Genetics Education for the 21st Century

Design Criteria and Good Practices

International workshop, Utrecht University, the Netherlands

14-16 March 2013

Genetics has evolved from a unique sub-discipline of biology into an integral part of most biological research. Results from studies in genetics influence societal practices, such as disease diagnosis and treatment, drug development, industrial production, criminal investigation, crop protection and sport. It has also become clear that many genes interact to produce phenotypes, that gene expression is modulated by the environment, and that the path from gene to trait is more complex than previously thought. Thus the image of the gene and the genome has changed fundamentally, and the time is fast approaching when personal genome analysis will become standard practice.

Few of these developments are addressed in biology education, and the distance between our understanding of genetics and genetics education has increased. Fortunately, good curriculum and teaching practices exist, for example, experimental materials on bioinformatics, genetic testing and forensic DNA research. The question is whether it is sufficient to add these to current genetics education or if a fundamental restructuring is needed.

During the three-day conference, which builds on earlier workshops held at Utrecht University in 2008 and 2010[i], participants will discuss the consequences of developments in genetics research and their implications for biology education, focusing on topics such as:

a. Choice of genetics concepts and practices and their relative importance for science and non-science majors
b. Proper sequence of genetics concepts within the curriculum and the relationship of genetics with other parts of the curriculum

c. Applications and implications of genetics/genomics research and preparation of students for decision making on related socioscientific issues
d. Innovations in educational approach, student learning and teacher training in genetics education

The conference is open to educational researchers, curriculum developers, teachers and teacher trainers and aims at producing innovative curricular proposals, supported by evidence and experiences with new educational approaches. The results will be published both digitally and in print.
Financial support for accommodation and the conference is available from the Cancer Genomics Centre and the Centre for Life Sciences and Genomics, two genomics centers funded by the Netherlands Genomics Initiative. For invited speakers, travel costs will be covered up to a maximum[ii].
The conference venue is 'Kontakt der kontinenten' close to Utrecht, but secluded in the woods. Conference, meals and rooms are all in the same building.

The time schedule is roughly as follows:

Thurday March 14
- From 16.00 reception, welcome
- Evening meal
- Evening program 19.30-21.30

Friday March 15
- Full day program 9.00-21.00

Saturday March 16
- Full day program, closing at 17.00
- Early leavers can return in the evening

Sunday March 17
- After breakfast:
- Optional guest program
- Departure

For more information check www.cancergenomics.nl or contact Dr. Dirk Jan Boerwinkel, Freudenthal Institute for Science and Mathematics Education, Utrecht University at D.J.Boerwinkel@uu.nl. Please contact us if you are interested in contributing to this conference or if you know of other people that might be interested.

Program committee;
Vaille Dawson, Michael Dougherty, Niklas Gericke, Corinna Hössle, Jenny Lewis, Laurence Simonneaux, Grady Venville, Arend Jan Waarlo, Anat Yarden

Cancer GENOMICS CENTRE
Improving cure rates for cancer patients

Society & GENOMICS
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[Faculteit Bètawetenschappen
FISME]

[i] proceedings workshops on genomics education
http://igitur-archive.library.uu.nl/bio/2009-1208-200117/UUindex.html
http://igitur-archive.library.uu.nl/bio/2011-0815-200626/UUindex.html
[ii] Europe €600, USA €1200, Asia/Australia €1600