NIH Extracellular RNA Communication Consortium
ERCC Program Closeout Meeting
May 1-2, 2023

Bethesda North Marriott Conference Center, Main Ballroom, Salons A & B
5701 Marinelli Road, Rockville MD 20852

Mon, May 1st

Note: All times are ET

Welcome & ERCC Overview	
8:15 a.m.	Badge pickup
8:30 a.m.	Danilo Tagle, Director, Office of Special Initiatives, National Center for Advancing Translational Sciences, NIH: Opening remarks & ERCC overview
8:45 a.m.	ERCC2 goals & accomplishments - Louise Laurent & Saumya Das (ERCC2)
Session I: Carrier Sorting Technologies & Applications I	Session Chairs: Angela Zivkovic & Meenu Srinivasan
9:05 a.m.	Hsueh-Chia Chang (ERCC2), College of Engineering, University of Notre Dame: High-throughput purification, fractionation and characterization of extracellular vesiclesand nanoparticles for diagnostic and therapeutic applications
9:25 a.m.	Robert Coffey (ERCC2), Dept. of Cell & Developmental Biology, Vanderbilt University: Extracellular vesicles and nanoparticles: Emerging complexities
9:45 a.m.	Louise Laurent (ERCC2), Dept. of Obstetrics, Gynecology & Reproductive Sciences, UC San Diego: Developing an immunomagnetic separation strategy for mapping extracellular vesicle heterogeneity
10:05 a.m.	*Break & Networking (30 min)*
10:35 a.m.	Bogdan Mateescu (ERCC2), Brain Research Institute, Universit of Zurich: PRISM: Purification of exRNA by Immuno-capture and Sorting using Microfluidics
10:55 a.m.	Ken Witwer (ERCC2), School of Medicine, Johns Hopkins University: Asymmetric flow field-flow fractionation for separation of exRNA carriers: Blood plasma lipoproteins and extracellular vesicles
11:15 a.m.	Daniel Chiu (ERCC2), Depts. of Chemistry & Bioengineering, Univsersity of Washington: Digital flow cytometry for the analysis of single extracellular vesicles and particles
11:35 a.m.	Shannon Stott, Center for Engineering in Medicine & Surgery, Massachusetts General Hospital: Microfluidics for cell-specific EV isolation
11:55 a.m.	Justus Ndukaife, Dept. of Electrical Engineering, Vanderbilt University: Next generation optical nanotweezers for unraveling the heterogeneity of extracellular vesicles and particles (EVPs)
12:05 p.m.	*Lunch, Networking, Posters (unattended) (90 min)*
12:45 - 1:15 p.m.	Ontology Discussion
Sesson II: ERCC Resource & Technology Showcase	Session Chairs: Jeff Franklin & Olesia Gololobova
1:35 p.m.	Aleks Milosavljevic (ERCC2), Dept. of Molecular & Human Genetics, Baylor College of Medicine: Untangling the complexity of EVs and their cargo using the exRNA Atlas
1:55 p.m.	Joel Rozowsky (ERCC2), Dept. of Molecular Biophysics & Biochemistry, Yale University: Integrative analysis of extracellular RNA profiles and associated tools for analyzing exRNA sequencing data
2:15 p.m.	Sharon Stack, Harper Cancer Research Institute, University of Notre Dame: Application of Asymmetric Nanopore Membrane (ANM) technology to evaluate extracellular vesicle-mediated tumor-host communication
2:35 p.m.	Roger Alexander (ERCC2), Extracellular RNA Communication Consortium: Overview of ERCC2 technology development
2:55 p.m.	Justin Chang (ERCC2), Dept. of Molecular Biophysics & Biochemistry, Yale University: Visualizing dimensionally-reduced Atlas data: the exRNA Explorer tool
3:05 p.m.	Jessie Arce (ERCC2), Dept. of Molecular & Human Genetics, Baylor College of Medicine: The NanoFlow Repository: a resource for sharing standards-compliant metadata and data for flow cytometry experiments involving extracellular vesicles and other particles
3:15 p.m.	*Break & Networking (30 min)*
Plenary Speaker	Introduction: Saumya Das
4:15 p.m.	**Plenary Speaker: Eduardo Marbán**, Smidt Heart Institute, Cedars-Sinai Medical Center: Novel ncRNA drugs bioinspired by EV contents
4:45 p.m.	Day 1 Summary
Session III: Poster session	
5:00 p.m.	Poster Sesssion, Main Ballroom, Salon C
6:30 p.m.	Day 1 adjourns

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Tue, May 2nd

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Welcome		**NIH: Opening Remarks & ERCC Overview**
	8:30 a.m.	Patricia Labosky, Office of Strategic Coordination – Common Fund Division of Program Coordination, Planning, and Strategic Initiatives, Office of the Director, NIH: Opening Remarks
Session IV Carrier Sorting Technologies & Applications II		Session Chairs: Bogdan Mateescu & Marsalas Whitaker
	8:45 a.m.	Eduardo Reategui (ERCC2), Dept. of Chemical & Biomolecular Engineering, Ohio State University: RNA characterization in single extracellular vesicles and particles from complex biofluids for cancer diagnostics
	9:05 a.m.	David Routenberg (ERCC2), Meso Scale Diagnostics: Identification and isolation of EVs with multi-marker signatures
	9:25 a.m.	Jeff Franklin (ERCC2), Dept. of Cell & Developmental Biology, Vanderbilt University: Overview of ERCC2 benchmarking studies: Complementary technologies to analyze a colorectal cancer cell secretome
REMOTE	9:45 a.m.	An Hendrix, Laboratory of Experimental Cancer Research, University of Ghent: A versatile toolbox for a comprehensive view on extracellular vesicles
	10:05 a.m.	Steven A. Soper, Center of BioModular Multi-scale Systems for Precision Medicine, University of Kansas Mixed-scale fluidic systems for the high efficiency selection of disease-associated EVs and their subsequent analysis for disease management
	10:25 a.m.	*Break & Networking 30 min*
	10:55 a.m.	Tony Jun Huang (ERCC2), Pratt School of Engineering, Duke University: Acoustofluidic technologies for the manipulation of cells and extracellular vesicles
	11:15 a.m.	Ionita Ghiran (ERCC2), Beth Israel Deaconess Medical Center: Identification of post-transcriptional modifications in nucleic acid sequences using purpose-designed molecular beacons
	11:35 a.m.	Gijung Kwak, Center for Nanomedicine, Johns Hopkins University: Extracellular vesicle-associated adeno-associated virus for inhaled gene delivery
REMOTE	11:55 a.m.	Giovanni Camussi, Dept. of Medical Sciences, University of Turin: Edible plant-derived extracellular vesicles as a carrier for an oral SARS-COV-2 vaccine
	12:15 p.m.	Priyanka Gokulnath (ERCC2), Cardiovascular Research Center, Massachusetts General Hospital: Extracellular vesicle microRNA cargo drives ventricular arrhythmia in heart failure patients by recapitulating developmental genes
	12:35 p.m.	*Lunch, Networking, Posters (unattended) (90 min)*
Session V: ExRNAs as Biomarkers		Session Chairs: Jennifer Jones & Jack Zheng
	2:05 p.m.	Tijana Jovanovic-Talisman (ERCC2), Dept. of Cancer Biology and Molecular Medicine, Beckman Research Institute, City of Hope: Integrated computational, "omics," and imaging approaches to high resolution identification of tissue-specific EVs
	2:25 p.m.	Desmond Brown, Neurosurgical Oncology Unit, Surgical Neurology Branch, National Institute of Neurological Disorders and Stroke: Primary cilia: Exploitable glioblastoma signaling hubs
	2:45 p.m.	Dennis Jeppesen (ERCC2), Dept. of Cell & Developmental Biology, Vanderbilt University: Ubiquitination of extracellular proteins is specific for tetraspanin-enriched small extracellular vesicles
	3:05 p.m.	Julie Saugstad, School of Medicine, Oregon Health & Science University: miRNAs as biomarkers for and mediators of Alzheimer's Disease
	3:25 p.m.	*Break 10 min*
Session VI: Remaining Challenges and Future of the Field		Moderators: Matt Roth & Ken Witwer
	3:35 p.m.	Panel discussion. Panelists: Eduardo Marban, Shannon Stott, Justus Ndukaife & Sharon Stack
	4:30 p.m.	Christine Happel, Office of Special Initiatives, National Center for Advancing Translational Sciences (NCATS), NIH: Closing Remarks
	4:45 p.m.	Meeting adjourns
	6:30 p.m.	Close-out ERCC dinner – All invited; self-pay