

International Society for Extracellular Vesicles 2018 Workshop Membranes and EVs



March 24-25, 2018
Johns Hopkins University
Baltimore, Maryland, USA

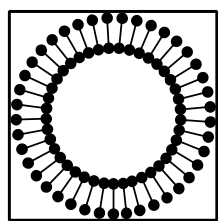
733 North Broadway
Entrance: Miller Research Building
Turner Concourse
Darner Conference Room (G007)
and G001 (breakout)

Organizing Committee

Chair: Kenneth W. Witwer, JHU
Norman Haughey, JHU
Steven M. Jay, University of Maryland
Alicia Martinez Llorente, Oslo University Hospital
Vasiliki Machairaki, JHU
Nicole Noren Hooten, National Institute on Aging
Jeanne Sisk, JHU
Marca Wauben, Universiteit Utrecht
Hang Yin, Tsinghua University

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Departments of Molecular and Comparative Pathobiology and Neurology, JHU



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8:00-9:00 Registration

9:00-9:30 Welcome, Introductions, Outline and the Value of ISEV Seminars and Outputs

Marca Wauben and local organizing committee

9:30-9:45 Why this Workshop? Addressing Big Questions in EV Membrane Biology

Kenneth Witwer

Topic #1: EV Release

Chairpersons: Vasiliki Machairaki and Ashley Russell

9:45-10:15 Exosome Biogenesis: an Overview

Steve Gould, Johns Hopkins, USA

10:15-10:30 Reflections on Biogenesis

Matias Ostrowski, University of Buenos Aires, Argentina

10:30-11:00 Networking Coffee Break and Sponsor Exhibition

11:00-11:15 Tracking exosome secretion in live cells and organisms

Frederik Verweij, Institut Curie, Paris, France

11:15-11:30 Choroid plexus-derived extracellular vesicles as an important player in neuroinflammation

Roosmarijn Vandenbroucke, VIB-UGent Center for Inflammation Research, Ghent, Belgium

11:30-11:45 Three dimensional visualization of extracellular vesicle release and uptake

Emanuele Cocucci, The Ohio State University, Columbus, USA

11:45-12:00 A Dynamic Scaling Model of Exosome Size Distributions

Michael Paulaitis, Johns Hopkins University, USA

12:00 to 1:00 Lunch Break and Sponsor Exhibition

Topic #2: EV fusion and uptake

Chairpersons: Steve Gould, Yiyao Huang

1:00-1:30 Overview: Uptake of Extracellular Vesicles in a Cell Free Extract

Gregory Lavieu, Institut Curie, INSERM, Paris, France

1:30-1:45 Viruses and fusion (Title TBA)

Jeanne Sisk, Johns Hopkins University, USA

1:45-2:00 Dye another day – issues with EV-staining fluorescent dyes and studying vesicular uptake

Dave Carter, Oxford Brookes University, United Kingdom

2:00-2:15 Fusion of liposomal membranes and genetic modified extracellular vesicles

Ana V. Villar, Institute of Biomedicine and Biotechnology of Cantabria (IBBTEC), University of Cantabria and Valdecilla Hospital Biomedical Research Institute (IDIVAL)

2:15-2:30 Extracellular Vesicles and Cargo Transfer: Regulation by ESCRT Components and Membrane Fusion Modulators

Tom Gallagher, Loyola University Chicago, USA

2:30-3:00 Coffee Break and Sponsor Exhibition

3:00-5:00 Roundtable #1
Biogenesis

Moderators
Matias Ostrowski, Hang Yin

3:00-5:00 Roundtable #2
Uptake

Moderators
Pieter Vader, Jeanne Sisk

Sponsor Presentations

5:00-5:15 Label-Free Imaging for High Throughput Single Vesicle Sizing and Phenotyping

George Daaboul, NanoView Biosciences

5:15-5:30 **SPONSORED PRESENTATION: TBA**

5:30-6:00 Wrap-up presentations from Roundtables 1 and 2
Discussion

7:00-9:00 Networking Dinner, Barcocina, Fells Point
1629 Thames St, Baltimore, MD 21231

Please plan to carpool or take a taxi, Uber, or Lyft to the location.

Day 2: Sunday, March 25

Topic #3: Technologies to target EV membranes and membrane proteins

Chairpersons: Nicole Noren Hooten, Zhiwei Wu

8:25-8:30 Welcome and introduction to the second day

8:30-9:00 Overview: Membrane curvature and lipid composition sensors targeting extracellular vesicles

Hang Hubert Yin, University of Colorado Boulder, USA

9:00-9:30 Overview: Single-molecule detection technologies

Taekjip Ha, Johns Hopkins University, USA

9:30-9:45 Toward Building Physiologically Relevant Bilayers for More Accurate Membrane Protein Structure Determination

Deanna Tesch, Shaw University

9:45-10:00 Projecting extracellular vesicles in two dimensions

Paulo Bergese, Department of Molecular and Translational Medicine, University of Brescia, Brescia, Italy. CSGI, Research Center for Colloids and Nanoscience, Firenze, Italy. INSTM, National Interuniversity Consortium of Materials Science and Technology, Firenze, Italy.

10:00-10:15 Development of 3-Hexanoyl-NBD Cholesterol (3NBDC) as a biochemical tool to detect cholesterol in microparticle membranes

Shuaishuai Hu, Dublin Institute of Technology, Dublin, Ireland

10:15-10:30 Membrane-engineering approaches to develop targeted, siRNA-loaded EVs

Pieter Vader, University Medical Center Utrecht

10:30-11:00 Coffee Break and Sponsor Exhibition

Topic #4: EV transfer: function and functional assays

Chairpersons: Steve Jay, Amrita Datta Chaudhuri

11:00-11:15 Crucial controls in EV functional studies

Marca Wauben, Utrecht University, The Netherlands

11:15-11:30 Intracellular delivery via ARRDC1-mediated microvesicles (ARMMs)

Quan Lu, Harvard University, Cambridge, USA

11:30-11:45 Live imaging of degranulation-labeled EVs and the clearance of cell debris by LC3-associated phagocytosis

Ann Wehman, University of Würzburg, Germany

11:45-12:00 Opening and revesiculation of exosome membranes for loading purposes

Jan Lötvald, University of Gothenburg, Sweden

12:00-1:00 Lunch Break and Sponsor Exhibition

1:00-1:15 Role of Cellular Organelles in Controlling Biogenesis of miRNPs in Mammalian Cells

Suvendra Bhattacharyya, CSIR-Indian Institute of Chemical Biology, Kolkata, India

1:15-1:30 Placenta-derived mesenchymal stem cells and their secreted exosomes exert therapeutic effects in Duchenne muscular dystrophy via the transfer of miR-29

Chaya Brodie, Faculty of Life Sciences, Bar-Ilan University, Bar-Ilan Israel and ExoStem Biotech, Israel

1:30-1:45 Glia-to neuron transfer of miRNAs via extracellular vesicles: a new mechanism underlying inflammation-induced synaptic alterations

Ilaria Prada, CNR-Institute of Neuroscience, Milan, Italy

1:45-4:00 Roundtable #3
Technologies and Strategies

Moderators
Marca Wauben, Paolo Bergese

1:45-4:00 Roundtable #4
Transfer and transfer assays

Moderators
Jan Lötvall and Daniel Anthony

4:00-4:30 Coffee break and Sponsor Exhibition

4:30-5:30 Wrap-up presentations from Roundtables 3 and 4
Discussion
Planning for Workshop product

5:30-6:00 Working groups, informal discussions, farewell

