Prostate cancer is currently the second highest diagnosed cancer in men worldwide. While the primary tumour is able to be removed and treated effectively, progression into advanced metastatic forms reduces the 5-year survival rate to less than 30%. This indicates the need to identify or understand biological phenomena and biomarkers that mediate the phenotype for treatments and diagnostic reasons.

An important biomarker in cancer progression is caveolin-1. In healthy human cells, this is usually co-localised and co-expressed with tumour suppressor, cavin-1. However, in many cancer types, caveolin-1 is expressed without cavin-1, which has been attributed to most of the hallmarks of cancer progression. Yet, adding cavin-1 to a cell line that contains this activity, such as the advanced prostate cancer cell line PC3, is able to reduce the metastatic phenotype. This establishes a system that can be used to assess and understand prostate cancer processes.

This system has been utilized by our lab recently to assess the role of extracellular vesicles in prostate cancer. EVs is the collective term to describe secreted vesicles, including exosomes and microvesicles, that are used in intercellular communication. Cancer-derived EVs are particularly interesting as they have been implemented in