

FINAL REPORT - THE UNIVERSITY OF MANCHESTER

SUPI PROJECT NAME: THE UNIVERSITY OF MANCHESTER

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1: THE 'STORY' OF YOUR SUPI PROJECT

a) Please provide a narrative summary that describes the journey your SUPI project has taken from beginning to end and covering all the key developments in between.

Our journey started in the summer of 2012 with the developing of the bid. At the same time we were contacted by Altrincham Grammar School for Girls who knew about the project and were very keen to be involved. The school then became the lead school for the project and we worked with members of the school's senior leadership team to put the bid together. In addition to our lead school, we also secured involvement from another 4 teaching schools in Greater Manchester who were working with our Institute of Education.

Our vision for our SUPI project was one of inclusivity, both in terms of the schools we engaged with as well as the academic subject areas we worked within. We aimed to increase students' knowledge, awareness, and enthusiasm for research through a number of different methods.

In order to gain buy-in from different parts of the University, we held an open meeting to inform colleagues about the bid and then invited expressions of interest to be part of the bid through the delivery of a 'Flagship Project'¹. The Flagship Projects were examples of existing activity that were scalable and transferable to other areas of the institution and represented the broad spectrum of research and degree disciplines. We were also very clear from the start that one of our outcomes would be to embed activity developed through SUPI within the University. The brief was open, so colleagues could put forward a range of project ideas so long as they were within the SUPI project aims. Some projects came out of existing models of research-led activities, whereas others came with new and novel ideas of engaging students and teachers in research. For example, one of the Flagship projects proposed to take a successful initiative which had a STEM focus and transpose this into a gallery and library context. Another project wanted to focus on work with teachers, improving their knowledge and confidence in communicating recent research developments in their subject areas.

From the point of receiving the funding in 2013, the focus for the rest of the year was creating the infrastructure to deliver the project and appointing our SUPI Project Officer. We established both our internal Project Advisory Group and our external teacher group (named the School-University Research Reference Group) with first meetings taking place in spring 2013. The Project Advisory Group was chaired by our PI and membership included the Co-Is, Flagship Project Leads, colleagues from our Institute of

¹ More information on our Flagship Projects can be found here: <http://www.supi.manchester.ac.uk/flagships/>

Education and representatives from our lead school. The School-University Research Reference Group (SURRG) was chaired by Altrincham Grammar School for Girls and membership included our partner schools and the SUPI Project Officer.

Due to the focus on setting up these structures there were limited events in this first year. Our first main event was our STEM Teacher conference in June, with a day focused on Biology and Chemistry and a day on Maths and Physics. The aim of this Conference was to introduce teachers of biology, chemistry, maths and physics to the research taking place at the University linked to these areas and to encourage teachers to think about how they could bring some of this knowledge into their classrooms.

In summer 2013 we had a change of staff in the Project Officer role.

Our first Researcher Training Day took place in November 2013. This session was developed in partnership with experienced public engagement practitioners and a local school teacher. Following on from this day, researchers then had the opportunity to apply for seed funding to run a project with a school. In November we also held our first Teacher-Researcher Networking event. This idea came from our School-University Research Reference Group, who wanted an informal way to meet University of Manchester researchers to discuss possible collaborations.

In the first year of the project we started to develop our communications, setting up a Twitter account and making the first steps to build our own website.

2014

In 2014 the project built up momentum and we further developed existing events, such as expanding our STEM teacher conference in summer and refining the programme for our autumn teacher-researcher networking event. Our Flagship projects continued to deliver their activities.

In summer we held an Expo event with our key stakeholders represented, to consider the past, present and future of SUPI. This was helpful in identifying both challenges and opportunities, and we gained useful feedback from this, including ideas such as our Research Champion Initiative.

We delivered our Researcher Training Day again in November and this saw a number of researchers going on to deliver projects with schools. We built upon our website, adding new elements to this including videos and case studies.

We had a few challenges during this year, in terms of key contacts and project cancellations. We organised a seminar for teachers on the topic of sustainability but due to very low booking numbers we cancelled this event. The Flagship Project with Nowgen on practical EPQs in DNA modelling was not able to continue due to reduction in University funding to the Nowgen Centre outside the SUPI project.

We had a change in 3 of our original partner schools as they were not able to take part due to demands on staff time - Sir John Deane's College, Fallibroome High School and Ashton on Mersey School. We approached Matthew Moss High School and Oldham Sixth Form College who joined the group.

2015

In this year we established our Research Champion Network of schools and colleges. This involved contacting institutions engaged in other University outreach work and asking them to nominate a key contact to be that institution's 'Research Champion'. This means acting as a point of contact for the SUPI team; championing research in their school; and feeding into plans for research-led activities for students and teachers organised by the University. This network was created to maintain the partnerships we have developed with schools and colleges over the course of the project.

We further developed our Young Person's University website, with the addition of content around a career in academia and understanding what it takes to be a researcher.

In March we developed and delivered a Science and Sustainability project with 3 schools. The students worked on research projects with the help of our researchers, and shared their findings through poster presentations at the University on a celebration day.

In this year we began our partnership with the Brilliant Club, starting with a small-scale launch event in June.

2016

In 2016 we received our extension funding which allowed us to trial some additional projects as well as continue and extend existing work. This also funded an additional post in the SUPI team which helped us deliver these projects. Some of our flagship projects bid for additional funding to undertake more work.

One of our additional projects in this year was our EPQ mentoring scheme. We decided to pilot this project to extend the support we provide to students through our on campus workshops and downloadable resources. We built on best practice in this area from colleagues at Lancaster and Bristol who have delivered similar schemes. Ultimately although some students found it useful, we had had mixed feedback from the students. The scheme was resource intensive for the number of students that benefitted and would be difficult to scale up, so we decided not to continue with this programme and instead focus on our successful on-campus Research Skills workshops, and investigate other ways to reach a wider audience, potentially through the use of the webinar format.

We continued with some existing activities including delivery of our 3rd STEM teacher conference and two more researcher training days. In July we held our SUPI Celebration event which afforded us the chance to recognise the contribution of all those who have been involved in partnership activities since the initiative began, show the ways the projects has impacted on key groups, and to look forward to the future of School-University partnership in years to come.

During the final year we also focused on embedding activity and resource to continue certain elements of our SUPI beyond the RCUK funding period.

2: KEY FINDINGS, LEARNING POINTS AND ENGAGEMENT ACTIVITIES

a) Please list the key findings from your SUPI project

We see a cross over between the key findings and learning points so have approached these areas as key findings that are specifically relevant to us and learning points that are more applicable across the sector.

Things that work for us:

- Getting steer from the teachers but ultimately we lead on activity development; not requiring significant time investment from teachers who do not have this resource. Consistent feedback from the teachers and schools we have worked with has reinforced this; teachers simply do not have the time to collaborate extensively on the design of activities;
- Teacher CPD – full day conference style events (e.g. our STEM teacher conference) have been more successful than twilight sessions (e.g. teacher seminars we have cancelled due to low numbers);
- Additionally, teachers responded best to activities that could be clearly linked to the curriculum they were teaching. Although they enjoyed engaging with researchers on their current research, and it was useful in terms of their own personal learning and development, they were unsure how some of the activities could be taken back to the classroom;
- Researcher training – better to give researchers the option to develop and deliver activity as part of training so they have the opportunity to put the theory into practice;
- EPQ mentoring scheme – whilst we were pleased to trial this format, it did not meet the aims of enabling us to extend our EPQ support to a wider audience, and it was not hugely beneficial for the students that participated. It was however a valuable learning experience and has led us to consider other online platforms to build capacity such as webinars;
- Visiting pupils appreciated being able to use a variety of university teaching spaces (e.g. labs, computer clusters);
- Important to consider staff/student ratios – works well having high ratio of researchers to students to ensure depth and level of engagement is greater.

Key findings from our school partners' perspective:

- Research projects that reflect/complement the content of the curriculum are most popular with teachers;
- “Off the peg” projects that require minimal teacher input are also popular with schools;
- The teacher networking event is a great way of bringing teachers and researchers together at the start of the year to discuss ideas, however in reality, it has been difficult to get teachers to attend. It may be better to run this biennially in future;
- Across teaching alliances, it has been difficult to engage those schools where pupils would probably benefit most from SUPI workshops, as staff are less able to get out from school due to pupil behaviour and staff shortages. In these circumstances in-school activities are best;
- Strong relationships with University staff have been established – some researchers and teachers have been collaborating on different projects over the past 3 years;
- As teachers find it difficult to leave school, a good way to reach teachers is by attending events such as teach meets etc.

b) Please list the most important learning points from your SUPI project

Many of the points above will be relevant to other institutions engaging in this area of work, but in terms of overall learning points we have noted the below:

- Importance of building up relationships with schools and requirement for sustained teacher engagement;

- Timing of activities – certain times of the year are not suitable for schools or researchers, and dates need to be booked well in advance;
- Students responded particularly well to activities that were interactive and relevant to their current studies;
- Training and support for researchers is very important for them to feel confident in engaging pupils with their research at an appropriate level;
- It was of value to have activities led by young researchers as the closeness in age to the secondary and college pupils allowed for informal discussions around HE. Additionally, it worked well involving early career researchers to design activities related to their subject area for our projects in academic departments.

c) Please list all engagement activities that were developed and run during your SUPI project

Over the course of the project a wide range of activities were developed and delivered. An overview of activities is provided in the table below. We have grouped the activities accordingly to the target audience; namely pupils; researchers; and teachers.

Pupils				
Project	Audience	Description	Aim/objective	Numbers
EPQ workshops	Year 12 - 13	On campus research skills workshops for students undertaking the Extended Project Qualification	Develop research skills of students	1957
EPQ mentoring	Year 12	Mentoring scheme whereby PhD students gave advice on research skills	Develop independent research skills and help students with their EPQs	47
EPQ practical projects	Year 12 - 13	Lab-based activities at our NOWGEN centre, working with current PhD students on projects	To understand the practical applications of Biology; to consider undertaking an EPQ in DNA barcoding.	10
EPQ practical projects in Maths	Year 12 - 13	One day activity on Mathematical Modelling	To understand the practical applications of Maths; to consider undertaking an EPQ in applied Maths.	217
Tomorrow's Citizens	Year 7 – 11	Debate and discussion led conferences and events on humanitarianism	To develop students debate skills and understanding of research in humanitarianism	300
Geography@Manchester	Year 7 - 11,	Series of Geography workshops	To enthuse and inspire students about research in Geography	1467
Culture Collective	Year 7 – 13	Research-led activities engaging with the collections at our cultural venues	Bring collections to life through research; enthuse students in these areas.	2645
Fastbleep Pharmacy	Year 12	Workshops around the	Enthuse students in	95

		drug development process	unseen aspect of Pharmacy through research	
Science and Sustainability	Year 10-13	Pupil research projects with PhD mentor, culminating in poster presentation	Develop independent research skills and enthuse students about scientific research	154
Nuffield Research Placements	Year 12	Summer research placements in science	To inspire and motivate students to study science at University, and enthuse them in research.	196
Brilliant Club	Year 5 – Year 13	On campus trips and research-led tutorials	Develop the knowledge, skills and ambition needed to progress to highly-selective universities.	1035
Range of one-off workshops in school or on campus	Year 7 – 13	Various	Various; enthusing students about a variety of subjects and research areas	~3000 (estimate from logged events on our database)

TOTAL Estimated Pupil numbers

~11,213

Researchers

Project	Audience	Description	Aim/objective	Numbers
Networking event - researchers	All researchers	Opportunity for teachers and researchers to meet explore ways to collaborate	To connect teachers with researchers in their subject areas, to then go on to deliver activities with their students	106
Researcher training	PhD students and ECRs	One day training course for researchers on school engagement	Develop skills and knowledge of researchers to enable them to design and deliver a research-led activity for pupils	130
Brilliant Club tutors	PhD students and ECRs	Delivery of research-led tutorials	Develop the knowledge, skills and ambition needed to progress to highly-selective universities.	46
Culture Collective demonstrators	PhD students	Delivery of research-led activities at the cultural institutions	Bring collections to life through research; enthuse students in these areas.	29
EPQ mentors	PhD students	Mentoring scheme whereby PhD students gave advice on research skills	Develop independent research skills and help students with their EPQs	6
Range of input into various other activities listed above	All researchers	Various	Various; enthusing students about a variety of subjects and research areas	No known total

TOTAL Estimated Researcher numbers

317+

Teachers

Project	Audience	Description	Aim/objective	Numbers
Networking event -	Year 7-13	Opportunity for teachers	To connect teachers with	156

teachers	Teachers	and researchers to meet explore ways to collaborate	researchers in their subject areas, to then go on to deliver activities with their students	
Life Sciences Summer School	Year 10-13 Teachers	2/3 day CPD events for Biology teachers	Enthuse and inspire teachers about current academic research in Biology; give them ideas for sessions	35
STEM Conference	Year 7-13 Science & Maths teachers	A 2 day CPD event	Enthuse and inspire teachers about current academic research in STEM subjects to take back to the classroom	501
Research Skills activity	Year 7 -9 teachers	Downloadable resources available for teachers, tested with local schools	Develop independent research skills	N/A
Geography@Manchester	Year 12-13 teachers	Conference Day for A-Level Geography teachers	To introduce teachers to research areas directly relevant to the new syllabus	26
Research Champions	Year 7- 13 Teachers	Network of engaged teachers in schools	To foster continued collaboration with schools in the network	32 (no of schools)
Range of input into various other activities along with their schools	Year 7-13 Teachers			
TOTAL Estimated Teacher numbers				750+

3: THE IMPACT AND INFLUENCE OF YOUR SUPI PROJECT

a) Please summarise the impact(s) of your SUPI project across its lifetime

In our bid we had 5 core aims for our SUPI – training development/reward and recognition; implementation and delivery; impact and evaluation; dissemination; coordination, embedding and sustainability. Below we have provided a summary of the impact and influence of our project under these core aims.



Training and development

Through our SUPI we aimed to provide a range of training and development opportunities for researchers. Our main strand to this was our Researcher Training Day. We delivered this 6 times across the project to 130 researchers in total. Many of these researchers have gone on to develop and deliver SUPI projects with schools, with many also going on to deliver additional engagement activities within their academic area. Through our Flagship Project across our cultural institutions we have trained 29 researchers to deliver research-led activities which engage with the cultural collections. Through our partnership with the Brilliant Club we have recruited 46 researchers to work as tutors on the Scholars Programme with a range of local schools. A number of other projects have also utilised researchers and in return they have benefitted from training and development. Our Humanitarian and Conflict Response Institute use Master's students for their projects as well as our Geography project which has used undergraduate students. We have trained researchers for our EPQ mentoring project and research skills workshops. Over the course of the project over 100 researchers have participated in our annual networking events.

We have recently surveyed researchers that have taken part in our SUPI researcher training across the life of our SUPI. 100% of responders strongly agreed or agreed that the training gave them a greater understanding of how to engage with schools. 80% of them have gone on to do more public engagement or work with schools since the training; and all of these said they have utilised learning from the training in subsequent school/public engagement activities. Comments from researchers include:

- *“The training engaged me in learning (about how to run public engagement events etc). The way that this was facilitated during the course gave me ideas/the knowledge of how to engage others in learning;”*
- *“It was useful to understand what schools need from academics going in, in terms of school's constraints, work patterns and expectations;”*
- *“It have given me the confidence to pursue organising engagement events with secondary schools;”*
- *“[The training gave me] a much more realistic idea of what I would need to prepare and be prepared for;”*
- *“SUPI has been a great experience, without it I would never have realised how enjoyable and rewarding it is to be involved in public engagement activities”;*
- *“[Through the training] I developed my ability to explain complex ideas in plain English and make them accessible to non-specialists”;*
- The most useful part of the training was...
 - *“the opportunity to hear from teachers. Overview and understanding of the SUPI scheme;”*
 - *“to understand what schools need from academics going in, in terms of school's constraints, work patterns and expectations;*
 - *“working in groups to come up with ideas for activities based on our research”;*
 - *“the networking and coming up with new public engagement ideas with colleagues from other divisions”.*

Within the University we have raised the importance of rewarding and recognising the work that researchers undertake with schools and colleges. Public engagement with research is recognised in the University's annual Making a Difference Awards. The awards celebrate the impact our staff and students

are having on the social well-being of our communities and wider society. Each year the number of entries in the public engagement category has made up over 40% of the total number of entries for the 9 awards, showing not only the breadth of the engagement but also the depth and quality. One of the researchers leading on a SUPI Flagship Project was awarded the Outstanding Public Engagement award in 2015 at the University's Making a Difference Awards. This was for the delivery of a family-orientated community open day which developed from the SUPI Fastbleep Pharmacy project.

There are some examples of public engagement with research being considered in workload planning and recruitment criteria but this is not found commonly across all areas of the University. The AVP for Social Responsibility and Academic Lead for Public engagement are currently working with HR on moving this area forward. Excellence in public engagement can be rewarded as part of the rewarding excellence awards which can allocate a cash sum or increment to reward excellent work and there are examples of people being promoted in part based on excellence in public engagement work.

We also wanted to ensure that this reward and recognition extended outside the University and we nominated Matthew Moss High School for an outstanding School Award at the NEON (National Education Opportunities Network) awards in May 2016. This was to recognise their involvement in our SUPI and other widening participation outreach work to improve the outcomes of young people from a disadvantaged area of Greater Manchester.

Implementation and delivery

We have included a summary of activities delivered in Appendix 1. This shows the impact of SUPI in terms of inputs and outputs. One of the aims of our bid was to ensure activity represented the range of subject areas across the University which we have achieved. We also wanted to ensure that our SUPI engaged with a diverse range of schools and throughout the project we have monitored this to ensure that we are working with schools within the most disadvantaged areas of Greater Manchester.

In terms of specific impacts, we have listed an example below:

The Brilliant Club: Students participating in The Brilliant Club programme increased their subject knowledge with the pre and post evaluation showing an increase from 25% to 84%. Their confidence in being able to complete written work at the same standard as a pupil one Key Stage above increased from 55% to 84%. Pupils' attitudes to Higher Education were positively affected, with 90% responding at the end of the programme that they plan to go to university in the future. They have also become more resilient learners, with 90% responding that they "feel confident that I am able to overcome difficulties and setbacks in my learning" compared to 68% at the start of the programme. The map in figure 1 below shows the geographical reach of the Brilliant Club programme and the focus of activity in areas of low progression into higher education measured by HEFCE POLAR 3 data.

The Brilliant Club commissioned their own research² of the national scheme to evaluate the impact of the programme. Data from the most recent cohort of pupils shows that 58% of pupils eligible for Free School Meals (Ever6FSM) secured a place at a highly-selective university compared to a national average of 11%.

² <http://www.thebrilliantclub.org/wp-content/uploads/2017/03/UCAS-Impact-Evaluation-1.pdf>

Furthermore, when compared to a control group with matched characteristics including gender, ethnicity, and GCSE attainment, UCAS reported that pupils who completed the programme were “significantly more likely to secure a place at a highly-selective university”.

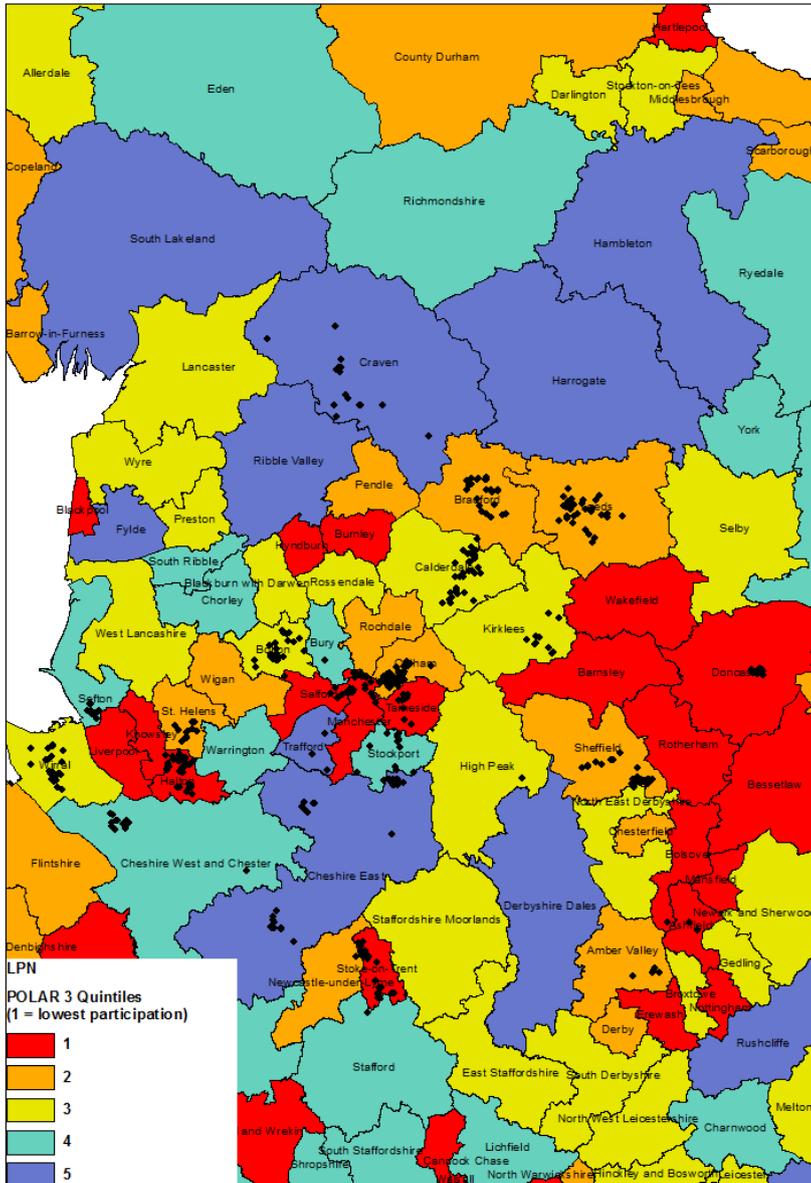


Figure 1. Map of students in North West and surrounding areas who participated in The Brilliant Club programme with The University of Manchester, with their postcodes mapped onto the POLAR Quintile³ areas.

Impact and evaluation

One of our impact aims was to enable teachers to enhance their confidence and knowledge in using contemporary research in the classroom. Our partner schools have reflected that staff are now confident to contact university researchers for support on specific areas of the curriculum, i.e. by delivering seminars, acting as mentors or delivering workshops. Teachers turn to researchers for ideas on how to bring the curriculum to life by demonstrating the practical application of curriculum subjects.

³ <http://www.hefce.ac.uk/analysis/yp/POLAR/>

We have already highlighted our STEM Teachers Conference where 79% of attendees 'strongly agreed' or 'agreed' that this event provided more ideas about how to engage with research at the University. Another example of this is within our Geography@Manchester project. In conjunction with the Manchester Geographical Society, in June 2016 we hosted a research based workshop for Geography teachers nationwide. September 2016 saw the launch of a new Geography A-Level which had three substantive changes that spoke to the research of Geography@Manchester – the carbon cycle, space and place theory and dryland Geography. In the morning, our academics used their research to teach the fifty strong audience of Geography teachers the basics of the material and we spent the afternoon in teacher led discussions about how that knowledge might be translated to the classroom. Networks were made and ideas shared. The resources are available with open access on the RCUK-SUPI site and have been promoted by the Royal Geographical Society. Whilst this day had a dramatic impact, with overwhelmingly positive feedback, it also had longer term impacts through school and university partnership. One of the issues that was highlighted was that schools lacked the equipment to test for carbon concentration. Working with Jen O'Brien our researchers spent several weeks in the Geography laboratories designing very simple but scientifically rigorous experiment and kit that school teachers can replicate in the classroom.

Our second aim was to enhance learner understanding of the importance of research to society therefore enabling them to act as informed citizens. Our partner schools have reported that researchers have developed pupils' knowledge regarding possible university courses and research-led careers. For example, the use of PhD Demonstrators in the Culture Collective Project provided an aspirational role model for students who often do not recognise the wide range of humanities-based qualifications on offer for them outside of the typical school subjects. Feedback from a teacher at one of our partner schools demonstrates students' increase awareness of research: "The activity allowed students to see how research is making a massive difference to everyday life" and "that there is a path to working in research from where they are in their career right now." One of our link teachers noted that the project has "opened the minds of students to the importance and value of research in academic study particularly amongst more able students who are from a non-academic background."

Dissemination and communication

For impact on Dissemination and communication see Q4.

Embedding and sustaining the School-University Partnership Initiative

The SUPI coordination role has been embedded into the post of a Student Recruitment and Academic Enrichment Officer in the Widening Participation team at The University of Manchester. Alongside this post, non-staff budget has been committed to continue to deliver and develop our SUPI.

Each of our 3 Faculties now has actions and targets around school engagement and researcher development embedded within their operational priorities.

We plan to continue to deliver our SUPI researcher training annually advertised through our Staff Learning and Development Unit. We will also continue to offer funding to researchers attending the training to deliver a research-led activity in one of our network of Research Champion Schools. We are looking to involve further colleagues in the delivery of this training to make it more sustainable in future.

As noted in our Year 4 report, we plan to continue with a number of elements of the project, thus the impact of the SUPI funding is that it has allowed us to trial a range of activities and continue with the elements that have been successful and have had the most impact.

There is also evidence of further embedding of SUPI activity identified as part of the cultural changes highlighted in question 3b.

b) Please summarise any influence your SUPI project has had on your institution, its culture, or that of any other institutions, cultures and projects/initiatives.

The work of our SUPI project is now embedded in our Widening Participation team. Going forward this means research-led activity has become normalised as part of our school engagement work; where we can utilise researchers within this area of work we will do, as we have seen first-hand the impact this can have on school students as well as teachers. We will continue to report on the outcomes and impact of our research-led projects within our Widening Participation Annual Report.

Each of our 3 Faculties develops and works to a set of Operational Priorities around Social Responsibility. In 2014 when these plans were put in place we worked with staff to ensure targets were set for school engagement, and promote opportunities for staff to get involved with this work. Now, this has become 'business as usual' and school engagement is embedded within the Faculty structures.

Our cultural assets which form our Culture Collective Flagship Project (Manchester Museum, Whitworth Art Gallery, John Rylands Library) have recognised the benefits of training and employing researchers. They work as demonstrators and bring the exhibitions to life and inject academic content into school visits, which has had a positive impact on the students. Due to the success of the programme, Culture Collective sessions now form an important component of the University's cultural learning offer for secondary schools. Within the Museum being part of SUPI has successfully aided them to draw on the expertise of the PhD Demonstrators; with the development of new workshops on Ancient Trade, Roman Manchester and potential links for a future Geography workshop – Ancient Places: Globalisation.

Our Tomorrow's Citizens project led by our Humanitarianism and Conflict Response Institute (HCRI) has now embedded its Young Persons in Humanitarian Conference into its core work, with this forming part of the training programme for MA students and incorporated into the HCRI budget.

Teachers have told us that their involvement has made them more likely to undertake their own research as well as engage with research-led projects. One of our partner schools, St Ambrose Barlow RC High School, has had some of its teachers undertake small research projects, in collaboration with a researcher or partner organisation. The aims were to develop teachers as researchers; create a research culture across the school; improve teaching and learning; and provide quality CPD for staff. They found this very successful, and noted increased staff engagement; pupil motivation; and improved curriculum. We used this feedback to inform our research project funding for schools in year 4 of the project.

4: PUBLICATIONS AND PRODUCTS

a) Please list any publications that have resulted from your SUPI project

Teacher guide: In 2016 we produced a short booklet for teachers to introduce our research-led activities and act as a signpost for how to get involved:

<http://www.supi.manchester.ac.uk/media/services/supi/KD228-SUPI-A-Guide-for-Teachers---web-%283%29.pdf>

Research for All: we are working on an article for the January 2-18 edition of Research For All. Dr Jennifer O'Brien (Lecturer in Human Geography and SUPI Flagship Project Lead) is the main author of this work. She has used Research Assistants from the Manchester Institute for Education to undertake interviews in preparation for this article.

WP report: As an institution we produce an annual report on our Widening Participation work. Our SUPI sits firmly within this area, and as such in 2016 we included a case study on SUPI and also on our partnership with the Brilliant Club (pages 10 and 11 here:

<http://documents.manchester.ac.uk/display.aspx?DocID=4294>)

Videos: We have developed a number of videos throughout the project, which mainly cover the benefits from the point of view of teachers, researchers, and students. These are available on our website:

www.supi.manchester.ac.uk/

EPQ resources: We have developed teaching resources for teachers to use with their students undertaking the EPQ: <http://www.manchester.ac.uk/connect/teachers/students/post-16/extended-project/resources/>

Research Skills activity: Linking to our EPQ research skills workshops, we developed resources for teachers to deliver a session on research skills to a Key Stage 3 audience:

<http://www.supi.manchester.ac.uk/forteachers/ks3researchskills/>

Geography resources: Resources from our research-based workshop for A-Level Geography teachers are available open access on the RCUK-SUPI site and have been promoted by the Royal Geographical Society:

<http://www.supi.manchester.ac.uk/forteachers/2016-a-level-geography-resources/>

Drosophila resources: Our Manchester Fly Facility have engaged with our SUPI work and delivered activities with our partner schools. They matched PhD and undergraduate students with local schools, who developed biology sample lessons including *Drosophila* activities:

<https://droso4schools.wordpress.com/>

b) Please list any products e.g. artistic, creative or educational material outputs that have resulted from your SUPI project.

In addition to the above publications, we have created a number of other outputs:

HCRI Teacher Packs: One of our Flagship Projects, within our Humanitarian Conflict and Response Institute, has created teacher packs in support of teaching and learning on the history of humanitarianism. In addition, one of their PhD students is completing her dissertation on teaching humanitarian topics at secondary level.

Life Sciences Equipment Bank: Our Life Sciences Flagship Project has put together an equipment bank where teachers can borrow scientific equipment for use in schools, as well as a number of resources for teachers: <http://www.supi.manchester.ac.uk/forteachers/biologicalsciencesresourcesforteachers/>

Young Persons University website: A resource targeted at secondary and college students to give them insight into research taking place at the University of Manchester, through a blog, challenge activities and information: <http://www.ypu.manchester.ac.uk/>

SUPI website: We have developed a standalone website for the project which is the first point of information for teachers, as well as students, researchers, and other stakeholder groups: www.supi.manchester.ac.uk/

Researcher training: We have developed the programme and resources for this activity over the course of the project which we can draw upon for our activities and other related training opportunities.

5: AWARDS AND RECOGNITION

Please list any awards or recognition associated with your SUPI project

We nominated Matthew Moss High School for an outstanding School Award at the NEON (National Education Opportunities Network) awards in May 2016⁴. Although they didn't win the category, they were one of 3 schools highlighted at the award ceremony at Westminster.

We nominated a researcher for a Postgraduate Research Excellence Award for "Best Contribution to Society". She completed the SUPI training in 2014, and has since gone on to undertake number of different outreach and public engagement initiatives. She didn't win the overall award but was highly commended for this work and the committee wrote to her and her supervisor in recognition of this achievement.

Our Project Officer received an Outstanding Contribution award for the work undertaken on our SUPI. This was part of the internal Directorate for the Student Experience awards in February 2017.

Our Office for Social Responsibility has run an award scheme in 2016 and 2017, entitled Making A Difference. In 2017, two of our flagship projects – Geography@Manchester and Tomorrow's Citizens were nominated for their work and received a commendation from the awards.

Manchester Museum's Real Life Science programme, part of the Culture Collective flagship project, won the 2015 Lever Prize awarded by the North West Business Leadership Team. The Lever Prize is an annual award for world-class arts organisations in the North West.

6: COLLABORATIONS AND PARTNERSHIP

Please provide details of any significant collaborations and partnerships that have resulted from your SUPI project

In 2015 we held a pilot with The Brilliant Club, as we recognised the similarity between their aims and ours, both in terms of getting researchers into the classroom and increasing the number of pupils from under-represented groups that progress to research intensive universities.

In summer a small number of students attended launch and graduation trips as part of their Scholars Programme and worked with tutors from The University of Manchester. Since then, we have progressed to a full partnership with The Brilliant Club, and over 1000 students have been part of the programme during

⁴ <http://www.educationopportunities.co.uk/matthew-moss-high-school/>

2015 and 2016, with numbers increasing again in 2017. Through working in partnership with them we have been able to reach wider audience. It has also been an efficient use of funding and resource for us, as we have been able to increase our engagement without much additional staffing costs.

Through SUPI we have also developed links with other institutions. For instance we have consulted with Lancaster University when setting up our EPQ mentoring scheme; this was highly valuable so that we could learn from their pilot programme and benefit from their best practice.

Our Flagship Projects have also collaborated with external networks; for example our EPQ Mathematical Modelling project within School of Mathematics is linked in with the Further Maths Support Programme and our Culture Collective project spans all 3 of our cultural institutions collaborating together.

Our Tomorrow's Citizens Flagship Project was initially focused around a partnership between our Humanitarian & Conflict Response Institute (HCRI), Stockport Council and the Schools Linking Network (SLN). Through the Model UN⁵ programme students were provided with an opportunity to explore ways of dealing with controversial issues through debate.

Geography@Manchester has built closer links with the Manchester Geographical Society (who part funded the A-Level Workshop day) and the Royal Geographical Society (RGS). The Royal Geographical Society Ambassadors have supported some of the Geography workshops by lending their expertise and experience, particularly when working off site at school visits. The carbon sequestration kits were part funded by the School of Environment and Development's Social Responsibility funds.

Major outcomes of the project are the collaborations with schools, which have been far-ranging and which we hope to continue and develop. For example, following on from the SUPI Fastbleep Pharmacy project collaborations have now been established with (a) Loreto 6th Form College whereby some WP year 12 pupils attend a full day of 1st year Pharmacy classes in order to experience Higher Education (b) Manchester Grammar School for Boys where a group of students come in for a week to undertake some basic microbiology research.

7: FURTHER FUNDING

Please list all further funding that your SUPI project has leveraged across its lifetime

In 2016, the University of Manchester covered 80% of the salary costs of the SUPI project officer role. From 2017 the university will cover the costs of this role, which we estimate equates to around 40% of the time of one of our Student Recruitment and Widening Participation Officer posts.

From the 2016/2017 academic year the University has ring-fenced money within our Widening Participation budget. For the current academic year, we have a consumables budget of £15,000 to continue with research-led activities. Separately to this we have been allocated £28,762 from the WP budget for costs for subscription to The Brilliant Club partnership as well as the delivery a number of campus visits. This figure will increase for the 2017/18 academic year as the number students on the programme as well as the number of campus trips increases. Additionally we have spent over £1000 on our EPQ campus visits in 2016/17 from our WP budget.

⁵ <http://www.hcri.manchester.ac.uk/connect/collaborations/stockport-schools-model-un/>

Although some staff were directly funded from SUPI, many other staffing costs were not, such as the Flagship projects leads; staff in the Widening Participation team that assisted with events; and staff who supported the researcher training programme. Our Flagship Projects also contributed additional consumables costs for their projects.

To ensure the embedding of Culture Collective workshops at Manchester Museum, workshops were supported by school income. Workshop charges vary dependant on workshop length. Over the last academic year, Manchester Museum has spent an additional £1,045 on demonstrators for over 68 hours of school workshop time.

This is all in addition to the match funding contributed by The University of Manchester throughout the duration of the project.

8: SKILLS AND PEOPLE

a) Please list any skills related developments that have taken place as part of, or as a result of your SUPI project

Researchers that have taken part in our training have gone on to participate in other school initiatives, from delivering one off events within their academic department to becoming a tutor on The Brilliant Club or one of our Widening Participation Fellows. As noted in Q3a, 100% of researchers responding to our survey strongly agreed or agreed that the training gave them a greater understanding of how to engage with schools. 80% of them have gone on to do more public engagement or work with schools since the training; and all of these said they have utilised learning from the training in subsequent school/public engagement activities.

Through our projects we have aimed to develop independent research skills of students, for example through our support of students undertaking the Extended Project Qualification. Through various SUPI projects, pupils have learnt how to find reliable sources for their research, how to structure their research, how to analyse and present their findings and how to communicate them clearly and effectively.

Strong relationships have been built between teachers and university researchers through our SUPI, which means that when teachers are seeking expertise in a particular area of the curriculum, they are now confident to approach researchers for additional support. In some cases, these relationships have been ongoing, with researchers acting as mentors as well as running workshops, and at times being asked to deliver staff CPD. Teachers and pupils have benefitted from hearing the latest research, learning about what research entails and possible university and career choices. Teachers have also been able to make use of researchers' ideas in the classroom.

Across our various teacher CPD initiatives we have strived to upskill teachers on their awareness and knowledge of research and how to engage with it. For example, at our Biology and Chemistry STEM Conference Day, 79% 'strongly agreed' or 'agreed' that this event provided more ideas about how to engage with research at the University. We surveyed teachers who attended our Life Sciences Teacher Summer School 6 months following the event, and in 2015 92% said they were using what they learnt at the event with their pupils. This included bringing pupils to the Faculty Animal Research Day, ordering

drosophila flies to conduct the genetic practical and using the online Stem Cell research resources. Furthermore 4 teachers borrowed equipment from the University including the Gel-electrophoresis kit and drosophila batches and the invertebrate practical.

An additional benefit of the CPD events are the networking opportunities. From the Geography A-Level workshop teachers spoke about how much they appreciated talking to other teachers, especially from institutions that were different to their own. Many noted that they were the only Geography teacher in their school so really benefitted from talking to others.

An example of staff learning is within our Culture Collective project. Within the John Rylands Library we have employed a PhD student to lead on the delivery of English Language workshops. In addition to using her expert knowledge to enrich the content of the workshop for students, her expertise has also contributed to the development of the subject knowledge of library staff and will inform the delivery of workshops in future when the researcher is no longer available.

Colleagues in the Whitworth Art Gallery have noted the projects have provided them with opportunities to consider their collection in a fresh light, particularly with a focus on the relationship between the art and science. Working with a biologist allowed them to explore botany from a micro and macro perspective, which translated well to the Humanities as well. The Art of Botany session has provided opportunities to use the collection and Art Garden in the Whitworth Park as primary sources. They are now making use of microscopes in many other workshops too, not just to look at flowers, but fibres and drawings.

b) Please list any secondments placements and internships to or from other organisations associated with your SUPI project

In Summer 2014 we advertised for a Teach First Summer Project⁶. This was a two week placement during which a trainee teacher with Teach First came to the University to work with us. During this placement, she was tasked with developing a number of resources that were pitched appropriately to the intended Key Stage audience.

In 2016, two third year students⁷ at The University of Manchester undertook a one year placement working on the droso4schools project of the Manchester Fly Facility. During this project, they worked in our partner schools, Trinity Church of England High School and Loreto Sixth Form College, with the aim of developing curriculum-relevant biology lessons using the fruit fly *Drosophila* as a powerful teaching tool.

9: OTHER

Please state here any other information associated with your SUPI project that you would like RCUK to know as part of final reporting.

⁶ <https://www.teachfirst.org.uk/support-us/business-support/employee-engagement/support-our-teachers/summer-projects>

⁷ <https://droso4schools.wordpress.com/2016/10/18/1st-impressions/>