8th Mayo Clinic Symposium on Tumor Microenvironment and Cancer Therapeutics: 
Role of precision medicine and targeted therapy in clinical practice

December 7-9, 2018
Sawgrass Marriott Golf Resort and Spa
Ponte Vedra Beach, Florida

Director: Debabrata Mukhopadhyay, Ph.D.

Co-Directors: Asher Chanan-Khan, M.D.
Leslie Cooper, M.D.

Planning Committee
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Leslie Cooper, M.D
Robert Diasio, M.D.
Debabrata Mukhopadhyay, Ph.D.
Steven Rosenfeld, M.D., Ph.D.
Tushar Patel, M.B., Ch.B.
Vijay Shah, M.D.
Robert Smallridge, M.D.

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Friday, December 7, 2018

7:00 a.m.    Continental Breakfast and Registration

8:00    **Section I: Welcome and Introduction**
        Asher Chanan-Khan, M.D., Mayo Clinic Jacksonville
        Leslie Cooper, M.D., Mayo Clinic Jacksonville

8:10    Pre-Plenary Assessment Utilizing Audience Response

8:20    **Joseph Austin McCartney and Ruth McCartney Hauck Named Visiting Professorship Lecture**
        Chair: Robert Diasio, M.D.

8:30.    Therapeutic Potential of Immune-Therapy and Current Challenges

8:55    Discussion

9:05    **Section II: Tumor Microenvironment Crosstalk and Cancer Stemness**
        Chair: TBA.

9:10    Glioblastoma Microenvironment and Stem Cells
        Alfredo Quiñones-Hinojosa, M.D., Mayo Clinic Florida

9:30    Discussion

9:35    Non-Endothelial Vascular Functions of Tie2
        Hellmut Augustin, Ph.D., Heidelberg University

9:55    Discussion

10:00   Anti-Angiogenesis Resistance and New Therapy to Inhibit Tumor Growth
        Brekken, Rolf A. Ph.D.

10:20   Discussion

10:25   Coffee Break

10:50   GBB Therapy and Cell Mortality
        Steven Rosenfeld, M.D., Ph.D. Mayo Clinic Jacksonville

11:10   Discussion

11:15   Epigenetic Regulation of Glioma Angiogenesis and Growth
        Susan Huang, Ph.D., University of Texas MD Anderson Medical Center

11:35   Discussion

11:40   The Role of Brain Tumor Stem Cells in Tumor Angiogenesis
        Jeremy Rich, Ph.D., Cleveland Clinic

12:00   Discussion

12:05 p.m.    Lunch

1:00    **Section III: Angiogenesis and Immune Crosstalk**
Chair: Resham Bhattacharya, Ph.D., University of Oklahoma

1:10 An Important Role of Lymphatic Vessels in Promoting Cancer Progression and Limiting Anti-Tumor Immune Responses
*Michael Detmar, M.D., Swiss Federal Institute of Technology*

1:20 Discussion

1:25 Regulation of Pathologic Brain Angiogenesis and Immune-Crosstalk
*Calvin Kuo, M.D., Ph.D., Stanford University*

1:45 Discussion

1:50 Forkhead (Fox) Transcription Factors in Vascular Formation
*Tsutomu Kume, Ph.D., Northwestern University*

2:10 Discussion

2:15 Break

2:40 **Section IV: Microenvironment and Cell Signaling**
Chair: Derek Radisky, Ph.D., Mayo Clinic Jacksonville

2:50 RK, an AMPK Family Member Critical for Cardiovascular Function in Mammals
*Ramani Ramchandran, Ph.D., Medical College of Wisconsin*

3:10 Discussion

3:15 Tris DBA Palladium: A Mechanism Based Antiangiogenic and Antitumor Agent
*Jack Arbiser, M.D., Ph.D., Emory University School of Medicine*

3:35 Discussion

3:40 KLF4 Signaling in ADM and Angiogenesis in Pancreatic Cancer
*Keping Xie, M.D., Ph.D., MD Anderson Medical Center*

4:00 Discussion

4:05 Macrophages as Drivers of Pancreatic Cancer Development
*Peter Storz, Ph.D., Mayo Clinic Jacksonville*

4:25 Discussion

4:40 **Section V: Poster Sessions/Reception**

6:00 **Section VI: Travel Scholarships/Oral Presentations**
Chairs: Tushar C. Patel, M.B., Ch.B, Mayo Clinic Jacksonville

Young Investigator Scholarship Winners

Young Faculty Scholarship winners

7:00 p.m. Adjourn
Saturday, December 8, 2018

7:00 a.m. Continental Breakfast and Registration

8:00 Section VII: Vascular Permeability and Immunity: Precision Therapy
*Chair: Panagiotis Z. Anastasiadis, Ph.D., Mayo Clinic Jacksonville*

8:10 Cancer Target Present on Both Tumor Cells and the Tumor Vasculature and Immunity
*Harry Yoon, M.D., Mayo Clinic Rochester*

8:30 Discussion

8:30 Vascular Endothelial Growth Factors Regulate Tissue Microenvironment by Dynamic Opening and Closure of Endothelial Junctions
*Lena Claesson-Welsh, Ph.D., Uppsala University*

8:55 Discussion

9:00 Precision Therapy: Immunity and Tumor Targeting
*Dong, Zigang, M.D. Hormel Institute*

9:20 Discussion

9:25 Coffee Break

9:50 Section VIII: Microenvironment and Diseases
*Chair: Al Copland, Ph.D. Mayo Clinic Jacksonville*

10:00 Cardiovascular Disease and stem cells
*Ming-Hui Zou, M.D. Ph.D., Georgia State University*

10:20 Discussion

10:25 Molecular Cardiology and Diseases
*Gangjian Qin, M.D., The University of Alabama at Birmingham*

10:45 Discussion

10:50 Regenerative Medicine and Diseases
*Ke Cheng, Ph.D. North Carolina State University*

11:10 Discussion

11:15 Non-Coding RNA and Diseases
*Yao Liang Tang, M.D., Ph.D., Augusta University*

11:25 Discussion

11:30 Microenvironment and Cell Signaling
*Arie Horowitz, Sc.D., Thomas Jefferson University*

11:50 Discussion

11:55 Lunch

1:00 p.m. Section IX: Mini-Symposium - Nanotechnology
*Chairs- Priyabrata Mukherjee, Ph.D. and Santanu Bhattacharya, Ph.D.*

1:05 Complexity of Nanoparticle Targeting to Tumors
1:25  Kevin Rice, Ph.D., U Iowa The University of Iowa
     Discussion

1:30  Application of Carbon Nanotube Sensor Arrays for Understanding Cellular Biochemical Signaling and Angiogenesis
     Michael S. Strano, Ph.D., Massachusetts Institute of Technology

1:50  Discussion

1:55  Lipososme and Targeted Therapeutics
     Leaf Huang, Ph.D., UNC Eshelman School of Pharmacy

2:15  Discussion

2:25  Nanotechnology and Canner Therapy
     Vladimir P. Torchilin, Ph.D., Northeastern University

2:45  Discussion

2:50  Coffee Break

3:15  Probing Cellular Processes with Engineered Nanoparticles
     Priyabrata Mukherjee, Ph.D., University of Oklahoma

3:35  Discussion

3:40  Tumor Microenvironmental Modulation to Improve Nanomedicine Delivery
     Betty Kim, M.D., Ph.D., Mayo Clinic Jacksonville

4:00  Discussion

4:05  New Advancements in Cancer Nanotherapeutics
     Samir Mitragotri, Ph.D., Harvard University

4:25  Discussion

4:30  Coffee Break

4:50  Section X: Cardiotoxicity Challenges in Anti-Angiogenesis and Chemotherapy Therapy
     Chairs: Asher Chanan-Khan, M.D., Mayo Clinic Jacksonville and Leslie Cooper, M.D., Mayo Clinic Jacksonville

5:00  Cardiotoxicity with Angiogenesis Inhibitors
     Joerg Herrmann, M.D., Mayo Clinic Rochester

5:15  Cardiac Toxicity of Anti-Cancer Drugs
     Taimur Sher, M.D., Mayo Clinic Jacksonville

5:30  Panel Discussion

5:35  Poster Session and Reception

7:00 p.m. Adjourn
Sunday, December 9, 2018
7:00 a.m. Continental Breakfast and Registration

8:00 Section XI: Precision Immune Therapy Targeting Microenvironment and Clinical Outcomes
Chair: Keith Knutson, Ph.D., Mayo Clinic Jacksonville

8:10 T Cell Therapy Utilizing Marrow-Infiltrating Lymphocytes
Ivan Borrello, M.D., Johns Hopkins Medicine

8:30 Discussion

8:35 Understanding the Stroma as a Means to Patient Selection for Anti-Angiogenesis and Immunotherapy
Laura Benjamin, Ph.D., Visiting Scientist at Maine Medical Center Research Institute

8:55 Discussion

9:00 Hematological Malignancies and Immune Therapy
Kenichi Takeshita, M.D. Sorrento Therapeutics, Inc.

9:20 Discussion

9:25 Cancer Immune Therapy and Precision Medicine
Eduardo Sotomayar M.D., George Washington Cancer Center

9:45 Discussion

9:50 Coffee Break

10:15 Future Immune Therapy and Lymphoma
Owen A. O’Connor, M.D. New York University Cancer Institute

10:35 Discussion

10:40 Myelodysplastic Syndrome and Acute Myeloid Leukemia: Precision Therapy
Alan List, M.D., Moffitt Cancer Center in Tampa, Florida

11:00 Discussion

11:05 Section XII: Folkman Lecture
Chair: Dev Mukhopadhyay, Ph.D.

11:10 Nanotechnology Application in Precision Therapy
Robert Langer, Sc.D., MIT

11:35 Discussion

11:40 Closing Comments and Course Overview
Harold Dvorak, M.D.

Noon Vote of Thanks
Drs. Asher Chanan-Khan, Leslie Cooper and Debabrata Mukhopadhyay

12:10 p.m. Adjourn. Thank you for attendance!