

# KEYSTONE SYMPOSIA

on Molecular and Cellular Biology

## Exosomes, Microvesicles and Other Extracellular Vesicles - RESCHEDULED (RB3)

October 30-November 2, 2022 • Eldorado Hotel & Spa • Santa Fe, NM, USA

Scientific Organizers: Clotilde Thery, Andrew Hill and Susmita Sahoo

Sponsored by Cell Research, Chinese Society for Cell Biology, (Cell Research), Ionis Pharmaceuticals, Inc., Moderna, Takeda Pharmaceutical Company Limited and Ultragenyx Pharmaceutical Inc.

Scholarship Deadline: November 9, 2021 / Abstract Deadline: July 28, 2022 / Discounted Registration Deadline: August 30, 2022

### SUNDAY, OCTOBER 30

#### Arrival and Registration

### MONDAY, OCTOBER 31

#### EV Isolation, Characterization and Normalization

**Kenneth W. Witwer**, Johns Hopkins Medical Institutions, USA  
*Guidelines (MISEV2018), Rigor and Standardization Initiatives for EV Studies*

**Robert J. Coffey, Jr.**, Vanderbilt University Medical Center, USA  
*Update on Isolation and Characterization of Extracellular Vesicles and Nanoparticles*

**Aleksandar Milosavljevic**, Baylor College of Medicine, USA  
*A Map of Extracellular RNA-Binding Proteins (exRBPs) and their exRNA Cargo in Human Biofluids*

**Cláudio Pinheiro**, Gent University, Belgium  
*Short Talk: Evaluation of Disparate Methods to Separate Extracellular Vesicles from Multiple Biofluids in the Extracellular Vesicle Quality Control (EVQC) Study*

**Ariana K. von Lersner**, Vanderbilt University, USA  
*Short Talk: "EV Fingerprinting": Resolving the Heterogeneity of Extracellular Vesicle Populations using Dimensional Reduction of Multi-Parametric Flow Cytometry Data*

**Lizandra Jimenez**, Vanderbilt University, USA  
*Short Talk: Evaluation of Culture Conditions on the Presence of Ago2 and miRNAs in Small Extracellular Vesicles*

**Ferdinando Pucci†**, Oregon Health & Science University, USA  
*Short Talk: "EV Painting" Uncovers Hidden Surface Interactions Between Tumor EVs and Immune Cells in vivo*

#### Hands On Workshop: Tools for Analysis of RNA Sequencing Data in Extracellular RNA and EVs

#### Biogenesis and Transfer of EVs

**Pascale Zimmermann**, Centre de Recherche en Cancerologie de Marseille and KU Leuven, France  
*Syntenin-Dependent Exosome Formation and Induced Molecular Signaling in Cell-to-Cell Communication*

**Maureen M. Barr**, Rutgers University, USA  
*Cilia-Derived Vesicle Biogenesis and Signaling in Animal Communication*

#### Speaker to be Announced

**Niek Dekker**, AstraZeneca, Sweden  
*Engineered Extracellular Vesicles for Drug Delivery for Regenerative Therapy*

**Bahnisikha Barman**, Vanderbilt University, USA  
*Short Talk: VAP-A-CERT Linkages at ER-Membrane Contact Sites Regulate Biogenesis of RNA Containing Extracellular Vesicles*

**Daniel Humphrys**, University of Washington, USA  
*Short Talk: Functionalization of the Membrane Envelopes of Enveloped Protein Nanocages with Transmembrane Proteins*

### Poster Session 1

### TUESDAY, NOVEMBER 1

#### EVs and Cancer

**Michele De Palma**, École Polytechnique Fédérale de Lausanne, Switzerland

*Remote Presentation: Harnessing Tumor-Derived Extracellular Vesicles for Cancer Therapy*

**Clotilde Théry**, Institut Curie, France  
*Exosomes and Other EVs in Tumor-Immune System Cross-Talk*

**Wei Guo**, University of Pennsylvania, USA  
*Exosomal PD-L1 Contributes to Immunosuppression and Is Associated With Anti-PD-1 Response in Melanoma*

**Nuno Bastos**, i3S - Institute for Research and Innovation in Health, Porto, Portugal  
*Short Talk: Loss of Rab27a in Pancreatic Cancer Steers an Inflammatory Microenvironment that Promotes Disease Progression*

#### EVs in Aging-Nervous System

**Andrew Hill**, Victoria University, Australia  
*EVs in Neurodegenerative Diseases*

**Efrat Levy**, NYU Langone Health, USA  
*Extracellular Vesicles are Central to Neuronal Endosomal Pathway Integrity in Aging and in Neurodegenerative Diseases*

**Michael Hantak**, University of Utah, USA  
*Short Talk: Arc EVs are Virus-like Intercellular Communicators*

**Christian Neri**, IBPS, Sorbonne University, France  
*Short Talk: Extracellular Vesicle Remodeling in Response to Mutant Huntingtin*

#### Career Roundtable

#### EVs and Cardio-Metabolic Physio/pathology

**Clair Crewe**, Washington University School of Medicine in St. Louis, USA

*Adipocyte Energetic Stress Induces Mitochondrial-Derived Extracellular Vesicle Production to Regulate Systemic Metabolism*

**Elena Aikawa**, Harvard Medical School, Brigham and Women's Hospital, USA  
*The Role of Extracellular Vesicles in Cardiovascular Calcification*

**Susmita Sahoo**, Icahn School of Medicine at Mount Sinai, USA  
*EVs in Myocardial Gene Delivery*

**Alan M. Adamczyk**, University Of Buenos Aires, Argentina  
*Short Talk: Plasma Extracellular Vesicles Impair Macrophage Activation and Promote an M2 Phenotype*

**Tamires Marques Zanotto†**, State University of Campinas, Brazil  
*Short Talk: Designing a New Therapeutic Approach using Exosomal miRNAs to Target Metabolic Disease: PCSK9 Inhibition Effects in Reducing Atherosclerosis Risk as a Model System*

### Poster Session 2

### WEDNESDAY, NOVEMBER 2

#### Non Mammalian EVs and Viruses

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**Esther Nolte-'t Hoen**, Utrecht University, Netherlands  
*Viral and Host Mechanisms Driving the Release of EV-Enclosed Picornaviruses*

**Nihal Altan-Bonnet**, NHLBI, National Institutes of Health, USA  
*All Aboard: Extracellular Vesicles, Viruses and Strength in Numbers*

**Matias Ostrowski**, University of Buenos Aires, Argentina  
*HIV Pathogenesis and Extracellular Vesicles-Mediated Inflammation*

### Speaker to be Announced

**Tanina Arab**, Johns Hopkins University, USA  
*Short Talk: EV Packaging of U6 Small Nuclear RNA in SIV Infection*

**Daniel C. Rabe**, Massachusetts General Hospital, USA  
*Short Talk: Microfluidic Detection of SARS-CoV-2 and Virus-Related Extracellular Vesicles to Predict Outcome in COVID-19 Patients*

**Aadil Sheikh**, Baylor University, USA  
*Short Talk: Bacteria-Derived Outer Membrane Vesicles Contain Unique Small RNA Species and Interact with Host Cells*

### Novel Technological Developments

**Chioma Okeoma**, Stony Brook University, USA  
*Novel Technologies for EVs and Virus Separation*

**Jennifer C. Jones**, NCI, National Institutes of Health, USA  
*New Approaches to Individual EV Assays and EV Repertoire Studies*

**Thomas Gaborrski**, Rochester Institute of Technology, USA  
*Short Talk: Development of Nanopocket Membranes for the Purification and Fractionation of Extracellular Vesicle Subpopulations*

**Qin Zhang**, Vanderbilt University Medical Center, USA  
*Short Talk: Supermeres are Functional Extracellular Nanoparticles Replete with Disease Biomarkers and Therapeutic Targets*

**Olesia Gololobova**, Johns Hopkins University, USA  
*Short Talk: Asymmetric Flow Field-Flow Fractionation for Separation and Characterization of exRNA Carriers: Blood Plasma Lipoproteins and Extracellular Vesicles*

### Meeting Wrap-Up: Outcomes and Future Directions (Organizers)

### THURSDAY, NOVEMBER 3

#### Departure