

The Society's November lecture entitled "Stem Cell Biology and the Promise of Regenerative Medicine" was given by Professor Paul Fairchild of the Stem Cell Institute, Oxford University.

He began by explaining the importance of this research for the developed world, as we have an increasingly ageing population, who suffer largely from disabilities associated with degeneration of certain tissues. A cure for this would both improve the quality of life in later years and save a large part of the vast cost of medical and social care involved.

Stem cells are the natural units of embryonic generation and adult regeneration. They fall into two types: those found in the early embryo, which can give rise to all types of cell, and those found throughout the adult body which have a more limited range of cell type potential. This latter cell type has the main function of repair and maintenance, but can also give rise to aggressively growing cancer cells. Research in this field may well lead to a breakthrough in cancer treatment. The embryonic stem cells have greater potential for repair of all tissue types but have rejection problems similar to those associated with implant surgery.

There have been several attempts to overcome these problems by nuclear transplants and gene implants into the stem cells; but all the problems have not yet been fully solved.

Prof. Fairchild concluded that there were no revolutionary treatments just round the corner.

There are still several problems to be overcome, such as controlling the new cells to organize into organ structures. Even without therapeutic benefit, the research was revealing the biology of cell development, and the control of differentiation and growth. He warned that there are many complex ethical problems involved as new cell technologies can be used for bad as well as good. He reassured us that there are strict safeguards in this country to prevent misuse of stem cell research.

On 12th January, Prof. Paul Valdes of the School of Geographical Sciences, Bristol University will lecture on "Bioengineering Solutions to Climate Change: What are they, do they work and are they ethical?" at the Royal Agricultural College at 7:30pm.

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