

Engage, inform, educate:

An update from the Genomics Education Programme



Developing people
for health and
healthcare

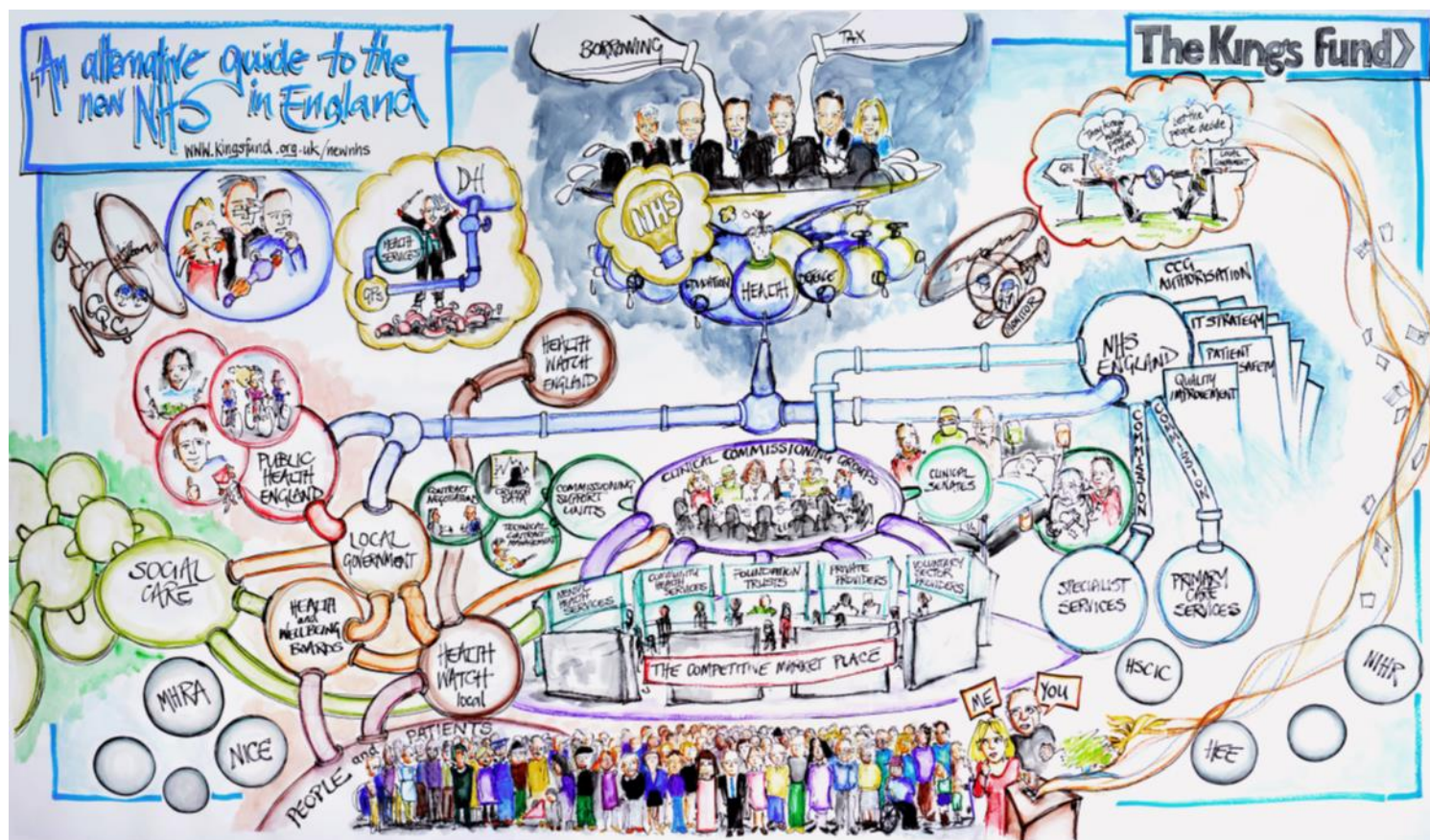
www.hee.nhs.uk

Dr Ed Miller: Senior Education and Development Officer

Outline of talk

- ▶ Setting the scene
- ▶ Overview of HEE Genomics Education Programme (GEP)
- ▶ Spotlight on GEP programmes of work
- ▶ Future direction

Setting the scene...



Setting the scene ...

100,000 Genomes Project

- 100,000th genome was sequenced in December 2018, 122,395 in total.
- Established new clinical pathways, informatic pipelines and models of care.
- Brought together 100s of NHS services across cancer, clinical genetics and other specialisms.

Setting the scene ...

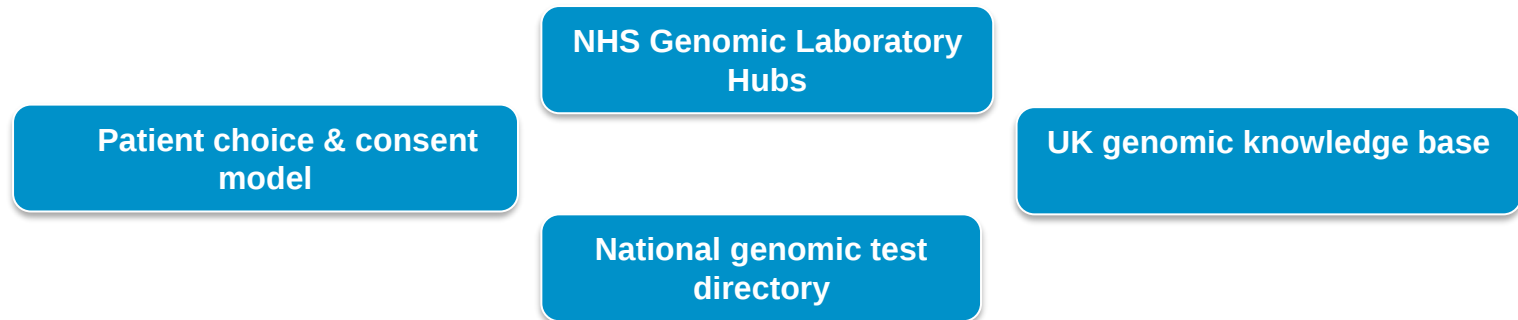
NHS England Genomics Medicine Service (GMS)

- Launched in 2018.
- Operating to national standards, specifications and protocols.
- Delivered via 7 Genomic Laboratory Hubs (GLH) and overseen by Genomic Medicine Service Alliances (GMSA).
- Workforce transformation led by 3 collaboratives.
- Bringing together healthcare, academia and industry.



The new national genomic infrastructure

NHS Genomic Medicine Service Alliances



Workforce development and education

Adapted from NHSE Genomics Unit

HEE Genomics Education Programme

- Health Education England (HEE) established in 2012.
 - Provides system leadership ***‘to support the delivery of excellent healthcare and health improvement to the patients and public of England by ensuring that the workforce of today and tomorrow has the right numbers, skills, values and behaviours at the right time and in the right place.’***
- Genomics Education Programme established in 2014.



GEP in summary

HEE's Genomics Education Programme is:



Co-ordinate genomics education, training and workforce development to support the activities of the NHS Genomics Medicine Service (GMS).



Leading on **workforce planning and intelligence** activities to inform training commissions, workforce numbers to deliver GMS activities.



Focusing on **upskilling the existing workforce** through targeted CPD opportunities.



Developing a broad range of innovative resources in-house and with our partners/collaborators.



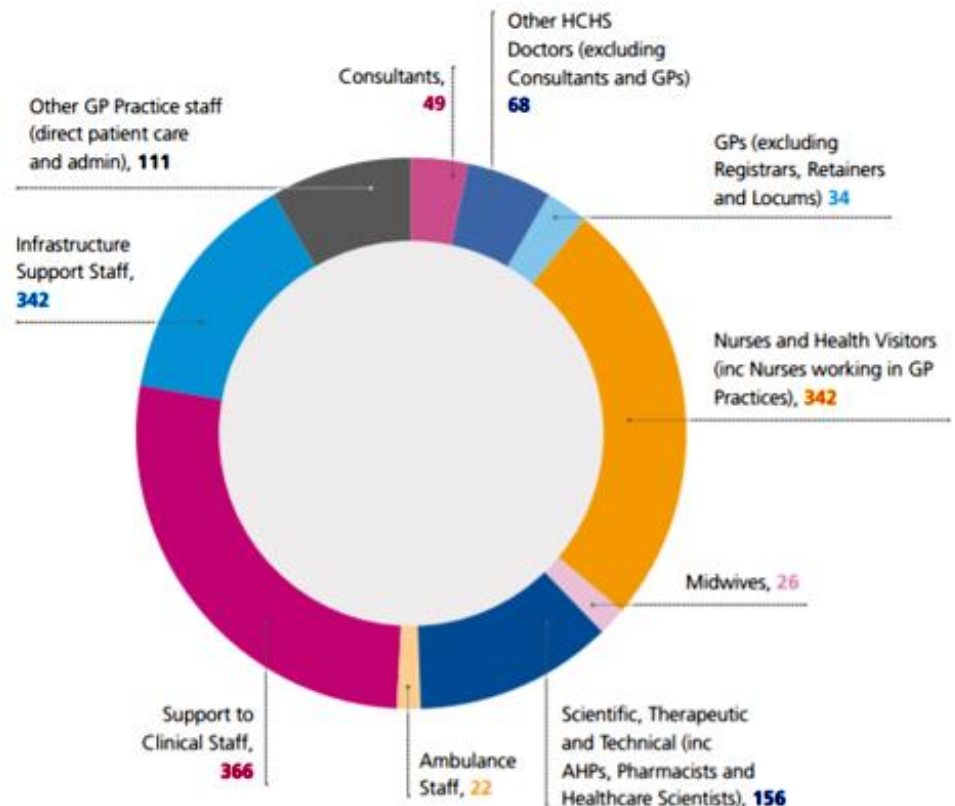
Providing expertise to the development of curricula and competency frameworks.



Working with networks to aid **spread and adoption**.

The challenge

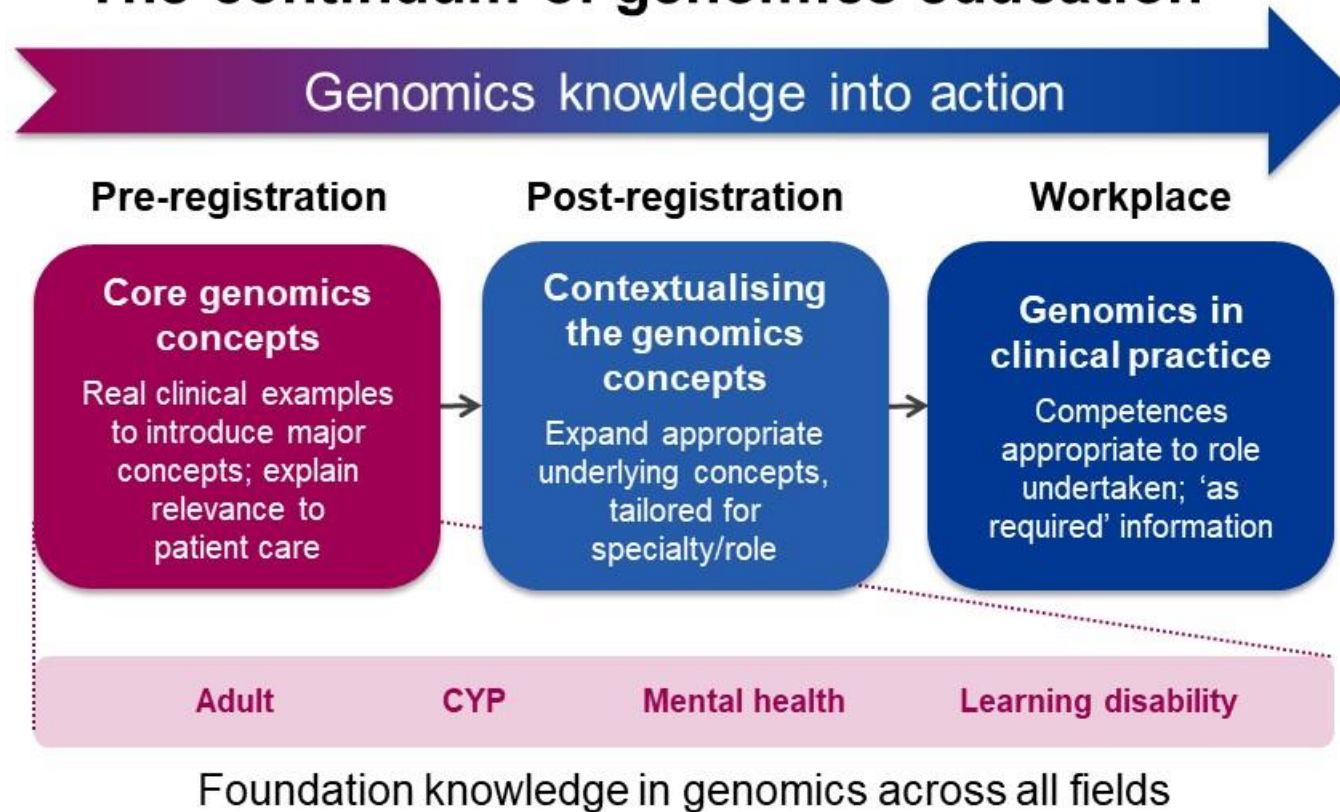
- Nurses ~25% of the NHS workforce.
- Genomics concepts are perceived to be complex.
- Lack of specialists to educate.
- CPD in work time is limited.
- Staff are time poor.
- 'I'm not sure if genomics is relevant to my practice'.



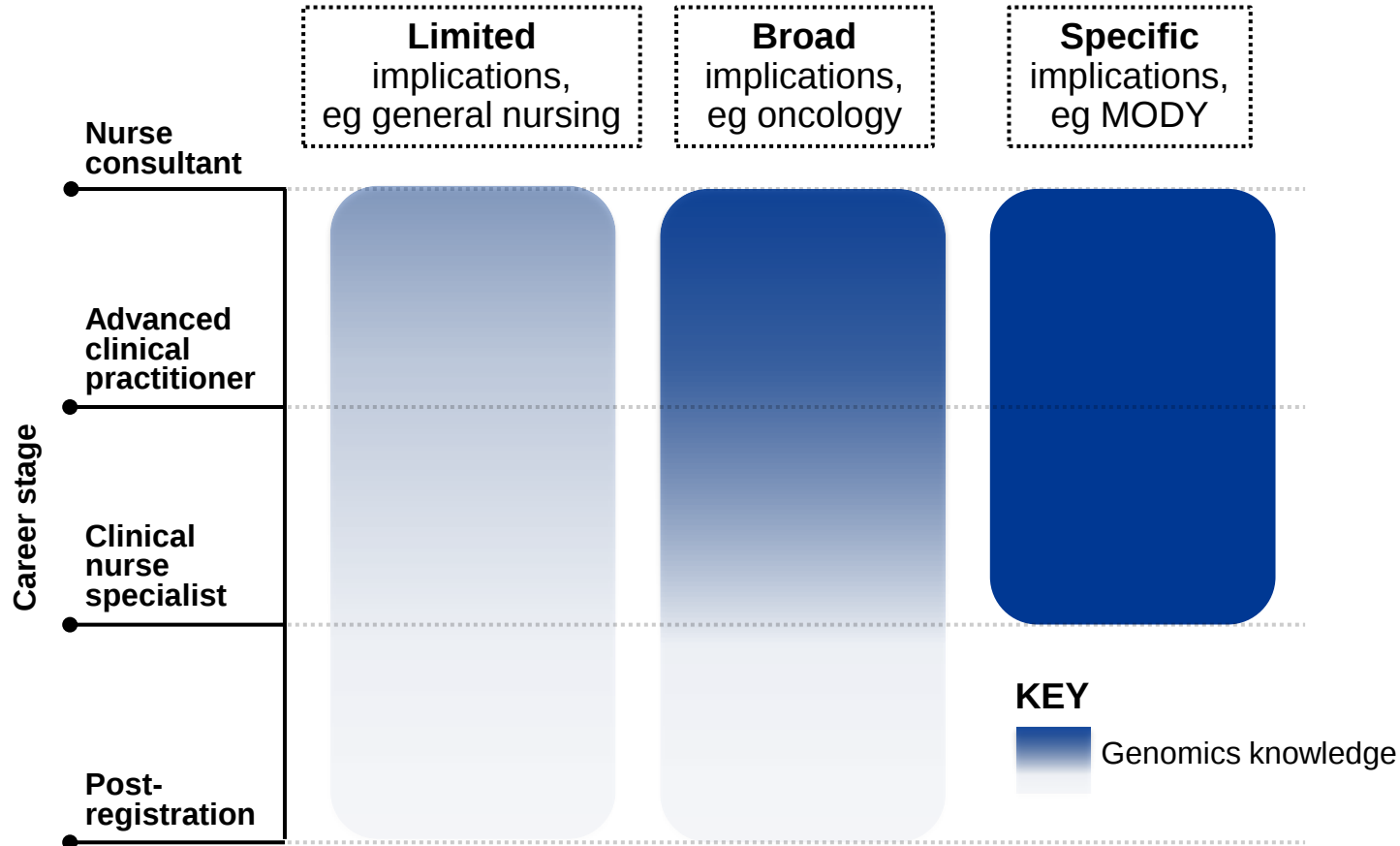
*The Topol Review 2019:
Preparing the healthcare workforce to deliver the digital future*

Recognising where genomics is relevant

The continuum of genomics education



Nursing in genomics: knowledge map



The approach

- Dependent on **situation**



Directive (top down)

- to meet urgent need and gaps, e.g. resources for the GMS.
- respond to professional and regulatory bodies.



Consultative (bottom up)

- to allow workforce to define their learning needs and styles.

Supporting the nursing workforce...

- Strategic:
 - Nursing and Midwifery Roundtable
 - Workforce transformation
- Education and training:
 - Competency framework
 - Educators toolkit
 - MSc framework
 - Resource development
 - Awareness raising

Nursing and Midwifery Roundtable

- Established 2017, chaired by Lord Willis of Knaresborough.
- Brings together **leaders and experts** from education, practice and policy to **listen, discuss and collaborate** the embedding of genomics into healthcare.
- Strategic oversight.



Workforce transformation

- Masterclass: relevance to leaders in trusts.
- Aligning to and supporting the NHSE collaboratives.
- Workforce survey.



Competency frameworks

- Building on previous work by Kirk et al 2014.
- For current and future workforce reflecting a modern genomics medicine service.
- Framework covering three aspects:
 - Undergraduate nurses
 - General nursing workforce
 - Specialist nursing workforce e.g. Advanced nurse practitioners
- Each competence underpinned by learning outcomes and practice indicators.



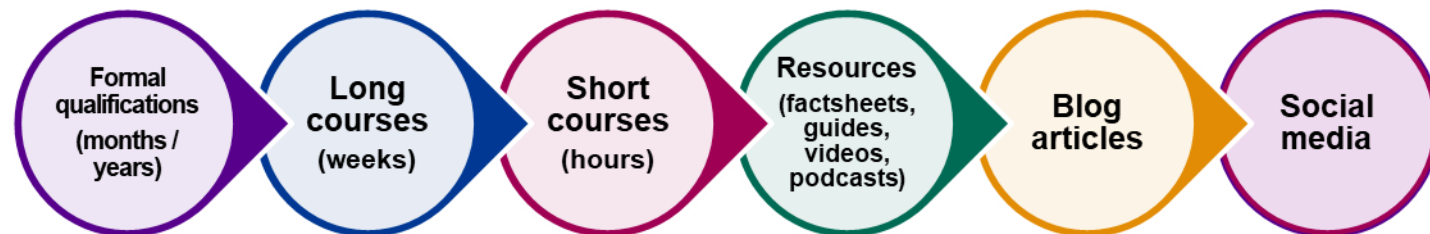
Educators toolkit

- To support the interpretation and delivery of the NMC standards.
- Repository of resources, freely available to all UK educators.
- Easily accessible and usable for educators wishing to incorporate genomics into their teaching.
- Suggestions for how genomics can be taught across the curriculum in relation to other areas.



GEP Resources

- HEE's Genomics Education Programme provides a wide range of free-to-access resources to provide an '**anytime, anyplace, anywhere**' approach to education – tailored to suit the range of professional requirements, and the time and immediate need for education.



MSc in Genomic Medicine

- Delivered at 7 higher education institutes.
- Knowledge-based curricula.
- Bespoke packages of CPD aligned to service needs.
- From 2015 to 31st March 2020, 1055 students have completed PG Cert, PG Dip or full Master's, and 714 CPPD modules completed by 460 students (1515 total)
- Interprofessional learning
 - ~250 Nurses (Nov 19)



I'm much more confident in my explanation to patients '[be]cause I have more confidence in my own knowledge.

Cancer nurse specialist

GEP Resources: Online courses

- **Whole Genome Sequencing Decoding the Language of Life and Health**
 - Massive Open Online Course (MOOC) on the FutureLearn platform.
 - Runs across three weeks, with ~ 3 hours of flexible facilitated learning each week.
 - Case studied based focusing on cancer, rare disease and infectious disease.
 - Next run November 2020.



GEP Resources: Online courses

- **Genomics 101**

- Collection of 9 short e-learning courses.
- Developed for those with little to no previous knowledge of genomics.



From Genes to Genome



Dominant, Recessive and
Beyond



Taking and Drawing a Genetic
Family History



Investigating the Genome
Part 1: The Process , Part 2:
The Tests

GEP Resources: Online courses

- **Genomics 101**



Genomics in Healthcare: 893 learners since Sep 2018.

- Approximately 50% are from the nursing workforce.
- 68% of those are students .



I have done other courses via future learn. This is a good introduction and wish I did this first.

Paediatric nurse



Interesting and very informative course, need to be included in all health professionals' courses.

Nurse educator



It will enable me to have more of an understanding when discussions are happening on the ward.

Student nurse

GEP Resources: Games

- **The Genomics Game:**
 - Designed to introduce genomics and its application in healthcare in a fun and engaging way. Over 400 now in circulation.



- **Dr Jargon**

- Developed to encourage healthcare professionals to explain genomics terminology in a more accessible, patient-friendly manner.

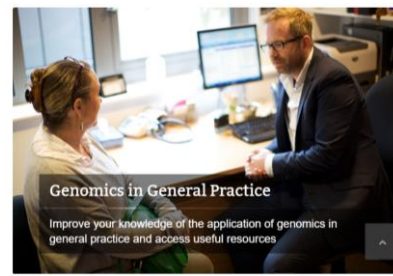
Mutation	Sickle cell disorder
Disease	Haemoglobinopathies
Allele	Recessive
Abnormal	Mutation
Mutagen	Anaemia
Pathogenic	Trait

GEP Resources: Genomics in healthcare

- **Genomics in professional groups:** dedicated pages containing videos, resources and career information.



- **Genomics medical specialties:** short films from experts in their field discussing the impact genomics is having within their clinical specialty.



GEP Resources: Supporting the Genomic Medicine Service

- Developing a wide range of educational resources across these key themes:



Patient choice



Patient pathways



NGIS
(National Genomics
Informatics System)



**Feedback
of results**

- Working with the Academy of Medical Royal Colleges and with individual Royal Colleges
- Working with NHSE-funded Nursing and pharmacy collaborative

Awareness Raising:



- **Genomics Conversation**

- National week of action to raise awareness of genomics in healthcare.
- Featuring events, twitter chats, podcasts and the launch of resources.



Summary and the future

- Genomic medicine is being embedded into routine healthcare in England.
- It is the responsibility of the GEP to ensure that the current and future workforce have the **right knowledge, skills and experience**.
- Achieving this through **linking workforce development to service need** within organisational constraints, shifting priorities.
- Current nursing workforce's education and training needs are often **bespoke to areas of practice**.
- GEP must use **innovative approach's** from awareness raising to formal learning.
- Imperative to continue to **engage, listen and learn** from the profession to ensure the programme's output and strategy is relevant, accurate and adaptable.

The team

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Find out more

Web:

www.genomicseducation.hee.nhs.uk

- Articles and guides
- Just-in-time resources, eg factsheets
- Links to all our courses
- c29,000 visitors every month

Social media: @genomicsedu

- Twitter, Facebook and LinkedIn
- c16,000 followers

Multimedia: Vimeo, YouTube, Flickr

- Educational films, animations and infographics
- Free to embed / download for use in your presentations

