

# Candidates Geivex Board 2021

# Candidates for Board member



**María Carmen Blanco López** (Group leader of Nanoparticles, Membranes and Bioanalysis of University of Oviedo).

**Experience in EVs:** Development of the first Lateral flow immunoassays for EVs. Application to characterization and quantification of EVs from cellular lines, urine and plasma (DOI:10.1016/j.bios.2016.08.001; DOI:10.3402/jev.v5.31803). Application to research on Myalgic Encephalomyelitis (DOI:10.1080/20013078.2018.1453730). Application to Point-of-care detection of EV tumor markers: (DOI: 10.1186/s12951-018-0372-z; Electromagnetic biosensors for EVs tumor markers (<https://doi.org/10.3390/s21113756>). Synthetic EVs for standardization and/or drug delivery (DOI: 10.3390/nano10050971; DOI: 10.1016/j.tibtech.2017.10.005)

IP of 3 EV national projects:

1. Rapid test based on nanomaterials for determination of EV biomarkers. (TEST4EVs) (1.9.2021- 31-8-2023).
2. Biosensor based on superparamagnetic nanoparticles for early diagnosis of colorectal cancer MAT2017-84959-C2-1-R(2017-2021)
3. Synthetic exosomes for the development of clinical diagnosis systems CTQ2013-47396-R(2014-2016).

**Why do you want to become a member of the Board?** The study of the EV mediation at the intercellular communication could be considered a revolution that could change our life expectations and current biomedical practices, similar to the way that internet has changed our society. I believe that in the next years we will see great developments on novel diagnostic methods, liquid biopsy, target delivery therapies, reconstructive medicine... This would be possible by means on the collaboration among research groups with complementary skills and expertise connecting experts on biology and medical field, to biomedical engineers, materials scientist, chemists and physicist.

From my position as member of a multidisciplinary European Committee at the Future Emerging Technologies (FET-OPEN) program and the European Innovation Council, monitoring projects related to EVs, I have seen that my background on analytical methods and biosensors and my research experience can be useful in this society, to design activities to:

- promote interaction with research groups from related disciplines (analytical chemistry, materials, bioengineering, physics). This could attract new members to this Society, enhancing multidisciplinary.
- facilitate tools to create consortiums to prepare joint proposals for European calls.
- boost standardization and critical analysis on physicochemical features of analytical methods, devices, protocols and reference materials.
- enhance interaction with the industrial innovation sector.
- contribute to the diffusion of activities to society, involving especially young researchers
- continue with the mobility and training programs that this society was developing, and the collaboration with other EV European societies.

As it happens in nature, communication among different sectors is the key for success. I believe that from the Board of this society I can



**Cristina Fornaguera Puigvert** (Assistant Professor at Grup d'Enginyeria de Materials (GEMAT), Institut Químic de Sarrià, Ramón Llull, Barcelona).

**Experience in EVs:** Long experience working in synthetic delivery nanosystems, which I transferred to the EVs field.

My main aim is to use EVs as natural but engineered nanosystems instead of synthetic systems, for gene delivery applications. Specially, we are mainly focused on the encapsulation of mRNA to design smart vaccines for cancer therapeutics, together with other drugs to promote dual cancer therapeutics.

During the last two years, we started in our lab by setting up EVs isolation from cell cultures by differential centrifugation and characterizing them physic-chemically. In addition, we are also working on the encapsulation of gene material (and also drugs) for cancer therapeutic purposes which we are already testing using in vitro models.

**Why do you want to become a member of the Board?** I want to become a member of the GEIVEX board because after my short but intense work during the last few years with EVs, I feel now prepared to get involved not only on my personal research but also in the EV Spanish community.

Coming from biomaterials engineering, I feel that I can scientifically contribute to the GEIVEX community from a complementary point of view to most GEIVEX members. I have an extensive expertise on the physic-chemical characterization at the nanoscale, using techniques recommended by the MISEV to be applied to the EVs. In addition, I have vastly worked on loading different kinds of nano-delivery systems; so, I feel myself prepared to contribute also in the complicated issue of efficiently loading and control the load of EVs. Currently, although many publications report EVs are promising as advanced delivery systems, and I strongly support this statement, methods of loading and further use are not standardized and there is still a long path to arrive to it. Then, I am convinced that I can contribute in this part.

Not from a strict scientific / technical point of view, I would like also to be a GEIVEX board member to get involved in the dissemination of the EVs knowledge in Spain and in collaboration with sister societies. Namely, I would like to get involved in disseminating the use of EVs for therapeutic purposes and to contribute on helping to their arrival to the market.



**Gloria Alvarez-Llamas** R(Group Leader of Translational Omics, IIS-Fundación Jiménez Díaz, Madrid).

**Experience in EVs:** Since more than a decade, my group works in analyzing urinary EVs in cardio-renal disease (MethodsMolBiol 2013 ) (Front Immunol 2014). We identified an altered EVs proteome in diabetic nephropathy subjects (JProteomics 2014) and showed how EVs reflect protein changes occurring directly in the kidney, not detectable in urine, and so demonstrating its diagnostic potential (TranslRes 2015). EVs protein alterations were also identified in hypertensive patients with higher cardiorenal risk (Oncotarget2017). More recently, we developed a methodology to analyze the metabolites content of EVs by NMR and LC-MS/MS showing a signature of cardiovascular risk in subjects with programmed coronary artery by-pass grafting (BMC Biology 2020).

**Why do you want to become a member of the Board** I work in Fundación Jiménez Díaz Hospital since 2007 where I lead the Translational Omics group in Immunology Department taking part of IIS-FJD. I got a PhD in Analytical Chemistry from University of Oviedo in 2004, with European mention. As pre-doctoral researcher I worked in Technical Universität Wien (Austria) and Kings' College London (UK). During 2005 and 2006, I worked in University Medical Centre Groningen (The Netherlands) where I started my career in proteomics and mass spectrometry analysis of biological samples.

Co-author in 138 publications (WOS) and co-inventor in 4 patents. I am evaluator for the Spanish State Research Agency and evaluator of European projects. Member of the Spanish Network of Renal Research REDINREN (ISCIII) and platform network PRB3 (ISCIII). Vocal of the Spanish Proteomics Society (2015-2019). The projects I lead focus on the identification of molecular markers of cardiovascular risk and renal pathology with the aim of assisting in an earlier diagnosis, prediction of therapeutic response or prognosis evaluation. By proteomics and metabolomics approaches, I am particularly interested in the potential role of EVs as carriers of local changes taking place directly in the tissue (e.g. kidney, arterial vessels) and their key role in understanding subjacent mechanisms behind a certain disorder.

With this motivation, I am GEIVEX member since 2014 and my group takes part of the Spanish network of EVs research groups. I had the opportunity to assist to the 1st GEIVEX Symposium taking place in 2012 in Segovia where I gave an oral communication showing data on our first studies in EVs. Since then, we have been working in gaining knowledge on EVs from both methodological and clinical points of view. During these years we reinforce our first hypothesis of EVs nicely complementing the information contained in biological fluids, not only as messengers but also as active players. I have recently joined the Urine Task Force of the International Society for Extracellular Vesicles. Based on my expertise and interest in the field, I hereby submit my candidature.



**Gemma Chiva-Blanch** (Researcher at Translational research in diabetes, lipids and obesity, CIBEROBN-IDIBAPS, Barcelona).

**Experience in EVs:** Since I started my first postdoc in 2014, I have been investigating the role of extracellular vesicles (EV) as biomarkers of cardiovascular disease, by quantifying and characterizing large size EV by flow cytometry. Since January 2020, I am studying the role of EV (both small and large size) in diabetes and obesity, and studying the influence of diet in EV shedding from cardiovascular cells, through proteomic approaches. In this line, I have been recently granted as PI in 2 national projects, and I have published 13 original manuscripts and 5 invited reviews about EV in diet and cardiometabolic diseases..

**Why do you want to become a member of the Board?** I am a 38-year old highly motivated and proactive scientist, and a passionate of EV. Beyond the scientific work, I am enthusiastic, cheerful, hardworking, and I enjoy and strongly believe in team effort and professional societies such as **GEIVEX**. I have been elected nucleolus member of the YTRG 2018-2020 (the young Working Group of Thrombosis from the European Society of Cardiology -ESC-), and I have served as the liaison between the YTRG and the Scientists of Tomorrow (SoT) for about two years. During these years, I have actively participated in the WG activities and make diffusion about them in the SoT periodical Newsletters. During my membership in the YTRG, we have launched the Article of the Month to closely collaborate with the Senior members of the WG, we have also launched a Facebook page and we have established a solid intellectual platform within the YTRG to exchange scientific experience. We have actively proposed young sessions within the ESC and Eurothrombosis meetings. Thanks to my contribution in the YTRG, I was elected Nucleus member of the Scientists of Tomorrow (SoT) from the ESC in February 2021 (<https://www.escardio.org/The-ESC/ESC-Young-Community/Scientists-of-Tomorrow/Meet-the-Scientists-of-Tomorrow>), which is a group of young, proactive, basic and clinical researchers, who work closely with the Council on Basic Cardiovascular Science. Our work consists in planning scientific sessions and career developing sessions in the ESC-related meetings as well as engaging young scientist in networking activities. In addition, I am also a member of the Young Fellow Program of the European Atherosclerosis Society. Overall, my experience within the ESC and SoT activities demonstrate that I am highly motivated and prepared to actively work within the **GEIVEX as a vocal**, if you give me the opportunity. Please do not hesitate to ask for references if you consider it appropriate.



**José Antonio López Guerrero** (Head of Department of Laboratory of Molecular Biology, Fundación Instituto Valenciano de Oncología, Valencia).

**Experience in EVs:** I am interested in studying EVs as potential source of biomarkers for early detection of cancer through non-invasive methods and, I have also considered that there is a lack of standards for quality in the field of EVs.

I have been involved during 8 years in the Spanish Network of Biobanks (ISCIII) leading specific tasks for handling biological samples for the study of cfDNA, miRNAs, and EVs. I applied as PI to different ISCIII with a coordinated project: 'Characterization of EXOsomes of the Spanish POPulation of REference (EXOSPORE)' which finally was not funded.

Currently our group is working on the characterization of VEs in serum and urine for prostate cancer patients as source of non-invasive biomarkers for early diagnosis.

- María García-Flores, Christian M. Sánchez-López, Marta Ramírez-Calvo, Antonio Fernández-Serra, Antonio Marcilla, José Antonio López-Guerrero. Isolation and Characterization of Urine Microvesicles from Prostate Cancer Patients: Different Approaches, Different Visions. BMC Urology (in press).

In addition, I am involved in *TenTacles*, the Translational NeTwork for the CLinical application of Extracellular VesicleS whose PI is María Yáñez Mó (UAM).

**Why do you want to become a member of the Board?** Throughout my career I have had the opportunity of working in different collaborative groups, in the field of translational research, including the Spanish Group of Research in Sarcomas (GEIS), the Spanish Group of Research in Ovarian Cancer (GEICO) and the Spanish Group of Research in Breast Cancer (GEICAM).

I have experience in the field of genetics and genomics and I lead a laboratory that has participated as a reference laboratory in many studies and clinical trials. It is also a reference laboratory for the Hereditary Cancer Program of the Valencia Community.

During the last 10 years I have been part of the Board of Directors of the Navional Network of Biobanks, as well as of the Boards of directors of GEIS (from 2006 to 2017) and GEICO (2014-current). Currently I am coordinating the GEICO Translational Office.

I also have knowhow in quality matters. In this sense we have accredited all the diagnostic tests we are currently developing in the clinical setting. Nowadays, we are also we are in the process of accreditation our biobank activities with the aim of providing the best service to the scientific community.

I consider myself a person with a vocation for service and with a strategic and integrative vision. For this reason, I believe that with the experience acquired in all these years of cooperative research I think I can contribute by providing a more translational vision to GEIVEX Board, although obviously I leave this to the group's consideration.



**Javier Sotillo Gallego** (Investigador Miguel Servet of The Laboratorio de Parasitología, Centro Nacional de Microbiología (Instituto de Salud Carlos III, Madrid).

**Experience in EVs:** During my PhD I participated in the first study describing EVs from parasitic helminths (2012, PLoS One) and, since then (as a postdoctoral or Miguel Servet researcher), I have published 14 manuscripts focusing on helminth EVs in journals such as JEV, Journal of Infectious Diseases, International Journal for Parasitology, and other parasitology-specialty journals. My research focuses on understanding how parasites “talk” to their hosts using EVs and how these EVs can be used as vaccines against parasitic helminths.

**Why do you want to become a member of the Board?** The field of EVs in microbiology and parasitology is rapidly growing. I would like to spread the work performed and published by Spanish parasitologists and infectious diseases researchers, and I believe that by joining Geivex as a vocal member I can contribute towards this. As a junior researcher I can also provide the viewpoint from those in early stages of their scientific career.



**Lydia Alvarez-Erviti** (Principal Investigator of Molecular Neurodegeneration Group, Center for Biomedical Research of La Rioja (CIBIR), Fundación Rioja Salud, La Rioja).

**Experience in EVs:** I have a long-track record in exosome research. In collaboration with Dr Seow, we generated modified-exosomes as gene therapy vehicle. This was a technical breakthrough, with the potential to revolutionize gene therapy delivery for neurological diseases treatment (Alvarez-Erviti, Nature Biotechnology, 2011). In the Molecular Neurobiology laboratory we have developed the exosome therapy for long-term silencing using shRNA minicircles delivered by exosomes (Izco, Molecular Therapy 2019). We are currently developing this technology for a personalized therapy.

**Why do you want to become a member of the Board?** My research has been focused in the development of extracellular vesicles as gene therapy vehicles for neurodegenerative disease since 2007. My expertise in therapeutic use of extracellular vesicles and their role in neurodegenerative disease progression could help to reinforce and enrich GEIVEX in those areas. I consider I uniquely placed to contribute to organize seminars and conference session covering those areas

I would like to contribute to improving the profile of EVs discipline through public advocacy and government representation, and fostering networking, information sharing, mentoring, career opportunities, leadership training, and professional development.

I am fully aware of the responsibility that running for the GEIVEX Board represents; I am also aware that I can make a difference. Thank you for considering me for this position.



**Beatriz Salinas** (Lab Head of Molecular Probes Group, Instituto de investigación sanitaria Gregorio Marañón, Madrid).

**Experience in EVs:** My main line of research is focused on the field of nanotechnology and biomedical imaging. In its transfer to the area of extracellular vesicles (EVs), my research focuses on the use of EVs from goat milk as natural nanoparticles in theragnostic and the development of new chemical tools for the incorporation of imaging agents (radioactive isotopes, commercial fluorophores and optical nanoparticles) into their structure for their non-invasive in vivo study by molecular imaging.

**Why do you want to become a member of the Board?** My motivation to be part of the Board is to be able to share my knowledge and background in the field of molecular imaging and to bring a new approach with a chemical perspective to the various topics and areas covered by the group. In addition, as part of the Board one of my main objectives will be to encourage the exchange of knowledge and experimental tools between the different groups that are part of GEIVEX through short-term training exchanges between students to acquire specific skills in techniques not available in their respective centers, as well as offering monthly online seminars addressing various topics around the EVs of common interest.



# Candidates for President



**María Yáñez-Mó** (Assistant Professor of the Tetrastapanin-enriched membrane microdomains in extracellular vesicles and cell adhesion group, Universidad Autónoma de Madrid).

**Experience in EVs:** I have always been interested in the role of tetraspanin-enriched membrane microdomains in cell biology, covering diverse aspects that include antigen presentation, leukocyte extravasation, viral infection, tissue fibrosis, angiogenesis or embryo implantation. Our research on the tetraspanin interactome (J Biol Chem 2013) led us to the study of tetraspanins in the biogenesis and function of extracellular vesicles (Front Immunol 2014, JEV 2021). We are also trying to exploit the tools against tetraspanin molecules to develop new isolation, detection and quantification devices (JEV 2016 and 2017, Eur J Pharm Sci 2017, Biosens Bioelectron 2016, Sci Rep 2017,2018 and 2019, JEV 2019).

**Why do you want to become a member of the Board?** I have been involved in GEIVEX since its foundation, having organized the first GEIVEX Symposium (Segovia November 2012) and being secretary of the society until 2018. I am also an active member of the International Society of Extracellular Vesicles (ISEV) and was Member of the Management Committee in BM1202 European Network on Microvesicles and Exosomes in Health and Disease COST ACTION and of two National Networks of Excellence on EVs (REDIEX and TeNTaCLES). As a result of all these networking initiatives I am a quite well-known person in the field of EVs, a fact that could ensure a smooth collaboration with other national societies and with ISEV.

I am convinced that GEIVEX has had a very productive history so far, helping the Spanish EV community to increase its international visibility and catalyzing new collaborations among groups. The next years will be crucial to ensure GEIVEX continuity, with incorporation of newcomers and younger researchers in the society and its board and to increase its visibility in all research and clinical national environments.