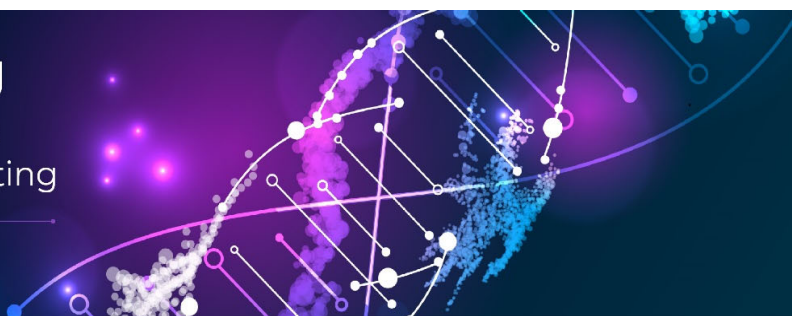


# 2020 NCI IMAT PI Meeting

21st Annual Innovative Molecular Analysis  
Technologies Principal Investigators Meeting

December 2-4, 2020



\*All times EST

## Wednesday, Dec 2, 2020

9:00	WebEx	ESI/NI Session	NCI overview – connecting your IMAT research to other opportunities Role of program officer, grants specialist and scientific review officer	
9:15				
9:30				
9:45				
10:00				
10:15	Break			
10:30	WebEx	Dinah Singer	NCI Welcome	
10:45		Yang Liu	University of Pittsburgh	High-throughput super-resolution imaging of chromatin structures at different epigenetic states
11:00		Jun Lu	Yale University	CRISPR-based Enhanced Molecular Chipper technology for identifying functional noncoding elements in cancer
11:15		Andrei Karginov; Jalees Rehman	University of Illinois at Chicago	Optogenetic tools for the dissection of oncogenic signaling mediated by kinases
11:30	Break			
11:45	Break			
12:00	WebEx	Yong Zeng; Andrew Godwin; Glenson Samuel	University of Florida	Integrated exosomes profiling for minimally invasive diagnosis and monitoring of cancer
12:15		Brian Brown	Icahn School of Medicine at Mt. Sinai	Pro-Codes: A novel vector and cell barcoding technology
12:30		Adam Schrum	University of Missouri - Columbia	Multiplex matrix ELISA for T cell protein-interaction networks in cancer
12:45		Maksim Royzen	State University of New York at Albany	Development of catch and release approach for multi-drug local delivery of chemotherapies
13:00	Break			
13:15	Break			
13:30	WebEx	Margaret Gulley	University of North Carolina at Chapel Hill	EndoGenus Toolkit: A biometric method for absolute quantification of tumor markers by massive parallel sequencing
13:45		Xiao-An (Sean) Fu	University of Louisville	A microreactor chip platform for quantitative analysis of unsaturated aldehydes in exhaled breath

14:00	Adam Engler	University of California, San Diego	Developing adhesome technology as a physical marker of highly metastatic cells
14:15	Tony Dickherber	Instructions for the Poster/Interactive Session	
14:30	Gather.Town	Poster/Interactive Session	
14:45			
15:00			
15:15			
15:30			
15:45			
16:00			
16:15			

### Thursday, Dec 3, 2020

9:00	WebEx	ESI/NI Session	NIH and NCI Review – how to get experience	
9:15			Fellowship and training grants	
9:30			Data sharing	
9:45			Communicating your research in plain language	
10:00				
10:15	Break			
10:30	Tony Dickherber & Chuck Schmaderer	IMAT Program and NTRAP Update		
10:45	Michael Cima	Massachusetts Institute of Technology	Advanced development and validation of microdevices for high-throughput in situ drug sensitivity testing in tumors	
11:00	James Allen Van Deventer	Tufts University	Discovering hybrid inhibitors for tumor microenvironment disruption	
11:15	Francisco (Paco) Robles	Georgia Institute of Technology	Stimulated Raman scattering spectroscopic optical coherence tomography (SRS-SOCT) for label-free molecular imaging of brain tumor pathology	
11:30	Break			
11:45				
12:00	Tujin Shi	Batelle Pacific Northwest Laboratories	An ultrasensitive targeted mass spectrometry system for proteomics analysis of single cells	
12:15	Roger Brent	Fred Hutchinson Cancer Research Center	Precision controllers of mammalian gene expression	
12:30	Chad Borges	Arizona State University - Tempe Campus	Validation and advanced development of albumin oxidizability as a marker of plasma/serum integrity	
12:45	Yingxiao (Peter) Wang	University of California, San Diego	Multiplex FRET imaging of kinase-epigenome interregulations in live cancer cells	
13:00	Break			
13:15				
13:30	Yehia Ibrahim	Batelle Pacific Northwest Laboratories	High resolution high-throughput proteomics platform for cancer research	
13:45	Noah Malmstadt; Richard Roberts	University of Southern California	A target-directed reagent pipeline via microfluidic mRNA display	

14:00	Web	Michael van Dam	University of California, Los Angeles	High-throughput radiochemistry platform for accelerated discovery and development of novel PET imaging agents for cancer
14:15		Kristen Naegle	University of Virginia	A molecular toolkit for the production of tyrosine phosphorylated proteins
14:30	Gather.Town	Poster/Interactive Session		
14:45				
15:00				
15:15				
15:30				
15:45				
16:00				
16:15				

### Friday, Dec 4, 2020

10:30	WebEx	Muneesh Tewari; Nils Walter	University of Michigan, Ann Arbor	Optimization and validation of single-molecule kinetic fingerprinting technology for rapid, ultra-specific detection of cancer mutations
10:45		Tania Konry; Andrew Evens; Tony Huang	Northeastern University	Determining treatment sensitivity in B cell lymphoma by novel microfluidics-based NK cell immunogenicity platform
11:00		Lloyd Smith; Brian Frey	University of Wisconsin - Madison	Novel NeuCode tagging reagents for identification and quantification of intact proteoforms in cancer tissues
11:15		Tan Ince	Cornell University	Live tumor culture core and Tissue Specific Culture (TSC) System for human cancers
11:30	Break			
11:45				
12:00	WebEx	Diversity & Inclusion Panel Discussion		
12:15				
12:30				
12:45				
13:00	Break			
13:15				
13:30	WebEx	Stephen Salipante	University of Washington	Advanced development and validation of genome-scale molecular diagnostics for microsatellite instability using targeted molecular counting methods
13:45		Ryan Fields	Washington University	Advancing cancer biology, diagnostics and therapeutics outside of the patient: creation of a novel, autologous, <i>ex vivo</i> , vascularized model of the tumor microenvironment
14:00		Sergei Nechaev	University of North Dakota	Transcriptome profiling of highly degraded specimens through global analysis of short RNA fragments

14:15	Amy Brock	University of Texas, Austin	High resolution cell lineage tracking and isolation
14:30	Tony Dickherber	Meeting Close	

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## Wednesday, Dec 2, 2020 Posters

1	Jacob Kennedy	Fred Hutchinson Cancer Research Center	Validation of a disposable biospecimen collection system with integral refrigeration for preserving the phosphoproteome
2	Aaron Mohs	University of Nebraska Medical Center	Tunable Fluorescent Organic Nanoparticles for Cancer Imaging Applications
3	Laurie Parker	University of Minnesota	Fluorescence lifetime-based single fluorophore biosensors of post-translational modification enzyme activity
4	Samantha Pattenden; Ian Davis; Paul Dayton	UNC Chapel Hill	The application of Enhanced Cavitation to enable DNA and Chromatin Extraction from Archived Tissues
5	Stephen Kron	University of Chicago	Tag-ChIP-MS for analysis of chromatin-level regulation of DNA repair
6	Farzad Fereidouni; Richard Levenson	UC Davis	Cancer histology and QC via MUSE: Sample-sparing UV surface-excitation microscopy
7	Amy Brock	University of Texas, Austin	High resolution cell lineage tracking and isolation
8	Anna Schibel	Electronic Biosciences, Inc.	Microsatellite Sequencing to Enable Cancer Genotyping
9	Margaret Gulley	University of North Carolina Chapel Hill	EndoGenus Toolkit: A biometric method for absolute quantification of tumor markers by massive parallel sequencing
10	Daniel Higginson	Sloan-Kettering Cancer Research Institute	Comprehensive breakpoint analyses for simultaneous quantification of all DNA double strand break repair pathways
11	Gautam Gupta	University of Louisville	Bio CaRGOS: Capture and release gels for optimized storage of Cancer Biospecimens
12	Wei Li	Texas Tech University	Fractionation and Profiling of Heterogeneous Circulating Tumor Cells Using a Hyperuniform- Structured Microchip
13	Michael Recht	Palo Alto Research Center	High-Throughput Screening Platform for Cancer Drug Discovery
14	Muneer Hasham	Jackson Laboratory	Impact of Genetic Diversity on Human Xenograft Tumor Growth
15	Shaopeng Wang	Arizona State University - Tempe Campus	A Virion-Display Oscillator Array and Detection Platform for Quantification of Transmembrane Protein Binding Kinetics
16	Fei Chen; Aviv Regev; Scott Rodig	Broad Institute	Clinical implementations of spatial transcriptomics in tumors
17	Rong Fan; Jun Lu	Yale University	High-throughput single-cell co-sequencing of small and large RNAs to identify molecular circuitry in cancer
18	Marcus Cicerone	Georgia Institute of Technology	Label-Free Cell-Resolved Metabolomics for Tumor Microscopy

19	Claire Hur	Johns Hopkins University	Development of a microfluidic primary cell editing platform (pCEP) for personal gene therapy
20	Chia-Lin Wei; Roel Verhaak	Jackson Laboratory	Advancing Ultra Long-read Sequencing and Chromatin Interaction Analyses for Chromosomal and Extrachromosomal Structural Variation Characterization in Cancer
21	Iwijn de Vlaminc; Ilana Brito; Warren Zipfel	Cornell University	Spatially Resolved Metagenomics to Explore Tumor-Microbiome Interactions in Human Colorectal Cancer
22	Steven Soper; Keith August	University of Kansas	Increased Sensitivity of Minimal Residual Disease Monitoring using Peripheral Blood in Pediatric Patients with Acute Lymphoblastic Leukemia
23	Albert Keung	North Carolina State University	Intracellular CRISPR gRNA assembly for massively multiplexed, one pot, (epi)genetic screening
24	Rachel O'Neill	University of Connecticut	Development and Utilization of Splice-specific Antibodies
25	Cristina Montagna; Jack Lenz	Albert Einstein College of Medicine	Development of a high-resolution mapping platform for HPV DNA integration in premalignant lesions
26	Hyungsoon Im	Massachusetts General Hospital	Nano-plasmonic technology for high-throughput single exosome analyses
27	Livia Schiavinato Eberlin	University of Texas, Austin	Advanced Development of the MasSpec Pen for Cancer Diagnosis and Surgical Margin Evaluation
28	Laura Andres-Martin	New York Stem Cell Foundation	Establishing efficient technologies for ovarian cancer organoid derivation from fresh tumor resections
29	Adam Mailloux	Moffitt Cancer Center & Research Institute	Autohistomagnetic Isolation of Tumor-reactive T-cells

### Thursday, Dec 3, 2020 Posters

30	Arminja N Kettenbach; Scott Gerber	Dartmouth College	Activity based profiling of Phosphoprotein phosphatases in cancer using mass spectrometry-based proteomics
31	Jenny Yang	Georgia State University	Multi-color Mapping of Cancer Molecular Signatures and Tumor microenvironment
32	Hossein Tavana; Gary Luker	University of Akron	A High Throughput Human Tumor Modeling Technology for Cancer Drug Discovery
33	Alex Kentsis; Paolo Cifani	Sloan-Kettering Cancer Research Institute	Multi-dimensional targeted mass spectrometry technology for pathway-scale functional proteomics
34	Jonathan Schneck	Johns Hopkins University	A high-throughput nanoparticle assay to characterize cancer neoepitope-specific T cells
35	Christopher Warren; Mary Ozers	Proteovista, LLC	SNAP-X: Development of a Mutagenesis Strategy and High Density Protein Array to Comprehensively Display Protein Variants
36	Srikanth Singamaneni; Jeremiah Morrissey	Washington University	Metal-Organic Framework as protective coating for cancer biospecimen preservation
37	Hyun Jung Kim	University of Texas, Austin	A personalized colorectal cancer-on-a-chip for assessing tumor-microbiome crosstalk
38	Jarrod Marto; Sara Buhrlage	Dana-Farber Cancer Institute	Tools for DUB Drug Discovery
39	Ning (Jenny) Jiang	University of Texas, Austin	An integrated therapeutic T cell receptor screening platform for adoptive cell therapy in cancer
40	Yazhen Zhu; Vatche Agopian; Hsiang-Rong Tseng	UC Los Angeles	Click Chemistry-Mediated Microfluidic Sorting for HCC CTCs

41	Sidi Chen	Yale University	Rapidly scalable platforms for direct in vivo screening of functional drivers in lethal cancers
42	Ralph Weissleder	Massachusetts General Hospital	Single Circulating Vesicle Analysis for Early Cancer Detection
43	Manuel Garber	University of Massachusetts	A modular, customizable sequencing system for simultaneous genotyping and transcript analysis in single cells
44	Parijat Bhatnagar	SRI International	T-cell Biofactories for targeting interstitial fluid pressure
45	Joshua Bruenig	Cedars-Sinai Medical Center	GESTALT Barcoding and Single-cell Transcriptomics of Tumor Cell Evolution in Personalized Tumor Models
46	Eric Seibel	University of Washington	Rapid Needle Biopsy Assessment at Point of Care to advance personalized cancer therapy
47	Robert Graham Cooks; Kaisorn Lee Chaichana; Alfred Quinone-Hinojosa	Purdue University	Advanced Development of Desorption Electrospray Ionization Mass Spectrometry for Intraoperative Molecular Diagnosis of Brain Cancer using Pathology Biopsies
48	Yun (Sunny) Wu; Qiaoqiang Gan	SUNY Buffalo	Exosome-Protein-microRNA-OneStop (Exo-PROS) biosensor: a new liquid biopsy for cancer screening and early detection
49	Yuguo (Leo) Lei	University of Nebraska, Lincoln	A Single Conical Tube Device for Precision CAR-T Cells Manufacturing
50	Reto Fiolka	UT Southwestern Medical Center	Multiscale microscope for 3D cancer imaging in model organisms and organoids
51	Keith Yamamoto; Nevan Krogan	UC San Francisco	CasCUT&RUN: An in vivo method to analyze locus-specific protein complexes driving transcription of target genes in cancer
52	Alexander Revzin	Mayo Clinic Rochester	A microfluidic cell culture platform for personalizing pancreatic cancer therapies
53	Peggi Angel	Medical University of South Carolina	Enzymatic Tools for 2D Tissue Localized and Deeper Proteomic Sequencing of Cancer Stromal Proteins
54	Xiaohua Huang	UC San Diego	Technology for measuring telomere length of individual chromosomes of single cancer cells
55	Aleksander Skardal; Roy Ervin Strowd	The Ohio State University	Predicting Tumor Heterogeneity Evolution After Therapy In Patient-Derived Ex Vivo Glioblastoma Organoids
56	Gennady Shvets	Cornell University	Phenotypic assay for drug discovery and personalized medicine based on real-time vibrational spectroscopy enhanced by plasmonic metasurfaces
57	Albert Folch	University of Washington	High-content functional cancer drug testing on micro-cuboidal tumor dissections
58	Ji-Xin Cheng	Boston University	Quantitative SRS Imaging of Cancer Metabolism at Single Cell Level