



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



Bethesda North Marriott Conference Center, White Oak Room
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. Kevin Howcroft, Branch Chief, Cancer Immunology and Hematology Branch, National Cancer Institute:
Opening remarks & ERCC overview
- 8:45 a.m. ERCC2 goals & accomplishments - Louise Laurent & Saumya Das (ERCC)

Session I: Carrier Sorting Technologies & Applications I Session Chairs: Angela Zivkovic & Meenu Srimeenakshi

- 9:05 a.m. Hsueh-Chia Chang (ERCC), College of Engineering, University of Notre Dame:
High-throughput purification, fractionation and characterization of extracellular vesicles and nanoparticles for diagnostic and therapeutic applications
- 9:25 a.m. Shannon Stott, Center for Engineering in Medicine & Surgery, Massachusetts General Hospital:
Microfluidics for cell-specific EV isolation
- 9:45 a.m. Louise Laurent (ERCC), Dept. of Obstetrics, Gynecology & Reproductive Sciences, UC San Diego:
Mapping the heterogeneity of extracellular vesicles and their cargo using immunomagnetic separation
- 10:05 a.m. *Break & Networking (30 min)*
- 10:35 a.m. Bogdan Mateescu (ERCC), Brain Research Institute, University of Zurich:
PRISM: Purification of exRNA by Immuno-capture and Sorting using Microfluidics
- 10:55 a.m. Ken Witwer (ERCC), Johns Hopkins University:
Novel separation methods for exRNA carriers: Extracellular vesicles, lipoprotein particles, and protein aggregates
- 11:15 a.m. Daniel Chiu (ERCC), Depts. of Chemistry & Bioengineering, University 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)*

Session II: ERCC Resource & Technology Showcase Session Chairs: Jeff Franklin & Olesia Golobova

- 1:35 p.m. Aleks Milosavljevic (ERCC), 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 (ERCC), 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 (ERCC), Extracellular RNA Communication Consortium:
Overview of ERCC2 technology development
- 2:55 p.m. Justin Chang (ERCC), Dept. of Molecular Biophysics & Biochemistry, Yale University:
Visualizing dimensionally-reduced Atlas data: the exRNA Explorer tool
- 3:05 p.m. Jessie Arce (ERCC), Dept. of Molecular & Human Genetics, Baylor College of Medicine:
The NanoFlow Repository
- 3:15 p.m. *Break & Networking (30 min)*
- 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 Session, Main conference room
- 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 (ERCC), 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 (ERCC), Meso Scale Diagnostics: Identification and isolation of EVs with multi-marker signatures
9:25 a.m.	Jeff Franklin (ERCC), Dept. of Cell & Developmental Biology, Vanderbilt University: Overview of ERCC2 benchmarking studies: Complementary technologies to analyze a colorectal cancer cell secretome
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.	<i>Break & Networking 30 min</i>
10:55 a.m.	Tony Jun Huang (ERCC), Pratt School of Engineering, Duke University: Acoustofluidic technologies for the manipulation of cells and extracellular vesicles
11:15 a.m.	Jennifer Jones (ERCC), Translational Nanobiology Section, Laboratory of Pathology, National Cancer Institute: Advancements in cross-platform, cross-institutional multi-parametric EV studies
11:35 a.m.	<i>Speaker to be selected from submitted abstracts</i>
11:55 a.m.	<i>Speaker to be selected from submitted abstracts</i>
12:15 p.m.	<i>Speaker to be selected from submitted abstracts</i>
12:35 p.m.	<i>Lunch, Networking, Posters (unattended) (90 min)</i>
Session V: ExRNAs as Biomarkers	Session Chairs: Jennifer Jones & Jack Zheng
2:05 p.m.	Tijana Jovanovic-Talman (ERCC), 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.	<i>Speaker to be selected from submitted abstracts</i>
3:05 p.m.	<i>Speaker to be selected from submitted abstracts</i>
3:25 p.m.	<i>Break 10 min</i>
Session VI: Remaining Challenges and Future of the Field	Moderators: Matt Roth & Ken Witwer
3:35 p.m.	Panel discussion
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