



## Help support research into the causes of invasion in metaplastic breast cancer

Dr Yague will compare breast cancer samples with healthy breast tissue to understand what causes the invasive properties of metaplastic breast cancer and identify biological 'markers' to distinguish this type of breast cancer.

### The challenge

Metaplastic breast cancer is a rare form of the disease, and can be aggressive. We need a better understanding of the biological mechanisms that drive this type of breast cancer in order to develop effective, targeted treatments.

<b>Aim:</b>	To understand what causes metaplastic breast cancer to be invasive and difficult to treat.	A portrait of Dr Ernesto Yague, a man with glasses, wearing a light blue shirt and a dark tie, against a blue background.
<b>Researcher:</b>	Dr Ernesto Yague, Imperial College London	
<b>Funding:</b>	Breast Cancer Now funded grant (2014NovPhD326)	
<b>Tissue:</b>	10 metaplastic breast cancer samples & 10 healthy breast tissue samples (paraffin embedded)	

### The science behind the project

Metaplastic breast cancer is characterised by the ability of the cancer cells to 'transform' into another cancer cell type. This type of breast cancer invades the surrounding tissue and can be difficult to treat. Dr Yague is aiming to understand the biological mechanisms that cause cancer cells to become invasive and therefore identify patients at risk.

Previous research has discovered that that cancer cells which have become invasive have 'lost' a protein known as E-cadherin. Dr Yague and his team will be studying how other molecules, including a protein known as EP300, are involved in the loss of E-cadherin. They will investigate whether these molecules can be used as biological 'markers' to identify whether the cancer cells are likely to be invasive and resistant to drugs.

Using breast tissue samples from Charing Cross Hospital, the team at Imperial College London have previously compared the levels of these molecules in metaplastic breast cancer samples and healthy breast tissue. Dr Yague will now use 10 metastatic samples and 10 samples of healthy breast tissue from the Breast Cancer Now Tissue Bank to further investigate and confirm how these molecules influence metaplastic cancer cells to resist treatments and invade surrounding tissue.

### What difference will this project make?

By identifying what causes the invasive properties of metaplastic breast cancer, Dr Yague's research may lead to the development of new treatments that specifically target the biological mechanisms responsible. This may ultimately lead to the availability of more treatment options and potentially better outcomes for patients.