



2020 NCI Cancer Systems Biology Consortium Annual Meeting

September 16-17, 2020

Virtual Meeting

(All time listed as EDT)

Wednesday, September 16, 2020

10:30am - 11:00am

Welcome

Ned Sharpless, M.D.

Director, National Cancer Institute

Dan Gallahan, Ph.D.

Director, Division of Cancer Biology, National Cancer Institute

11:00 – 11:15 a.m.

Meeting Overview

Laura Heiser, Ph.D.

*Associate Professor and Vice Chair, Biomedical Engineering
Oregon Health Sciences University*

Kevin Janes, Ph.D.

*Professor, Biomedical Engineering
University of Virginia*

11:15 – 1:15 p.m.

Session 1: Emerging Cancer Systems Technologies

Session Chair: Trey Ideker, Ph.D. University of California, San Diego

11:15-11:45 a.m.

Rewiring of regulatory networks in breast cancer by transcription factor isoforms

Martha Bulyk, Ph.D. (DFCI U01)

Professor, Medicine & Pathology, Harvard Medical School

11:45-12:15 p.m.

Predicting drug response and synergy using a deep learning model of a cancer cell

Brent Kuenzi, Ph.D. (UCSF/UCSD U54)

Postdoctoral Fellow, University of California, San Diego

12:15-12:45 p.m.

BRCA1 on the Edge: Annotating Variants of Uncertain Significance with Interactome Mapping

David Hill, Ph.D. (PPI WG)

Principal Scientist, Dana-Farber Cancer Institute

12:45-1:15 p.m.

DREAM High: Cancer systems biology for high school students

Diana Murray, Ph.D. (Columbia U54)

Program Director of Research and Outreach, Research Scientist, Columbia University

1:15 – 1:45 p.m.	Break
1:45 – 2:45 p.m.	Poster Session 1
2:45 – 3:00 p.m.	Break
3:00 – 5:00 p.m.	Session 2: Systems Modeling of the Immune Response and the Tumor Microenvironment <i>Session Chair: Christina Leslie, Ph.D., Memorial Sloan Kettering</i>
3:00-3:30 p.m.	Atlas of clinically distinct cell states and cellular ecosystems across human solid tumors Andrew Gentles, Ph.D. (Stanford U54) <i>Assistant Professor of Medicine and Biomedical Data Science, Stanford University</i>
3:30- 4:00 p.m.	Regenerative lineages and immune-mediated pruning in lung cancer metastasis Ashley Laughney, Ph.D. (MSKCC U54) <i>Assistant Professor of Physiology and Biophysics and Computational Cancer Genomics in Computational Biomedicine, Weill Cornell Medical College</i>
4:00-4:30 p.m.	Eco-Evolutionary dynamics of NSCLC to immunotherapy: Response and Resistance Alexander (Sandy) Anderson, Ph.D. (Moffitt U01) <i>Senior Member and Chair, Department of Integrated Mathematical Oncology, Moffitt Cancer Center</i>
4:30-5:00 p.m.	Subtype-specific microenvironmental crosstalk and tumor cell plasticity in metastatic pancreatic cancer Srivatsan Raghavan, M.D., Ph.D. (MIT U54) <i>Instructor in Medicine, Dana-Farber Cancer Institute</i>
5:00 - 6:00 p.m.	Collaborative Social

Thursday, September 17, 2020

10:45am - 11:15am	CSBC Update and Highlights Shannon Hughes, Ph.D. <i>Program Director, Tumor Metastasis Branch, DCB, NCI</i>
11:15 – 1:15 p.m.	Session 3: Therapeutic Implications of Tumor Evolution and Heterogeneity <i>Session Chair: Kevin Janes, Ph.D., University of Virginia</i>
11:15-11:45 a.m.	Clonal cooperation drives estrogen receptor positive (ER+) breast cancer growth and survival Andrea Bild, Ph.D. (COH U54) <i>Professor, Division of Molecular Pharmacology, Department of Medical Oncology & Therapeutics Research, City of Hope</i>
11:45-12:15 p.m	Impact of the microenvironment on heterogeneity and trametinib response in HCC1143 basal-like breast cancer cells James Korkola, Ph.D. (OHSU U54) <i>Associate Professor of Biomedical Engineering, School of Medicine, Oregon Health & Science University</i>

12:15-12:45 p.m.	<p>Identification of personalized adaptive response mechanisms in breast cancer by information theory and proteomics towards rational design of individualized treatments</p> <p>Forest White, Ph.D. (MIT U01) <i>Professor of Biological Engineering, Massachusetts Institute of Technology</i></p>
12:45-1:15 p.m.	<p>Receptor-driven ERK pulses enable persistence of BRAF-mutant melanoma cells adapted to RAF and MEK inhibitors</p> <p>Luca Gerosa, Ph.D. (Harvard U54) <i>Postdoctoral Fellow, Harvard Medical School</i></p>
1:15 – 1:45 p.m.	Break
1:45 – 2:45 p.m.	Poster Session 2
2:45 – 3:00 p.m.	Break
3:00 – 5:00 p.m.	<p>Session 4: Systems Approaches to Elucidate Mechanisms of Therapeutic Response and Resistance</p> <p><i>Session Chair: Laura Heiser, Ph.D., Oregon Health & Science University</i></p>
3:00-3:30 p.m.	<p>Personalized Metabolic Models Identify Targets of Redox Metabolism in Radiation-Resistant Tumors</p> <p>Melissa Kemp, Ph.D. (Georgia Tech U01) <i>Professor of Biomedical Engineering, Georgia Tech</i></p>
3:30- 4:00 p.m.	<p>A protein network map of head and neck cancer reveals PIK3CA mutant drug sensitivity</p> <p>Danielle Swaney, Ph.D. (UCSD/UCSF U54) <i>Assistant Professor of Cellular Molecular Pharmacology, University of California, San Francisco</i></p>
4:00-4:30 p.m.	<p>Metabolic imaging of KRAS mutant colorectal cancer patient-derived tumor organoids to assess drug- response</p> <p>Emma Fong, Ph.D. (USC U01) <i>Cell Imaging Staff Scientist, University of Southern California</i></p>
4:30-5:00 p.m.	<p>A Modular Master Regulator Landscape Determines the Impact of Genetic Alterations on the Transcriptional Identity of Cancer Cells</p> <p>Andrea Califano, Ph.D. (Columbia U54) <i>Professor and Chair, Department of Systems Biology, Columbia University</i></p>
5:00 - 5:15 p.m.	Wrap-up and Poster Awards