



Join Keystone Symposia  
for the 2016 conference on:

# Exosomes/Microvesicles: Novel Mechanisms of Cell-Cell Communication

June 19–22, 2016

Keystone Resort | Keystone, Colorado | USA

Scientific Organizers: Richard A. Cerione and Xandra O. Breakefield

*Extracellular vesicles are thought to serve as a means of cell-to-cell communication and contribute to a number of disease states, including cancer and neurodegeneration, thus offering new targets for therapeutic intervention and novel possibilities for diagnostic biomarkers. However, a number of important questions need to be answered. What are the regulatory cues that determine content and release of these vesicles from "donor" cells? How many different types of extracellular vesicles are there and do they vary among cell types? Are there specific uptake mechanisms of vesicles into "recipient cells" and is the cargo functional in these cells? The time is right for a conference that covers this exciting area and aims to bring together investigators from different disciplines and areas of interest to present their newest findings concerning the biogenesis of extracellular vesicles, how they are shed and dock onto target cells, and the biological and disease consequences of their functions.*

*Session Topics:*

- Extracellular Vesicles and Cargo
- Extracellular Vesicle Biogenesis
- Extracellular Vesicle Release and Docking
- Extracellular Vesicles as Biomarkers and Therapeutic Vehicles
- Extracellular Vesicles in Cancer
- Extracellular Vesicles in Other Aspects of Biology and Disease
- Meeting Wrap-Up: Outcomes and Future Directions



Submitting an abstract is a great way of participating in the conference through poster presentation and possible selection for a short talk.

**Scholarship & Discounted Abstract Deadline: Feb 18, 2016**

**Abstract Deadline: Mar 17, 2016**

**Discounted Registration Deadline: Apr 19, 2016**

For additional details, visit [www.keystonesymposia.org/16E4](http://www.keystonesymposia.org/16E4).

**KEYSTONE SYMPOSIA™**  
on Molecular and Cellular Biology  
*Accelerating Life Science Discovery*

[www.keystonesymposia.org/meetings](http://www.keystonesymposia.org/meetings) | 1.800.253.0685 | 1.970.262.1230

a 501(c)(3) nonprofit educational organization

# KEYSTONE SYMPOSIA

on Molecular and Cellular Biology

## Exosomes/Microvesicles: Novel Mechanisms of Cell-Cell Communication (E4)

June 19-22, 2016 • Keystone Resort • Keystone, Colorado, USA

Scientific Organizers: Richard A. Cerione and Xandra O. Breakefield

Supported by the Directors' Fund

Abstract & Scholarship Deadline: February 18, 2016 / Abstract Deadline: March 17, 2016 / Discounted Registration Deadline: April 19, 2016

### SUNDAY, JUNE 19

#### Arrival and Registration

### MONDAY, JUNE 20

#### Welcome and Keynote Address

\***Richard A. Cerione**, Cornell University, USA

**Xandra O. Breakefield**, Massachusetts General Hospital, USA  
*The Language of Extracellular Vesicles*

#### Extracellular Vesicles and Cargo

**Jan Lötvall**, University of Gothenburg, Sweden  
*Extracellular Vesicles and their RNA Cargo*

\***Louise Laurent**, University of California, San Diego, USA  
*ExRNAs as Biomarkers of Placental Function*

**Raghu Kalluri**, University of Texas MD Anderson Cancer Center, USA  
*The Biology and Function of Exosomes in Cancer*

**Jennifer C. Jones**, NCI, National Institutes of Health, USA  
*Short Talk: NanoFACS: A Tool to Enable Extracellular Vesicle Subset Sorting for Personalized Medicine*

**Valery Combes**, University of Technology Sydney, Australia  
*Short Talk: Identification of a Novel Intracellular Actin-Based Structure Implicated in Endothelial Vesiculation*

#### Workshop

**Chulhee Choi**, Korea Advanced Institute of Science and Technology, South Korea  
*Efficient intra-cellular Delivery of Therapeutic Proteins via Opto-genetically Engineered Exosomes*

**Deepak Nagrath**, University of Michigan, USA  
*Tumor Microenvironment Derived Exosomes: A Major Player Regulating Cancer Cell Metabolism*

**Paul Coats**, University of Strathclyde, UK  
*Mitochondrial Regulation of Exosomal MicroRNA Cargo in Vascular Smooth Muscle Cell Proliferation*

\***Carole A. Parent**, NCI, National Institutes of Health, USA  
*Exosomes as Key Regulators of Signal Relay during Chemotaxis*

**Ryan Middleton**, Cedars-Sinai Medical Center, USA  
*Newt Exosomes are Bioactive on Mammalian Heart, Enhancing Proliferation of Rat Cardiomyocytes and Improving Recovery after Myocardial Infarction*

**Anaïs Soula**, Interdisciplinary Institute for Neurosciences, France  
*Involvement of Exosomal miRNAs in the Mechanisms of Neuronal Plasticity*

**Michela Marcatti**, University of Texas Medical Branch, USA  
*Damaged Mitochondrial DNA as a Potent Inducer of Lung Inflammation*

**Leonid Margolis**, NICHD, National Institutes of Health, USA  
*Extracellular Vesicles in HIV Infection: Analysis and Function*

#### Extracellular Vesicle Biogenesis

**Guillaume van Niel**, Institute Curie, France  
*Exosomes Shed new Light on Endosomal Sorting and Functional Amyloid Formation*

**Richard A. Cerione**, Cornell University, USA  
*Signals that Lead to Microvesicle Formation*

\***Stephen J. Gould**, Johns Hopkins University School of Medicine, USA

*Exosome Biogenesis: Models, Predictions and Results*

**Ann M. Wehman**, University of Würzburg, Germany  
*Short Talk: PAD-1 Activates the Phospholipid Flippase TAT-5 to Prevent Extracellular Vesicle Release in C. elegans*

#### Poster Session 1

### TUESDAY, JUNE 21

#### Extracellular Vesicle Release and Docking

**Marc Antonyak**, Cornell University, USA  
*Embryonic Stem Cell Microvesicles and Their Roles in Early Development*

\***Crislyn D'Souza-Schorey**, University of Notre Dame, USA  
*Extracellular Microvesicles Mediate Tumor Cell Invasion*

**Phyllis I. Hanson**, Washington University School of Medicine, USA  
*ESCRTs, Endosomal Trafficking, and Extracellular Vesicle Biogenesis*

**Hakho Lee**, Massachusetts General Hospital, USA  
*Nanotechnology Platforms for Quantitative Analyses of Extracellular Vesicles*

**Andrew R. Nager**, Pfizer, USA  
*Short Talk: Actin-Dependent Ectocytosis and BBSome/beta-Arrestin2-Mediated Retrieval Drive the Removal of Activated GPCRs from Cilia*

**Chungen Pan**, Dalhousie University, Canada  
*Short Talk: Fusogenic Nonenveloped Reoviruses are Released as Highly Infectious Vesicle-Encapsulated Nonenveloped Virus (VENEV) Particles Inside Fusogenic Exosomes*

#### Extracellular Vesicles as Biomarkers and Therapeutic Vehicles

\***Johan Skog**, Exosome Diagnostics, Inc., USA  
*Exosome Based Liquid Biopsy for Cancer Screening, Patient Stratification and Monitoring*

**Richard Simpson**, La Trobe University, Australia  
*Comparative Proteome and RNA Analyses of Extracellular Vesicle Subtypes*

**Anastasia Khvorova**, University of Massachusetts Medical School, USA

*Exosomes as Therapeutic RNA Delivery Vehicles*

**Andrew Michael Breglio**, NIDCD, National Institutes of Health, USA  
*Short Talk: Exosomes Protect Inner Ear Hair Cells from Aminoglycoside-Induced Death*

#### Poster Session 2

### WEDNESDAY, JUNE 22

#### Extracellular Vesicles in Cancer

# KEYSTONE SYMPOSIA

on Molecular and Cellular Biology

## Exosomes/Microvesicles: Novel Mechanisms of Cell-Cell Communication (E4)

June 19-22, 2016 • Keystone Resort • Keystone, Colorado, USA

Scientific Organizers: Richard A. Cerione and Xandra O. Breakefield

Supported by the Directors' Fund

Abstract & Scholarship Deadline: February 18, 2016 / Abstract Deadline: March 17, 2016 / Discounted Registration Deadline: April 19, 2016

\***Janusz Rak**, McGill University, Canada

*Intercellular Trafficking of Oncogenic Macromolecules as Cargo of Extracellular Vesicles in Cancer – Pathways and Barriers*

**Ayuko Hoshino**, Weill Cornell Medicine, USA

*Tumor Exosome Integrins Initiate Pre-Metastatic Niches*

**E. Antonio Chiocca**, Brigham and Women's Hospital, USA

*Role of Microvesicles in Glioblastoma*

**Alissa M. Weaver**, Vanderbilt University School of Medicine, USA

*Role of Exosomes in Promoting Directional Migration of Cancer Cells*

**Sónia A. Melo**, i3S Instituto de Investigacao e Inovacao em Saude, Portugal

*Short Talk: ExoNet: Exosomes-Mediate Intra-Tumor Communication in Pancreatic Cancer*

**Maria Laura Tognoli**, University of Oxford, UK

*Short Talk: RASSF1C Promotes Tumor Invasiveness via Exosome Release*

### Extracellular Vesicles in Other Aspects of Biology and Disease

\***Leonid Margolis**, NICHD, National Institutes of Health, USA

**Mercedes Tkach**, Institut Curie, France

*Extracellular Vesicles in Immune Response*

**Kaushik Choudhuri**, University of Michigan Medical School, USA

*Microvesicle Release in T Cell Communication*

**Andrew Hill**, La Trobe University, Australia

*Role of Extracellular Vesicles in Neurodegenerative Diseases*

### Meeting Wrap-Up: Outcomes and Future Directions

**Richard A. Cerione**, Cornell University, USA

**Xandra O. Breakefield**, Massachusetts General Hospital, USA

### THURSDAY, JUNE 23

#### Departure