SAMPLES
- Blood / genomic DNA
- Normal breast tissue
- Tumour - FNA/TMA
- Blood - ctDNA, CTC, metabolomics
- Marrow biopsy - DTC
- Multimodality imaging

OUTPUT
- Biomarkers of risk
- Effects of lifestyle changes/interventions
- Early detection
- Molecular subtypes/staging
- Known biomarkers (ER, HER2 etc)
- Diagnostic biomarkers
- Prognostic biomarkers
- Response biomarkers
- Treatment toxicity biomarkers
- New cell lines and PDX

Outcome
- Cure
- Metastasis
- Resistance

- Male/female
- Ethnically diverse
- Pre/post menopausal
- Metastases
- Blood - ctDNA, CTC, Metabolomics
- Multimodality imaging

- Progression biomarkers
- Changes in ER/HER2 etc
- Metastasis genes
- ‘Organotropism’ genes
- Resistance biomarkers
- New therapeutic targets
- New cell lines and PDX