



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

Rome, University of Rome Tor Vergata  
December 2<sup>nd</sup> – 4<sup>th</sup>, 2024

(Preliminary Program)

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



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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. Extracellular nanoparticles include not only well-known entities, such as lipoprotein particles, nucleosomes, and vaults, but also two recently discovered nanoparticles, exomeres and supermeres. Although their biological function is not yet clear, exomeres and supermeres are thought to be 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<sup>nd</sup>**. 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\*<sup>1</sup>, 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 (EVIta)** (<https://evitasociety.org/index.php/en/>), **Zanichelli** (<https://www.zanichelli.it>) and **Acoerela** (<https://acoerela.com>) 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, including **ONI** (<https://oni.bio>), **Beckman Coulter** (<https://www.beckman.it>), **IZON** (<https://www.izon.com>), **CytoViva** (<https://www.cytoviva.com>) and **Particle Metrix GmbH** (<https://particle-metrix.com>), 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** will be published on the **Journal of Extracellular Biology** (Wiley).

**December 3<sup>rd</sup> and 4<sup>th</sup>**. 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 school will be by invitation and the places available will be limited (max 12): students who wish to attend the school must send their CV through the dedicated website. The first day of the school (December 3<sup>rd</sup>) will be held in the laboratories of the Department of Experimental Medicine of the University of Rome Tor Vergata. First, there will be theoretical lessons about general aspects of cell-derived vesicles and nanoparticles (lesson held by **Prof. Saida Mebarek**, Université Claude Bernard Lyon 1, Villeurbanne, France) and their characterization (lesson held by **Prof. Paola Lanuti**, University of Studies G. d'Annunzio Chieti and Pescara, Chieti, Italy). Next, three will be practical lessons about the isolation procedures of cell-derived vesicles and nanoparticles using size-exclusion chromatography (lesson held by **IZON**) and their characterization using such techniques as Tunable Resistive Pulse Sensing (lesson held by **IZON**), Nanoparticle Tracking Analysis (lesson held by **Particle Metrix GmbH**), Hyperspectral Microscopy (lesson held by **CytoViva**), High Resolution Imaging (lesson held by **ONI**) and Flow Cytometry (lesson held by **Beckman Coulter**). The second day of the school (December 4<sup>th</sup>) 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 (lesson held by **Prof. Pietro Ciancaglini**, Universidade de São Paulo, Ribeirão Preto, Brazil) and theoretical and practical lessons about the characterization of extracellular vesicles and nanoparticles using Atomic Force Microscopy (lesson held by **Prof. Simone Dinarelli**, National Research Council of Rome, Rome, Italy).

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

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

3<sup>rd</sup> ICMV – Nincki Institute of Experimental Biology, Warsaw (Poland) - September 27<sup>th</sup> – 28<sup>th</sup>, 2021 (Virtual)

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

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

# PROGRAM (preliminary)

December 2<sup>nd</sup>, 2024

07:30 – 08:30	Transfer from the Hotel to the University of Rome Tor Vergata	
07:30 – 08:30	Registration	
<b>Fleming Hall</b>		
08:30 – 08:35	<b>Prof. Nathan Leviaidi Ghiron – Rector of the University of Rome Tor Vergata</b> <i>Welcome talk to the 2024 Conference &amp; School on Extracellular Vesicles and Nanoparticles</i>	
<b>Fleming Hall – Conference on EVs</b>		
08:35 – 09:00	<b>Keynote Speaker - Prof. José Luis Millán</b> – Sanford Burnham Prebys, La Jolla, USA – <i>Matrix vesicles function during physiological mineralization and ectopic calcification</i>	
09:00 – 10:20	<b>Fleming Hall Conference on EVs Session 1.</b>	09:00 – 09:20. <b>Prof. Luciana Dini</b> - 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. <b>Prof. Barbara D. Boyan</b> - Virginia Commonwealth University, Richmond, USA - <i>Title TBD</i>
		09:40 – 10:00. <b>TBD</b> - <i>Title TBD</i>
		10:00 – 10:20. <b>TBD</b> - <i>Title TBD</i>
10:20 – 10:40	Coffee break	
10:40 – 11:40	<b>Fleming Hall Conference on EVs Session 2.</b>	10:40 – 11:00. <b>Prof. Agnieszka Strzelecka-Kiliszek</b> – 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. <b>Prof. Dobrawa Napierala</b> – 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. <b>Prof. Owen Davies</b> - Loughborough University, London, UK - <i>Matrix vesicles: insights into composition and prospective therapeutic applications.</i>
11:40 – 12:40	<b>Fleming Hall Conference on EVs Session 3.</b>	11:40 – 12:00. <b>ONI</b>
		12:00 – 12:20. <b>Beckman Coulter</b>
		12:20 – 12:40. <b>IZON</b>
12:40 – 14:00	Buffet lunch	
<b>Fleming Hall</b>		
14:00 – 14:30	<b>Keynote Speaker - Prof. Saida Mebarek</b> - Claude Bernard University Lyon 1, Villeurbanne, France - <i>Title TBD</i>	
14:30 – 15:30	<b>Fleming Hall Conference on EVs Session 5. Rising Stars</b>	14:30 – 14:45. <b>Diana Vardanyan</b> - 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. <b>Giada Corti</b> - University of Rome Tor Vergata, Rome, Italy - <i>Title TBD</i>
		15:00 – 15:15. <b>Young Speaker</b> - <i>Title TBD</i>
		15:15 – 15:30. <b>Young Speaker</b> - <i>Title TBD</i>
15:30 – 15:45	Coffee break	
15:45 – 15:30	<b>Fleming Hall Conference on EVs Session 6. Rising Stars</b>	15:45 – 16:00. <b>Young Speaker</b> - <i>Title TBD</i>
		16:00 – 16:15. <b>Young Speaker</b> - <i>Title TBD</i>
		16:15 – 16:30. <b>Young Speaker</b> - <i>Title TBD</i>
		16:30 – 16:45. <b>Young Speaker</b> - <i>Title TBD</i>
		16:45 – 17:00. <b>Young Speaker</b> - <i>Title TBD</i>
		17:00 – 17:15. <b>Young Speaker</b> - <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	
<b>December 3<sup>rd</sup>, 2024</b>		
07:30 – 08:30	Transfer from the Hotel to the University of Rome Tor Vergata	

07:30 – 08:30	Registration	
08:30 – 08:45	<b>Finazzi Agro' Hall - School on EVs</b> Prof. Massimo Bottini & Prof. Claudia Matteucci: <i>Welcome talk to the School on EVs</i>	
08:45 – 09:30	<b>Finazzi Agro' Hall - School on EVs</b> <b>Prof. Annalisa Radeghieri</b> – University of Brescia, Brescia, Italy - <i>Beyond the surface: Delving into biomolecular corona and biogenic nanoparticles</i>	
09:30 – 13:00	<b>School on EVs</b> <b>Session 1.</b> ⇒ <i>Finazzi Agro' Hall</i> ⇒ <i>Bottini's Lab</i> ⇒ <i>Matteucci's Lab</i>	<b>Class 1. Scientist from IZON</b> – <i>Isolation of extracellular nanoparticles by size exclusion chromatography</i>
		<b>Class 2. Scientist from Beckman Coulter</b> – <i>Characterization of extracellular nanoparticles by flow cytometry</i>
13:00 – 14:00	Buffet lunch	
14:00 – 17:30	<b>School on EVs</b> <b>Session 2.</b> ⇒ <i>Finazzi Agro' Hall</i> ⇒ <i>Bottini's Lab</i>	<b>Class 3. Scientist from ONI</b> – <i>Theory on high resolution microscopy</i>
		<b>Class 4. Scientist from ONI</b> – <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 4<sup>th</sup>, 2024

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