glioblastoma-mediated immunosuppression and liquid
biopsy
Ian F. Parney, M.D., Ph.D., Mayo Clinic Rochester
- 9:15 a.m. Discussion
- 9:20 a.m. The critical role of m6A RNA methylation in cancer cell-brain microenvironment
interaction and brain metastasis
Suyun Huang, Ph.D., Virginia Commonwealth University
- 9:40 a.m. Discussion
- 9:45 a.m. The Role of Brain Tumor Stem Cells in Tumor Angiogenesis
Jeremy Rich, Ph.D., UPMC Hillman Cancer Center
- 10:05 a.m. Discussion
- 10:10 a.m. Targeting the Development of Resistance to Stem-Cell Active Drugs in Glioblastoma
Steven Rosenfeld, M.D., Ph.D., Mayo Clinic Jacksonville
- 10:30 a.m. Discussion
- 10:35 a.m. Coffee Break
- 11:05 a.m.** **Section III: Microenvironment and diseases**
Chair: Mahadev Rao, Ph.D., Manipal College of Pharmaceutical Sciences, India
- 11:15 a.m. Pancreatic cancer tumor microenvironment
Peter Storz, Ph.D., Mayo Clinic Jacksonville
- 11:35 a.m. Discussion
- 11:40 a.m. CD38 biology in immune microenvironment and clinical implications
Fabio Malavasi, M.D.
- 11:55 a.m. Discussion
- 12:00 p.m. Lunch
- 1:00 p.m.** **Section IV: Molecular basis of human diseases**
Chair: Krishnendu Pal, PhD., Mayo Clinic Jacksonville
- 1:10 p.m. Microenvironment and cell signaling and immunity
Dan Billadeau Ph.D., Mayo Clinic, Rochester
- 1:30 p.m. Discussion
- 1:35 p.m. Title TBA
Resham Bhattacharya, Ph.D., University of Oklahoma
- 1:55 p.m. Discussion

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- 2:00 p.m. Title TBA
Ramasamy Paulmurgan, Ph.D., Stanford University
- 2:20 p.m. Discussion
- 2:25 p.m. Title TBA
Januario E. Castro, M.D., Mayo Clinic Phoenix
- 2:45 p.m. Discussion
Special short-talk
- 2.50 p.m. The revolution of immunotherapy in Multiple Myeloma
Claudio Cerchione, M.D., Ph.D.
- 3:00 p.m. Discussion
- 3:05 p.m. Coffee Break
- 3:30 p.m. Section V: Microenvironment and Cell Signaling**
Chair: Vivek Rangnekar, Ph.D.
- 3:40 p.m. Cilia as a biomarker of vascular health
Ramani Ramchandran, Ph.D., Medical College of Wisconsin
- 4:00 p.m. Discussion
- 4:05 p.m. Tris DBA Palladium: A Mechanism Based Antiangiogenic and Antitumor Agent
Gangjian Qin, M.D., The University of Alabama at Birmingham
- 4:25 p.m. Discussion
- 4:30 p.m. **Title TBA**
Thai Ho, M.D., Ph.D., Mayo Clinic Arizona
- 4:50 p.m. Discussion
- 5:00 p.m. Section VI: Martin and Winifred Ehlers Lectureship**
(Named-Professor Lecture)
Chair: Jennifer J. Westendorf, Ph.D., Mayo Clinic Rochester
- 5:05 p.m. Leveraging the Natural Cellular and Biomolecular Interactions in Blood for the
Design of Targeted, Anti-Inflammatory Particle Therapeutics
Omolola Eniola-Adefeso, Ph.D., University of Michigan
- 5:35 p.m. Discussion
- 5:45 p.m. Section VII: Poster Session and Networking**
- 6:15 pm Dinner and Health Disparities in Cancer Research and Care – Gaps and
Opportunities**
Chair: Dr. Jennifer J. Westendorf, Ph.D. Chair of Biochemistry & Molecular Biology
Speaker: Dr. Lewis R. Roberts, M.B., Ch.B., Ph.D., Professor of Medicine MCCCC
Speaker: Dr. Folakemi T. Odedina, Ph.D., Professor of Oncology MCCCC
Speaker: Dr. Cheryl L. Willman, M.D., Professor of Laboratory Medicine and Pathology;
Director of MCCCC
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Saturday, December 10, 2022

- 7:00 a.m.** **Continental Breakfast and Registration**
- 8:00 a.m.** **Section IX: Joseph Austin McCartney and Ruth McCartney Hauck Named Visiting Professorship Lecture**
Chair: Cheryl L. Willman, M.D., Director, MCCC
- 8:10 a.m. von Hippel-Lindau Disease: Insights into Oxygen Sensing, Protein Degradation, and Cancer
William G. Kaelin M.D., Harvard Medical School and the Dana-Farber Cancer Institute
- 8:45 a.m. Discussion
- 8:55 a.m.** **Section X: Microenvironment and growth factors**
Chair: Radisky, Derek C., Ph.D., Mayo Clinic Jacksonville
- 9:15 a.m. SDC1 inhibitors as a strategy to target therapeutic resistance cancer
John “Al” Copland, Ph.D. Mayo Clinic Jacksonville
- 9:35 a.m. Discussion
- 9:40 a.m. Forkhead (Fox) Transcription Factors in Vascular Formation
Tsutomu Kume, Ph.D., Northwestern University
- 10:00 a.m. Discussion
- 10:05 a.m. Coffee Break
- 10:35 a.m. **Short Talks from Abstracts**
- 10:45 a.m. **Short Talks from Abstracts**
- 10:55 a.m. **Short Talks from Abstracts**
- 11:00 a.m.** **Section XI: Vascular-Immune biology and cell signaling**
Chair: Santanu Bhattacharya, PhD. Mayo Clinic Jacksonville
- 11:10 a.m. Protein Kinase Ci Mediates Immune Suppression in Lung Adenocarcinoma
Alan Fields, Ph.D., Mayo Clinic Jacksonville
- 11:30 a.m. Discussion
- 11:35 a.m. Discovery of small peptide-based checkpoint inhibitors for cancer immunotherapy
Kun Cheng, Ph.D., University of Missouri - Kansas City
- 11:55 a.m. Discussion
- 12:00 p.m. **Short Talks from Abstracts**
- 12:10 p.m.** **Lunch**
- 1:05 p.m.** **Section XII: Mini-Symposium - Nanotechnology**
Chairs- Priyabrata Mukherjee, Ph.D., and Santanu Bhattacharya, Ph.D.
- 1:15 p.m. uPAR targeted delivery of nanoparticle/drugs modulates fibroblasts and immune cells of the tumor stromal microenvironment in pancreatic cancer
Lily Yang, M.D., Ph.D., Emory University
- 1:35 p.m. Discussion
- 1:40 p.m. Application of Carbon Nanotube Sensor Arrays for Understanding Cellular Biochemical Signaling and Angiogenesis.
Suwan Jayasinghe, Ph.D., University College London
- 2:00 p.m. Discussion
- 2:05 p.m. Developing Extracellular Vesicles (EVs) as Drug Carriers for Cancer Therapy – Benefits and Challenges
Rajagopal Ramesh, Ph.D. University of Oklahoma
- 2:25 p.m. Discussion

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- 2:30 p.m. Probing cellular processes with engineered nanoparticles.
Priyabrata Mukherjee, Ph.D., University of Oklahoma
- 2:50 p.m. Discussion
- 2:55 p.m. Coffee Break
- 3:15 p.m. Continuous low-dose cancer chemotherapy with oral nanoparticle-paclitaxel
Ravikumar Majeti, Ph.D., The University of Alabama in Tuscaloosa
- 3:35 p.m. Discussion
- 3:40 p.m. Image-guided Antiangiogenic Prodrug Therapy
Dipanjan Pan, Ph.D., Pennsylvania State University
- 4:00 p.m. Discussion
- 4:05 p.m. Ultrasmall silica nanoparticles improve anti-tumor pro-inflammatory and cytotoxic
responses in immune suppressive microenvironments
Michelle S. Bradbury, M.D., Ph.D., Memorial Sloan Kettering Institute
- 4:25 p.m. Discussion
- 4:30 p.m. Cancer Immunotherapy based on Extracellular Vesicles
Ke Cheng, PhD., NC State University, Raleigh, North Carolina
- 4: 50 p.m. Discussion
- 5:00 p.m. Section XIII: Poster Session and Reception and Dinner**
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Sunday, December 11, 2022

- 7:00 a.m.** **Continental Breakfast and Registration**
- 8:00 a.m.** **Section XV: Developing precision therapy targeting microenvironment- immune pathways from preclinical to clinical steps**
Chair: Roxana S. Dronca, M.D Mayo Clinic Jacksonville
- 8:10 a.m. Synthetically Lethal Combination of Radiation Therapy and Other Therapies
Sunil Krishnan, M.D. Ph.D, Mayo Clinic Jacksonville
- 8:30 a.m. Discussion
- 8:35 a.m. Precision therapy: Immunity and tumor targeting
Lewis R. Roberts, M.B., Ch.B., Ph.D. Mayo Clinic Rochester
- 8:55 a.m. Discussion
- 9:00 a.m. A new mechanism used by human resilient T cells to avoid exhaustion and retain tumoricidal activity in response to immunotherapy
Dong, Haidong, M.D., Ph.D. Mayo Clinic Rochester
- 9:20 a.m. Discussion
- 9:25 a.m. Liver disease and its microenvironment
Vijay Shah, M.D., Mayo Clinic Rochester
- 9:45 a.m. Discussion
- 9:50 a.m. Immune Therapy Clinical Trials and outcomes
Keith L. Knutson, Ph.D., Mayo Clinic Jacksonville
- 10:10 a.m. Discussion
- 10:15 a.m. Coffee Break
- 10:40 a.m.** **Section XVI: Selected Talks from Abstracts**
Chairs: Vijay Shah, M.D. Mayo Clinic Rochester and Leslie T. Cooper, M.D., Mayo Clinic Jacksonville
- 10:40 a.m. Short Talk
- 10:50 a.m. Short Talk
- 11:00 a.m. Short Talk
- 11:00 a.m.** **Section XVII: Folkman Lectureship Forum**
Chair: Alfredo Quiñones-Hinojosa, M.D., Mayo Clinic Jacksonville
- 11:10 a.m. Endothelial – Tumor cell interactions during metastasis
Luisa Iruela-Arispe, Ph.D., Northwestern University
- 11:35 a.m. Discussion
- 11:40 a.m. Cancer Cells Don't Live Alone!: Exploring Tumor Neighborhoods
M. Celeste Simon, Ph.D., Univ. of Pennsylvania Perelman School of Medicine
- 12:05 p.m. Discussion
- 12:15 p.m. Overview of the symposium
Asher Chanan-Khan, M.D. and Dev Mukhopadhyay, Ph.D., Mayo Clinic Jacksonville
- 12:25 p.m. Vote of Thanks
Dev Mukhopadhyay, Ph.D., Mayo Clinic Jacksonville
- 12:30 p.m.** **Adjourned**