BIO 206 ASSIGNMENT

EKWEFI KENNEDY

MICROBIOLOGY

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IMPORTANCE OF MODERN CELL BIOLOGY TECHNIQUES

When a person falls sick, it will have been your cells that were affected by the poisonous chemicals or toxins from bacteria cells in the bad food.

You may know of someone who has been ill with a disease or disorder such as meningitis, malaria, diabetes, a type of cancer. All these diseases and disorders are caused by problems at a cell or molecular level. Physical damage such as a burn or broken bone also causes damage at cell level.

By understanding how cells work in healthy and diseased states, cell biologists working in animal, plant and medical science will be able to develop new vaccines, more effective medicines, plants with improved qualities and through increased knowledge a better understanding of how all living things live.

Eventually it will be possible to produce a ‘health forecast’ by analysing your database of genetic and cell information. Using this you will be able to take more control over your health in a preventive way.

But cell biology is not just about disease. It has greatly assisted the human fertility programme. DNA testing has been used in archaeology to provide evidence that a living person is related to a long dead ancestor.

In plant science it has been used to show that two plants that look different have the same genetic origins.

Forensic medicine uses cell biology and DNA fingerprinting to help solve murders and assaults. Neither the courts of law nor the criminals can escape the importance of cell biology.

Biotechnology uses techniques and information from cell biology to genetically modify crops to produce alternative characteristics; to clone plants and animals; to produce and ensure high quality food is available at lower costs; to produce purer medicines and in time organs for the many people who need transplants.

Cell biology is about all this and can make an exciting career.

It is also important that everyone feels informed about how the increase in knowledge about cell biology could affect him or her and society in general. Society will have to make informed decisions about such things as growing organs for transplanting into humans and, in those areas where vitamin ‘A’ deficiency causes blindness, growing rice modified to produce the vitamin.

A basic understanding of cell biology including genetics will be as important as having some knowledge about computers and the Internet.

SOMETHING YOU CAN THINK ABOUT

You are a rice farmer and a parent. You know that each year more than one million children die and another 124 million are made more susceptible to measles and diarrhoea due to shortage of vitamin A. You have heard about a new strain of genetically modified rice producing vitamin A is available. Would you grow it and let your family eat it?