



**2024 Conference & School on
Extracellular Vesicles and Nanoparticles
(CSEVP-2024)**

Rome, University of Rome Tor Vergata
December 2nd – 4th, 2024

(Preliminary Program)

The
2024 Conference on Extracellular Vesicles and Nanoparticles
is endorsed by:



SPONSORS



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BACKGROUND

All cells release extracellular vesicles and nanoparticles into the extracellular environment during physiological and pathophysiological processes (cancer, diabetes, arthritis, etc.). Extracellular vesicles are lipid bilayer-enclosed nanosized particles that are released by cells in the extracellular milieu and cannot replicate, *i.e.*, are devoid of a functional nucleus. They are of two types: vesicles that are free to migrate to other regions of a tissue, or even to other tissues, after their release (*media vesicles*), and vesicles that bind to the extracellular matrix and are less inclined to migrate (*matrix vesicles*). The current model describes the main function of media vesicles as participation in paracrine and endocrine cell-cell communication processes, while the main function of matrix vesicles as participation in mineralization processes. Recently, extracellular nanoparticles of a non-vesicular nature (exomeres and supermeres) have been isolated and characterized. These nanoparticles are exclusively capable of migration and their main function is described to be participation in cell-cell communication.

DESCRIPTION OF THE EVENT

The aim of the **2024 Conference & School on Extracellular Vesicles and Nanoparticles (CSEVP-2024)** is to bring together young and senior experts in the field of extracellular vesicles and nanoparticles and stimulate discussion on the state of the art and challenges in the field.

December 2, 2024. The first day of the event will be characterized by the **2024 Conference on Extracellular Vesicles and Nanoparticles**. The conference is the sixth edition of the International Conference of Matrix Vesicles (ICMV), whose first edition was in Rome in 2018*¹, expanding its topics to all types of extracellular vesicles and nanoparticles. Senior experts will highlight recent advances in understanding the role of extracellular vesicles and nanoparticles in physiological and pathological processes, as well as recent advances in their use in nanomedicine. A session will also be dedicated to young scientists (the "rising stars") who will present their research through oral and poster presentations. Prizes from the **Italian Society for the Extracellular Vesicles** and **Zanichelli** will be awarded to young scientists for best oral communication and best poster presentation. During the day there will also be interventions from private companies (Beckman Coulter, ONI, and IZON) who will briefly present the state of the art in instrumentation for the purification and characterization of cell-derived vesicles and nanoparticles. The conference is endorsed by the **International Society for Extracellular Vesicles** (ISEV). The abstracts of the **2024 Conference on Extracellular Vesicles and Nanoparticles** and a **Special Issue** will be published on the **Journal of Extracellular Biology** (Wiley).

3-4 December 2024. The second and third day of the event will feature the **2024 School on Extracellular Vesicles and Nanoparticles** with theoretical and practical lessons on topics related to the isolation of extracellular vesicles and nanoparticles and their characterization. The first day of the school (3 December 2024) will be held in the laboratories of the Department of Experimental Medicine of the University of Rome Tor Vergata. There will be lessons regarding the isolation procedures of cell-derived vesicles and nanoparticles using size-exclusion chromatography (lesson held by IZON), and their characterization using flow cytometry (lesson held by Beckman Coulter) and high-resolution microscopy (lesson held by ONI). The second day of the school (4 December 2024) will be held at the laboratories of the Institute of Matter's Structure (ISM) of the National Council of Research. There will be theoretical lessons about the fabrication and characterization of biomimetic structures of extracellular vesicles based on proteoliposomes and theoretical and practical lessons about the characterization of extracellular vesicles and nanoparticles using AFM.



ZANICHELLI



¹ 1st ICMV – University of Rome Tor Vergata, Rome (Italy) - May 29th, 2018

2nd ICMV – Université Lyon 1, ICBMS UMR 5246 CNRS, Lyon (France) - June 14th, 2019

3rd ICMV – Ninki Institute of Experimental Biology, Warsaw (Poland) - September 27th – 28th, 2021 (Virtual)

4th ICMV – Águas de Lindóia, São Paulo (Brazil) - September 5th – 6th, 2022

5th ICMV - Universidade de São Paulo, Campus Ribeirão Preto (Brazil) - July 8th, 2023

PROGRAM (preliminary)December 2nd, 2024

07:30 – 08:30	Transfer from the Hotel to the University of Rome Tor Vergata	
07:30 – 08:30	Registration	
Fleming Hall – Conference on EVs		
08:30 – 09:00	Keynote Speaker - Prof. José Luis Millán – Sanford Burnham Prebys, La Jolla, USA – <i>Matrix vesicles function during physiological mineralization and ectopic calcification</i>	
09:00 – 10:20	Fleming Hall Conference on EVs Session 1.	09:00 – 09:20. Prof. Luciana Dini - University of Rome Sapienza, Rome, Italy – <i>Macrophage-derived extracellular vesicles alter polarization of recipient macrophages and skeletal muscle homeostasis in a hyper-glucose environment.</i>
		09:20 – 09:40. Prof. Barbara D. Boyan - Virginia Commonwealth University, Richmond, USA - <i>Title TBD</i>
		09:40 – 10:00. TBD - <i>Title TBD</i>
		10:00 – 10:20. TBD - <i>Title TBD</i>
10:20 – 10:40	Coffee break	
10:40 – 11:40	Fleming Hall Conference on EVs Session 2.	10:40 – 11:00. Prof. Agnieszka Strzelecka-Kiliszek – Nencki Institute of Experimental Biology, Polish Academy of Sciences, Warsaw, Poland - <i>The difference between media and matrix vesicles as a possible diagnostic tool to monitor the progression of cardiovascular and skeletal diseases.</i>
		11:00 – 11:20. Prof. Dobrawa Napierala – University of Pittsburgh, Pittsburgh, USA, Polish Academy of Sciences – <i>Matrix vesicle secretion and molecular composition is regulated by phosphate ion.</i>
		11:20 – 11:40. Prof. Owen Davies - Loughborough University, London, UK - <i>Matrix vesicles: insights into composition and prospective therapeutic applications.</i>
11:40 – 12:40	Fleming Hall Conference on EVs Session 3.	11:40 – 12:00. ONI
		12:00 – 12:20. Beckman Coulter
		12:20 – 12:40. IZON
12:40 – 14:00	Buffet lunch	
Fleming Hall		
14:00 – 14:30	Keynote Speaker - Prof. Saida Mebarek - Claude Bernard University Lyon 1, Villeurbanne, France - <i>Title TBD</i>	
14:30 – 15:30	Fleming Hall Conference on EVs Session 5. Rising Stars	14:30 – 14:45. Diana Vardanyan - University of Rome Sapienza, Rome, Italy - <i>Revealing the impact of glioblastoma-derived extracellular vesicles: their role in modulating sensitivity and resistance to temozolomide</i>
		14:45 – 15:00. Giada Corti - University of Rome Tor Vergata, Rome, Italy - <i>Title TBD</i>
		15:00 – 15:15. Young Speaker - <i>Title TBD</i>
		15:15 – 15:30. Young Speaker - <i>Title TBD</i>
15:30 – 15:45	Coffee break	
15:45 – 15:30	Fleming Hall Conference on EVs Session 6. Rising Stars	15:45 – 16:00. Young Speaker - <i>Title TBD</i>
		16:00 – 16:15. Young Speaker - <i>Title TBD</i>
		16:15 – 16:30. Young Speaker - <i>Title TBD</i>
		16:30 – 16:45. Young Speaker - <i>Title TBD</i>
		16:45 – 17:00. Young Speaker - <i>Title TBD</i>
		17:00 – 17:15. Young Speaker - <i>Title TBD</i>
17:15 – 18:15	Poster Session, Sponsor Exhibition, Awards and Concluding remarks	
18:30 – 19:30	Transfer from the University of Rome Tor Vergata to the Center of Rome	

December 3rd, 2024

07:30 – 08:30	Transfer from the Hotel to the University of Rome Tor Vergata	
07:30 – 08:30	Registration	
08:30 – 08:45	Finazzi Agro' Hall - School on EVs Prof. Massimo Bottini & Prof. Claudia Matteucci: <i>Welcome talk to the School on EVs</i>	
08:45 – 09:30	Finazzi Agro' Hall - School on EVs Prof. Annalisa Radeghieri – University of Brescia, Brescia, Italy - <i>Beyond the surface: Delving into biomolecular corona and biogenic nanoparticles</i>	
09:30 – 13:00	School on EVs Session 1. ⇒ Finazzi Agro' Hall ⇒ Bottini's Lab ⇒ Matteucci's Lab	Class 1. Scientist from IZON – <i>Isolation of extracellular nanoparticles by size exclusion chromatography</i>
		Class 2. Scientist from Beckman Coulter – <i>Characterization of extracellular nanoparticles by flow cytometry</i>
13:00 – 14:00	Buffet lunch	
14:00 – 17:30	School on EVs Session 2. ⇒ Finazzi Agro' Hall ⇒ Bottini's Lab	Class 3. Scientist from ONI – <i>Theory on high resolution microscopy</i>
		Class 4. Scientist from ONI – <i>Characterization of extracellular nanoparticles by high resolution microscopy</i>
17:30 – 18:30	Transfer from University of Rome Tor Vergata to the Hotel	

December 4th, 2024

07:30 – 08:30	Transfer from the Hotel to the National Research Council of Rome	
08:30 – 13:00	School on EVs Session 3. Institute of Matter's Structure	Class 5. Prof. Pietro Ciancaglini – Universidade de São Paulo, Ribeirão Preto, Brazil - <i>Proteoliposomes as biomimetic systems of extracellular nanoparticles</i>
		Class 6. Prof. Simone Dinarelli – National Research Council of Rome, Rome, Italy - <i>Theory on atomic force microscopy in bimedcine</i>
		Class 7. Prof. Simone Dinarelli – National Research Council of Rome, Rome, Italy - <i>Characterization of extracellular nanoparticles by atomic force microscopy</i>
13:00 – 14:00	Buffet lunch	
14:00 – 14:30	Transfer from the National Research Council of Rome to the Hotel	