

Advances in Extracellular Vesicle & Biomimetic Science 2025

Monday, December 1, 2025 - Tuesday, December 2, 2025

Baylor College of Medicine—Houston, Texas—Kleberg Auditorium

Professor Bruna Corradetti, Baylor College of Medicine—Conference Chairperson

Conference Day 1: Monday, December 1, 2025

08:00 *Conference Check-In, Badges Pick-Up and Networking*

09:00 *Welcome and Introduction by Conference Chairperson + Conference Themes and Topics*

Addressed -- by Professor Corradetti

Welcome Remarks and Opening Reflections -- by Professor Walker

Bruna Corradetti, Assistant Professor, Center for Precision Environmental Health,
Department of Medicine, Baylor College of Medicine -- Conference Chairperson

Professor Cheryl Walker, Chair, Center for Precision Environmental Health, Baylor College
of Medicine

Session Title: Session I: Extracellular Vesicles in Cancer and Immunology

09:15 Keynote Presentation

miRacles of Cell-to-Cell Communication in Cancer

George A. Calin, Chair, Department of Cancer Biology Department, Division of Discovery
Science, The University of Texas MD Anderson Cancer Center

09:45 *Cancer Cell-released Extracellular Vesicles Mediate Cachexia*

Yi-Ping Li, Professor, Department of Integrative Biology and Pharmacology, UTHealth
Houston

10:05 *CD9⁺ Extracellular Vesicles Instigate Generation of Myeloid-derived Suppressor Cells to
Promote Pancreas Cancer Recalcitrance to Immunotherapy*

Kate McAndrews, Assistant Professor, Department of Cancer Biology, MD Anderson Cancer
Center

10:25 *Partitioning the Immunostimulatory and Immunoinhibitory Functions of Dendritic Cell-
Secreted Extracellular Vesicles*

William K. Decker, Professor, Baylor College of Medicine

10:45 Mid-Morning Break -- Network with Colleagues and Exhibitors

Session Title: Session II: Emerging Technologies for EV Characterization and Detection

11:00 *Isolation-free Nanophotonic Single Exosome Profiling for Cancer Biomarker Validation and Early Cancer Detection*

Wei-Chuan Shih, Cullen Engineering Endowed Professor, University of Houston; Founder-CEO, Seek Diagnostics

11:20 *Monitoring Prostate Cancer in Circulation*

Theocharis Panaretakis, Associate Professor, GU Medical Oncology, MD Anderson Cancer Center

11:40 *Exofection: Material Transfer Mechanism via Exosomes (How does the Fetus Support a Healthy Pregnancy?)*

Ananth Kumar Kammala, Assistant Professor, The University of Texas Medical Branch at Galveston

12:00 Technology Spotlight Presentation

ZetaView Evolution – Providing Advanced Nanoparticle Tracking Solutions

Michael Van Kanegan, Head of Support & Application Technology, Particle Metrix, Inc.



12:30 Lunch Break

Session Title: Session III: Lipid Nanoparticles (LNPs) and Biomimetic Platforms

13:20 *Biomimetic Nanoparticles, Applications and Translation*

Francesca Taraballi, Associate Professor of Orthopedic Surgery, Houston Methodist Research Institute

13:45 *Lipid and Plant-derived Vesicles as Delivery Systems in Cancer Therapy*

Sara Corvigno, Assistant Professor, Department of Gynecologic Oncology and Reproductive Medicine, The University of Texas MD Anderson

14:05 *Engineering Placenta-tropic Lipid Nanoparticles for the Treatment of Pregnancy Disorders*

Kelsey Swingle, Assistant Professor, Department of Bioengineering, Rice University

14:25 *RNA Nanotherapeutic for Wound Healing and Protection of Radiation-Induced DNA Damage in the Skin*

Biana Godin, Associate Professor, Department of Nanomedicine, Houston Methodist Research Institute

14:45 *Technology Spotlight Presentation*

*Accelerating Extracellular Vesicle Research & Development
with EXODUS Purification Technology*



Ziwen Wang, Field Application Scientist, EXODUS BIO

15:15 Mid-Afternoon Break and Networking with Colleagues and Exhibitors

15:30 Instrument Demo

EXODUS BIO Onsite Instrument Demo

16:00 Instrument Demo

Particle Metrix Onsite Instrumentation Demo

16:30 Session Title: Young Investigator Presentations Session I

*Talk #1: Deciphering Extracellular Vesicle Uptake Mechanisms
in Ovarian Cancer: Insights into Tropism and Resistance
Transfer*



Joana Sousa Esteves - Houston Methodist Research Institute

Talk #2: Biomimetic PEGylated Bismuth Nanoparticles as Targeted X-Ray Contrast Agents
Antonio Martino - Houston Methodist Academic Institute

*Talk #3: Quantitative and Qualitative Changes in Extracellular Vesicles in Response to
Different Hormonal Stimulation of Breast Cancer Cells*

William S. Symmans - MD Anderson Cancer Center

*Talk #4: Hsp70/90-Carrying EVs Potentiate Muscle Wasting During Chemotherapy-Induced
Cancer Cachexia*

Edson Alves de Lima Junior - UT Health Houston

*Talk #5: iPSC-Derived Mesenchymal Stem Cell Extracellular Vesicles Restore Salivary Gland
Function After Radiation by Modulating Macrophage Immunometabolism via Spermidine-
Eif5a Axis*

Ethan Chang - Texas A&M University

Talk #6: Profiling Exercise-Induced Extracellular Vesicle Dynamics in Human Plasma
Giulia Zaffaroni - Houston Methodist Research Institute

*Talk #7: Mesenchymal Stromal Cell Preconditioning Reprograms EV Signatures Prompting
Controlled Inflammatory Responses in Wound Healing*

Ramiro A. Villarreal-Leal – Baylor College of Medicine

17:50 Discussion / Wrap-Up

18:00 Close of Day 1 of the Conference

Conference Day 2: Tuesday, December 2, 2025

08:00 Conference Day 2 Opens

09:00 Professor Bruna Corradetti -- Chairperson Recap of Day 1 and Objectives for Day 2

Session Title: Session IV: EV Biomarkers and Prenatal Medicine

09:15 *Extracellular Vesicle Biomarkers in Perinatal Medicine: Translational Potential*

Laura Goetzl, Professor and Vice Chair for Translational Research, The University of Texas, MD Anderson Cancer Center

09:45 *Amniotic Fluid Extracellular Vesicles: Insights into Fetal Adaptations to Cardiovascular Stress*

Jacqueline Parchem, Associate Professor, Department of Obstetrics, Gynecology & Reproductive Sciences, UTHealth Houston

10:05 *EVs as Minimally Invasive Strategies for Congenital Malformations*

Bruna Corradetti, Assistant Professor, Center for Precision Environmental Health, Department of Medicine, Baylor College of Medicine

10:40 Mid-Morning Break -- Network with Colleagues and Exhibitors

11:05 Session Title: Young Investigators Presentation Session II



Talk #8: Circulating Extracellular Vesicles Capture Signatures in Association with Racial Disparities in Preterm Birth

Xiyu Ge - Baylor College of Medicine

Talk #9: Examining The Role of Bacterial Extracellular Vesicles in Host Blood Pressure Regulation

Tianyi Zhu - Baylor College of Medicine

Talk #10: Differential mRNA Profiles of Amniotic Fluid-Derived Extracellular Vesicles in Myelomeningocele and Myeloschisis Pregnancies

Julia Enterria Rosales - Baylor College of Medicine

Talk #11: Airway Derived Extracellular Vesicles Carry Virus-Specific Small Noncoding RNA Signatures in RSV And hMPV Infections

Nicholas Dillman - University of Texas Medical Branch

Talk #12: Development of Brain Endothelial Cell-Derived Extracellular Vesicles from Bioreactor Cultures

Balaji Govindaswamy - UT Health Houston

12:30 Lunch Break

Session Title: Session V: EVs in Immunity, Infection, and Disease Microenvironments

13:30 *Delivery of Mitochondria-Containing Extracellular Vesicles to the BBB and Spinal Cord*

Devika S. Manickam, Associate Professor of Neurology, UTHealth-Houston

13:50 *Regulation of Fibroblast Exosome Production by Mechanical Tension Influences Scarring Heterogeneity*

Swathi Balaji, Associate Professor, Baylor College of Medicine and Texas Children's Hospital

14:10 *Tiny Messengers, Big Impact: Extracellular Vesicles Linking Viruses and Airway Disease*

Tiziana Corsello, Assistant Professor, Department of Pediatrics, CEIID Research, University of Texas Medical Branch

14:30 *Signals from the Tumor Matrix: EV-Mediated Regulation of Endothelial-Immune Dynamics*

Sara Zanivan, Associate Professor, Scientific Director Proteomics Core, MD Anderson Cancer Center

14:45 *Nanodisc Design for Kinetic Assessments of Membrane Protein Interactions for Insights into Antibiotic Resistance*

Carly Filgueira, Assistant Professor of Nanomedicine & Cardiovascular Surgery, Houston Methodist Research Institute

15:00 Trainees Prize Award (Sponsored by Biology Open)



15:30 *Emerging Therapeutic Avenues in Diabetes: The Big Potential of Tiny Blebs*

Surja Dash, Senior Scientist, Department of Nephrology, School of Medicine, University of Virginia

16:00 *Tau Oligomers in Circulating Extracellular Vesicles as Markers of Vulnerability and Resilience to Alzheimer's Disease*

Michela Marcatti, University of Texas Medical Branch at Galveston

16:30 Close of Conference