

RESEARCH IN HARMONY

Oxford Science + Ideas Festival
Hertford College Chapel, University of Oxford
18 October 2019

What

“Research In Harmony” was an event featuring five scientists from The Wellcome Centre for Human Genetics (WHG)¹ and The Jenner Institute (JI)² who collaborated with leading Oxford a cappella group The Beatroots³ to develop and perform an a cappella singing concert about their research at Hertford College Chapel⁴ during the Oxford Science+Ideas Festival (IF Oxford)⁵ in October 2019.



Figure 1 Publicity Poster

How

Starting in May, the scientists thought deeply about the aspects of their research they would be most passionate sharing with an adult audience without prior knowledge of their field. Each scientist wrote new lyrics about their science for a popular song of their choice, and passed them on to a member of The Beatroots to compose an original a cappella arrangement of the song. Following several rehearsals with The Beatroots - an exciting but intimidating experience, as none of the scientists had performed a solo part before - the performance was held on a crisp Winter evening in the lovely acoustics of Hertford College Chapel in October.

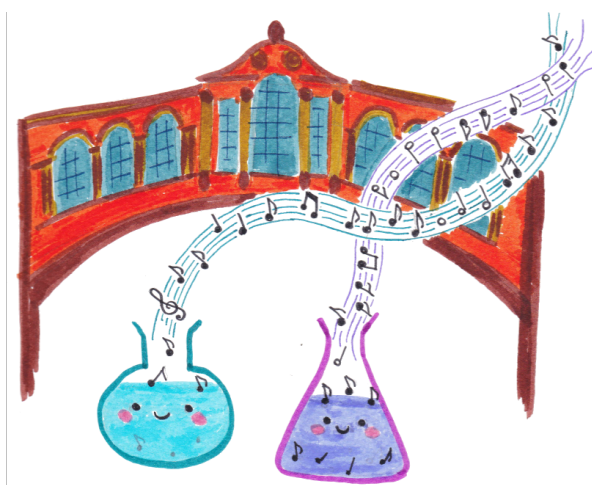


Figure 2 Programme cover

Each scientist did a spoken introduction to themselves and their research, before performing the lead part of their song, accompanied by The Beatroots. To keep the audience focused on the scientists, we chose not to use whiteboards or PowerPoint presentations during the introductory talks, although there was some inventive use of props, and indeed The Beatroots themselves, to help explain therapeutic antibody technology using superhero names. The a cappella songs were performed without microphones or instrumental accompaniment. More detailed bios of the performers, lay descriptions of each research area, and full

song lyrics were provided in the printed programme so the audience could continue to engage with the material after the event. The concert was also recorded.

Why

This event was a fun way for us to combine our passions of science and singing. We enjoyed the challenge of making our research accessible to a lay audience in this unusual way. The experience of developing a story that would be suitable and engaging for the target audience, and delivering it in the medium of a live performance, has undoubtedly helped to build confidence for subsequent science communication events, and speaking or chairing sessions at scientific conferences. It was a great opportunity for each of us to sing with a really good a cappella group, which was a new style of music for many of us, and develop the confidence to sing as a soloist, rather than part of a choir.

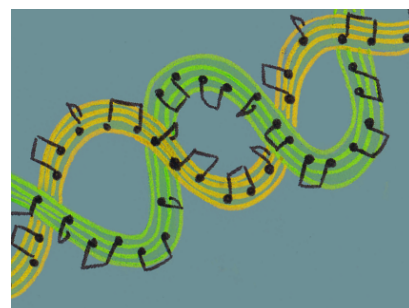


Figure 3 Image used in IF Oxford official programme

In doing this event, we were able to support IF Oxford, which is an important event in Oxford's science communication and engagement calendar. By choosing to engage with the audience with science through music, we were able to reach both people who already attend many scientific talks per year, and attract those who came for the music and discovered an interest in the science.

Music



Figure 4 Carla and The Beatroots

New lyrics for a popular song of their choice were written by each scientist at the University of Oxford, and arranged for an a cappella performance (singing without instrumental accompaniment) to promote public engagement with research. During the concert, each scientist introduced themselves and gave a brief summary of the topic of their song, then sang the solo part, accompanied by vocal harmony sung by The Beatroots.

The programme contains a bio for each scientist and The Beatroots, and a full listing of the new song lyrics:

"I Don't Like Tree Fluff"

- based on "Dreadlock Holiday" by Graham Gouldman and Eric Stewart
- revised lyrics by Camilla Ip (WHG)
- a cappella arrangement by Graham Thew

"tHIVConsvX"

- based on "Y.M.C.A." by Jacques Morali, Victor Willis and Henri Belolo
- revised lyrics by Nicola Borthwick (JI)
- a cappella arrangement by Andrew Elliott

"It's All About The Gene Regulation"

- based on "All about that bass" composed by Meghan Trainor, Kevin Kadish and Tomas Hedman
- revised lyrics by Carla Cohen, The Wellcome Centre for Human Genetics
- a cappella arrangement by Rachel Wood

"Changes in the DNA"

- based on "Changes" by David Bowie
- revised lyrics by Carme Camps, The Wellcome Centre for Human Genetics
- a cappella arrangement by Freya Marijatta

"I Wanna Find Antibodies"

- based on "I wanna dance with somebody" by George Merrill and Shannon Rubicam
- revised lyrics by Francesca Donnellan
- a cappella arrangement by Edwina Christie

Audience

IF Oxford is a vibrant and innovative celebration of science and the arts. Thus, it is a good opportunity to engage with people who regularly attend scientific events, and those who would never do so, unless tempted by a more accessible medium like music.

The performance was attended by approximately 85 people, so allowing for performers, this was close to capacity for the venue. Most people had heard about the event through friends, family or colleagues (65%), or the IF booklet or website (29%), and lived in Oxford. We were successful in attracting our target audience of adults, with most attendees being in the 25-60 age range (82%), with some younger adults aged 19-25 (7%), some older people over 60 (5%), and some children under 10 (5%). The combination of science and music seems to have been a winning combination, as 23% of attendees said they came because they were intrigued by an event that combined both. Interestingly, the combination of science and singing enabled us to reach people who would not normally attend a science event (23%). Several groups commented that they were surprised and delighted that all the scientists were women, and that the scientists were so passionate about their work.

Benefits and Impacts

As scientists, we are passionate about our work in the medical sciences and the potential is has to improve human health during our lifetime. An event like this, targeting an adult audience, allowed us to go into more detail than we might otherwise be able to with an audience with younger children, and engage with people who might not otherwise come to a science event. The experience of having to think deeply about our work gave us insight into our own motivations and career choices, and committing to a relatively stressful performance increased our confidence for public speaking.

The audience were entertained and hopefully came away with a better understanding of medical sciences research in Oxford. We were contacted afterwards by one audience member who suffers from the condition that was the topic of one of the songs. Another audience member contacted us to say how they were moved by the stories and were now inspired to investigate their own health problems.

By contributing to IF Oxford, we helped foster a good relationship between the University of Oxford and the people who live in our city. By helping to promote a more positive view of scientists as motivated by a wish to help, passionate about their work, approachable, and able to explain their work in plain language, we have served as more positive examples of scientists and improved public trust in the medical sciences.

The Beatroots are a group of talented Oxford University postgraduates and University Staff from a variety of science and humanities backgrounds. They spoke of how they were really interested to find out about our work as we are all peers in the same institution. On several occasions, members of the group expressed how interesting they found the whole process, both from the scientific point of view, and as a means of communicating and engaging with lay audiences about complex material.

Feedback

The feedback from our collaborators in The Beatroots was very positive:

It was an absolute pleasure to take part in this event, and we learned so much! We thought you did a great job in composing songs that conveyed the science, as well as cracking performances: the audience were really engaged with what you were saying and their participation in the songs showed that. A fantastic initiative, and we'll be looking out for your research (and the chance to do similar public engagement events) in future. Thanks for the opportunity! [Rachel Wood, Director]

A feedback form with the following questions was supplied to all audience members (85) on arrival:

1. How did you hear about this event?
2. What inspired you to come to this event?
3. What three words would you use to describe this event?
4. What did you like most about today's event?
5. Has attending this event changed your opinion about biomedical scientists or any of the topics mentioned?
6. Having attended the event, do you have any new questions about the topics mentioned?
7. How far have you travelled to attend this event?
8. How many people, of the following age groups, attended in your group today? [Age Categories: Under 10, 11-18, 19-24, 25-60, 60+]
9. How many science events have you attended in the past year?
10. How many singing events have you attended in the past year?
11. How many music or other cultural events has your group attended in the past year?
12. Any thoughts on how we could improve future events?

The responses from the 31 groups, representing just over half (44) attendees, were overwhelmingly positive.

Some quotes from audience members:

- *We, as a family with 2 teenagers, found all the show very inspiring and funny*
- *Wonderful, laughter-filled, creative, brilliant, inspiring, brace, accessible*
- *Brilliant biological songs!*



- Carme C

- Camilla Ip (WHG, event concept and coordination)
- Francesca Donnellan (JI)
- Nicola Borthwick (JI)

The Beatroots are an a cappella vocal group based in Oxford who perform their own arrangements of popular songs in a variety of styles, with members:

- Rachel Wood (director)
- Edwina Christie
- Andrew Elliott
- Lu Li Jovanoska
- Freya Marijatta
- Emma Ladell-Stuart
- Graham Thew
- Jackie Thompson



Figure 7 The Beatroots

Funding

We extend our warmest thanks to the organisations that enabled us to be involved in this project. The cost of entering the event in IF Oxford, hiring The Beatroots to write original harmonies for four songs, performing on the night, an audio recording of the event by the University's podcasting team, printing facilities for the programme and time for public engagement officers (Camilla Ip, Brian Mackenwells, and Sue Wilson) was supplied by funding for public engagement at the WHG.



The research group of Prof. Simon Draper at the Jenner Institute covered the cost of the original arrangement for Francesca Donnellan's song.



Recordings

Video highlights: www.facebook.com/watch/?v=549207712530931

Video of entire event with better audio : well.ox.ac.uk/about-us/for-the-public/

References

- ¹ The Wellcome Centre for Human Genetics : well.ox.ac.uk
- ² The Jenner Institute : jenner.ox.ac.uk
- ³ Hertford College Chapel : hertford.ox.ac.uk/living-here/chapel
- ⁴ The Beatroots :
 YouTube - [beatrootsacappella](https://www.youtube.com/beatrootsacappella)
 Facebook - facebook.com/beatrootsacappella
 Twitter - [@acabeatroots](https://twitter.com/acabeatroots)
 Email - beatrootsacappella@gmail.com
- ⁵ Oxford Science+Ideas Festival : if-oxford.com