

# The Tenth Annual Gloucestershire Schools' Christmas Lectures



Monday 2 December 2019  
The Bacon Theatre  
Dean Close School  
Cheltenham



## The Gloucestershire Schools' Christmas Lectures A spectacular learning experience for KS3

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### EXECUTIVE SUMMARY

This year's successful Gloucestershire Schools' Christmas Lectures reached 487 pupils from 15 schools across Gloucestershire. Presentations from two leading science communicators focused on genetics and the Apollo program. The topics and the interactive manner of delivery were well received across the audiences. Teachers felt that the show provided real life context for pupils to appreciate the relevance of science from professionals in their fields, and there was a positive shift in pupils considering future careers in STEM after attending the show.

### CONTEXT

The Cheltenham Science Festival has delivered the Christmas Lectures for The Honourable Company of Gloucestershire since 2010. The overall aim of the collaboration is to inspire young people and encourage them to consider taking STEM subjects through and beyond school. The ongoing concerns around skills shortages and the need to produce and retain more scientists and engineers in the future make events like this an essential part of the work companies and organisations are doing within the local STEM community. Gloucestershire schools recognise the value of these lectures to both their pupils and staff and it continues to be an exceptionally well supported event. The topic areas, delivered by outstanding science communicators, always enrich the school curriculum.

### FORMAT

The event is designed around two separate interactive talks. Sponsors are recognised and thanked at the event on the screen, by The Honourable Company and by Cheltenham Festivals. Planning commences early in the New Year, culminating in the delivery of a professionally produced, dynamic and engaging show. The event was once again held at The Bacon Theatre which is an excellent venue both in terms of capacity and location for all the Gloucestershire schools.

## PRESENTERS

### Antonia Forster: Secret Stars Of The Space Race

Antonia explained how, fifty years ago, humans stepped foot on the Moon for the first time. Neil Armstrong took one small step, but this giant leap wouldn't have happened without the efforts of hundreds of thousands of scientists, engineers and mathematicians. Antonia described the work of the 'hidden figures' of the space program, including programmers, mathematicians and scientists. Pupils were invited to the stage to have a go at programming, learning key lessons through instructing a fellow pupil to make a sandwich using only programming terms!



Antonia Forster is a Virtual Reality Developer and worked at the UK's first 3D planetarium, coding virtual space flights. She has been named as one of Bristol's top 'Women To Watch' in STEM, was shortlisted for Nature's John Maddox Prize in recognition for work as an LGBTQ+ speaker and activist in science, performed at TEDxBristol, and is a regular speaker at science festivals and museums across the country.

### Simon Watt: Cracking The Code: The Genetics Of Superheroes

Simon explained that comic books are filled with mutants; heroes and villains whose special abilities come from their genetic make-up. He explored what real mutants are like, and whether we could one day use genetics to make us superhuman! He explained DNA, mutations, gene therapy and more with a team of pupil volunteers on stage.



Simon Watt is a biologist, writer, science communicator and comedian, and is perhaps best known as a presenter on the BAFTA winning documentary series Inside Nature's Giants. He performs at schools and science festivals throughout the UK and internationally, championing conservation with the Ugly Animal Preservation Society. He is a regular contributor to TV, radio and national newspapers, and author of The Ugly Animals: We Can't All be Pandas.



## MARKETING

A 'save the date' email was sent to all Gloucestershire secondary schools on 16 July, and a promotional flyer was sent at the start of the autumn term. Booking opened on 11 September. Information about the event and how to book, including the sponsor logos, were included on the website where schools completed an online booking form.

**CHELTEMHAM Science Festival** Monday 2 December 2019 10am-12.30pm Years 8-9 The Bacon Theatre Dean Close School, Cheltenham

### The Gloucestershire Schools' Christmas Lectures

A spectacular learning experience for KS3

Treat your pupils to a **FREE, one-off STEM extravaganza** with Antonia Forster and Simon Watt.

The Gloucestershire Schools' Christmas Lectures are spectacular STEM shows for years 8-9 which bring the best of Cheltenham Science Festival to The Bacon Theatre to inspire and engage inquisitive young minds. As well as enjoying interactive lectures covering some of the latest scientific themes, pupils will learn more about the benefits of studying science, technology, engineering and maths at GCSE and beyond.

**"Excellent enthusiasm, brilliant content"**  
Teacher feedback from 2018

Tickets are free\* & booking is now open! Go to [cheltenhamfestivals.com/gloslectures](http://cheltenhamfestivals.com/gloslectures) to book.

For more information, contact the Education Team on [education@cheltenhamfestivals.com](mailto:education@cheltenhamfestivals.com) or call 01242 537268/537250.

\*Please note that tickets are only available through the Education Team in advance of the event, and are not available on the day. Free activities are subject to a £25 admin charge and a cancellation policy (see our website for details).

The Honourable Company of Gloucestershire would like to thank their generous sponsors:

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To maximise the reach of the lectures we set an upper the limit of 40 pupils per school. (Any less than 40 makes it difficult for schools as, although the event is free, the cost of coaches per pupil becomes expensive.) Schools were keen to attend, and a number of the schools who had successfully booked tickets requested further places if any became available. By early October we were fully booked with two schools on a waiting list.

We were delighted that the following 15 schools were allocated tickets this year:

Cheltenham Bournside School  
Cheltenham Ladies' College  
Chipping Campden School  
Chosen Hill School  
Cirencester Kingshill School  
Cleeve School  
Dean Close School  
Dene Magna School

Newent Community School  
Rednock School  
Rendcomb College  
St Edward's School  
Stroud High School  
The Cotswold School  
Winchcombe School



## PRODUCTION

Chris Tarren Production once again produced the event to an extremely high standard and, in line with our Science Festivals guidelines, our Health and Safety Advisor, Matthew Tosh, ensured that the show adhered to regulations and proceeded in absolute safety.

To enhance the talks, programmed lighting, music and a welcome slideshow preceded the show. During the interval a 'Did you know' style presentation with facts and career ideas linked to the shows kept the audience entertained while props were changed and the stage was reset.

The following people provided key roles on the day:

- Mrs Helen Lovatt (Warden of HCG) – Formal welcome
- Patrick Brooke (HCG) – VIPs and closing thank you to sponsors
- Elspeth Kenny (CF) – Project Manager
- Charli Shephard (Chris Tarren Production Company) – Production Manager
- Matthew Tosh – Health and Safety Advisor
- Cheltenham Festivals Staff – meetings and escorting pupils, greeting VIPS

## MEDIA COVERAGE

Jo Durrant from BBC Radio Gloucestershire interviewed both presenters, as well as pupils and teachers from 2 schools. This was broadcast on Jo Durrant's Beautiful Universe on 15 December on BBC Radio Gloucestershire.

All photos were taken by Still Moving Media.



## TEACHER FEEDBACK

Anecdotal feedback on the day was overwhelmingly positive, and both teachers and students were very enthusiastic as they left the theatre. All the lead teachers from each school were asked to complete a feedback form. 9 out of 15 schools returned their forms (60% response rate), and the summary and highlights from the teacher feedback are given below.

	Excellent	Good	Adequate	Poor
How would you rate your <b>overall experience</b> of your visit to the Schools' Christmas Lectures?	100%			
How would you rate the <b>overall organisation</b> of your visit to the Schools' Christmas Lectures?	89%	11%		
How would you rate the <b>content</b> of <b>Secret Stars Of The Space Race</b> (Antonia Forster)?	100%			
How would you rate the <b>presenter</b> of <b>Secret Stars Of The Space Race</b> (Antonia Forster)?	100%			
How would you rate the <b>content</b> of <b>Cracking The Code: The Genetics Of Superheroes</b> (Simon Watt)?	75%	25%		
How would you rate the <b>presenter</b> of <b>Cracking The Code: The Genetics Of Superheroes</b> (Simon Watt)?	100%			
	Yes	Maybe	No	
Do you feel the show allowed pupils to acquire new knowledge, concepts and skills?	100%			
Do you feel events like this impact pupil choices in their GCSEs or A levels?	67%	33%		
Do you feel the show allow pupils to consider a future career in science, engineering, technology and maths?	100%			
Would you attend this style of event again?	100%			





## TEACHER FEEDBACK

### What attracted you to the Gloucestershire Schools' Christmas Lectures?

Most responses mentioned previously attending either the lectures or Cheltenham Science Festival.

### What value did attending the lectures have for your pupils?

"Gave them an opportunity to listen to 'experts' and have an insight into different areas of science" – Chipping Camden School

"Different presenters, enthusiasm about their subjects - seeing the opportunities for lots of different types of people to be involved in science" – Winchcombe School

"Science as entertainment, seeing role model scientists, looking beyond National Curriculum" – Stroud High School

"Expert knowledge and anecdotes they wouldn't have access to in class. Think outside the box when imagining future" – Dene Magna School

"Curriculum linked content in an energetic way. First speaker particularly highlighting that women are scientists too" – Rednock School

### What value did attending the lectures have for you as a teacher?

"Loved the humour and enthusiasm of the presenters and the real-life contexts of the lectures" – Winchcombe School

"Reminds me about the importance of contextualising the learning" – Rednock School

"Gave me some ideas for demos and activities" – St Edward's School

### General comments

"Fantastic free event to provide our Pupil Premium students with insights they may not otherwise get - thank you for allowing us to attend" – Chipping Camden School



## PUPIL FEEDBACK

Teachers were also asked to do a 'show of hands' survey with their pupils to gather some quantitative data on the impact of the shows, ideally as they travelled back from the show. We received forms from 6 of the 15 schools. In total 105 (22%) pupils who attended were questioned, and their answers summarised below:

	Yes		No	
Did you enjoy the Schools' Christmas Lectures?	100%			
	Excellent	Good	Adequate	Poor
How would you rate Secret Stars Of The Space Race (Antonia Forster)?	80%	17%	3%	
How would you rate Cracking The Code: The Genetics Of Superheroes (Simon Watt)?	58%	32%	8%	2%
	Definitely	Probably	Possibly	Unlikely
Before seeing the shows how likely were you to choose a career in science, engineering, technology or maths?	24%	21%	29%	26%
After seeing the shows how likely are you now to consider a career in science, engineering, technology or maths?	23%	30%	30%	17%
Will the things you learned today help your understanding of science and the world around you?	49%	21%	15%	15%

53% of pupils said that after seeing the Schools' Christmas Lectures they were likely to consider a future career in STEM, compared to 45% of pupils before seeing the shows – a 25% increase.

## RECOMMENDATIONS FOR 2020

- Fix date and confirm funding as early as possible so that the Bacon Theatre can be reserved
- Continue with new time of 10am-12.30pm to avoid any risk of overrunning
- Discuss changing the timing so that talks are 45 minutes, include a 15-minute break and a 10-minute Q and A session with both presenters at the end
- Ensure presenters are clear on how to bring volunteers to the stage, to enable the walk-up music and lighting to be smoothly cued
- Clarify the order of introducers to ensure music requirements during the introduction are suitable
- Continue to ensure bookers are aware that they need to plan the trip once tickets have been reserved
- Continue to ensure that presentations are as interactive as possible and keep to time (using the clock on the stage)





Patrick Brooke, on behalf of The Honourable Company of Gloucestershire, once again raised the sponsorship to ensure the lectures could take place. Cheltenham Festivals would like to thank him for all his efforts and for the time he gave during the planning.

With grateful thanks to this year's sponsors:



And to the Honourable Company of Gloucestershire, without whose enthusiasm and support this event could not take place.

