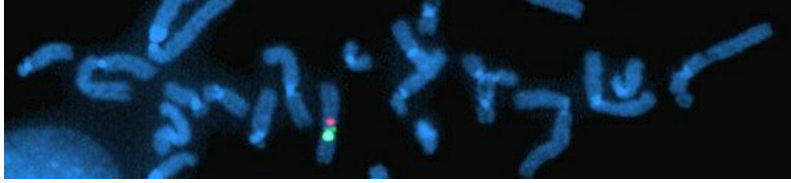


Cancer Genetics and DNA Damage



Cancer Genetics is the cornerstone of basic cancer research and this theme focuses not only on the genetics of specific cancers, but also on the relationship between genome stability and cancer development.

A large part of our research is concerned with proteins that protect the genome from error and instability. These include proteins whose genes give rise to

cancer predisposition syndromes e.g. Ataxia-Telangiectasia (ATM), familial breast cancer (BRCA1, BRCA2), RIDDLE and Nijmegen Breakage Syndromes (RNF168 and NBS1). Processes that protect genome integrity are also central to the actions of many DNA damaging anti-cancer therapeutics and we are exploring these pathways for potential therapeutic targets.

The genetics of childhood cancer is another major area of interest, with a focus on neuroblastoma, retinoblastoma and leukaemia. The aim of our research is to translate knowledge about the genetics of these cancers into improved therapies for patients.

[Open all sections](#)

Genome Stability and Cancer Research...

- [Cancer predisposition pathways \(/research/activity/mds/domains/Cancer/cancer-genetics-dna-damage/cancer-predisposition-pathways/index.aspx\)](/research/activity/mds/domains/Cancer/cancer-genetics-dna-damage/cancer-predisposition-pathways/index.aspx) ([Dr J Morris \(/staff/profiles/cancer/morris-joanna.aspx\)](/staff/profiles/cancer/morris-joanna.aspx))
- [DNA damage and repair \(/research/activity/mds/domains/Cancer/cancer-genetics-dna-damage/dna-damage-repair/index.aspx\)](/research/activity/mds/domains/Cancer/cancer-genetics-dna-damage/dna-damage-repair/index.aspx) ([Dr Grant Stewart \(/staff/profiles/cancer/stewart-grant.aspx\)](/staff/profiles/cancer/stewart-grant.aspx))
- [DNA damage in Haematopoietic Malignancies \(/research/activity/mds/domains/Cancer/cancer-genetics-dna-damage/haemopoietic-malignancies/index.aspx\)](/research/activity/mds/domains/Cancer/cancer-genetics-dna-damage/haemopoietic-malignancies/index.aspx) ([Prof T Stankovic \(/staff/profiles/cancer/stankovic-tatjana.aspx\)](/staff/profiles/cancer/stankovic-tatjana.aspx))
- DNA damage response in Ataxia Telangiectasia & related disorders ([Prof M Taylor \(/staff/profiles/cancer/taylor-malcolm.aspx\)](/staff/profiles/cancer/taylor-malcolm.aspx))
- [DNA replication and genome stability \(/research/activity/mds/domains/Cancer/cancer-genetics-dna-damage/dna-replication-genome-stability/index.aspx\)](/research/activity/mds/domains/Cancer/cancer-genetics-dna-damage/dna-replication-genome-stability/index.aspx) ([Dr E Petermann \(/staff/profiles/cancer/petermann-eva.aspx\)](/staff/profiles/cancer/petermann-eva.aspx))
- [Chromosomal replication \(/research/activity/mds/domains/Cancer/cancer-genetics-dna-damage/chromosomal-replication/index.aspx\)](/research/activity/mds/domains/Cancer/cancer-genetics-dna-damage/chromosomal-replication/index.aspx) ([Dr Aga Gambus \(/staff/profiles/cancer/gambus-aga.aspx\)](/staff/profiles/cancer/gambus-aga.aspx))

Childhood Cancer Genetics Research...

- Leukaemia ([Dr P Kearns \(/staff/profiles/cancer/kearns-pamela.aspx\)](/staff/profiles/cancer/kearns-pamela.aspx), Dr V Weston)
- Neuroblastoma & Retinoblastoma ([Dr C McConville \(/staff/profiles/cancer/mcconville-carmel.aspx\)](/staff/profiles/cancer/mcconville-carmel.aspx))