



# FSEV 2024



## 7th FSEV meeting, PMC, Strasbourg Program

### DAY 1 (afternoon) – MONDAY, NOVEMBER 4th

**12h00-13h30 – Registration.** Please make sure to upload your presentations before your session

**13h40-14h - Welcome introduction:** Vincent Hyenne (INSERM, Strasbourg), Christian Neri (IBPS-Paris)  
With the distinguished presence of Nadège Hornbeck, Vice-President of the Région Grand Est

#### **14h-15h15 - Session 1: EVs Cell Biology – joint session with the Club Exo-Endo**

Chairs: Rania Ghossoub (CRCM, Marseille) and Julien Saint-Pol (Exo-Endo, LBHE, Lens)

**Keynote: Deborah Goberdhan (Oxford, UK):** *Focusing on Rab11a-Exosome Cell Biology: New Insights into Physiological and Pathological Exosome Functions*

Short talk 1: **Rania Ghossoub** (CRCM, Marseille): Role of ADAM10 in the signaling of extracellular vesicles

Short talk 2: **Kuang - Jing Huang** (INSERM, Strasbourg): Tumor EVs secretion relies on the cooperation between EHD4 and RalA/B in shaping multi-vesicular bodies

Short talk 3: **Laura Salavessa** (Necker, Institut Curie, Paris): Coated for capture: extracellular vesicles determining biological particle uptake in skin

#### **15h15-16h15 Coffee break & Poster session A**

#### **16h15-17h30 - Session 2: EV Engineering/Methodology – joint session with the French Society of Nanotechnology**

Chairs: Marie Morille (ICGM, Univ. Montpellier) and Mathilde Mosser (Oniris, Nantes)

**Keynote: Pieter Vader (UMC Utrecht, Netherlands):** *Extracellular vesicles for RNA delivery: From mechanistic insights towards therapeutic applications*

Short talk 1: **Adiilah Mamode Cassim** (INSERM, CTM, Dijon): Cutting-Edge Microwave-Based Techniques for Analyzing PD-L1 on Extracellular Vesicles: A Novel Approach to Biomarker Detection

Short talk 2: **Maribel Lara Corona** (IPNP, Paris): Manipulation of Tumor Extracellular Vesicles Biodistribution and Uptake in vivo by a Cell-Surface "EV-Trap"

Short talk 3: **Steffi Bosch** (Oniris, Nantes): Insight process scale up: production of extracellular vesicles from anchorage-dependent beta cells

#### **17h30-18h Closing, information about the following days**



## DAY 2 – TUESDAY, NOVEMBER 5th



### 9h-10h15 - Session 3: EVs & Cancer

Chairs: Lucas Treps (CRCI2NA, Nantes) and Christopher Rovera (YN-FSEV, CRCM, Marseille)

**Keynote: Hector Peinado (Madrid, Spain):** *Tumor-secreted EVs, the leading edge of metastasis*

Short talk 1: **Louis Bochler** (INSERM, Strasbourg): Tumor extracellular vesicles promote metastasis through neutrophil mobilization and NETs formation

Short talk 2: **Mohamed Bangoura** (INSERM, CEA): Constitutively active Wnt/ $\beta$ -Catenin signaling controls small extracellular vesicle biogenesis, composition and secretion in adrenocortical cancer

Short talk 3: **Shima Ghoroghi** (Institut Curie, Paris): Mechanisms and functions of CSF1 association to extracellular vesicles in anti-tumor immune responses

### 10h15-11h Coffee break & Poster session A

### 11h-12h15 Session 4: EVs in diagnostic and therapy

Chairs: Jessica Gobbo (CGFL, INSERM, Dijon) and Anaïs Becot (YN-FSEV, IPNP, Paris)

**Keynote: Catherine Alix-Panabières (Montpellier, France):** *Liquid Biopsy: From Discovery to Clinical Application*

Short talk 1: **Laetitia Guével** (CRCI2NA, Nantes): Monitoring concentration and lipid signature of plasma extracellular vesicles from HR+ metastatic breast cancer patients under CDK4/6 inhibitors treatment

Short talk 2: **Amandine Dupuy** (INSERM, Nantes): Extracellular vesicles produced by regulatory B cells: new approach in kidney transplantation

Short talk 3: **Lucas Walther** (INSERM, Transgene, Strasbourg): Therapeutic poxvirus triggers the secretion of extracellular vesicles with immunomodulatory anti-tumoral activity

### 12h15-13h15 Lunch & Poster session A



**13h15-14h45 - FSEV General assembly** (Christian Neri, Jessica Gobbo and FSEV board members) / **Presentation of the regional networks** / **Presentation of the FSEV Young Network (YN-FSEV)**

### FSEV PhD Award 2024



**14h45-16h - Session 5: FSEV - joint session with the Netherlands Society of EVs (NLSEV)**

Chairs: Céline Élie-Caille (FEMTO-ST, Besançon) and Rubina Baglio (NLSEV, Amsterdam UMC, Netherlands)

**Keynote: Esther Nolte-t Hoen (Utrecht, Netherlands):** *Formation and function of picornavirus-induced extracellular vesicles*

Short talk 1: **Crescenzo Massaro** (CCA, Netherlands): Tumor-secreted extracellular vesicles counteract bone cancer therapy response by triggering inflammatory mesenchymal stem cell development

Short talk 2: **Marije Kuipers** (Utrecht Univ, Netherlands): EVtrace: proteomic profiling of EV-associated proteins interacting with different recipient cells

Short talk 3: **Louise Merle** (Institut Curie, Paris): Deciphering the fate of tumor derived EVs within immune cells

### 16h-16h30 Coffee break & Poster session B



## 16h30-18h - Session 6: Prokaryotes & Virus EVs – joint session with the French Society of Microbiology

Chairs: Annie Frelet-Barrand (FEMTO-ST, Besançon) and Priscilla Branchu (SFM, IRSD, Toulouse)

**Keynote: Leo Eberl (Zurich, Switzerland):** *Mechanisms of bacterial vesiculation and their role in biofilm formation and antibiotic resistance*

Short talk 1: **Julia Papail** (INRAE, Rennes): The double life of *Staphylococcus aureus* extracellular vesicles inside and outside the host cells

Short talk 2: **Anaïs Halbert** (INRAE, Nantes): Effects of antibiotherapy on extracellular vesicle production from primary bacterial colonizers of the newborn gut microbiota

Short talk 3: **Julia Bos** (Institut Pasteur, Paris): Extracellular vesicles are key drivers of antibiotic adaptation in bacteria

Short talk 4: **Priscilla Branchu** (IRSD, Toulouse): Pathogenic *Escherichia coli* produce specific extracellular vesicles that alter epithelial permeability

**Evening: Young Researcher Network - FSEV Gala dinner**

## DAY 3 – WEDNESDAY, NOVEMBER 6th

### 9h30-10h45 - Session 7: EVs in Physiology & Metabolism

Chair: Cécile Malnou (INFINITY, Toulouse) and Louise Merle (YN-FSEV, Institut Curie, Paris)

**Keynote: Marie Barberon (Geneva, Switzerland):** *EV structures associated with suberin deposition in plant cell walls*

Short talk 1: **Laura Entz** (RMES, Nantes): Characterization of cargos of bone-derived extracellular vesicle in the context of aging

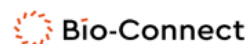
Short talk 2: **Charlene Martin** (INFINITY, Toulouse): Role of extracellular vesicles in placenta-brain dialogue during congenital human cytomegalovirus infection

Short talk 3: **Joan Guillouzouic** (IRSET, Rennes): Effect of Benzo(a)Pyrene on the production of large extracellular vesicles containing mitochondria by endothelial HMEC-1 cells

### 10h45-11h15 - Coffee break & Poster session B

### 11h15-12h30 - Sponsor session: Sponsor talks and Round table: Methodology and technology challenges

Sponsor talks: **Beckman Coulter, Agilent, Izon, Myriade, Bio-Connect**



**Round Table** animated by Marie Morille & Jessica Gobbo

### 12h15-13h15 Lunch & Poster session B



### 14h-15h - Session 8: FSEV - joint session with the Belgian Society for EVs (BESEV)

Chairs: Émilie Velot (IMoPA, Univ Lorraine, Nancy) and Basile Stamatopoulos (BSEV, Bruxelles Univ, Belgium)

**Keynote: Pascale Zimmermann (Leuven, Belgium - Marseille, France):** *Engineering of extracellular vesicles for biomedical applications – facing the pharmaceutical reality*

Short talk 1: **Basile Stamatopoulos** (Bruxelles Univ, Belgium): Extracellular vesicles from chronic lymphocytic leukemia cells promote leukemia aggressiveness by inducing the differentiation of monocytes into tumor associated macrophages via an RNA-dependent mechanism

Short talk 2: **Aleksandra Georgievski** (CTM INSERM, Dijon): Development of synthetic extracellular vesicle mimetics for targeting immunosuppressive cells and cancer therapy

### 15h-15h30 - Coffee break & Poster session B

### 15h30-16h45 - Session 9: EVs in neurosciences & cardio-vascular biology

Chairs: Christian Neri (IBPS, Paris) and Natayme Rocha Tartaglia (YN-FSEV, Institut Curie, Paris)

**Keynote: Guillaume Van Niel (Nantes, France):** *The winding road of CD63*

Short talk 1: **Corentin Bernou** (IRIM, Montpellier): Cultured adult human brain explants to investigate the role of extracellular vesicles in network electrophysiological activity

Short talk 2: **Sandy Hmadeh** (CRBS, Strasbourg): Extracellular Vesicle Generation by Osteogenic Valvular Interstitial Cells: Potential Role in Valvular Dysfunction and Remodeling

Short talk 3: **Laura Merlet** (CRCI2NA, Nantes): Exploring the functions of centriolar satellites in glioblastoma

### 16h45-17h15 - Closing ceremony & Awards



# **FSEV 2024 Local Organizing Committee**

**Céline Élie-Caille (FEMTO-ST, Besançon), Annie Frelet-Barrand (FEMTO-ST, Besançon), Rania Ghossoub (CRCM, Marseille), Jessica Gobbo (CGFL, INSERM, Dijon), Vincent Hyenne (CNRS, INSERM, Strasbourg), Cécile Malnou (INFINITY, Toulouse), Marie Morille (ICGM, Univ. Montpellier), Christian Neri (IBPS-Paris), Julien Saint-Pol (LBHE, Lens), Lucas Treps (CRCI2NA, Nantes), Émilie Velot (IMoPA, Univ Lorraine, Nancy)**



# FSEV 2024 Invited speakers



7th FSEV meeting, PMC, Strasbourg

*Keynote speakers were invited for their high expertise and the quality of their work on extracellular vesicles (EVs). They come from various European countries and represent the diversity of EV research, from cell biology to pre-clinical research, from plants and bacteria to human.*

## Catherine Alix-Panabières, Montpellier, France, EVs in Diagnosis and Therapy session



**Catherine Alix-Panabières**, is full professor at **Montpellier University (France)** and head of the Rare Human Circulating Cells & Liquid Biopsy laboratory and Visiting Professor at Hamburg University (Germany). Her research focuses on **liquid biopsy** for 25 years, a concept she coined, together with Klaus Pantel in 2010. Her work provided key insights in the characterization and clinical use of **circulating tumor cells** for early non-invasive detection and monitoring of cancer. She characterized additional components of liquid biopsies, including circulating DNA and more recently extracellular vesicles. She is the leader of the WP 'Dissemination and Education' at the European Liquid Biopsy Society (ELBS). She received numerous awards, including two from the Académie Nationale de Médecine in 2012 & 2023 for her lifetime achievement in the Liquid Biopsy field.

For more information: <https://lccrh.com/>

## Marie Barberon, Geneva, Switzerland, EVs in Physiology and Metabolism session



**Marie Barberon** is Professor on plant biology and heads the plant nutrition and development laboratory at the University of **Geneva (Switzerland)**. She has expertise in deciphering the mechanisms controlling the radial transport of nutrients in plant roots. Her recent research work, published in Nature communication, has highlighted a new role for EVs in **plant physiology**, not in the context of biotic interactions, but in development, with their involvement in the formation of a major cell wall polymer.

For more information: <https://biveg.unige.ch/labs/barberon/>

## Leo Eberl, Zurich, Switzerland, EVs, Prokaryotes and Virus session



**Leo Eberl** heads the Department of Microbiology at the Institute of Plant Biology at the University of **Zurich (Switzerland)**. His research aims to understand the molecular basis and ecological importance of intercellular signaling between **bacteria** in response to their fluctuating density, known as **quorum sensing** (QS). He studies QS systems in strains such as those of the Pseudomonas genus. Recently, his work has led to the discovery of a new mechanism for the biogenesis of **bacterial outer membrane vesicles** based on the action of phage-derived enzymes.

For more information: <https://www.botinst.uzh.ch/en/research/microbiology/eberl.html>

## Deborah Goberdhan, Oxford, UK, Cell biology session



**Deborah Goberdhan** is Associate Professor of Cell Signaling in the Nuffield Department of Women's and Reproductive Health in the Division of Medical Sciences at the University of **Oxford (England)**. Her group combines imaging, cell biology and molecular genetics to understand the mechanisms driving EV secretion and heterogeneity in Drosophila and in human cancer cells. They notably identified and characterized a population of exosomes originating from Rab11a recycling endosomes.

For more information: <https://www.wrh.ox.ac.uk/team/deborah-goberdhan>



## Esther Nolte-'t Hoen, Utrecht, NL, Joint session with the Netherlands Society of EVs (NLSEV)



**Esther Nolte-'t Hoen** teaches in the Division of Infectious Diseases and Immunology in the Faculty of Veterinary Medicine at **Utrecht University (Netherlands)**. Her research focuses on the role of **EVs in communication between immune cells** with or without microbial infection. She is an expert in the technical aspects of EVs isolation and high-throughput content analysis methods. She is also focusing on the contribution of RNAs in EVs biological function, in particular during **viral infections**.

For more information: <https://www.uu.nl/staff/ENMNoltetHoen>

## Hector Peinado, Madrid, Spain, EVs in cancer session



**Hector Peinado** heads the Microenvironment and Metastasis Laboratory at the National Cancer Research Centre in **Madrid (Spain)**. His work focuses in how tumour cells can influence the evolution of cancer during **metastatic spread**, seeking to understand the interactions between tumor cells and stromal cells. He is studying the role of EVs in the evolution of primary tumors and the formation of **pre-metastatic niches** in melanoma, prostate cancer and pancreatic cancer, with the aim of developing new targeted therapies.

For more information: <https://www.cnio.es/en/personas/hector-peinado-2/>

## Pieter Vader, Utrecht, NL, EVs engineering session



**Pieter Vader** is Associate Professor at the Central Diagnostic Laboratory and the Department of Experimental Cardiology at the University Medical Centre in **Utrecht (Netherlands)**. His research focuses on the development of a new generation of **EV-based therapies** with **cardiovascular** applications. He is notably studying the mechanisms underlying EVs loading, biodistribution and cargo transfer. In 2021, he has been awarded the Prix Galien Research Award for his work on drug delivery.

For more information: <https://research.umcutrecht.nl/researchers/pieter-vader/>

## Guillaume Van Niel, Nantes, France, EVs in Neurosciences and Cardiovascular biology



**Guillaume Van Niel** heads the EVICAT (EV based Intercellular Communication and their Application for Therapy) at CRCI2NA in **Nantes (France)**. He is a pioneer in the field of EVs, and achieved significant milestones, such as the first reporting of exosome secretion in non-hematopoietic cells, the sorting mechanisms acting at multivesicular body to generate exosomes or the development of the zebrafish model for in vivo studies. Additionally, he is co-leading the EMBO course on EVs and recently served as FSEV president. He is now focusing on EV secretion and uptake mechanisms and developing new tools for manipulating EV life cycle in the context of age-related pathologies, in particular in tumor microenvironment.

For more information: <https://crci2na.univ-nantes.fr/en/research/team-3>

## Pascale Zimmermann, Leuven Belgium, Marseille France, Joint session with the Belgian Society for EVs (BESEV)



**Pascale Zimmermann** is a pharmacist and scientist trained in molecular, cell and developmental biology. Using structure-function approaches, she provided major contributions to our understanding of the molecular mechanisms supporting EV signaling. She currently conducts her research as PI at the **KU Leuven (Belgium)** and the Cancer Research Center of **Marseille (France)**. Her team focuses on the cell biology of EV secretion and uptake, their role in tumor-host relationships and their potential in pharmaceutical innovation.

The importance and originality of her work was acknowledged by the Royal Academy of Medicine Belgium award and the EMBO young investigator program.

For more information: <https://gbiomed.kuleuven.be/english/cme/research/research>  
<https://www.crcm-marseille.fr/equipements/equipements-de-recherche/pascale-zimmermann/>



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Extracellular Vesicles



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French Society for Cell Biology



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