NIH Extracellular RNA Communication Consortium
9th Investigators’ Meeting
November 6-7, 2017
Hilton Washington DC/Rockville Hotel & Executive Meeting Center
Plaza Ballroom†, 1750 Rockville Pike, Rockville, MD 20852

Monday, November 6th, 2017

Welcome and Registration
8:15 a.m.  Registration opens
9:15 a.m.  Opening Remarks

Session I: Extracellular Vesicle Biogenesis and Function  
Session Chairs:  Drs. Nihal Altan-Bonnet & Xandra Breakefield

9:30 a.m.  HIV-1 Latency: The Relationship between Virus, Exosomes, and TAR-gag, a Novel HIV-1 RNA.  
Robert Barclay
9:45 a.m.  Inter-Organismal Vesicular Transmission of Enteric Viruses  
Marianita Santiana
10:00 a.m.  CD63, MHC class 1, and CD47 identify subsets of extracellular vesicles containing distinct populations of non-coding and microRNA  
Sukhbir Kaur
10:15 a.m.  The RNA binding protein HuR regulates extracellular vesicle secretion in colorectal cancer  
Daniel A. Dixon
10:30 a.m.  Oncogene Regulated Production and Release of Vesicles and Extracellular RNAs  
Seda Kilinc Avsarglu

10:45 a.m.  Discussion: Cargo Sorting

11:30 a.m.  Lunch* and DMRR Workshop

1:00 p.m.  Special Presentation: Methodologies to Standardize Flow Cytometric Measurement of Extracellular Vesicles and Quantitatively Measure Extracellular RNA  
Erica Stein

Session II: exRNA and Extracellular Vesicle Standards and Resources  
Session Chairs:  Drs. Kendall Jensen & Hameeda Sultana

1:30 p.m.  Definition of serum ribonucleoprotein composition and its regulation and function  
Klaas Max
1:45 p.m.  Comparison of different technical platforms for circulating miRNA profiling  
Vasily Aushev
2:00 p.m.  Full-coverage landscape of extracellular coding and non-coding RNA released by human glioma stem cells  
Anna M. Krichevsky
2:15 p.m.  The exRNA Atlas resource provides insights into exRNA biology through cross-study analysis of exRNA profiles  
Aleksandar Milosavljevic
2:30 p.m.  exceRpt: the extracellular RNA-Seq processing pipeline of the ERCC  
Joel Rozowsky

2:45 p.m.  Break

Session III: Research, Diagnosis and Biomarkers  
Session Chairs:  Drs. Leonora Balaj & Tomer Cooks

3:00 p.m.  Extracellular vesicle microRNA signatures reveal tissue heterogeneity in defined glioblastoma subtypes  
Agnieszka Bronisz
3:15 p.m.  MicroRNA Biomarkers for Alzheimer's Disease in Human Cerebrospinal Fluid  
Julie Saugstad
3:30 p.m.  The bioavailability and distribution of exosomes and their RNA cargos from bovine and porcine milk in mice  
Janos Zempleni
3:45 p.m.  Extracellular RNA profiles with human age  
Nicole Noren Hooten
3:00 p.m.  Plasma-based detection of the mutant IDH1.R132H in glioma patients  
Leonora Balaj

4:15 p.m.  Break

4:30 p.m.  Poster Session and Networking (Foyer)
6:30 p.m.  

* Attendees will be responsible for their own meals and/or refreshments. The government neither provides nor reimburses the cost of food and beverage.
† Unless otherwise noted, all talks will be held in the Plaza Ballroom.
Tuesday, November 7th, 2017

**Special Session: Navigating Regulatory Submissions**

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<thead>
<tr>
<th>Time</th>
<th>Topic</th>
<th>Speaker</th>
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<tbody>
<tr>
<td>9:30 a.m.</td>
<td>Regulatory Considerations for In Vitro Diagnostics</td>
<td>Aaron Schetter</td>
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<tr>
<td>10:00 a.m.</td>
<td>Regulatory Considerations for Biologics</td>
<td>Malcolm Moos</td>
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**Session IV: Therapeutic Uses of exRNA and Extracellular Vesicles**

Session Chairs: Drs. Ana Robles & Tom Schmittgen

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<thead>
<tr>
<th>Time</th>
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<tbody>
<tr>
<td>10:30 a.m.</td>
<td>Anti-HER2 scFv-directed extracellular vesicle-mediated mRNA-based gene delivery arrests growth of HER2-positive human breast tumor xenografts by prodrug activation</td>
<td>A.C. Matin</td>
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<tr>
<td>10:45 a.m.</td>
<td>Modified Extracellular Vesicles Improves Host Immune Response in Colorectal Cancer</td>
<td>Subbaya Subramanian</td>
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<td>11:00 a.m.</td>
<td>Optimizing exosome production and intracerebroventricular delivery to brain</td>
<td>Reka A. Haraszti</td>
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<td>11:15 a.m.</td>
<td>Tissue Regeneration by Exosome Engineering</td>
<td>James D. Bryers</td>
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<td>11:30 a.m.</td>
<td>N6-Methyladenosine (m6A) RNA Modifications Mediate the Beneficial Function of Human CD34+ Stem Cell-Derived Exosomes to Repair the Failing Heart</td>
<td>Susmita Sahoo</td>
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11:45 a.m. **Lunch* and Networking**

**Session V: Cutting-Edge Technologies**

Session Chairs: Drs. Dolores Di Vizio & Jennifer Jones

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<tr>
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<tbody>
<tr>
<td>1:15 p.m.</td>
<td>Quantification and characterization of low-abundance exosomes and RNA biomarkers with Interferometric Reflectance Imaging</td>
<td>Derin Sevenler</td>
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<td>1:30 p.m.</td>
<td>Role of Red Blood Cell derived extracellular vesicles in cardiac remodeling after myocardial infarction in a transgenic murine model</td>
<td>Saumya Das</td>
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<tr>
<td>1:45 p.m.</td>
<td>Microfluidic Isolation and Molecular Profiling of Tumor-specific Extracellular Vesicles</td>
<td>Berent Aldikacti</td>
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<tr>
<td>2:00 p.m.</td>
<td>Sequencing exosomal mRNA and lncRNA across human biofluids coupled with targeted enrichment of exosomal sub-populations reveals novel biomarkers</td>
<td>Robert Kitchen</td>
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<td>2:15 p.m.</td>
<td>Evaluating functional delivery of cargo in extracellular vesicles</td>
<td>Meadbh Brennan</td>
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2:30 p.m. **Break**

**Session VI: Discussions Not to Miss – Future Directions of Research**

Session Chairs: Drs. Louise Laurent & Aleksandar Milosavljevic

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<tr>
<td>2:45 p.m.</td>
<td>Technological Challenges &amp; Opportunities</td>
<td>Jennifer Jones &amp; Mark Ansel</td>
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<td>3:10 p.m.</td>
<td>Critical Questions in EV Biology</td>
<td>Alissa Weaver &amp; Mike McManus</td>
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<td>3:35 p.m.</td>
<td>The Future of Clinical Applications of EVs/exRNAs</td>
<td>Tushar Patel &amp; Saumya Das</td>
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<td>4:00 p.m.</td>
<td>Open Discussion</td>
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5:00 p.m. **Closing Remarks**

5:15 p.m. **Meeting Adjourns**

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