

Sir William Dunn School of Pathology

History and Background

The University department of Pathology is entirely research and teaching-based; it has no service commitment.

The first course of Pathology teaching was given in 1894 by Professor John Burdon Sanderson, Professor of Physiology, (Regius Professor of Medicine from 1895-1905), and Dr James Ritchie, who, in 1897, was appointed as the first University Lecturer in Pathology.

The first Department of Pathology was opened in 1901 and functioned until 1927 when it was handed over to Pharmacology on completion of the new purpose-built Sir William Dunn School of Pathology. This had been made possible by a munificent benefaction of £100,000, made in 1922 by the Trustees set up in the will of Sir William Dunn who died in 1912.



Sir William and Lady Dunn



The Sir William Dunn School of Pathology 1927

The handsome building, in Queen Anne style, is set in its own gardens. The laboratories were exemplary in their time and after many internal modifications, still function effectively today.



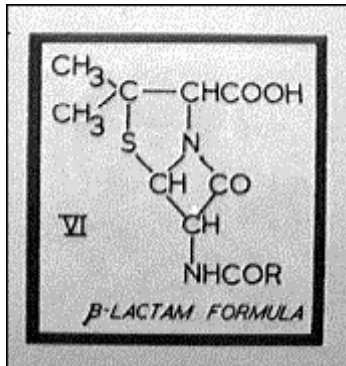
The first full Professor of Pathology, Georges Dreyer, a Dane, was appointed in 1907 and remained in post until he died in 1934.

He had a mathematical bent and carried out some of the earliest quantitative assays on immunological reactions to infection. His special interest was in the immunology of enteric infections and tuberculosis and he was deeply involved in efforts to produce vaccines for these diseases. A little known fact is that he was responsible for the design and manufacture of the earliest oxygen masks worn by pilots in WWI.



Georges Dreyer was succeeded in 1935 by Howard Walter Florey, an Australian who had made England his home. Florey was a physiologist by training and was dedicated to the application of physiological and chemical methods to pathology. His main interests were in the physiology of the cells in the gut, inflammatory reactions and atherosclerosis. He is, however, best known for the work done under his direction that demonstrated the therapeutic value of [penicillin](#) and thus ushered in the age of antibiotics. The purification of penicillin was achieved by Ernst Chain, Norman Heatley and Edward Abraham, with Chain and Abraham eventually determining its chemical structure.

Howard Walter Florey



Penicillin structure



Penicillin researchers (c1940)

After penicillin, the work on antibiotics was continued in the Dunn School by Abraham and Guy Newton, who during the 1950s discovered, purified and established the structure of cephalosporin C, the first of the cephalosporin family of antibiotics. This compound and the ring structure on which it was based were patented, and both Newton and Abraham set up trusts out of the royalties that they received. The Edward Penley Abraham Research Fund, the EPA Cephalosporin Fund and the Guy Newton Research Fund are dedicated to the support of medical, biological and chemical research in the Dunn School , [Lincoln College](#) and the [University of Oxford](#) .



During the 1950's James Gowans worked out the life cycle of the lymphocyte, a cell whose life history was at that time completely obscure. He showed that the small lymphocyte continuously recirculated from the blood to the lymph and back again to the blood. He also demonstrated that this cell was at the centre of immunological responses.

James Gowans

A Cellular Immunology Research Unit, under the honorary direction of Gowans, was established in the Dunn School by the [Medical Research Council](#) in 1963, and this led to the construction of an additional building, (the Leslie Martin building). Gowans remained the Honorary Director of the Unit until he moved, in 1977, to become the Secretary of the Medical Research Council.



Florey was succeeded as Professor in 1963 by Henry Harris, another expatriate Australian. Harris's main interest was in cell biology and especially what was later to become the science of somatic cell genetics. With John Watkins he developed the technique of cell fusion for the study of the physiology and genetics of higher cells.

Henry Harris (from Michael Noakes)

They demonstrated that cell fusion provided a general method for the amalgamation of different cell types across the barriers imposed by species differences and by the process of differentiation. This technique was one of the main roots of somatic cell genetics and, in due course, resulted in the production of monoclonal antibodies.

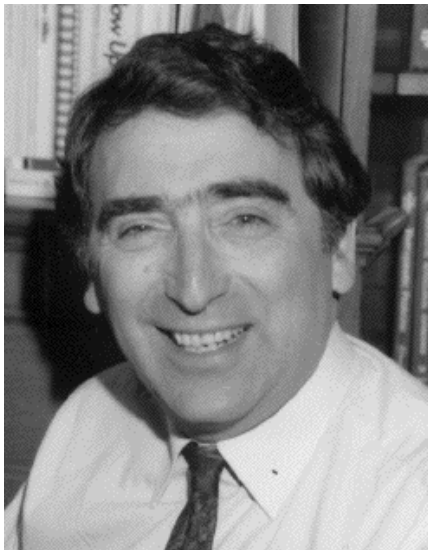
It was also by means of cell fusion that Harris and Goss devised the first systematic method for determining the order of genes along the human chromosome and the distances between them. In 1969 Harris, collaborating with George Klein in Stockholm, showed that when a wide range of malignant tumour cells were fused with normal fibroblasts, the resulting hybrids were not malignant and had the morphological character of fibroblasts. This meant that there were normal genes that had the ability to suppress malignancy. These genes are now known as tumour suppressor genes and work on them has become a world-wide industry. Harris's research was supported mainly by what is now Cancer Research UK, (originally The British Empire Cancer Campaign, BECC, and then The Cancer Research Campaign, CRC.)



In 1977 Gowans was replaced as Honorary Director of the MRC Cellular Immunology Research Unit by Alan Williams, yet another Australian. Williams was mainly concerned with the structural and biochemical aspects of immunological reactions and developed the concept of the immunoglobulin superfamily.

In 1992 Williams was elected to succeed Harris as Professor of Pathology but, tragically, died before he was able to take up the Chair

Alan F. Williams (from Lois Valetta)



Harris continued as Head of Department until 1994 when the new appointee, [Herman Waldmann](#), was able to take up the post. Waldmann's principal interest is in the study of immunological tolerance and application of immunology to the clinic. To cater for this clinical interest, the [Therapeutic Antibody Centre](#), an outstation of the Dunn School, has been built on the Churchill Hospital site to manufacture clinical grade monoclonal antibodies

Herman Waldmann

The construction and furnishing of the EPA Building, completed in 2001 and formally opened by Tim Hunt the 2001 Nobel prizewinner on 10th July 2003, was made possible by the largest grant yet given by the EPA Research Fund.

