

# **The BA Festival of Science 2006**

## **Evaluation report**

**The BA Festival of Science in Norwich with the University of East Anglia, the Institute of Food Research, the John Innes Centre, Norwich City Council, the Sainsbury Laboratory, the Teacher Scientist Network and the Norfolk and Norwich University Hospital**

## **The BA and the BA Festival of Science**

The BA (British Association for the Advancement of Science) exists to advance the understanding, accessibility and accountability of the sciences and engineering. We aim to promote openness about science in society and to engage and inspire people directly with science and technology and their implications. We endeavour to do this through events, award schemes, public consultations, science in society activities and by encouraging and assisting scientists to communicate their research.

The BA Festival of Science is the flagship event of the BA. Each year the Festival is hosted by a different university usually in the UK. The Festival aims to engage as many people as possible with science through discussions and debates about the applications of science and its impact on our society. The four programmes (the main programme, the Science in the City programme and the two young peoples' programmes) interact with each other to present opportunities to people of all ages and backgrounds to interact with the Festival.

## **Background to the BA Festival of Science in Norwich**

The BA was invited to Norwich by the University of East Anglia. The BA accepted the invitation, recognising the importance of science research at UEA, particularly in climate change, and at other research institutes in Norwich: plant science and microbiology at the John Innes Centre and agriculture and food science at the Institute for Food Research.

## **Key supporters**

The BA Festival of Science in Norwich was supported by:

University of East Anglia  
Norwich City Council  
East of England Development Agency  
Microsoft Research  
AstraZeneca  
Research Councils UK (supporters of *perspectives*)  
Roche  
Wyeth  
ESRC  
Royal Commission for the Exhibition of 1851  
RSA  
The IET  
UCB  
The Royal Society  
GSK  
Nesta  
LSI Architects  
Norwich Town Close Estate Charity  
The Paul Bassham Charitable Trust  
Laura Elizabeth Stuart Memorial Trust

The BA is also grateful for support from the Office of Science and Innovation



# Key targets and objectives for 2005

## Quantitative objectives

Programme	2006 target	2006 actual
<i>Festival core (adults)</i>	5000	174263
<i>Festival fringe (all)</i>	25000	
<i>Festival schools (8-12 years)</i>	2000	2441
<i>Festival schools (12-14 years)</i>	400	463
<i>Festival schools (14-16 years)</i>	700	951
<i>Festival schools (16+)</i>	300	425

The evolution of the Science in the City programme has made it more difficult to make comparisons between attendance numbers over the last few years. This year saw a significant increase in the numbers of exhibitions in busy public spaces, more large scale events (eg. TRY Science weekend, Royal Philharmonic Concert), and more free access, non-ticketed events which means that counting the number of individuals who interacted with the Festival is impossible. The total figure of 174,263 is therefore a measure of attendance levels at events and exhibitions rather than the number of individual attendees. See Appendix 2 for a full breakdown of figures.

## Qualitative objectives

<i>Objective</i>	<i>Action</i>
Increase use of Festival webcast over Dublin	Broader programme of activity in Norwich (more interviews) but funding issues meant that we were unable to do as much as we would have liked
Increase Festival media coverage over 2005	Overall media coverage was higher, with regional print coverage significantly increased but national radio coverage down
2 rural outreach events in Norfolk	Events took place in Loddon and Hethel outside of Norwich
Increase 12-14 participation in Festival compared to Exeter	463 compared to 365 in Exeter
Show 16-19 programme at Festival is more appealing than previous years	More events targeted at this specific age group with good feedback from teachers and pupils
Achieve a more enduring media focus throughout the week of the Festival by developing the Presidential Address and encouraging more opinion/comment pieces on issues raised	The introduction of the Presidential Strand was successful in maintaining the media focus on the central issues of the Presidential Address

## *The four programmes*

### **The main programme**

Over the 5 days of the main Festival programme 97 events took place on the UEA campus and Norwich Research Park. A variety of formats for events was evident with talks and debates complemented by tours and trips. More of the events for adults included hands on elements.

### **Science in the City**

87 events, ranging from behind-the-scenes tours of local museums, to debates on climate change and religion, to a concert by the Royal Philharmonic Orchestra. A stronger focus was put on attracting family audiences than in recent years which really paid off in terms of numbers of attendees. A series of cultural events such as concerts and book readings attracted a new audience to science events. Such a comprehensive and wide ranging programme meant that the visibility of the Festival all around Norwich was very high, with numerous, diverse organisations taking part.



**"The access to science afforded by the BA Festival is a rare and wonderful opportunity in a city like Norwich" *Local attendee***

### **Schools programme – Ages 8 – 13**



**"As an enrichment programme and a stimulus it was priceless" *Teacher having brought a group of children aged 8-13***

The Teacher Scientist Network (TSN) ran a highly successful programme for 8-13 year olds at the BA Festival of Science in Norwich. The 3-day programme of events attracted 2906 pupils from 62 schools across East Anglia. Schools in Norfolk, Suffolk, Cambridgeshire, Essex and Hertfordshire were represented and 3 groups of home educators

attended. Responses from teachers rated the event as excellent [average score, 4.55 out of 5], and good value for money.

Particularly given that the event fell in the very first week of the school term, it was a great success for our region's schools, providing an almost unique opportunity for pupils and their teachers to attend hands-on workshops and science shows, meet with scientists and see how science affects their everyday lives. An extensive and diverse range of activities was offered.

### **Schools programme – Ages 14 – 19**

The programme for 14-19 year olds at the BA Festival of Science ran from Wednesday 6<sup>th</sup> to Friday 8<sup>th</sup> September and included 21 events put on especially for this age range alongside 28 specially selected events from the Main Festival Programme. 1,400 students attended across the three days, representing 23 schools and six individual bookings from home educators or families.



**"All very good, relevant, easy to understand and relate to" *Attendee in the 14-19 programme***

# ***Practical aspects of the Festival***

## **Venue**

Norwich Research Park is located approximately 20 minutes drive from the city centre with good public transport links. It encompasses 4 sites – University of East Anglia, John Innes Centre, Institute of Food Research and Norfolk and Norwich University Hospital. Given that the walk between UEA and the other sites is at least 15 minutes, the decision was made that the majority of events would be held at UEA to avoid making attendees travel long distances between events. Delegates were in general very pleased with the setting, finding UEA a compact and pleasant campus to navigate.

Comments were made that a complimentary bus service should have been provided for the few events that were placed at other sites on NRP. Some also felt that a service into town would have been useful, despite a regular (at least every 10 minutes during the day and every 15-20 minutes in the evening) direct service in to the City centre being provided by First Buses.

Again, we were very limited for flat spaces with capacities of over 40. As organisers increasingly prefer to use these types of spaces for their events this issue needs to be taken into account in earlier stages of planning in future. We were, however, able to make good use of the largest lecture theatre seating 485 for 8-13 Schools programme events and *Something for the weekend* family day which worked well in this large space due to the visual nature of their content.

## **Signage**

There were initial concerns about how to make external signage around campus sufficient for visitors as UEA campus is constructed on a series of levels with decimal point coding relating to room names. Extra efforts were made to cover directions from all angles and, in general, visitors seemed to find navigating their way around campus straightforward. More prominent signage from main car parks may have been beneficial, particularly for the *Something for the weekend* event, and there were some comments that signage to other areas of NRP was insufficient.

Efforts this year were made to improve internal signage, with specific venue posters produced carrying the Festival brand image. Festival Assistants spent much of the first weekend posting these signs in the buildings in use. In general these worked extremely well, however there were considerable problems for venues within the Arts Buildings, despite sending Assistants round several more times during the week to hang more signs. This will be worked on in future and potential problem areas identified sooner to avoid such problems reoccurring, but a step has been made in the right direction.

## **Festival assistants**

Assistants were recruited through NRP and other outlets. Sufficient applications were received although a significant drop out rate in the final stages caused some concerns over having sufficient numbers, but these were resolved. Again, UEA AV Services considered it necessary to have a dedicated AV trained assistant in each venue, plus an assistant dealing with attendees. Organisers specifically noted that having an Assistant with good knowledge of AV/IT systems was extremely beneficial and helped with the smooth-running of their events. While the benefits of this system are undeniable it does have obvious cost implications.

## **Booking and ticketing**

As attendance levels at the Festival are growing and online bookings are becoming more common, it was necessary to overhaul the Festival booking system so that an entirely integrated system was in place. This significantly reduced the workload for the Festival Assistant and took pressure off the Box Office during the Festival week as processes were more streamlined and an ever increasing proportion of bookings were placed online. The decision was made not to give the option for attendees with weekly or daily passes to reserve seats within events included in their pass. The new booking system did not therefore show events which could not be reserved which caused some confusion. In general this system worked well but became an issue of concern where events were very popular and could lead to overcrowding (pass holders were instead advised to turn up to the event in good time, as was the norm up until a few years ago) so how this is worked in future needs to be considered. Some users also noted that the online programme was difficult to navigate.

A dedicated Box Office area was created within the Student Union building at UEA, located very centrally and created so that it entirely met the BA's requirements. It's layout, with under bench storage and a back room, meant that the Box Office remained looking tidy and professional throughout the week. While there were certain times when the Box Office became busy, it was always at a controllable level and those working on the Box Office were trained sufficiently to deal with most enquiries efficiently.

A box office in the town centre was run by the local Tourist Information Centre. Although this was popular there were issues about the level of knowledge of the staff in the TIC which given the number of events was not surprising. The TIC is busy during the summer with tickets for other events so the increased workload necessary for ticketing the Festival was problematic.

On the door sales for events in the city was significant, often more than the number of people who booked in advance.

## **Accommodation**

University accommodation was all of a decent standard, reasonably priced and closely located to the main venues. No significant complaints were received. At a very late stage the University advised that they were unable to accommodate disabled visitors as they had no rooms which reached regulatory standards. This reflected very badly on the BA and University as these visitors had no choice but to stay off campus and incur additional charges of taxis to and from the University. This must be avoided at all costs in future and confirmed at an earlier stage.

'Visit Norwich' set up a dedicated accommodation booking site online for Festival visitors who wished to stay off campus. This was a useful service to offer visitors but the extent to which it was used is unclear. Often where on campus accommodation is plentiful and of a decent standard, the demand on hotels locally is minimal.

## **Catering**

In general the cost and quality of catering on campus was satisfactory. UEA kept the majority of its catering outlets open throughout the Festival week, offering a variety of hot and cold food, although these were mostly at the top of campus leading to some

complaints from those at events further down the site. In addition, despite catering orders being received well in advance of the Festival, there were problems with catering arriving at events – some orders were considerably late which disrupted the schedule of the event, while others did not show at all.

### **Speakers' lounge**

The speakers' lounge was located fairly centrally within UEA Council House. It was a large and impressive room, enabling areas to be set aside for computers, laptops, desk space and relaxation areas. Many speakers and organisers commented on the salubrious surroundings which had an impact on how they perceived the BA valued their contribution to the Festival. It also positively affected the numbers of people and length of time they spent in the room as it was a pleasant area within which to work and hold informal meetings. However, as always, there were many other speakers who did not register here, particularly those affiliated with the host organisations.

### **University steering committee**

The University steering committee met once a month with academic and service staff being well represented. Because of the involvement of institutes on the Research Park, at times this exceeded 25 people. The scale of the committee largely meant the meetings served as a means of feeding back rather than addressing any specific issues, though it often proved useful in getting broad views on certain matters that emerged. The Festival organisers met independently within smaller groups to discuss more precise arrangements with those directly concerned.

### **Press centre and media coverage**

The press centre was well placed on the UEA campus and supplied all necessary amenities for the journalists attending the Festival. Overall media coverage was the highest since evaluation began in 1999. Regional print and radio coverage were both increased on last year although national radio coverage was less than 2005. Festival stories attained front page coverage in the Daily Telegraph, Daily Mail, Daily Express and the Times. The top three stories were the *BA Presidential Address* followed by *Beyond the brain: making science personal* then *Doctor, Doctor I'm allergic to my food*. A full media evaluation can be downloaded from our website [www.the-ba.net/festivalofscience](http://www.the-ba.net/festivalofscience).

## ***BA Events***

### **Science in Society**

#### *perspectives*

This year thirty-seven young scientists exhibited posters exploring the social and ethical implications of their research, addressing issues as diverse as neutrinos, cancer and music downloads. The judges commented on the very high standard across the board, with Sarah Collins, from Oxford University, emerging the overall winner with her poster *What can we learn from volcanic eruptions?* All the posters can now be viewed online [www.the-ba.net/perspectives](http://www.the-ba.net/perspectives).

#### *the x-change*

Yet again, the x-change proved a popular part of the Festival programme. Each evening a diverse panel of Festival contributors discussed the day's events, with no subject out of bounds. A lively audience of up to 150 filled the Blue Bar, exploring Britain's place on the Moon, tackling climate change at grass roots, and attempting to build the best brain. Amongst others, Robert Winston, Jim Al-Khalili, Kathy Sykes, Harry Witchel, and Tony Juniper shared their views. [www.the-ba.net/x-change](http://www.the-ba.net/x-change)



### *Working Lunches*

Four Working Lunches provided science communicators with the continuing professional development and networking opportunities. Two sessions focussed on each of the resources which resulted from the Delivering Inclusion in Science Communication (DISC) project. Firstly *Gathering Market Intelligence* which provided thoughtful suggestions on how to engage black and minority ethnic groups in issues involving science then *Representations of Science*, a detailed directory of resources which provides positive science role models for BME groups. The other two Lunches showcased projects funded by Sciencewise: the community x-change ([www.communityxchange.org.uk](http://www.communityxchange.org.uk)) and sciencehorizons ([www.sciencehorizons.org.uk](http://www.sciencehorizons.org.uk)). Both these projects aim to feed the views of citizens on science issues through to policymakers.

### **Festival set pieces**

#### *Presidential address and honorary degree ceremony*

The Presidential address was held off campus in the Assembly Rooms in Norwich City Centre. BA President, Frances Cairncross, was awarded an honorary degree by UEA. A civic reception followed the address. The event was very well attended by approximately 250 people.

#### *Festival dinner*

The Festival dinner was held in the newly refurbished Sainsbury Centre. Attendees at the dinner were a mixture of invited dignitaries, Festival supporters and paying guests. As in recent years there was a limited number of tickets available for sale to attendees of the Festival, which was commented on in feedback by people who have been attending the Festival for many years.

#### *BA Open Forum*

The BA Open Forum was held as usual on Friday lunchtime. A light buffet was served. A review of the past year was provided by Sir Roland Jackson and questions were invited from the audience. Many of the comments focussed on the change of BA supporter structure and what entitlements long-term 'members' had.

## ***The evaluation***

### *Demographic information*

Demographic information was collected during online booking and on paper forms at the Box Office on campus. Analysis of the audience statistics based on a questionnaire completed at the time of booking shows that the gender split between male and female attendees is approximately 50:50. 45% of attendees were under 35 and 6% were over 60. 90% of attendees had never attended a Festival before and almost half of attendees did so as they had a general interest in science.

39% did not have a career involving science. This figure may be skewed slightly by the high level of attendance by staff at UEA and the Research Park.

A full report of the findings can be found in Appendix 4.

### *Evaluating events*

Events were evaluated in 2 ways. Firstly BA staff, officers and Festival assistants were asked to evaluate the events they attended in terms of level of attendance and quality of the event. Feedback regarding the content of events was very positive with almost 70% of events rated interesting and informative. In over 70% of events the presenters were

considered to be good communicators. Only 7% of events were considered dull and just 1% were considered poor events. Full results for the survey can be found in appendix 6. Secondly events were evaluated by attendees. The events were in the most main programme events which took place on the campus. Almost 90% of respondents rated events excellent or good in terms of enjoyment and interest.



**“Excellent and important session. A privilege to hear some top notch experts” Attendee**

### **Attendee feedback**

Analysing feedback from attendees at the Festival can be difficult. There are many different levels on which people can get involved in the Festival – from a full week pass allowing access to all events on campus, buying tickets for individual events, to visiting one of many exhibitions. The responses of these different groups of people are slightly different. For example when asked why they were attending the Festival, among people who had booked weekly or daily passes, the top answer was a general interest in science. However of those who had booked for individual events, the top answer was an interest in a specific subject. In terms of how much people enjoyed their experiences at the Festival feedback was extremely positive. A full report of the findings can be found in Appendix 5.



**“I hope it will be possible to see science so well-presented at this level again. How soon can Norwich host a festival of science again?” Local attendee**

### **Presenter evaluation of the Festival**

Presenters were on the whole very happy with their experiences at the Festival with 86% rating their overall experience at the Festival as excellent or good. 53% of speakers were male and 42% were under 45 years old. The majority of speakers were from academia (74%) with other presenters coming from industry and research institutes, with a small minority from areas such as the visual arts and museums. A full report of the feedback can be found in appendix 7.



**“Would attend more events in future but could not due to time pressures.....I had very good media coverage and [the Festival] is a VERY important event. Science should be communicated.” Presenter**

### **Science in the City**

With 87 separate events and 21 exhibitions around the town, the size of the Science in the City programme increased by 27% on 2006. The programme was overseen by Norwich City Council events team, within the Cultural Services Division. The overall aims of the Science in the City programme were to attract a different audience to the Festival; to raise the profile of the Festival in the local area; to broaden the range of events during the Festival. A range of different organisations, mostly from Norwich and the surrounding area, were invited to a reception at the City Council offices to find out about the Festival and the opportunities it offered to local organisations. Following this reception, organisations were invited to submit proposals for consideration. More than 80 separate ideas for events followed this invitation.

Having the Science in the City programme co-ordinated by the City Council meant that they had the contacts to tie in with other initiatives such as the Heritage Open Days and the Royal Philharmonic Orchestra. It also allowed access to venues which may not have been open to the BA otherwise, as well as access to mailing lists for all homes in the Norwich area.

The expertise of the organising team meant that a large scale family event could take place over the first weekend, which was extremely successful.



**"The A5 booklet was most informative and enticed us to participate all that we could" Local attendee**

## ***Publicity***

The marketing campaign of the Festival was undertaken by the BA, University of East Anglia, Norwich Research Park and Norwich City Council. Materials included posters, leaflets, adverts in magazines and newspapers, banners and e-marketing (see appendix 10 for examples).

Thanks to the media partnership between the BA and the Eastern Daily Press (EDP) and the good relations between UEA Communications Department and the EDP, a series of feature articles appeared in the paper in the run up to the Festival which worked very well in raising local awareness of the Festival.

Banners, posters and pavement graphics around the city centre helped raise awareness around the city. A series of leaflets both general and subject specific were produced by UEA/NRP and the BA which were mailed out in targeted marketing drives.

Once again two programmes were produced – the main programme listing every event taking place during the Festival, and a smaller programme highlighting the events taking place in the city.

New for 2006 was the Festival magazine – *Ignite: the best of the fest*. This magazine comprised articles relating to events or series of events during the Festival, and input from major partners and supporters. The magazine was produced in collaboration with the EDP and was distributed as a supplement within their morning paper as well as through the BA's network of corporate and institutional members. Anecdotal evidence suggests that the magazine was an effective tool in raising awareness of the Festival among a new audience.

## ***Conclusion***

In recent years the growth of the city programme, the number of affiliated exhibitions and free and un-ticketed events as well as the different methods of ticketing have meant that comparison of 'attendee numbers' with previous years has become difficult. There is no doubt though that the impact on the inhabitants of Norwich and the surrounding area was bigger than ever before. Visibility of promotions around Norwich and the support and enthusiasm of the EDP were key to raising awareness.

Family events gained a much higher profile this year than in previous years with *TRY Science* attracting thousands of visitors to the Cathedral and *Something for the Weekend* proving popular and attracting a new, family orientated audience to the UEA campus. This is to be continued in future years, and efforts will be made to ensure that more disadvantaged families are able to attend such events.

Since the Festival, organisations who worked together to bring the Festival together, and who staged events at the Festival have made a commitment to capitalise on the 'science buzz' generated by the Festival and intend to take a more co-ordinated approach to providing science communication activities in the local area thus ensuring that the Festival leaves a legacy to the City.



*Beer today, champagne tomorrow?*  
Attendees get to sample the goods



Family fun in the shopping centre –  
*Making it molecular* in Castle Mall



Professor Graeme Jones explores the  
chemistry of a night out on the town



People of all ages are inspired to  
create some *Beautiful Brains*

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## Appendix 1 Attendee numbers overview

	2006	2005	2004	2003	2002	2001	2000
adult paying	3392	4707	3357	966	1246	951	1446
other adult <sup>1</sup>	3178	1962	1534	1592	1495	2037	1418
<b>Sub-total</b>	<b>6570</b>	<b>6849</b>	<b>4891</b>	<b>2558</b>	<b>2741</b>	<b>2988</b>	<b>2864</b>
14 – 19 programme <sup>2</sup>	1518	2296	1507	1041	1542	978	1300
Non ticketed events and exhibitions <sup>3</sup>	162763	18,749	22,456	1270	n/a	n/a	n/a
<b>Sub total</b>	<b>170851</b>	<b>33,677</b>	<b>28,854</b>	<b>4869</b>	<b>4283</b>	<b>3966</b>	<b>4164</b>
Hands-on programme <sup>2</sup>	3287	5373	3165	3389	4555	4914	4300
Press	125	214	220	180	156	322	322
<b>GRAND TOTAL</b>	<b>174263</b>	<b>39,264</b>	<b>32,019</b>	<b>8,258</b>	<b>8,838</b>	<b>8,880</b>	<b>8,464</b>

<sup>1</sup> includes organisers, BA staff, officers, speakers, Section committee members, student bursaries, student assistants, press and UEA and NRP staff and students

<sup>2</sup> includes students, teachers, and presenters

<sup>3</sup> The attendance figures are based on total numbers that visited all the events combined which includes all people who attended at least one non-ticketed event, as well as those who attended 21 exhibitions throughout the city. Through engaging with some of the attendees at city events it was clear a number of people visited more than one event therefore figures cannot gauge the percentage of the local public who engaged in the Festival but rather reflects attendance levels at events and exhibitions. In regards to the exhibitions the figures do not take into account the numbers of people who specifically visited the exhibition but who may have seen it whilst visiting the venue for another purpose.

**Appendix 2 - Attendee numbers breakdown by attendee type**

<b>Type</b>	<b>Numbers registered</b>	<b>Numbers observed/estimated</b>	<b>Grand total</b>
Full week passes (paid)	118		
Full week passes (comp)	1800		
Speakers	375		
Staff	30		
student assistants	73		
Press	125		
Orgs tickets for events	900		
Day passes	122		
Individual events	2389		
Sold by TIC	763		
Non booked events		27002	
Exhibitions		135761	
8-13 programme	3287		
14-19 programme	1518		
<b>Subtotals</b>	<b>11500</b>	<b>162763</b>	
<b>Total</b>			<b>174263</b>

## Appendix 3 – Attendee numbers by event

<b>Event title</b>	<b>No of attendees</b>
21st century demonstration lectures	130
21st century science with today's scientists	36
A day in the life	300
A review of traditional and alternative energy resources in East Anglia	20
Airships: the flying pigs of Pulham	81
Al Hejamah (cupping therapy): old meets new or east meets west	30
Alternative cleaners and cosmetics	50
An introduction to Islamic religious sciences	25
Ancient woodland field trip to Hockering Wood	34
Archaeological fieldtrip	27
Archives: the appliance of science	2000
Are we all selenium deficient?	48
Are we sacrificing the future for the present? How do we ensure that development is sustainable?	120
Arts for health in Norfolk	50
Assessing how to do more good than harm with medical treatments	80
AstraZeneca Press Reception	100
Awards for the presentation of heritage research 2006	45
Beating the odds	25
Beautiful brains	150
Beer today, champagne tomorrow.	127
Behind the scenes: Castle Museums natural history collections (Friday)	160
Behind the scenes: Castle Museums natural history collections (Thursday)	160
Behind the scenes: Castle Museums natural history collections (Tuesday)	160
Beyond the brain: making science personal	130
Biodiversity at Bayer tours 5 Sep	28
Biodiversity at Bayer tours 6 Sep	16
Biodiversity: what on earth is it?	25000
Biological motors and molecular machines	135
Book reading	10
Brunel debate	127
Building a future for the past: science cafés ( Pulse 17.30 Tues)	0
Building a future for the past: science cafés ( Pulse 17.30 Weds)	4
Building a future for the past: science cafés (Marzano 14.15 Tues)	2
Building a future for the past: science cafés (Marzano 14.15 Weds)	0
Building a future for the past: science cafés (Marzano 17.30 Tues)	8
Building a future for the past: science cafés (Marzano 17.30 Weds)	5
Building a future for the past: science cafés (Pulse 14.15 Tues)	2
Building a future for the past: science cafés (Pulse 14.15 Weds)	2
Building a future for the past: science cafés (Starbucks 14.15 Tues)	2
Building a future for the past: science cafés (Starbucks 14.15 Weds)	2
Building a future for the past: science cafés (Starbucks 17.30 Tues)	2
Building a future for the past: science cafés (Starbucks 17.30 Weds)	1
Business innovation zone	50
Can science feed Africa?	50
Cathedral Church of St John the Baptist tours (Tues)	15
Cathedral Church of St John the Baptist tours (Weds)	25
Cathedral herb garden	10000
Changing the climate, changing ourselves	10000
Changing the landscape of Eastern England: practical solutions to conservation challenges	80
Climate change: science or dogma?	80
Communicating without words	180
Cooking cancers: a recipe for success	6
Coping with an uncertain world	55

Cracking the real da Vinci code: what happens in the artist's brain?	120
Crime: investigation, prevention and detection	100
Cryptohumanid Oceanid & cryptohumanid angelithicus	8000
Data mining for crime reduction	45
Do doctors have a future?	135
Doctor, doctor: I'm allergic to my food	50
Does science need to be incompatible with religion?	50
Dowsing experiment (Sat)	300
Dowsing experiment (Sun)	200
Drugs from bugs	60
Elm Hill Arts Festival, past, present and future	2500
Engineering and industry of East Anglia	55
Engineering today helps you work, rest and play	50
Environmental change and society: present changes and future scenarios	100
Environmental change and society: reconstructing the past	70
Environmental change and the increasing threat of infectious diseases	50
Ethical dilemmas in science and scientific research	6
Ethnographic film showing	20
Everyday science at City College: open laboratories	80
Eye spy	500
Famine to feast: the good guys and the bad guys	60
First in the wilderness: the earliest settlement of Britain	60
Floods: insurance - what you need to know	35
Food scientist: friend or foe?	35
Friday night science	125
From Benidorm to Brancaster: climate change and its impacts on tourism	30
From flight simulators to computer-aided design: new techniques in cancer treatment	41
Future energy sources: the options and the facts	100
Giant bubble experiment	50
Green, clean and biological: catalysts of the future!	130
Gristhorpe Man: A 21st century investigation of a 19th century discovery	120
Home climate gardens / Norwich lido	3962
How can research in science education influence practice?	90
Images of scientists	25
Institute of Food Research open day	400
Is my GP trying to turn me into a guinea pig?	45
'Is the future green? Citizens' visions for a sustainable Norfolk' - Housing	27
'Is the future green? Citizens' visions for a sustainable Norfolk' - Transport	29
Is there an anti-cancer diet?	100
Islam ecology and the environment, the living world and our responsibility towards it	30
It looks good enough to eat, but what does it taste like?	28
It's a microbes' world!	120
'It's bad to talk'. When should firms talking to each other be a crime?	50
Kith and kin: from chimpanzee politics to global networks	50
Lab in a Lorry (Loddon)	154
Lab in a Lorry (Wymondham)	79
Life in extreme environments	40
Lionel Fanthorpe: the science in science fiction	72
Make it molecular	800
Making a drama out of a crisis	50
Making faces	120
Making faces exhibition	25000
Making space for water field excursion	20
Maths of music	250
Mentoring for women: why bother?	10
Mind over matter	60
Mission impossible? Reinventing the three R's - reduce, reuse and recycle	40
Molecular medicine	135
National Science and Engineering Week briefing evening	30



Odyssey, alchemy and the planets with the Royal Philharmonic Orchestra	676
Of all the people in all the world (UK) presented by Stan's Café	1535
Out of this world: sci-fi films promotion	25000
People, plants and medicines: new approaches from ethnobotany	30
People, science and society: 'making space for water'	60
Personalised pills: a new approach to the prescribing of medicines in the 21st century	80
Plants and us	250
Professor Robert Winston: the man, the media and making babies	250
Putting ideas to work	16
Quantum theatre	198
Reconstructing past ice age environments	23
Regenerative medicine: the future for patients in the 21st century	120
Reproductive technologies and designer babies	25
RETURN to a career in science, engineering and technology (SET)	25
Returners: the barriers, the business case and the benefits	80
Rigour, respect and responsibility	15
Sacred molecules	14000
Science and religion: the contemporary debate	80
Science and the arts: two cultures or one?	65
Science fiction quest with Norwich Science Fiction Group	25
Science fiction writing masterclass with Geoff Ryman	39
Science in a suitcase	211
Science on your doorstep	16
Science trail	4000
ScienceHorizons launch	8
Secrets of our Universe	150
Seed to Seed: illustrated book reading	60
Seeing the wood for the trees: woodland historical ecology	75
Seething Observatory open evenings	200
Self-help for autoimmune diseases: biological therapies in arthritis, cancer, skin and gut	65
Shelter from the storm	500
Should I eat fish?	85
Solving problems and making decisions	60
Something for the weekend	1300
Surely doctor knows best?	60
Sustainable design in the broads	
Taking the fun out of eating?	30
The Antarctic canary - the human impact of climate change	200
The BA Charles Darwin Award Lecture: The case of the four-legged duck: investigations of concepts and meaning	250
The BA Charles Lyell Award Lecture: How stable is planet Earth?	180
The BA Isambard Kingdom Brunel Award Lecture: The role of materials technology in sporting performance	80
The BA Joseph Lister Award Lecture: "Computer says no": the social aspects of computer misuse	200
The BA Lord Kelvin Award Lecture: The story of a 27km long machine and the fundamental building blocks of the Universe	220
The BA Open Forum	15
The BA Presidential Address and Honorary Degree Ceremony	250
The day after tomorrow: a Hollywood fantasy or wake up call?	80
The emotions	100
The ins and outs of the John Innes Centre (09.30)	25
The ins and outs of the John Innes Centre (11.00)	25
The ins and outs of the John Innes Centre (14.30)	25
The ins and outs of the John Innes Centre (16.00)	25
The management of sex offenders	25
The most complicated machine in the universe	91
The mysteries of DNA testing	50

The science behind Whitlingham Broad	76
The science of south Norfolk & Whitlingham Broad	280
The seven ages of man	50
The truth about hypnosis	290
The x-change (Mon-Thurs)	400
Things behaving badly: how ergonomics puts people in control	28
Transformers: how cancer cells grow & spread	55
TRY Science	12000
Under the microscope	1034
Unlearnt science: a pataphysical cosmology	120
Virtual humans: real communication	40
Walk on an organic farm	25
Walks on National Nature Reserves: ancient woodland (Foxley Wood)	6
Walks on National Nature Reserves: coastal heathland (Winterton Dunes)	20
Walks on National Nature Reserves: floodplains (Bure Marshes)	10
Walks on National Nature Reserves: freshwater and wetland habitats (Hoveton Broad)	15
Walks on National Nature Reserves: freshwater and wetland habitats (How Hill)	12
Walks on National Nature Reserves: freshwater and wetland habitats (Upper Thurne)	15
Walks on National Nature Reserves: heathland (Dersingham)	12
Walks on National Nature Reserves: reedbed and open water (Hickling Broad)	15
Walks on National Nature Reserves: reedbed and open water (Mid Yare)	10
Walks on National Nature Reserves: wet grassland (Holkham)	10
What does your blood say about you? (Friday 18.00 - 19.15)	20
What does your blood say about you? (Friday 19.30 - 20.45)	20
What does your blood say about you? (Monday 18.00 - 19.15)	20
What does your blood say about you? (Monday 19.30 - 20.45)	20
What does your blood say about you? (Thursday 18.00 - 19.15)	20
What does your blood say about you? (Thursday 19.30 - 20.45)	20
What has brewing ever done for us?	56
What science do we need for a sustainable future?	80
What shall we save today: who decides conservation priorities?	50
Whatever happened to the science wars?	55
Where's your edge in engineering?	75
Who needs mathematics now we have computers?	57
Why day surgery?	24
Why maths needs the arts and why the arts need maths	60
Wild about Norfolk 2006	5500
Wildlife and wild places on the North Norfolk coast	40
Will 5 a day really keep the doctor away?	125
Women in science: fulfilment or frustration?	150
Working lunch: gathering market intelligence	13
Working lunch: representations of science	6
You've got your mother's eyes	8000

Numbers for non-ticketed events and exhibitions are based on observations by event organisers and Festival assistants.

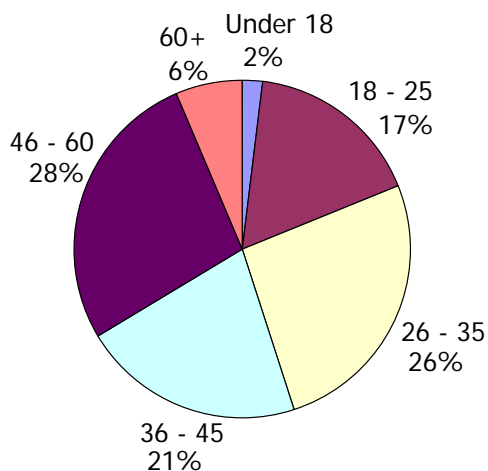
## Appendix 4 - Attendee demographic information

Results of questionnaires completed by attendees booking events online and by telephone

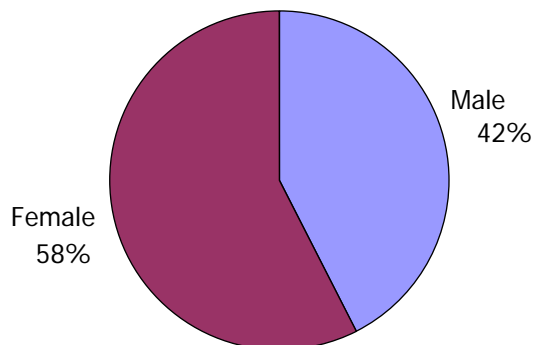
Purpose of evaluation:

- To determine the demographics of people attending the Festival
- To determine whether the Festival is attended by both scientists and non-scientists

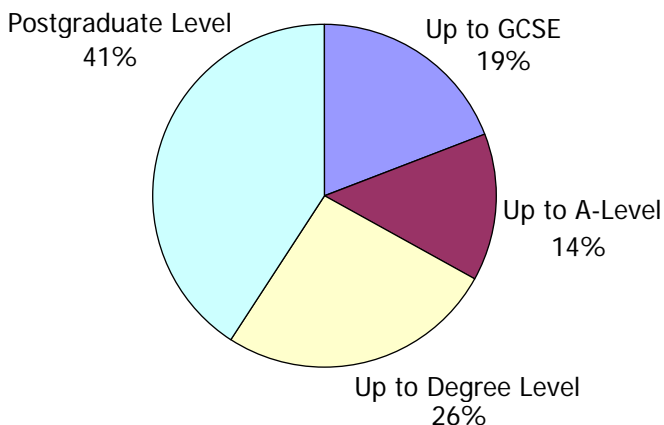
### Age Group



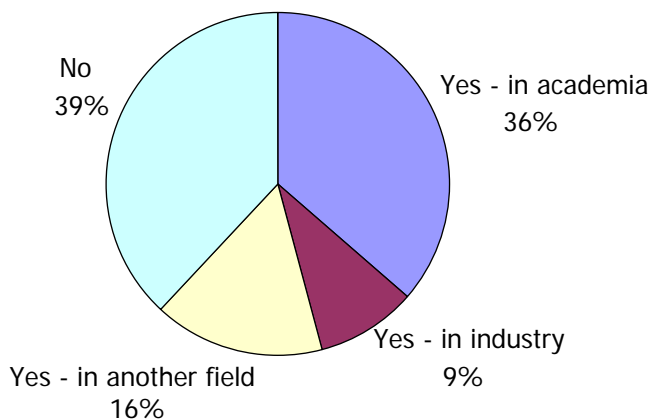
### Gender Ratio



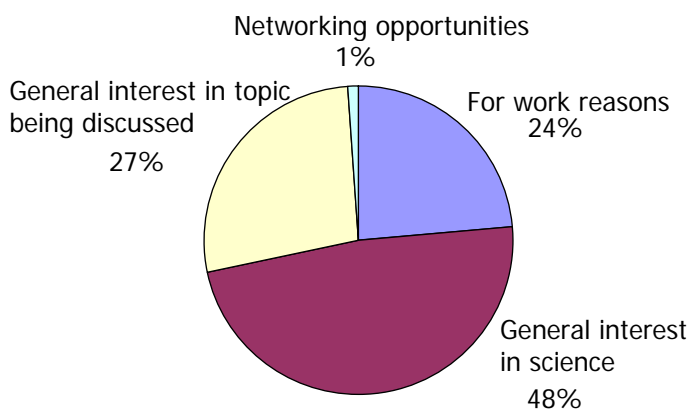
### Level of Science Studied



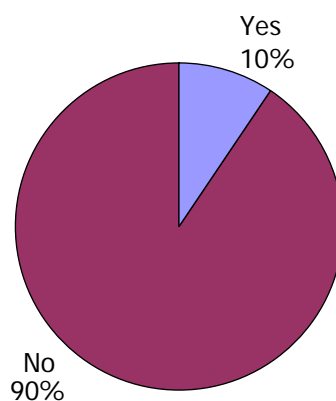
### Career in Science?



### Motivation to Attend



### Attended Before?



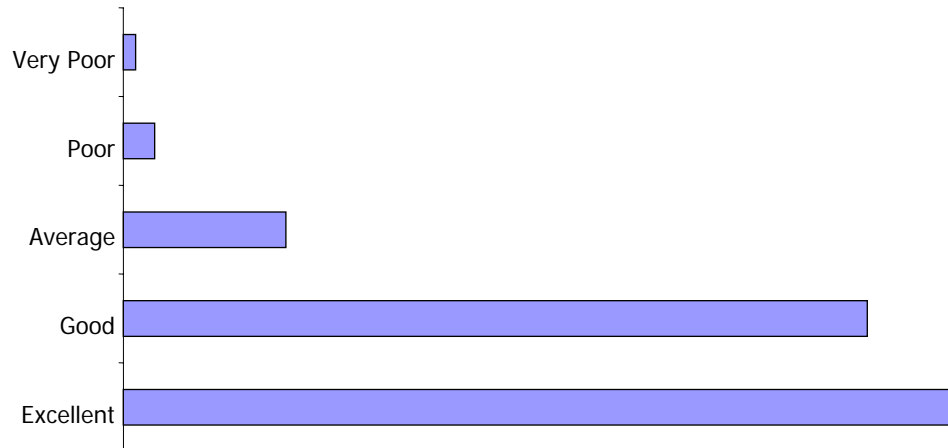
## **Appendix 5 – Attendee feedback on events**

Results of questionnaires completed by attendees at events. Where an attendee attended more than one event they could either complete a form for each event or one for the Festival as a whole.

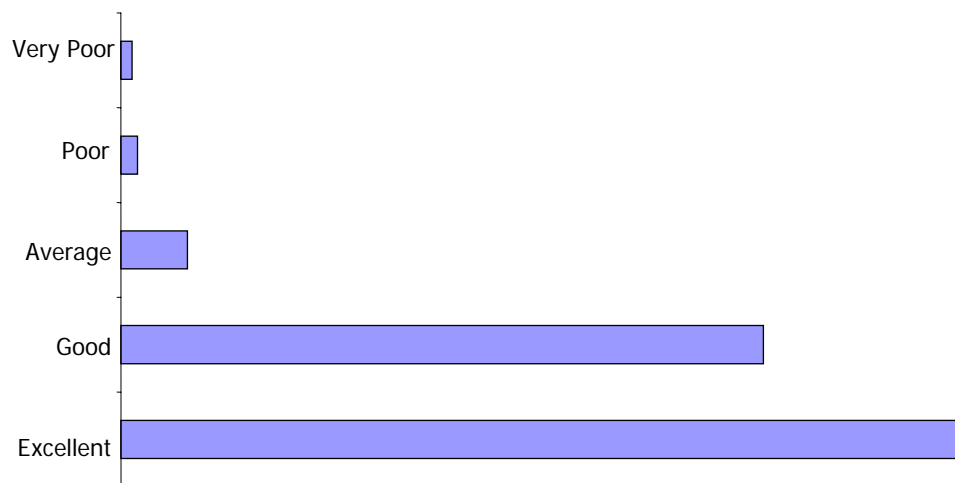
Purpose of evaluation:

- To determine what people feel about the quality of events at the Festival

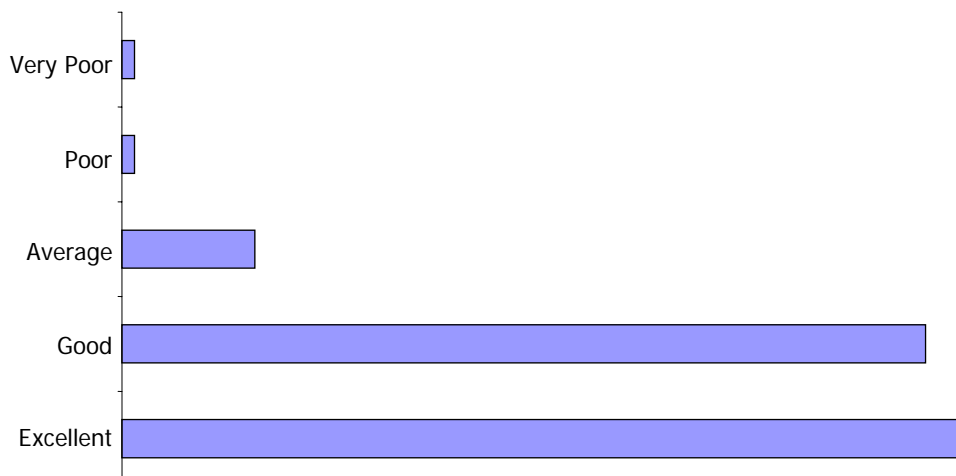
### **How would you rate the Festival/event in terms of: Enjoyment?**



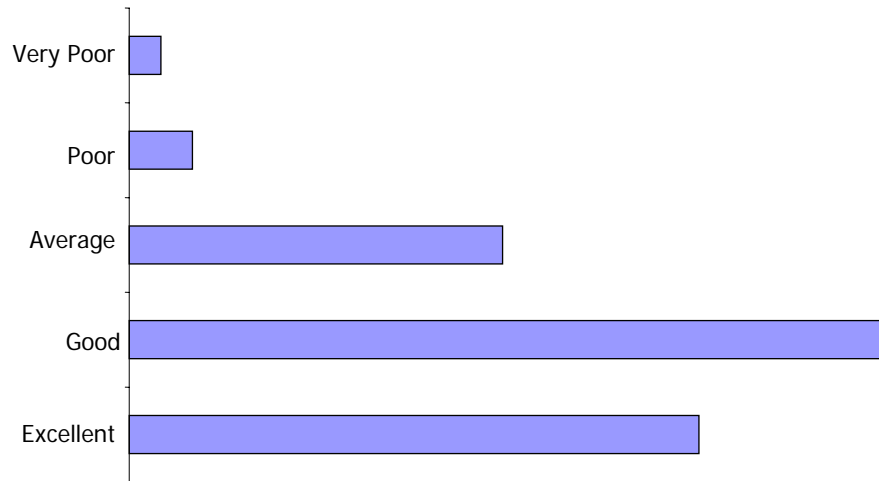
### **How would you rate the Festival/event in terms of: Interest?**



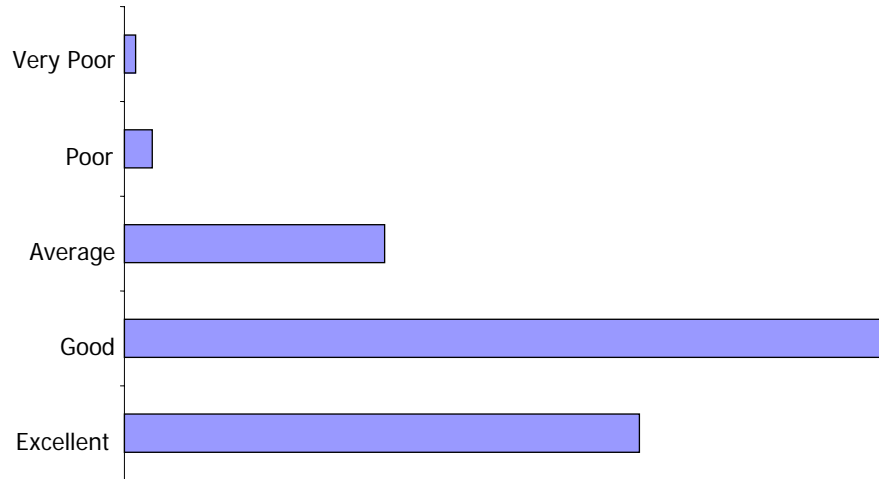
### **How would you rate the Festival/event in terms of: Information given?**



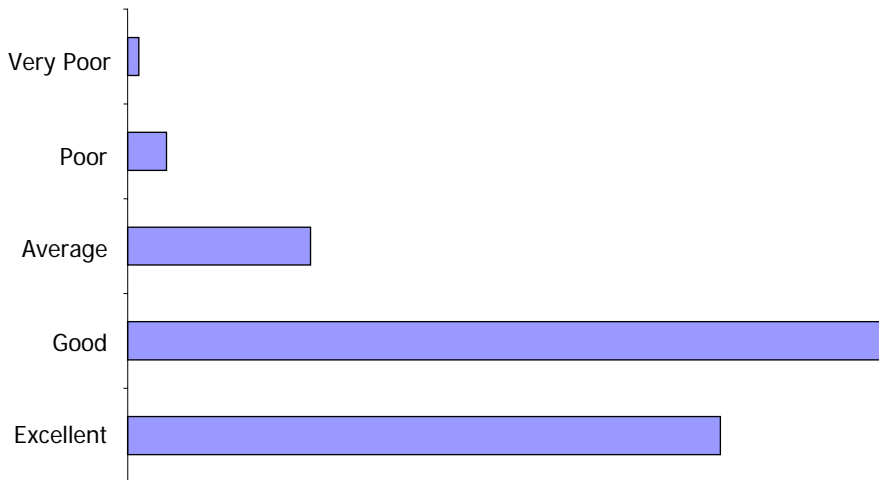
**How would you rate the Festival/event in terms of:  
Entertainment?**



**How would you rate the Festival/event in terms of:  
Clarity of Science?**



**How would you rate the Festival/event in terms of:  
Overall organisation?**



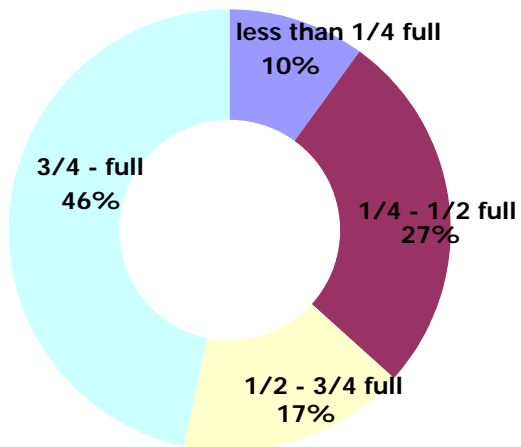
## Appendix 6 – Staff and Festival assistant feedback on events

Results of observational questionnaires by BA staff, officers and the Festival Assistants working in events.

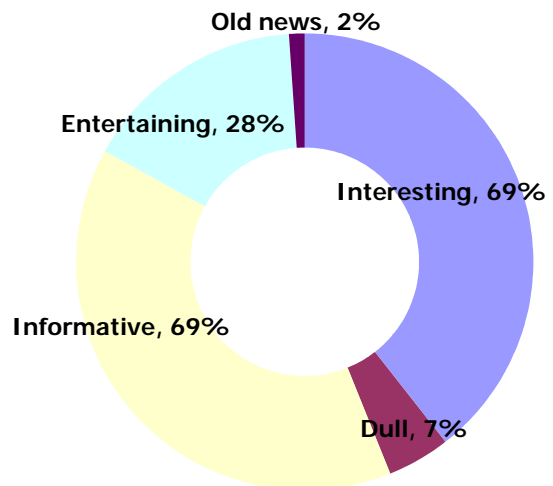
Purpose of evaluation:

- To gain an understanding of the popularity of certain types of events
- To get an overview of the quality of the quality of events
- To identify any issues with the quality of speakers
- To monitor the level of audience interaction in events

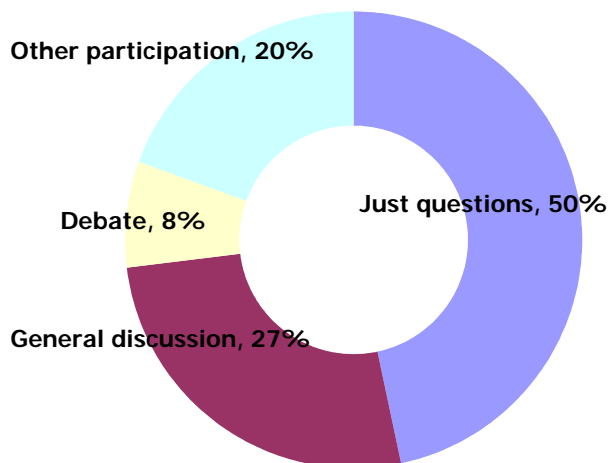
**Attendance level**



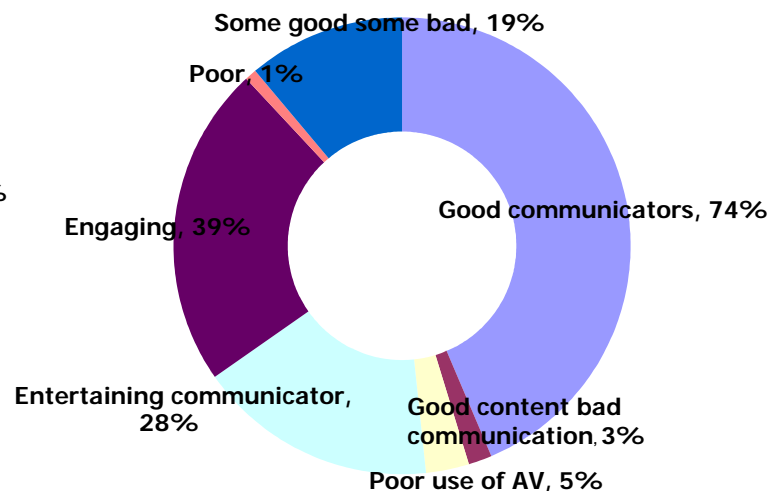
**Quality of event**



**Level of audience participation**



**Quality of presenters**



## **Appendix 7 – Presenter evaluation**

Presenters were asked to complete questionnaires about their experiences at the Festival.

Purpose of evaluation:

- To find out what motivates presenters to take part in the Festival
- To consider the demographics of people taking part in the Festival
- To find out how much involvement presenters have with the Festival as a whole
- To find out how to improve the service we provide to presenters

<b>How happy were you with the advance information provided?</b>	
Very	47%
Fairly	31%
Not very	4%
Not at all	0%
No view	18%

<b>How happy were you with the audience in your event?</b>	
Very	57%
Fairly	34%
Not very	5%
Not at all	1%
No view	3%

<b>How did you find the overall experience of the Festival?</b>	
Excellent	56%
Good	30%
Average	5%
Poor	2%
No view	7%

<b>Have you attended previous Festivals?</b>	
0	37%
1 – 2	53%
3-4	5%
5+	5%

<b>Would you have attended if you weren't speaking?</b>	
Yes	16%
No	63%
Unsure	21%

<b>Work sector</b>	
Academia	74%
Industry	5%
Other	5%
Self employed	5%
Research institute	11%

<b>Did you attend other events?</b>	
0	32%
1-2	53%
3 – 4	0%
5+	16%

<b>Would you recommend it to a friend/colleague?</b>	
Definitely	74%
probably	21%
unsure	5%

<b>What was your main motivation for attending?</b>	
Was asked	42%
Raise profile of subject	47%
Discussion of science	11%

<b>Gender</b>	
Male	53%
Female	42%
No answer	5%

<b>Age</b>	
25-44	42%
45-64	37%
65+	16%
No answer	5%

<b>Nationality</b>	
British	79%
Other	11%
No answer	11%

## Appendix 8 – Feedback from 2005 and actions taken

<b>Points raised in evaluation 2005</b>	<b>Action</b>
Clarify what weekly pass holders are entitled to attend	This was done in the same way as usual. The programme may be designed differently next year to make it even more clear.
Review the system for people booking into too many events	We provided no facility for pass holders to reserve seats in events.
Better signage for the YPP desk	YPP desks were in a prime location for school groups getting off their coaches and very few teachers asked at the main Box Office desk.
Improve the speed of dealing with people at the Box Office	The Box Office was less busy than previous years, due to changes in the booking system and increases in online bookings.
Greater clarity with regard to organisers free passes	A system for organisers to book their free passes online was introduced.
Provide bus and train timetables at the Box Office	Provided
Buses for trips to be clearly marked	Done although due to different set up it was less necessary than in Dublin.
Print the Festival programme on recycled paper	Investigated but costs substantially increased. Programme printed on paper from sustainable forests.
Location of the BA Offices in relation to the box office and other locations on campus	Done.
Too many events at the same time, splitting the potential audience	Slightly fewer events on campus but city events increased significantly due to levels of interest among local organisations wishing to take part.
Teachers would have liked to have had more welcome onto the campus and people available to greet and chaperone them	This was not done as there were not enough assistants to do so. The information desk was located conveniently near the coach drop off point.
Printed programme too complex and hard to navigate; the colour scheme was difficult to read in some cases	Programme design changed.
Make sure that the Honorary Degree Ceremony, receptions and Festival Dinner are available to all	Dinner once again tight on numbers but more tickets than Dublin available to buy.
Booking system too complicated	New online booking system in place.
Programme available late	Programme available mid July. Few comments on timing of programme.
Accommodation too expensive	Feedback about accommodation was positive. This is an area over which the BA has no control.
Some problems with IT provision over the first weekend	IT department at UEA were aware of the problems in Dublin and worked very hard to ensure everything was up and running in good time.
Link up the Festival booking database with the local ticket outlet	The TIC did not have the facility to do this. It will be investigated again for York.



## **Appendix 9 - Feedback from 2006 and actions to be taken for 2007**

<b>Points raised during feedback</b>	<b>Action to be taken</b>
Make sure that all groups of people (eg honorary members; long term members etc) know their entitlements and how to book	Work closely with Supporter Development team to ensure that the right messages go to the right people
Badge printers in the speakers' lounge and press centre are useful	Buy more printers (depends on budget)
Not all student assistants were trained properly making timetabling difficult	Make sure that a training day is organised and students are informed earlier. Make sure that students are not left without an answer to their application for too long to avoid drop-outs.
Internal signage in one particular building a problem	Ensure that all signage is checked by a member of BA staff after assistants have put it up and before the beginning of the Festival
People getting lost on way from bus stop and car park	Ensure that main routes are identified and signed accordingly
Programme design – make sure that events included in a pass are marked clearly	Look at different ways of laying out information in the programme

## Appendix 10 - Teenage Programme at the BA Festival of Science 2006

### 1. Summary

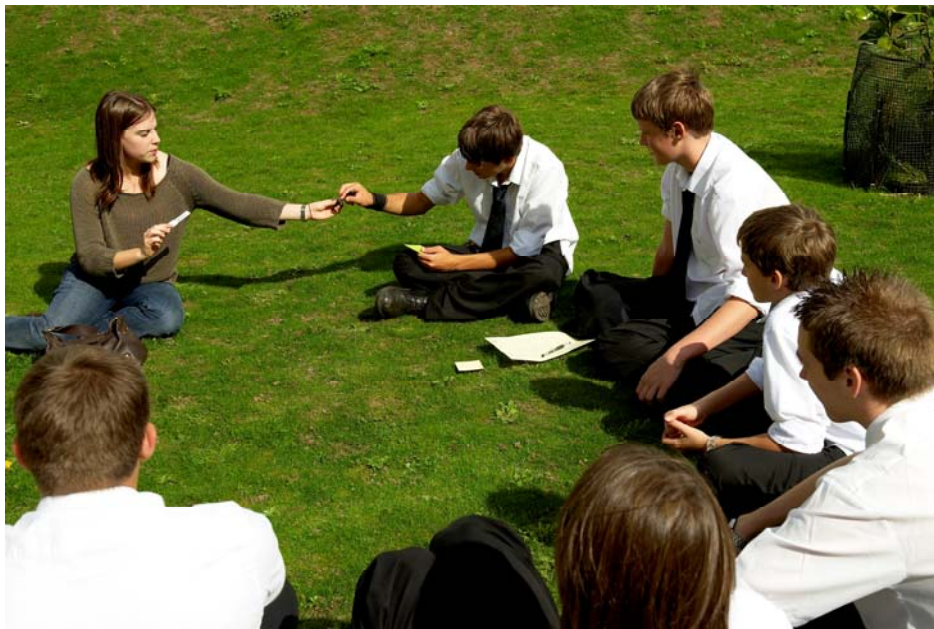
The 2006 programme for 14-19 year olds at the BA Festival of Science ran from Wednesday 6<sup>th</sup> to Friday 8<sup>th</sup> September and included 21 events put on especially for this age range alongside selected events from the Main Festival Programme. 1,400 students attended across the three days, representing 23 schools and six individual bookings from home educators or families. Questionnaires were distributed to students and teachers throughout the Festival during events. Raw data can be found at G:\YPPCurrent\Festivalprogramme\Norwich\Evaluation.

### 2. Student Feedback

Completed questionnaires were collected from eight of the Teenage Programme events: *Being a citizen*, *Do we need food scientists?*, *Waste away*, *Are we living sustainably?*, *Skills of the Ice Age*, *Soapbox science*, *Make a molecule* and *BAckchat*. Feedback from students was largely positive with comments including, 'I enjoyed it very much', 'all the speakers were brilliant' and 'very helpful and informative'.

Events that took place in a laboratory environment proved to be particularly popular. 74% of young people who attended *Do we need food scientists?* or *Make a molecule* found them 'very' or 'extremely' entertaining and 70% found them 'very' or 'extremely' educational. This illustrates the value of doing science in a real lab setting and letting the students participate.

Speaking to scientists and asking them questions gives young people the opportunity to find out about what a career in the field could be like. At *Soapbox science* where this happens, 83% of students rated the sessions as 'very' or 'extremely' informative.



***Students speaking to a PHd student in Soapbox Science***

Hands-on sessions such as *Waste away*, where students were construction engineers for the day, were the most enjoyable. In this workshop 79% of participants found it 'very' or 'extremely' enjoyable. In contrast, 46% of students who went to *Skills of the Ice Age* rated it as 'not very' or 'not at all' enjoyable and someone mentioned that they needed 'more to

do'. Other sessions where the audience were less involved also proved less popular with the comments 'went on for a bit too long' and 'good but slow' coming out.

### **3. Teacher Feedback**

17 teachers completed questionnaires, commenting on 15 events and the hands-on exhibition area. All those who filled in the feedback forms had come to the Festival with GCSE students. 71% said that they came to the Festival for 'student enjoyment/motivation', 71% said it was for 'enrichment', 41% came in relation to the 'science syllabus' and 6% wanted to 'broaden horizons' for their students.

74% of teachers reported that the Festival had met their expectations and 81% said that the events had valuable content and delivery. Comments include, 'I think our pupils enjoyed the events MUCH more than thought they would', 'valuable for students to see other routes and ideas for careers' and 'pupils have thoroughly enjoyed the event'.

Five events in particular were greatly appreciated by the teachers: *Soapbox science*, *Chemistry of the atmosphere*, *Target Mars*, *Weird waves* and *Waste away*. 100% of teachers rated these as 'extremely' or 'very' in all four categories: meeting expectations, being appropriate to the age of their students, having valuable content and giving their students enjoyment. These are all sessions that were put on especially for the 14-19 year olds and they all highly involved the participants.

Out of the sessions that groups went to in the main Festival Programme, 43% of the teachers said they did not meet their expectations. Only 43% rated the sessions as being suitable for the age of the students, 29% said that the content and delivery was valuable and 43% said that the students enjoyed them. Additional comments suggest that it is the appropriateness to the age group that is the biggest concern. They highlighted that 'the content of sessions is too heavy for GCSE students' and 'the pupils were often a bit lost'.



#### ***Student interacting with a plasma ball in the hands-on exhibition***

On average, the hand on exhibition met expectations, had valuable content and was enjoyed by the students. Only one teacher rated it as not very suitable for the age range and commented that there should be more aimed especially at 14-15 year olds. There were a lot of requests for 'more hands on!' from teachers so the more exhibitors that provide interactive activities suitable for school groups, the better.

#### **4. BAcKchat**

*BAcKchat* was held at lunchtime everyday in the Teenage Programme. The topics covered were climate change, engineering and biomedicine. 40 to 60 students attended each session and 120 participant questionnaires were collected.

86% of the students said that there was an 'extremely good' or 'very good' amount of discussion in the sessions. 80% found *BAcKchat* 'extremely' or 'very' informative and 71% rated it 'extremely' or 'very' entertaining. The students appeared to enjoy interacting with the panel, commenting that they were 'easy to chat to', 'gave us lots of interesting facts' and 'gave a really good insight into what they did for a living'.

83% of teachers said that the content and delivery of *BAcKchat* was 'extremely valuable' and 100% considered it 'extremely' or 'very' appropriate to age and ability of the students. One teacher believed that, '*BAcKchat* was well done – it really got the students talking and discussing!'



***Students designing houses of the future and talking to Mick Kelly, UEA Climatic Research Unit, as part of the BAcKchat about climate change***

#### **5. Recommendations**

Based on the findings from the evaluation of the Teenage Programme, the following recommendations can be made:

- **If possible, avoid holding the event during the first week of term.** Although schools still came, some said that they would have liked to but couldn't and less students can be reached during three days than in a full school week.
- **Include events that happen in a laboratory environment.** Students appreciate the opportunity to discover what it is like to do authentic experiments.
- **Involve scientists in events.** Students welcome the chance to speak to them and to find out about careers in this field.

- **Encourage event organisers to include hands-on elements.** Students' enjoyment is one of the major reasons for teachers taking their class to the Festival and students enjoyed hands-on events considerably more than those they were less involved in. Even if the event is a lecture it will be more popular if it involves audience participation or experiments using volunteers.
- **Only 16-19 year olds should attend events in the Main Festival Programme.** GCSE teachers reported that even though they had been deemed suitable for their students, the content was not appropriate. For this to happen, **more events should be put on specifically for 14-16 year olds.**
- **The hands-on exhibition should continue to include interactive activities suitable for 14-19 year olds.** The teachers were positive about what was there but requested even more.
- ***BAckchat* should continue to involve scientists for the students to interact with.** It may be worth specifically inviting people who have experience of working with this age group.

**Appendix 11 – Examples of publicity materials**



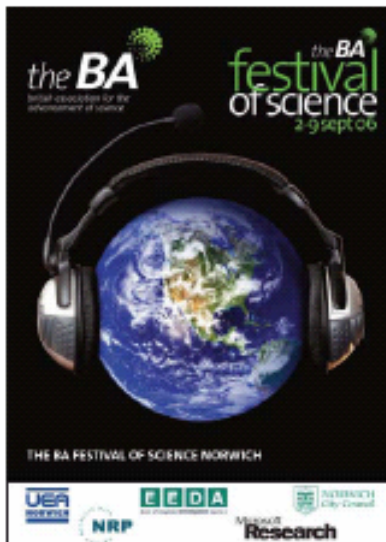
**Lamppost banners**  
20 across Norwich City Centre, 264x72 cm



**Eastern Daily Press adverts**  
7 adverts across 4 weeks, 0.2x0.1 cm



**Promotional flyer**  
30,000 distributed, 0.2x0.1 cm



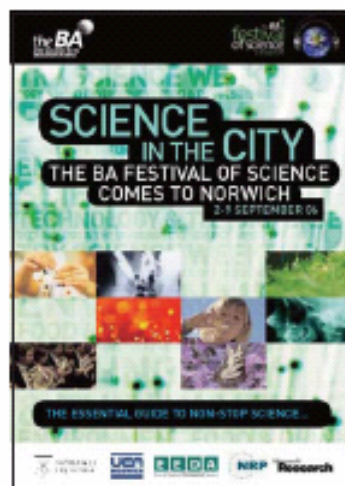
**Festival of Science programme**  
12,000 distributed, A4



**Pavement graphics**  
100 across Norwich centre and NRP, 150x100 cm



**Railway station posters**  
5 at sites along London-Norwich line, 180x120 cm



**Science in the City programme**  
100,000, distributed to all Norwich households, A5



**A4 Posters**  
1000 produced. 300 sited in Norwich buses. Remaining distributed across City and NRP.