Workshop Abstracts

New frontiers in teaching genetics

15 June 2010 (Edinburgh)

Genes - diseases and dilemmas.

In this workshop participants will have the opportunity to try out a range of different discussion activities which encourage the exploration of issues associated with recent advances in Genetics.

The workshop will begin with a description of some areas of Human Genetics where technological advances are creating dilemmas for society. Then participants will take part in a group activity where they have to make decisions about some of these 'gene' challenges. In the final part of the workshop there will be discussions about the implications of DNA profiling and how they may affect people now, and in the future. A resource pack containing all the activities will be available for the teachers attending the workshop.

Marjorie Smith (Dollar Academy)

Wizard Genes.

Pupils are likely to have heard of DNA profiling and may be curious to know more about how DNA testing is carried out. DNA profiling is used in a wide range of applications where knowledge of individual genotypes is advantageous. It can be used to help solve crimes, to establish relationships whether human (for example in paternity and immigration investigations) or in other animals and plants, to track the evolution and movements of species and to study genetic diversity.

In this activity, pupils carry out gel electrophoresis in order to help identify the 'magic power genes' possessed by four different wizards. Through this practical work and other related activities, we aim to engage pupils and provide a route through which they are able to gain some understanding of the technique and also of the issues which may arise from the science.

Kath Crawford, Paul Beaumont, Anne Adams and Gordon Moore (SSERC)

Gene Jury - engaging in modern genetics

The Gene Jury project is designed to engage both Primary and Secondary school children with modern genetics. The project consists of free workshops and on-line resources. The workshops are a fun and active way to engage pupils in new and controversial genetic developments. Topics include: Designer babies, Whose DNA is it anyway, GM'll fix it, Bye bye Biodiversity, and Build a monster. The web-based resources are designed to enhance active learning and discussion, and include animations, interviews with scientists, discussion activities, real life stories, role play, and problem solving games. The resources are relevant to CfE topical science and health and wellbeing outcomes, issues raised within higher and advanced higher biology, and many aspects of personal and social education within schools.

This workshop will showcase our resources and participants will get the opportunity to try them out for themselves. Using a mix of short animation film, hands-on activities, video clips and discussion activities we will investigate Designer Babies and Whose DNA is it anyway? Delegates are asked to bring along their brains, enthusiasm, open mindedness and a sense of fun to explore these with us for the hour.

http://www.biology.ed.ac.uk/projects/GeneJury/

Gene Jury is a collaborative project involving SSERC, The University of Edinburgh and Our Dynamic Earth and is funded by the Scottish Government.

Fiona Stewart (SSERC) and Dr. Heather McQueen (University of Edinburgh)

Meet the Gene Machine.

This lively drama and discussion event is designed to get pupils thinking and talking about the ethics of recent advances in genetics e.g if you could find out that you would develop a genetic disease in later life would you want to know? Would it change how you live your life?

The activity consists of a 10 minute drama followed by a 40 minute facilitated discussion on the issues raised.

Susan Meikleham and Jo Foo (Glasgow Science Centre)

The Nowgen Schools Genomics Programme: Using TV material as a stimulus for teaching contemporary genetics and genomics.

This workshop will provide teachers and their students with an opportunity to view the new Teachers' TV programmes made for the Nowgen Schools Genomics Programme (NSGP). The 3 TV programmes are targeted to students aged 14 - 16, post-16, and to teachers. They aim to introduce simple case studies of contemporary genetics and genomics to the classroom, to excite viewers about the pace of discovery in genetics, and to stimulate discussion about some of the wider issues associated with research in this field. The workshop will promote dialogue amongst the group on the most effective methods of teaching and learning using these resources, and also provide an overview of the other resources available as part of the NSGP.

Dr. Leah Holmes (Nowgen)