



EVALUATION REPORT

The BA Festival of Science took place in Liverpool from 5-10 September 2008. The BA worked in partnership with the University of Liverpool, Capital of Culture, STEMPOINT Merseyside and the World Museum to produce a Festival programme for adults, families and school groups.

The Festival was supported by the following organisations:

The Department for Innovation Universities and Skills
Northwest Development Agency
RCUK
BAE Systems
AstraZeneca
Unilever
Wellcome Trust
Royal Academy of Engineering
Diamond Light Source
The Kavli Foundation
The Royal Commission for the Exhibition of 1851
SAFC Hitech
The Granada Foundation

Media Partner:
Liverpool Daily Post

The BA works towards advancing the public understanding, accessibility and accountability of the sciences and engineering.

The overarching aim of the Festival is to provide an interdisciplinary platform for organisations engaged with all branches of science, engineering and technology to interact with a wide range of audiences.

The BA Festival of Science evaluation covers three main areas:

Impact – assessing the effects of the Festival

Demographics – who is taking part in the Festival, both presenting and attending events

Process – looking at ways to improve how the Festival works for event organisers, speakers and attendees

The specific objectives of the Festival 2008 were:

Impact

- Work with the City of Culture and other relevant bodies to establish the Festival as the main science-based event for the year
- Increase the number of speakers with high public profiles
- Develop greater involvement of the science-based business community, alongside the NWDA
- Link the programme to the Cultural Olympiad and exploit the importance of football and music to the city
- Provide a high quality programme for young people

Demographic

- Identify and target specific communities in Liverpool, in conjunction with the Liverpool Council and locally-based organizations which have a community outreach focus

Process

- Improve promotion through an effective advertising campaign developed with external expertise
- Improve the user-friendliness of the physical and online programme
- Explore outsourcing the ticketing instead of maintaining the current in-house provision and revise the system accordingly

Impact

- **Work with the City of Culture and other relevant bodies to establish the Festival as the main science-based event for the year**

During Capital of Culture year the Festival was the major public science event. The programme was typically diverse and to celebrate Capital of Culture year some events focussed on the interaction between science and culture. The Festival was promoted as part of Capital of Culture online and in its brochures. Early meetings between the BA and the science board of the Culture Company helped to develop partnerships between the Festival team and key contacts within the local science, engineering and technology community.

The idea of science as a cultural stimulus was embedded within the programme by using traditionally cultural venues like the Playhouse and Everyman Theatres and the Cavern Club for events. We also worked closely with National Museums Liverpool, most notably partnering with the Liverpool World Museum on *Science Explosion*, our main family event. Events took place at local parks, the National Wildflower Centre and cinemas, as well as Liverpool's Anglican Cathedral.

- **Increase the number of speakers with high public profiles**

For the Festival we hosted a variety of 'high profile' speakers to appeal to different audiences. In 2007 we had 2 'high profile' speakers – Professor Robert Winston and Nick Arnold

Professor Adam Hart-Davis – a popular TV presenter with a flair for engaging young people. He opened the Festival at Science Explosion at the World Museum, with a series of demonstration lectures. Following this Adam Hart-Davis and Marty Jopson delivered an entertaining and informative show about the history of the vacuum *Much ado about nothing*. This took place in front of a capacity audience at the Everyman Theatre. The performance was well received, but the breadth of the appeal of Adam Hart-Davis was evident during the questions at the end, with many children asking questions, and engaging in discussion with Adam and Marty.

Sir Ranulph Fiennes gave an engaging presentation to a packed out Playhouse Theatre. His universal appeal was evident in the audience. Observational evaluation noted groups of young men, family groups, older and younger couples.

Dick and James Strawbridge are well known through their TV appearances in shows like *It's not easy being green*. They were joined by a Festival audience to explore how individuals can use science and engineering advances and principles to reduce their impact on the environment. It was an informal and relaxed evening which the audience enjoyed.

Sir David King, as President of the BA, gave his Presidential Address on Monday evening, in front of an audience that included local dignitaries, researchers, media from at home and abroad, local business leaders and representatives from Government departments. The content of the presentation was widely reported, analysed and commented upon by the media and provoked significant discussion and debates in various letters pages and online.

Professor Tom Kirkwood is one of the world's foremost authorities on ageing research. The talk by Professor Kirkwood rounded off a day of talks and activities about ageing research, in biomedical research, as well as other areas such as ergonomics and transport. The talk was attended by a variety of interested parties including medical practitioners, researchers, and retired people.

Phil Redmond OBE is well-known for having created several popular television series such as *Grange Hill*, *Brookside* and *Hollyoaks*. He also oversaw the creative direction of Liverpool's Culture Company. Phil took part in two events at the Festival including a discussion alongside **Professor Robert Winston** debating the role that science plays in culture.

- **Develop greater involvement of the science-based business community, alongside the NWDA**

During the planning process for the Festival we contacted local businesses through the NWDA to encourage them to become involved with the Festival programme. There were numerous ways to participate including running an event, providing sponsorship for the Festival or providing a venue. We also investigated the possibility of running a careers day in collaboration with local businesses but there was not sufficient take up to make this viable.

A significant number of businesses took part. These included:

- Unilever (with NPL) and Daresbury Laboratory who ran successful events. Unilever's event provided one of the top stories in terms of media coverage with over 80 items including almost 30 newspaper articles from the UK, as well as Canada, America, Australia, Oman and Serbia. United Utilities, Amgen and SAFC Hitech who supported events based on their areas of interest.
- Philips Medical Systems and Olympus who provided hands-on activities.
- BAE Systems who supported the young people's programme and as part of this support held discussion events with teenagers which generated local press coverage.
- AstraZeneca who sponsored the press centre and held a reception for local, national and international journalists.

- Link the programme to the Cultural Olympiad and exploit the importance of football and music to the city

We held 2 specific football-related events for different audiences. The first was a family event *The physics of sport – how to bend it like Beckham*. This event examined the physics behind how a football moves through the air. Feedback from the event was 100% positive, with comments such as “Fascinating. There is science everywhere” and, from someone attending as a non-football fan “[I now have a] greater understanding of the attraction of the sport to those who follow it”. The event also generated media coverage in the Sunday Telegraph, as well as the Telegraph Online and Belgian and Italian media.

The second event focussed on a very local issue – the proposed move of Everton Football Club. The event reported findings of a sociological study into the attitudes of fans towards the club’s move to Kirkby in association with Tesco.

With the Festival taking place in Liverpool, it was impossible to ignore the Beatles and their impact on the City. Our mass participation experiment, the *Magical Memory Tour*, drew together peoples’ memories of the Beatles, their songs, albums, appearances and stories in a research project to increase our knowledge and understanding of how we relate to our memories and in particular two concepts within cognitive psychology known as the reminiscence bump and generation identity. It aimed to do this by uncovering the role The Beatles and their music play in our personal histories. It was devised by psychologists Professor Martin Conway and Dr Catriona Morrison from the Leeds Memory Group.

The project was launched during National Science and Engineering week in March 2008. During the course of the project over 3000 people spanning 69 different nationalities took part in the experiment with almost 140,000 visits to the website. Over 200 news items were generated from the project including almost 50 newspaper articles, both national and international. People were invited to blog the most vivid memory that came to mind relating to a Beatles album, song, news story or band member. The majority of respondents were ‘silver surfers’, between the ages of 55 to 65, who would have been teenagers during the Beatles heyday of the ‘60s.

As expected, the majority of memories related to the teenage years of people’s lives, showing a classic reminiscence bump. The difference here is that the bump occurs slightly earlier in the lifespan than for autobiographical memories more generally, suggesting that music, or at least The Beatles’ music, is important in the storage of particularly early memories.

The song that emerged overall as generating the most memories was ‘She Loves You’. This is perhaps not surprising as this was the biggest selling single of the 60s and the Beatles most popular record ever.

With the exception of the murder of John Lennon, memories submitted were overwhelmingly positive, demonstrating that memory and emotion are linked. It seems that positive emotions are the ones primarily associated with shaping memory.

There were some differences between nationalities: English people related most memories to the song 'She Loves You', whilst for Americans it was 'I Want to Hold Your Hand'; English people reported most film-associated memories to 'Help', while Australians reported most to 'A Hard Day's Night'. But what is more interesting than these relatively minor differences between nationalities is the similarities in terms of the moods, feelings, scenes and situations they relay. They show the influence The Beatles had as global cultural icons.

The results were revealed during an event at the Festival 'Brains, drugs and rock n roll' which took place at the Cavern Club.

- **Provide a high quality programme for young people**

The programme for young people was delivered in collaboration with STEMPOINT Merseyside who have significant experience in large scale events for schools in the area. They were also able to work with STEMPOINTs in other regions in the North West to promote the Festival to a wider audience.

Key Stages 2 and 3

The programme was a good balance between workshops and shows given by both local and national activity providers, with over 30 different activities for key stages 2 and 3.

Feedback from teachers bringing students to the Festival was overwhelmingly positive and individual events were highlighted as particularly good which is useful for future planning of the Schools Programme.

"The classes were adapted to suit all age groups and abilities in the audience"

"Thank you for organising such good activities"

Key stages 4 and 5

When asked why they brought their students to the Festival the main reason was the relationship to the science syllabus (49%). The next most popular reason with 31% was to for students' motivation and enjoyment. 20% of teachers stated that student enrichment was their main motivation for attending.

75% of teachers rated the ability of the activity to meet their expectations as extremely or very good

75% of teachers rated the appropriateness of the activity to the age and ability of the students as extremely or very good

65% of teachers rated the content and delivery of the activity as extremely of very good

75% stated that the students enjoyed the activity extremely or very much

None of the teachers rated the activities as not good at all.

Demographic

- **Identify and target specific communities in Liverpool, in conjunction with the Liverpool Council and locally-based organizations which have a community outreach focus**

Meetings took place with the Creative Communities group at Liverpool City Council to promote the Festival through as many community groups and venues as possible. We were able to identify many useful contacts including youth services within the City Council, Age Concern and community and branch libraries. We sent tailored emails to these organisations to distribute through their mailing lists and information bulletins.

Process

- **Improve promotion through an effective advertising campaign developed with external expertise**

We asked attendees how they found out about the event and the responses were representative of the different methods we had used for promoting the Festival. Coupled with a new look programme we were able to form earlier and closer partnerships with a local distribution agency who were able to advise on the best areas to target and who also had established relationships with many large, medium and small businesses and visitor attractions around the North West. Consequently the feedback shows that people were finding out about the Festival at the places they were used to visiting – their local pub, corner shop or butchers for example. The distribution of programmes door-to-door had a positive effect in bringing in people who had never been to a science event before.

- **Develop a more user-friendly physical and online programme**

We worked with a design and marketing company to improve the look and feel of the marketing materials with a striking central image and a revamped Festival programme designed to be more accessible and inclusive with more pictures and colour to appeal to a broader audience and to more accurately reflect what the Festival is about. Informal and anecdotal feedback indicates that the image was eye-catching, especially given the number and nature of other events being promoted throughout the region for Capital of Culture year.

Following advice from an external web consultant we redesigned the online programme to be more user friendly with pre-loaded searches by day, audience level, and subject so that first time visitors could access more specific information relevant to them.

- **Decide whether to outsource Festival ticketing or retain in-house provision**

We decided to retain in-house provision of ticketing and simplified the procedure for online bookings. Although the majority of bookings are done online with no issues, the number and nature of telephone calls and emails that we receive wanting more information about events before booking indicates that contracting out all ticketing would mean a definite decline in the standard of service we could offer.

Did the BA Festival of Science 2008 meet its objectives?

The Festival in Liverpool was successful and it worked well within the context of the Capital of Culture. Although footfall was down on our expectations the number of people attending ticketed events increased.

We decided based on feedback from previous years that we would run more events for adults at the weekend. This was a very successful part of the programme with audiences enjoying a range of activities and talks about topics such as poetry, football and aliens.

With a focus on raising the profile of the Festival in the local area we were pleased with the proportion of people who attended who had travelled less than 50 miles – 58% of all questionnaire respondents. The feedback showed that people were finding the programme in various locations.

The star speaker strand also helped to raise awareness of the Festival, with interest in these events very high in the run up to the Festival. Working on these events in conjunction with the theatres in Liverpool opened up avenues to new audiences, and the success of these events has encouraged the theatres to want to stage more science based events.

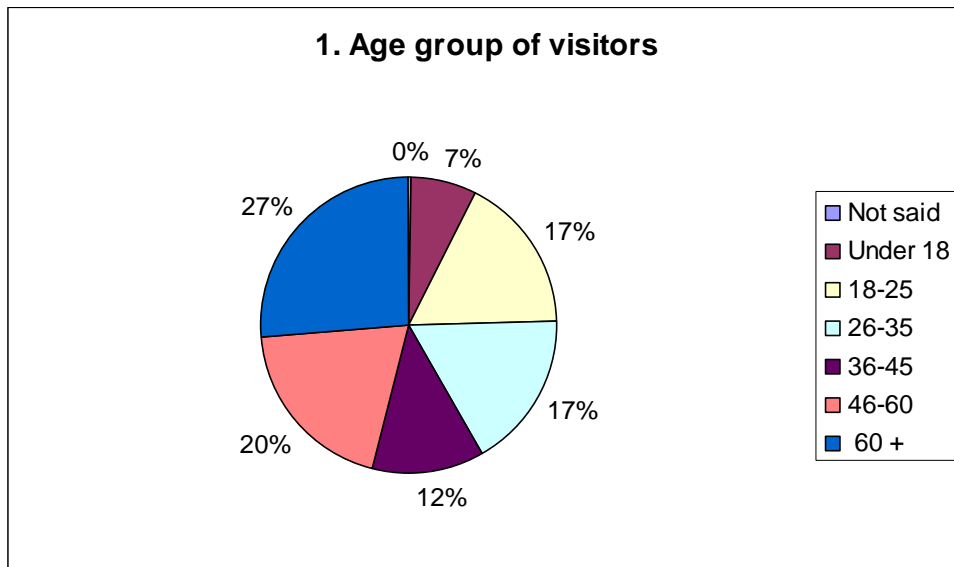
Appendices

Appendix 1 – Audience demographics

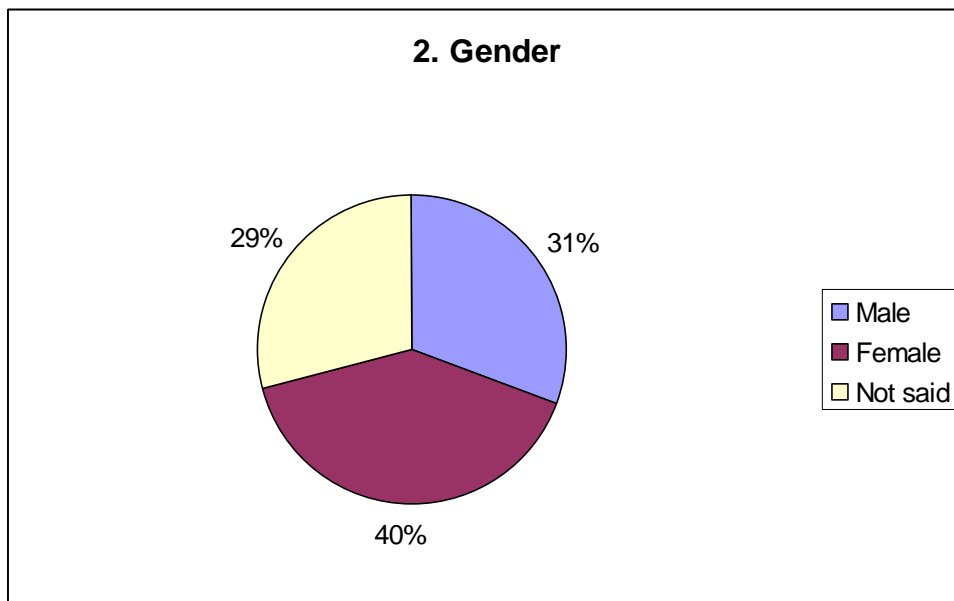
Appendix 2 – Audience feedback

Appendix 3 – The Festival in numbers

Appendix 1 – Audience demographics



There was a fairly even split of people from different age groups who answered the questionnaire and this was borne out by observational evaluation.



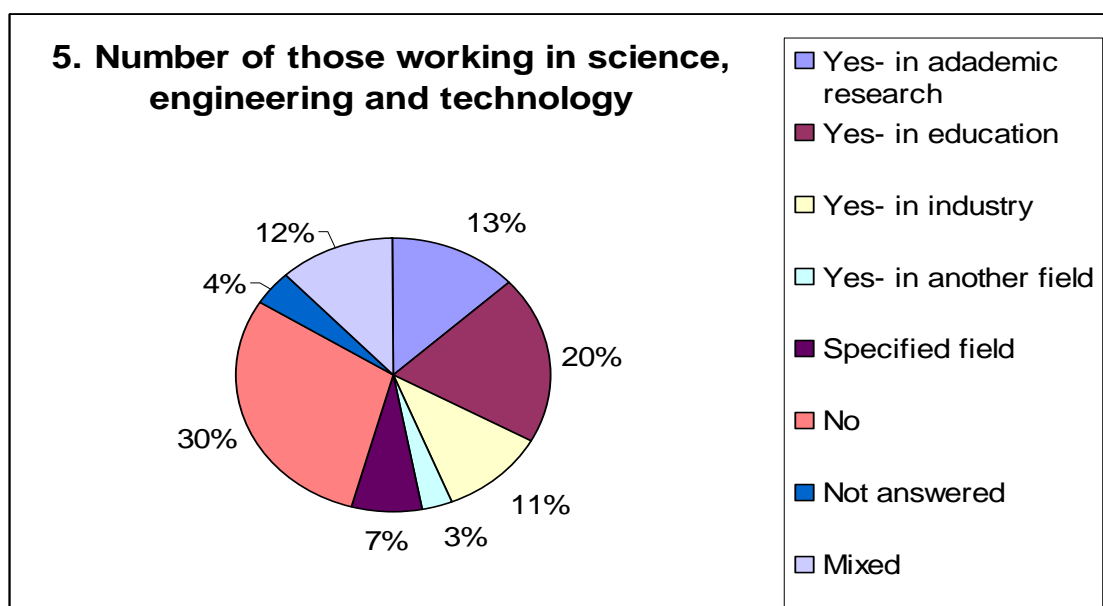
Unusually this year showed more women than men, among those answering this question.

3. Ethnicity

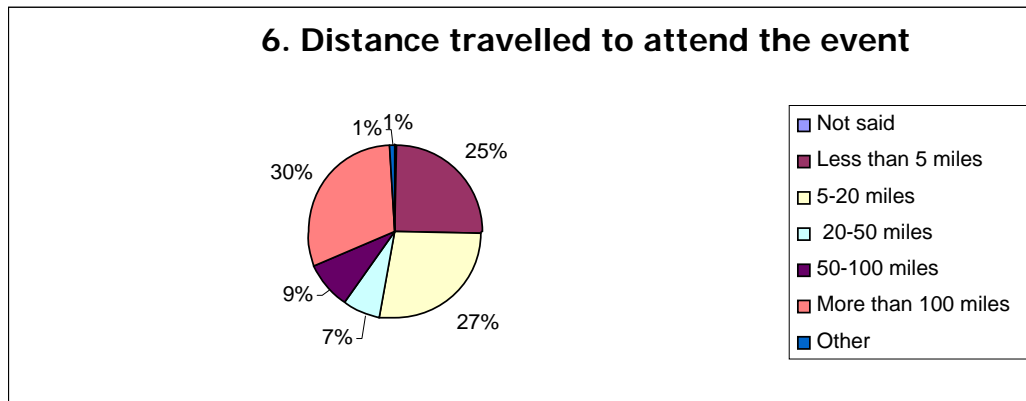
White British	79.88%
White Irish	13.53%
White other	8.31%
Caribbean	0.19%
African	0.38%
Asian	1.45%
Asian/ Asian British/ Asian Irish	1.45%
Black/ Black British/ Black Irish	0.29%
Chinese	0.96%
Other	1.06%
White British and White Irish	0.10%

The statistics broadly correspond to the ethnic profile of Liverpool (source <http://www.liverpoolcityportal.co.uk/history/demographics.html>) which gives the following statistics based on the 2001 census:

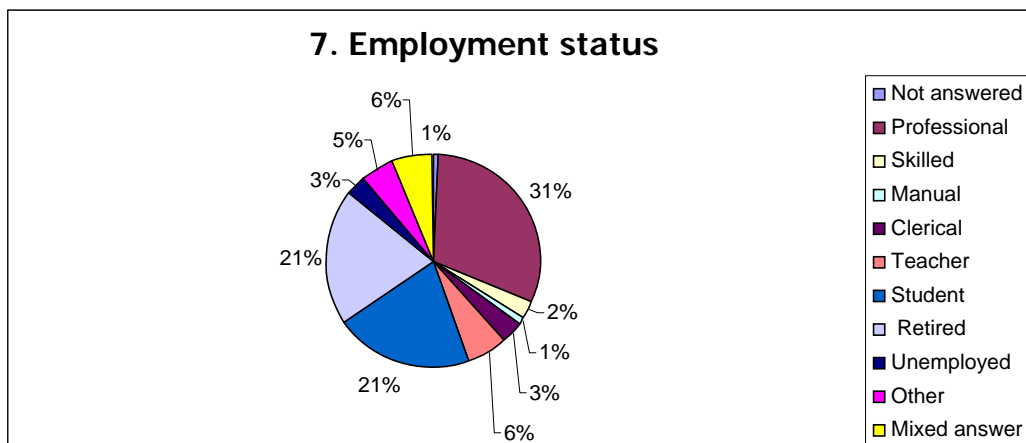
- 94.3% White
- 1.1% S.Asian
- 1.2% Afro-Carib.
- 1.2% Chinese



Almost 1/3 of people attending did not work in any field relating to science, engineering and technology. The second largest group who indicated they worked in education also included students studying science, engineering and technology subjects.

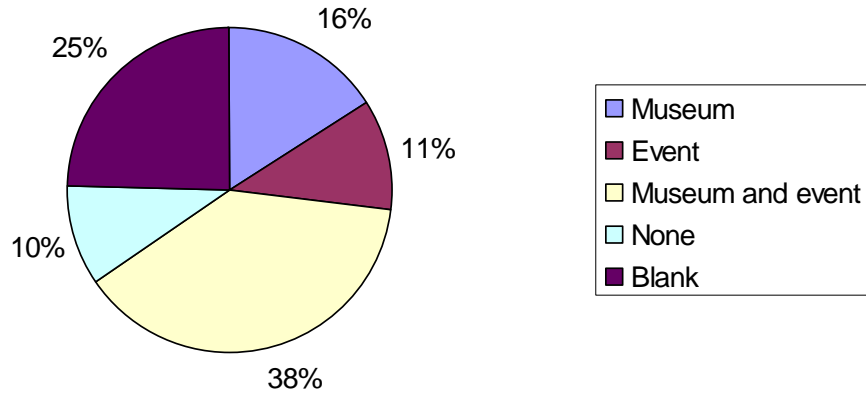


The statistics show a good variety of local people and those who had travelled from other areas of the UK and abroad. The relatively small number of people who travelled from the local region (20-100miles) should be addressed in future publicity campaigns.



The majority of respondents were professionals or students, with a very low response rate for other categories. This may have been affected by the low number of evaluation questionnaires we received from drop-in and family events.

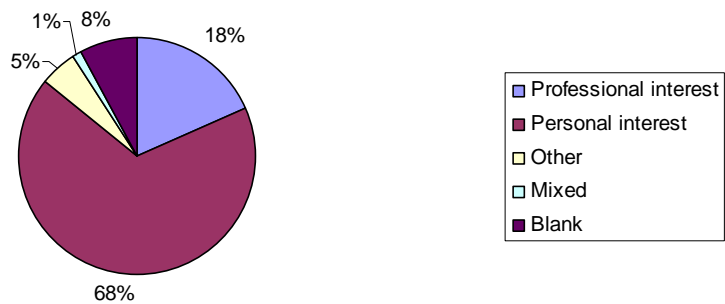
8. Previous visits to science exhibitions/events



Just over ¼ of all respondents had never been to a science event before. A very high percentage of people did not answer this question. It is not clear why this might have been the case but we will need to consider other ways to ascertain this information.

Why did people attend the Festival?

13. Motivation for attendance



Most people attend the Festival for reasons of personal interest. Where the answer was elaborated upon reasons such as bringing the children were often cited along with people who are retired wanting to keep up with latest research.

Appendix 2 – Audience feedback

- Almost 90% rated the events excellent or good in terms of how much they enjoyed the event. Only 4% rated them as poor
- 88% rated them excellent or good in terms of how educational and informative they were
- Over 70% rated them excellent or good in terms of level of audience participation
- Over 80% rated the clarity of the science presented as excellent or good
- 85% rated the overall organisation of the event as excellent or good
- Only 1% of respondents rated any aspect as poor
- 2% of respondents rated any aspect of the event as dull. Over 90% rated the event as interesting, informative or engaging.

Comments

Respondents were asked if they had any additional comments to make. The majority of them were very positive (see examples below). Negative comments related in the main part to venues (temperature, difficulty of finding etc), disruption by late arrivals, inadequate AV provision and events starting and/or finishing late.

“A good 2hrs. Really worth attending”

“A very interesting lecture + well organised, would be very likely to come to other lectures in the future.”

“Can we have events like this one more often with a continuous selection of brilliant speakers please?”

“Made science much less scary”

“Really good to see young children interested”

“Thoroughly enjoyable and informative. Very inspiring.”

Appendix 3 – the Festival in numbers

Attendee numbers	2008 target	2008	2007
Drop-in estimated numbers		14100	40542
Tickets sold		9955	7832
Pass holders		1845	2640
School children (aged 8-14)	3700	2633	3351
School children (aged 14-18)	1000	1022	775
Teachers		421	396
SUBTOTAL	75000	28829	58988
Other participants			
Speakers		395	324
Organisers		95	72
Press		112	139
Festival assistants		65	86
Total footfall		31276	59523

Footfall

The targets for numbers of visitors were set against an optimistic outlook of the effect that Capital of Culture would have. We had hoped to have events and drop in activities organized in collaboration with a number of partners including Liverpool Museums and art organizations, thereby raising the footfall potential. In reality however, with the notable exception of the World Museum, this failed to be realized. Many organizations already had a full programme of events for the whole of the year in place, and were not able to add to them because of a shortage of resources. We were also intending to have science busking and hands-on drop in activities in a marquee in the city centre for the whole week, but Liverpool City Council asked us to cancel this at the last minute due to health and safety issues concerning La Machina, the spider which took over the entire city for the first weekend. We had estimated, based on attendance figures of over 10,000 at a similar event in York, that we would attract a minimum of 1000 people each day with more at the weekend.

Tickets booked

We were very pleased with the numbers of tickets sold for events which is the highest ever number. The success of having more speakers with higher public profiles contributed to this, as did having more events for adults and families at the weekend.

Schools

The timing of the Festival always poses a problem for schools. This year however seemed in some ways to be exacerbated by some schools adopting a 2-week timetable which meant that by the second week back in school students would not have completed a full round of their timetable.

In the 8-12 age group the numbers were significantly lower than previous years whereas the 12-16 age group made up a greater proportion of student attendees than in previous years.

Event attendances

EventTitle	Evaluation numbers
Climb every mountain with Sir Ranulph Fiennes	660
BIG BANG!	420
Much ado about nothing	384
The x-change	350
Mind Magic	230
The BA Presidential address: Sustainability through science	230
Going green with the Strawbridges	200
The BA Lord Kelvin Award Lecture - Evolutionary colour: understanding nature's use of light	200
Womb Wars: from conception to delivery	200
Mathemagics: geometric transform and invisibility	180
Murder, mystery and microscopes	160
The BA Joseph Lister Award Lecture - Txt crimes, sex crimes and murder: the science of forensic linguistics	160
The BA Isambard Kingdom Brunel Award Lecture: Climate change: what space can teach us about planet Earth	154
Chaos and fractals - new frontiers	150
Fun maths evening lecture	150
Ghost Universe: the greatest challenge to modern science	150
New materials for the 21st century	150
The search for extraterrestrial life	150
Aware, awake and aroused - how the brain generates consciousness	140
The BA Charles Darwin Award Lecture: The Sat Nav in our brain	130
Hanging Hooke	120

Launch of the annual report of the Chief Scientist 2007/08: Dispelling the myths - the truth about science and food	120
Science and culture	120
Getting the measure of your genes	105
Sustaining happiness: the science of Buddhist meditation	104
Between faith and reason: the new shape of science in the Islamic world	100
Brains, drugs and rock 'n' roll	100
Liverpool, the home of sea level science: sea level rise and climate change	100
Looking in on the City	100
Murder, mystery and microscopes - SOLD OUT	100
Roots project	100
Sex, drugs and rock 'n' roll	100
Should creationism be a part of the science curriculum?	100
The importance of touch - from artificial fingers to pleasurable stroking	100
The truth about hypnosis	100
Brian Cox event	97
Fizz, foam and flubber: chemistry experiments you can do at home	96
Spies and codes	96
Science fiction and you	95
Memories in distress	90
Science, reason and belief	90
The gr8 GM db8 2008	90
Why the one you fancy never fancies you	90
How science addresses developing world issues	84
Cystic Fibrosis: better understanding, better lives	80
Fat of the land or land of the fat?	80
Population ageing: the big challenge of our time?	80
Who is 'in' and who is 'out' in the City?	75
Older people going places	70
Science of the superheroes	70
Science, innovation and the economics of the future	70
Tropical disease in Britain	70
Worms turn detective and other earthy tales from the world's brightest light source	70
Halstead Lecture - How Britain became an island: catastrophic megafloods in the English Channel	65
Quantum Physics on TV	61
Evidence informed law	60
Green chemistry - towards a more sustainable future?	60

Lifestyle impact on the human skeleton: traces from the past	60
Playing with atoms	60
Science communication ideas factory	60
The cultural evolution of human groups	60
The physics of life	60
Tropical medicine: the present and future	60
What the Universe has done for us and why we must care	60
Fusion - powering the future?	59
Grid computing in the UK	59
Isotopes: silent witnesses to Earth history	58
Maritime Liverpool: knowledge and power	58
Science education for all: rockets, ethics, gadgets and people	58
The UK's biggest serial killer	54
Join the Kavli Prize winner in the logics of networks in motion - from genes to behaviour	51
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Faces, words and brains	50
Geoscience at the frontiers of global oil - gas exploration	50
One hundred not out - the t-test reaches its centenary	50
Public engagement with science: should we be worried?	50
Seed stories	50
Slavery under the microscope: what genetics tells us about the legacy of the slave trade	50
The BA Charles Lyell Award Lecture - 'Atishoo, Atishoo, we all fall down': predicting and controlling epidemics	50
The Large Hadron collider at CERN: reception and lecture	50
Visit to The Liverpool School of Tropical Medicine	50
Water in Liverpool	50
What's your poison?	50
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What are you being served? How the science underpinning policy and advice arrives on your plate	33
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Sunday fieldtrip to the Pennines	20
The local and the global: Liverpool and international health	20
Visit to Clatterbridge Centre for Oncology	20
Climate change and 'hopeful monsters' - using poetry to communicate the impact of climate change on biodiversity	16
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Meet the underwater treasure hunter	11
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Tours of the Victoria Gallery and Museum - Tuesday 12:00	10
Tours of the Victoria Gallery and Museum - Wednesday 14:00	10
Working Lunch: engaging marginalised groups	10
Tours of the Victoria Gallery and Museum - Monday 14:00	9
Club upheaval and supporter sentiment: - case study of fan attitudes to Everton Football Club's proposed ground move	7
Ethnographic film	6
Faith in sustainability through science	6
Drop in events (estimated numbers)	
Science explosion	4000
Perspectives	5500
Colourdome	400
Train station	1200
Artificial organs to x-ray vision	1000
Science choir	1000
Science butlers	1000