

SCIENCE SPECTACULAR REPORT 2014

“Wonderful interactive day for big and little kids alike”

The Manchester Science Festival is a nine day programme of events held throughout the City and Greater Manchester. It aims to “inspire young people and nurture the scientists of the future” by being “an opportunity to bring science to life and encourage young people to be excited by and question the world around them”. It also provides a chance for people of all ages to engage with science.

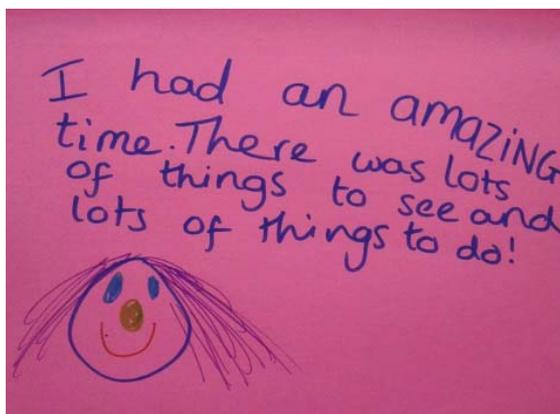
Staff and students from The University of Manchester continue to contribute to the Festival and, as in previous years, a small co-ordinating group organised a key event, **Science Spectacular**, from 11am-4pm on 25 October 2014 in the Whitworth Hall and Manchester Museum where families could explore interactive exhibits and take part in science challenges. It was selected as one of the highlights of the Festival and included in a [Festival-wide video](#).



“... it was a great 4 hours of my day” Young Science Spectacular Visitor

“Our key highlight of the event was being able to share our research with the general public. It was a great opportunity to remember how much people care about the work we are doing and inspired us to keep working towards our group goals...” Science Spectacular Researcher

Science Spectacular 2014 was successful in engaging a large number of visitors, mainly families, from across Greater Manchester and beyond. All those who took part enjoyed the experience.



Facts and Figures

- 1,700 people attended the event
- 45% visitors came from Manchester
- 47% visitors came from Greater Manchester
- 175 researchers took part
- 39 stands (4 were new to Science Spectacular)
- 22 stands from Faculty of Engineering & Physical Sciences
- 7 stands from Faculty of Medical & Human Sciences
- 6 stands from the Faculty of Life Sciences
- 1 stand from the Faculty of Humanities
- 1 stand was cross-faculty
- 3 stands from other organisations
- 21 science buskers

What the visitors said ...

"We came to Manchester for a music event and I thought I'd bring my youngest here ... we thought it was so brilliant, we're brought our older two back this afternoon, this is our first visit but not our last." Science Spectacular Visitor

Visitors were asked to post what they thought of the day on a graffiti wall. Most comments related to the fun, interactive and enjoyable challenges and experiments which inspired young people in science and were educational. Others mentioned being able to use a microscope, making goo and collecting stars on their challenge card.

Activities specifically mentioned included:

Bubble-making	Smarties
Tornado	Volcano
Meteorites	Fruit flies
Marvellous medicine	Virtual reality
Build your own house	Turtles
Rockets	Dinosaur
Bugs & drugs	DNA



THE IMPACT OF SCIENCE SPECTACULAR

Some visitors emailed about their experience of the day:

"Just wanted to let you and the team know that my kids really enjoyed the Science Spectacular event – a big thank you to everyone. Oliver (my 8 year old) enjoyed it so much, that he has created this PowerPoint for his show and tell at school this morning ..."

Oliver's Show and Tell
Science Spectacular at the Manchester
Museum/University of Manchester

"I just wanted to let you know that both myself and my family absolutely loved the Science Spectacular on Sat 25th October. I am a teacher at The Kingsway School in Cheadle, Stockport and we take our gifted and talented students to the Cambridge Science festival every year in March/April- but I think this festival was just as good and it's just on our doorstep. Consequently, in future I will try to get a group of students to visit the Science Festival next year..."

"I just wanted to send you an email to say how impressed I was by the Science Spectacular. The stalls and experiments were well laid out and suited a wide range of ages. I was especially pleased by footstools being provided for younger children, so that they could participate ... Additionally, the staff remained cheerful and enthusiastic right until the end .. and made the experience one my boys are still telling everyone about. My eldest is now talking about having a mad scientist birthday party, complete with experiments, thanks to the trip on Saturday."

What the researchers said ...

"I felt very grateful to be able to be part of it [Science Spectacular] and share the excitement around science ... I look forward greatly to being involved again next year ... I am bursting with pride to be part of such a super University!." Science Spectacular Researcher

One of the main highlights for researchers was the number of engaged and, in some cases, knowledgeable members of the public and young children who were keen to learn and take part in the activities. They

commented on lots of young smiling faces (many wearing safety glasses!) and having interesting conversations with the adults.

Generally, most stallholders felt that little about the event could be improved and that it was *“an easy to contribute towards due to its brilliant organisers”*. Some suggested minor additions for example a central supply point for some of the little things stand holders tend to forget, and have more stars on the challenge card as most children complete them quickly due to their enthusiasm.

There were two key surprises for researchers - the young age and enthusiasm of the children, and the breadth of research groups and number of engaged research staff taking part.

What the organisers said ...

The organisers were very pleased with the event. They thought the following worked particularly well:

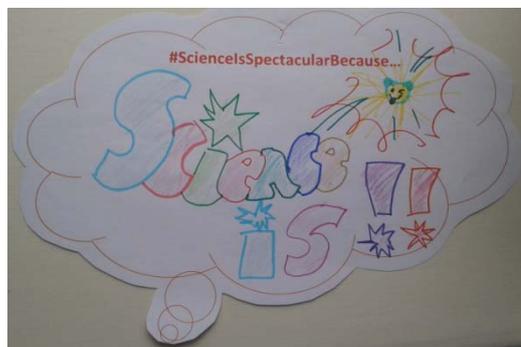
- having a small cross-faculty coordinating committee that organises the event with support from Widening Participation and Outreach.
- having 2 volunteers at the event to support the organisers and have an opportunity to be on a stand.
- the excellent support from the porters and building attendants in the Whitworth Hall which is key to a successful event.
- having an experienced science busker manage the buskers through their training and at the event.
- having a mixture of undergraduate and postgraduate students as science buskers.
- our evaluation methods which compliment what is undertaken by the Manchester Science Festival.
- the small Twitter campaign leading up to the event.

What the tweeters said ...

Most posts related to either the scientific process and what science allows us to do, or the impact science has on us and our world from acquiring knowledge, to making us think and save lives.

“There are always more questions to tackle!”
“You can look at things really close up.”
“It empowers us and makes us think.”
“It inspires a generation of explorer and adventurers.”

“It makes sense of the world.”
“It unleashes the power of curiosity.”
“It changes people’s lives.”
“It makes the impossible possible.”



What the science buskers said ...

“Thank you for the opportunity, I really, really enjoyed every second!” Science busker



Following a recruitment call, 22 undergraduates and postgraduates from all faculties, attended the science busking training held on 8 October 2014. This was followed up with a practice day at Manchester Museum before 21 acted as science buskers at Science Spectacular on 25 October 2014.

Those who completed the training and worked at the event were asked to comment on what worked well and what could be improved about their experience.

EVALUATION OF SCIENCE SPECTACULAR: METHODOLOGY AND RESULTS

The evaluation comprised:

a) Asking questions of stallholders via email (see Appendix A).

16 responded to the email survey.

They were asked three questions:

1. What was your key highlight of this year's event?
2. What could we do to improve the experience for (a) you and (b) for the visitor?
3. Did anything surprise you?

b) Asking visitors for their thoughts via a graffiti wall

Visitors were asked what they thought of the day. 79 Post-It Notes were filled out by everyone from 2 year olds to adults. All comments were positive with 15% expressed as drawings. Most comments related to the fun, interactive and enjoyable challenges and experiments which inspired young people in science and were educational.

c) Monitoring where visitors came from using postcode data (see Appendix B)

136 groups/individuals gave the first part of their postcode.

78% came from Manchester and Stockport. 47% were from Manchester postcode districts, the most popular being Hulme, Prestwich, Moss Side & Fallowfield, Withington and Chorlton-cum-Hardy. This is 7% less than last year but visitors did come from 9 additional postcode districts including Burnage, Harpurhey, Crumpsall and Whitefield.

29% were from Stockport, an increase of 8% compared to 2013. 8% came from Warrington postcode areas, 6% came from Oldham, Bolton and Bury and many of the remainder from the North West with a few from far as Cambridgeshire, Nottinghamshire and Kent.

d) Using the Twitter hashtag #SciencelsSpectacularBecause...

There were 69 responses from both stallholders, staff and the public using the Twitter hashtag #SciencelsSpectacularBecause... posted both prior to and during the event.

e) Debriefing of the organising team, the science buskers and the volunteers.

Following a recruitment call, 22 postgraduates and undergraduates, from across all four faculties attended the science busking training held on 8 October 2014. This was followed up with a practice day at Manchester Museum before 21 (including 4 researchers from previous years) acted as science buskers for Science Spectacular on 25 October 2014.

Those who completed the training and worked at the event were asked to comment on their experience (see Appendix C):

1. What worked well?
2. What could be improved?

The Manchester Science Festival evaluation form was also completed and entered into the Festival's evaluation.

The event was written up in Unlife Vol 12 Issue 3 (1 Dec 2014) and our Flickr photo gallery has prompted requests for photos to be used by other university publications, as evidence of impact by participating researchers, and by MSF for future publicity. <https://www.flickr.com/photos/128754940@N08/sets/>

RECOMMENDATIONS

- Review stallholder guidelines in light of comments eg. logistical information, expected audience.
- Offer a drop-in information session for new stallholders.
- When reprinting, review the challenge cards and consider increasing the number of stars.
- Recruit 2 volunteers to help the organisers on the day as well as being given the opportunity to be on a stand.
- Recruit an experienced science busker to manager the buskers through their training and at the event.
- Explore the potential to recruit more undergraduate students as science buskers.
- Build on the 2014 twitter campaign and consider how to encourage all those involved to use social media to actively promote the event beforehand.

APPENDIX A: Stand Leader Email Survey Results

1. What was your key highlight of this year's event?

<p>Our key highlight of the event was being able to share our research with the general public. It was a great opportunity to remember how much people care about the work we are doing and inspired us to keep working towards our group goals of finding solutions to pregnancy problems</p>
<p>Talking to the public and seeing how much fun they were having across the whole event.</p>
<p>Visitor comments are always the highlight. Also, I have lots of photos of happy smiley faces, often with safety glasses on!</p>
<p>To see so many Schools involved and enthusiastic academic staff working at an outreach event.</p>
<p>The size and variety of stands. Twitter and media campaign in the build-up but would like to start the buzz of this earlier.</p>
<p>The sheer number of people who took part in our activity was brilliant as was the general level of enthusiasm from everyone involved.</p>
<p>First year to run this particular stand and theme so there was quite a lot of prep. it was also independent of the school so I had no direct support there either and covered the costs out of my own pocket as well.</p>
<p>The key highlight for me was seeing how much knowledge some of the young children who attended have. I was amazed by their knowledge on some of our topics and how enthusiastic they were. I helped a young boy (possibly about age 7) to create the structure of penicillin using our modelling kits and was genuinely shocked at how quickly he picked up what I was telling him. It was also great to see how excited he was to have completed it.</p>
<p>The Bugs & drugs stall provided a fun and educational day out for the attending families. As an antibiotic guardian, I had opportunity to raise public awareness against antibiotic resistance and also to see how well they could wash their hands, especially children! Overall the event was extremely successful as it entertained families through variety of learning activities and highlighted the importance of awareness of antibiotic resistance.</p>
<p>I didn't get loads of opportunity to walk around this year, but I'd say my key highlight was how busy and popular it was. There's a clear appetite for these kinds of events.</p>
<p>Highlight for me was the range and scale of the event-so much to see and do for the children (and adults) visiting</p>
<p>The number of parents who were really enthusing about science to their kids even if/especially if they said they didn't understand science themselves while they were at school.</p>
<p>The event was as interesting as was great hands- on activities. It created a chance for children and their wards to have a better understanding of rivers and the creatures in them. They were keen to relate the types of invertebrates collected to the level of pollution in the river... and to determine if their river was clean or polluted. The event was well organised, with space, pace and we enjoyed it.</p>
<p>The highlight of the event for me was to be able to take part in an event that presented so much variety/diversity in sciences to the public. I think each visitor that came to the stall I was working on really didn't know what to expect as they had been exposed to so many different ideas and activities. It was nice to be able to present a new idea to them and ask them to get involved.</p>
<p>As it was our first time as a society getting to do this kind of event, our key highlight would probably be the opportunity to get to show our society to such a large number of interested people</p>

2. What could we do to improve the experience for (a) you and (b) for the visitor?

<p>The experience for us was great, I can't think of anything that can be improved for the stall holders. There wasn't really anything that springs to mind for the visitors, but maybe more places to put stars, as most of the children were running out due to their enthusiasm!!</p>
<p>a) Nothing – such an easy event to contribute towards due to brilliant organisers. b) Identify areas which caused bottlenecks to help the flow of people (for example, Living Worlds gallery became very crowded).</p>
<p>I thought that there wasn't enough signposting to the Whitworth Hall stands in the Museum. Many visitors I talked to didn't know there were more stands than those just in the museum. We didn't get many visitors for the first 1-2hrs and I wonder if that was because most were in the Museum. Was there too many stands? I know this sounds weird but sometimes if too many, visitors are a) overwhelmed b) suffer from data overload c) lack sufficient time to get round all stands.</p>
<p>a) Possibly provide more refreshments for all contributors. I thought the organisation was really good and everyone was really helpful. b) A bit more encouragement by student ambassadors for people to move around and get to see everything. For instance, if they see a stand maybe hidden away from view or less popular than another that has a substantial queue already.</p>
<p>Nothing</p>
<p>a) Some kind of supply point for some of the little things we tend to forget (scissors, bin bags, pin/Velcro tape to put posters up, sticky tape, blue tack etc.) b) Perhaps a space/room for parents with young children/babies who just need some time out because of tiredness/over-excitedness.</p>
<p>It would be nice if the stands that made very messy sticky horrible goodies for the visitors could provide better ways for the visitor to take their sticky treat away. Unfortunately quite a few visitors seemed to think that my stand was a rubbish bin for the sticky mess and just dumped them on top of my handouts. I also need more plug sockets and after asking for an additional plug got no help and ended up finding one myself.</p>
<p>(a) I thoroughly enjoyed the experience and cannot at this time think of any improvements. (b) I found that quite a few of the families approaching the stall did not have the star sticker sheets when I offered them stars for doing well with our activities. I think this could be improved by ensuring everyone is given one of these upon entry.</p>
<p>More space, bigger stall, improve lighting system and access to power socket, moving the event to September if it is possible!</p>
<p>a) Not very much for me. More space for the stall would be nice but I realise for practical reasons this is impossible. b) I understand that the Science Extravaganza at MMU was taking place on the same day and at the same time. Could more be done to link these two events together - or if not together, at least ensure they run on different weekends? Combined marketing for example might free-up resources for a more ambitious and far-reaching marketing campaign, and perhaps be more likely to attract media attention for both.</p>
<p>I can't think of any improvements</p>
<p>I can't think of anything – I thought being in a side room with two other physics groups worked really well for us. Ideally it'd be great if there was some way interested parents or older kids could follow up on some of the research they've been hearing about, like a webpage linking to all the different Schools/research areas, but I would assume most don't have online resources for the public</p>
<p>Everything went well and I'm not surprised.</p>
<p>The event experience could have been improved for me by having the café in Whitworth Hall open on the day, or providing a snack as has been provided at recent events I have worked on, like the Community Open Day in Michael Smith building in June this year.</p>
<p>Perhaps a bit more information on how to interact with visitors on the day?</p>

3. Did anything surprise you?

<p>It was surprising how some really young children, pre-school age, really concentrated and took in all the information you had to share with them and also how much many of them already knew!</p>
<p>The breath of research groups present on the day and how inventive some stalls were.</p>
<p>The number of stands, great to see UoM having so many engaged staff!</p>
<p>Just how little and young some of the kids were. Our activities didn't really lend themselves to the really young ones but this was really the dominant demographic unfortunately. It did pick up a bit more in the afternoon. I'm not sure how you can manage this if it's a free with no required pre-booking, maybe put a recommended age-range on the flyer?</p>
<p>No</p>
<p>We are always surprised by how much kids already know about our topic. It is also surprising how you can engage even quite young children.</p>
<p>I was slightly saddened by the behaviour of some, a minority, of the visitors.</p>
<p>I was surprised to see children of such a young age attending the event. Some of them showed great enthusiasm and knowledge despite their young age.</p>
<p>Yes, indeed, dealing with variety of people with different background knowledge! for instance, I had a person with PhD in antibiotic in our stall.</p>
<p>The genuine interest from parents always surprises me. I think they learn more than the kids do.</p>
<p>I was surprised with the scale of the event - It was really huge!</p>
<p>I thought there seemed to be a lot more younger children this year, some of them extremely young.</p>
<p>Everything went well and I'm not surprised.</p>
<p>The sheer number of people that kept on coming to our stand and how tiring working the day on the stall was.</p>

APPENDIX B: Postcode Data

POSTCODE	No.	POSTCODE	No.
M1 Manchester City Centre	1	WA5 Warrington	2
M5 Salford Quays	2	WA14 Altrincham	4
M8 Crumpsall	2	WA15 Hale	4
M9 Harpurhey	2	WA16 Knutsford	1
M13 Ardwick/Rusholme	3	TOTAL (as %)	8%
M14 Moss Side/Fallowfield	5		
M15 Hulme	7	OL3 Oldham	1
M16 Whalley Range/Old Trafford	2	OL8 Oldham	2
M19 Burnage	2	OL9 Oldham	2
M20 Withington/Didsbury	5	BL3 Bolton	2
M21 Chorlton-cum-Hardy	5	BL9 Bury	1
M22 Wythenshawe	1	TOTAL (as %)	6%
M23 Wythenshawe	1		
M25 Prestwich	6	CW6 Tarpoley	1
M26 Radcliffe	1	CW11 Sandbach	1
M27 Swinton/Pendlebury	1	CW12 Congleton	1
M28 Worsley	2	BB2 Blackburn	1
M30 Worsley/Eccles	3	CB8 Newmarket	1
M31 Partington	1	DE6 Ashbourne	1
M32 Stretford	2	FY3 Blackpool	1
M33 Sale	4	FY5 Thornton-Cleverleys	1
M34 Denton	1	HD6 Huddersfield	1
M35 Failsworth	1	L18 Liverpool	2
M43 Droylsdon	1	ME3 Rochdale, Kent	1
M45 Whitefield	2	NG5 Nottingham	2
M50 Salford Quays	1	ST8 Stoke-on-Trent	1
TOTAL (as %)	47%	WF1 Wakefield	1
		TOTAL (as %)	10%
SK2 Offerton	1		
SK3 Cheadle Heath/Bramhall	3		
SK4 Four Heatons	2		
SK5 Reddish	2		
SK6 Marple/Bredbury	2		
SK7 Poynton	3		
SK8 Cheadle Hulme	10		
SK9 Wilmslow	1		
SK10 Prestbury/Bollington	5		
SK13 Glossop	3		
SK14 Hyde	2		
SK15 Stalybridge	1		
TOTAL (as %)	29%		

APPENDIX C: Science Buskers Feedback

1. What worked well?

- The training session gave you confidence and practical advice.
- Being in a team of 3.
- Moving around to different spots.
- If performing in the Corridor, ensure you tell the public about the link and encourage them to move between the two venues.
- Having the rockets and bubbles outside in the Quad.

2. What could be improved?

- Distinguish the boxes by suitability for big groups, small groups, outdoors and quiet areas. When busy it would be easier to decide what activities were most appropriate for different locations.
- Balloon pumps for the balloon kebab activity so saves preparation time.
- More buskers in the Museum/Outside the Museum because it seemed more heavily populated.
- Atom activity didn't stand up to constant use as most of the Velcro pad had come away.
- Investing in science busking hoodies as the T-shirts are not warm enough in the colder weather.