

# TEACHERS' GENETICS NETWORK NEWSLETTER

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ISSUE 37

Welcome to the Teachers' Genetics Network (TGN) newsletter from Wales Gene Park. Members receive a termly e-newsletter providing details of genetics-related news and information, educational resources and events from Wales Gene Park. Membership is free and is open to teachers across Wales and the bordering counties of England with an interest in genetics.

To unsubscribe from this newsletter please email: [walesgenepark@cardiff.ac.uk](mailto:walesgenepark@cardiff.ac.uk)

## Sixth Form Genetics Conference

Tuesday 20<sup>th</sup> November 2018, William Aston Hall, Wrexham

Wednesday 28<sup>th</sup> November 2018 St David's Hall, Cardiff

Book now - places going fast! (limited availability for Cardiff event)

If you haven't booked yet there is still time to join us for our **FREE** Sixth Form Genetics Conferences in Cardiff and Wrexham. 'Spotlight on Genetics and Genomics' will be the 8th Wales Gene Park Sixth Form Genetics Conference. Aimed at post-16 students, the event will look at how discoveries in the rapidly-advancing areas of DNA, genetics and genomics are being applied to aspects of everyday life. Talks, delivered by experts in the field, include....

- ◆ Introductory talks on DNA, Genetics and Genomics
- ◆ Ethical Dilemmas in Clinical Genetics
- ◆ The Genetics of Sleep
- ◆ The Genetics of Ageing and the Quest for Immortality
- ◆ DNA Analysis in Forensic Science
- ◆ The Genetics of Society
- ◆ Plant & animal genomics in global food security
- ◆ Astrobiology

.....amongst other exciting, current topics. (NB: programme will vary between venues due to the availability of speakers). There will also be stands, with activities and careers information, for students to visit.

To book contact: [walesgenepark@cardiff.ac.uk](mailto:walesgenepark@cardiff.ac.uk) or [download the booking form](#)



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### Wales Gene Park on Twitter!

[@WalesGenePark](https://twitter.com/WalesGenePark)

Get all the latest information from Wales Gene Park or tweet us with your news. It's great to hear from you!



## Free schools' screening of JURASSIC WORLD: FALLEN KINGDOM with post-film talk from TVs Dr Rhys Jones

8th Nov 2018, 10am - 12.50pm, Chapter Arts Centre, Market Road, Cardiff CF5 1QE



Wales Gene Park and Into Film Cymru present a free, unique screening of the film *Jurassic World: Fallen Kingdom* as part of the Into Film Festival 2018.

Following the film Dr Rhys Jones, Cardiff University Lecturer and Broadcaster (BBCs *Rhys to the Rescue* & *Rhys Jones's Wildlife*



*Patrol*), will lead an interactive session, discussing the topics covered in the film and asking the question *Just because it might be possible to genetically engineer a dinosaur, should we do it?* Join us for what promises to be an exciting, thought-provoking event! Book via [Into Film](#) (spaces allocated on a first-come, first-served basis). Recommended age group 11+



Wales Gene Park is funded by Welsh Government through Health and Care Research Wales



## Website of the term

The [Khan Academy](#) offers practice exercises, instructional videos, and a personalised learning dashboard that empower learners to study at their own pace in and outside of the classroom. Visit their [Biology](#) pages for topics including cell division, DNA, gene regulation, biotechnology and evolution. Additional [Health and Medicine](#) webpages cover areas such as respiratory and circulatory diseases, infectious diseases neurological conditions and much more.



## Review: Cutting-edge Genetics & Genomics CPD for teachers

In the summer term Wales Gene Park, in collaboration with Techniquest and Swansea University Medical School, held a 'Cutting-edge Genetics & Genomics' CPD event for secondary teachers in Swansea. The day-long course aimed to provide biology teachers with updates on new research and advances in the fast-moving field of genetics and genomics.

The event was held at the Institute of Life Sciences at Swansea University, and attended by around 35 teachers from schools and colleges throughout south Wales.

The programme included talks from expert speakers on *Genetics, Cell Division and Cancer* (Dr George Johnson, Swansea University), *Crop Biotechnology* (Prof Huw Jones, Aberystwyth University), *Microbes and Genomes: Tackling the Antibiotic Crisis* (Dr Cerith Jones, University of South Wales), *Epigenetics in Conservation Genetics* (Prof Sonia Consuegra, Swansea University), *Building Stem Cell Networks to Understand Heart Disease* (Prof Chris George, Swansea University) and *Ethical Dilemmas in Clinical Genetics* (Dr Alex Murray, All Wales Medical Genetics Service). There was also a bioinformatics session (Professor Faron Moller, Swansea University) and a showcase highlighting the opportunities available at Swansea University, including a tour of the laboratory facilities.



Brilliant talks - amazing information from inspirational speakers  
Biology Teacher, June 2018

The event, which was subsidised by STEM Learning as part of their RCUK programme allowing teachers to have an ENTHUSE/RCUK bursary to attend, was very well received by those attending. We plan to run similar events in the future and are keen to hear what teachers would like us to include, so please get in touch if you'd like to suggest some topics or content.

## Genetics in the news

### Wheat gene map to help 'feed the world'

[BBC Science & Environment news](#) reported recently that the starting pistol has been fired in a race to develop "climate change resistant" wheat with the publication of a map of the crop's genes. An international team of scientists has identified the location of more than 100,000 wheat genes and their position in the DNA of wheat. They have in effect produced a map which shows and labels all the most important places on the wheat genome. By knowing where all the genes are, researchers will now be able to discover how they work together to control traits such as drought resistance, increased nutritional value and higher yield. And by using gene editing techniques they can add the traits they need more quickly and precisely. The researchers say the map will accelerate the development of new strains to cope with the increased heat waves expected from climate change. The [research](#) has been published in the journal *Science*.

### Gene-editing hope for muscular dystrophy

Scientists have for the first time used gene-editing to treat Duchenne muscular dystrophy (DMD) in a large mammal, a significant step towards effective treatment for people with the disorder, [BBC Health News](#) reports.

DMD is the most common fatal genetic disease in children and almost entirely affects boys and young men - about 2,500 of them in the UK have the condition. Children born with the degenerative disease have a genetic mutation that stops them producing dystrophin, a protein that is vital for muscle strength and function. In a research study, scientists were able to partially restore the key protein those with DMD cannot make using CRISPR gene-editing to make a strategic cut in the faulty DNA. The proof-of-concept study raises hopes that CRISPR can ultimately lead to more effective treatments for DMD. The full study was published in [Science](#).

## Free Public Talk

### The Welsh Plan to Transform Patient Care with Genomics

8th November 2018, 7pm

Large Chemistry Lecture Theatre,  
Cardiff University, Cardiff CF10 3AQT

Join us to hear a panel of expert speakers from Genomics Partnership Wales (GPW) and The 100,000 Genomes Project in Wales talk on **The Welsh Plan to Transform Patient Care with Genomics**.

The Welsh Government's ambitious plan, the 'Genomics for Precision Medicine Strategy', aims to ensure everyone in Wales has access to cutting-edge genetic and genomic testing. The plan aims to make Wales an international leader in precision medicine, with experts working closely together to make genomics and genetics part of everyday medicine.

The **FREE** lecture, part of Cardiff University School of Medicine's [Public Understanding of Science in Health series](#) 2018-19, will highlight the recent progress being made in genomics across Public Health and NHS services, as well as Wales' contribution to the landmark 100,000 Genomes Project.

Patient and Public Involvement is also a priority for GPW and the talk will explain how the public and patients can get involved.

**The lecture series attracts a wide audience and is very popular with Sixth Form students. There will also be an opportunity to talk with the speakers afterwards.**

**No booking required.**

This talk has been organised by Wales Gene Park in collaboration with Genomics Partnership Wales.



## Save the date

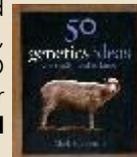
### Science in Health Live! 13<sup>th</sup> & 14<sup>th</sup> March 2019

Don't miss 2019 Science in Health Live. **This will be the event's 25<sup>th</sup> anniversary so we hope to be celebrating in style!**

This popular, interactive event includes lab tours, demonstrations, performances and quizzes and is a great opportunity for year 12 pupils to find out about the latest research and clinical practice taking place at Cardiff University's School of Medicine as part of National Science and Engineering week. Wales Gene Park will have an interactive stand at the event so make sure to visit us! Further details will appear on the [Cardiff University website](#)

## Win a copy of "50 genetics ideas you really need to know"

We're always interested in hearing from you and would like your recommendations on resources, websites, future sessions for students, CPD courses, topics for public talks or suggestions for newsletter features. **The winning contribution will receive a free book!**



To submit your contribution, please email: [walesgenepark@cardiff.ac.uk](mailto:walesgenepark@cardiff.ac.uk)