


University Museums Group Member Projects

Case study title	Real World Science
Institution name	The Manchester Museum, University of Manchester
Summary [100-150 words. What is this case study about? What was the problem, issue or challenge and how did you tackle it?]	The Real Life Science programme at The Manchester Museum was developed in response to concerns about negative perceptions of science as a study subject and career option and the consequent 'drop-out' rate of secondary school pupils. By providing pupils with the chance to use equipment and learn techniques that are not available in school and introducing them to young practising researchers from the science faculties, the programme offers a unique mutual benefit for the university and school groups. As facilitators in the museum's 'life lab' early career researchers gain experience in public engagement and science communication whilst providing school pupils with hands-on training and informal careers advice. The programme links to the national curriculum and is designed to be accessible, engaging and relevant to the lives of the pupils. Pupils use DNA analysis to solve a crime; explore biodiversity; examine fossil evidence, and explore the science of mummification.
Keywords [please choose up to 5 keywords to describe your project which will help members to find your project within the website database.]	Science, careers, public engagement, schools programme, hands-on
Background [100 words. Give brief details of your Museum/Gallery and any relevant background to the project.]	The Manchester Museum is one of the UK's great regional museums and the country's largest university museum. It makes a significant contribution to the University's Widening Participation and community engagement aspirations. As one of the University of Manchester's 'cultural assets', the Museum has a key role to play in supporting the University's strategic goals. The Earth Sciences, Diversity of Life and Forensic Science programmes are funded jointly by the Department for Culture, Media and Sport and the Department for Children, Schools and Families as part of the Strategic Commissioning Programme for Museum and Gallery Education.
Objectives [100 words. Describe the objective(s) behind the project.]	<ul style="list-style-type: none"> • To provide for secondary school pupils a positive experience of experimental science and potential role models that encourages them to consider further study and career options • To provide PhD demonstrators from the Faculty of Life Sciences at The University of Manchester with training in public engagement and paid experience to enhance their skills and employability • To add value to the museum's Secondary & Post-16 science programme with techniques and equipment not available in school
Project details [400 words. What did you do? This might also include details of project partners, financial and staff implications etc.]	At the start of each academic year the museum puts out a call for new demonstrators, preferably 1 st year PhD students (but not exclusively). Students must apply with a CV and covering letter. Once all applications have been reviewed, this is followed up with an orientation meeting (in 2009-10 16 applicants were shortlisted) which details the commitment and training involved, provides an overview of the science programme and options for involvement. The orientation includes a science communication task designed to assess the level of each applicant's ability and potential. Some applicants usually self-select out of the competition after this process. The remaining candidates attend a

	<p>training session at the start of spring term, where they take part in a Forensic Science session as participants in order to experience the session structure and delivery methods. After this, they are able to choose workshops from the programme and begin the process of practical training. This takes place over the spring and summer terms and involves observing a session, team-teaching a session with an experienced facilitator, team-teaching with another PhD student while confidence grows, then finally delivering the session solo, observed by a staff member to ensure delivery is of the required quality. By the start of the new academic year applicants should have completed the training and be able to deliver sessions alone. Constant monitoring and support is a key element of the training and feedback is provided by pupils, teachers and the trainer after each session. After each stage in the process a review meeting is held to reflect on progress and provide coaching for the trainees.</p>
<p>Project outcomes and impact [200 words. How did this project make a difference to your museum?]</p>	<p>This partnership with the science faculties has enabled the museum to develop an exciting, relevant programme that complements the school curriculum while offering an enriching experience to both pupils and demonstrators.</p> <p>Real Life Science programme has strengthened the museum’s relationships with university colleagues and added an extra layer of academic rigour to the learning programme by opening up access to current research in the faculties.</p> <p>Feedback from PhD demonstrators shows that they find the experience invaluable for building confidence in presenting their knowledge, which helps with their future career choices.</p>
<p>What went well? [200 words – what were the most successful outcomes or learning points of the project?]</p>	<ul style="list-style-type: none"> • The project creates excellent links with University departments and provides CPD opportunities for PhD students. Two thirds of the people trained as demonstrators go on to deliver the programme, so retention is good. Time spent on the support during the training is paramount. • Real World Science is funded by Strategic Commissioning and provides a small income that helps support the Museum’s learning programme. • Evaluation with pupils demonstrates a huge increase in motivation and enthusiasm for science and much greater awareness of the opportunities it can provide. Teachers agree that the lab experience and exposure to ‘real’ science definitely boosts attainment back in school. • Alexa Jeanes used to be a PhD demonstrator and is now Lead Educator, Secondary & Post-16 Science, coordinating the programme. • Ceri Harrop was also one of the demonstrators and is now leading the Public Engagement Committee at the Wellcome Trust Centre for Cell Matrix Research. • Peter Bell was a pupil who attended one of the sessions taught by a PhD demonstrator and went on to study Science at The University of Manchester as a result. He now delivers the workshop he originally attended.
<p>What could have been done better? [200 words – barriers, failures and</p>	<p>The training programme has been developed over a number of years with considerable investment in terms of staff time and resources. Unexpected difficulties can arise in training and employing university</p>

<p>things that could have gone better provide some of the most valuable learning points for others.]</p>	<p>students as demonstrators. For example, foreign students sometimes have English pronunciation that can create a barrier which prevents pupils from understanding crucial concepts and instructions. This raises issues about further training needs that require extra investment.</p>
<p>Conclusions and recommendations for the future [150 words. Briefly identify the most important points in the case study for others and where this project might lead in the future.]</p>	<ul style="list-style-type: none"> • A good relationship with university departments is integral to making the programme work because it ensures that the workshops relate to the skill sets of the PhD students. • First Year PhD students are an ideal choice for the programme because they will be at the university for a significant period and will have time in their schedules for demonstration work. • It is important not to underestimate the time and support required for the training programme, which at the Manchester Museum takes up to a year. • The criteria for success must be clear at the beginning of the programme so that the students are fully aware of the importance of their role and the expectations of their 'customers': the quality of the workshop must remain high and teachers and pupils must be satisfied with the service.
<p>Image [please attach an image connected to the project.]</p>	
<p>Contact name and email address [contact details for someone connected with the project who is willing to share more information with members.]</p>	<p>Alexa Jeanes, Lead Educator (Secondary & Post-16 Science) alexa.jeanes@manchester.ac.uk The Manchester Museum University of Manchester Oxford Road Manchester M13 9PL</p>
<p>Date of submission</p>	<p>October 2010</p>