**Access to HE STEM subjects & the Third Sector**

**Introduction**

The link between low family income and poor educational attainment is greater in the UK than in almost any other developed country. Just 16% of pupils who are eligible for free school meals progress to university, compared to 96% of those educated in fee-paying schools. This highlights the need to target pupils from lower socio-economic groups to raise their aspirations to pursue a degree, particularly in STEM subjects. Teach First partners with schools in areas of high poverty. We are concerned that without a focus on access to STEM subjects in these schools, pupils will not pursue STEM subject for Further and Higher Education.

We know that to create societal and sustainable change, we need to have great teachers in the classroom to address issues concerning access such as low attainment and lack of aspirations. However, there is a large, unmet demand for STEM teachers, particularly in schools in areas of high poverty. We are concerned that if there is a further decline in STEM teachers, in the long term, there will be a decline in the numbers of pupils taking up STEM subjects in both Further and Higher Education. Therefore, a part of Teach First’s project will also focus on the employability of undergraduate and postgraduate STEM volunteers, and provide relevant experience should they wish to enter the teaching profession. Teach First aims to recruit 1250 graduates for the 2013 cohort.

**Our Objectives and Target Group**

* To provide an opportunity to Year 11 pupils **who have not yet chosen their A Level subjects** to experience STEM subjects at university level; encourage them to choose science based A Levels; and aspire to study sciences at King’s College London. We hope that this will help to foster a healthy pipeline of potential applicants to the College’s K+ scheme or UCAS applications.
* To develop the skills of science undergraduates at King’s College London and provide an opportunity to gain insight into working with pupils/schools/communicating their subject knowledge effectively.

**The Stages of the Development of the Project**

**Our Outreach Model and Methodologies**

**Elements for Consideration**

1. Outline of the outreach day and benefit for pupils
2. Student volunteers – the commitment required and training provided for volunteers
3. Commitment from academic staff and alumni
4. Costs and logistics
5. Targeting schools and pupils
6. **Outline of the Outreach Day and Benefit for Pupils:**

**The Outreach Day:** The day will enable pupils who are interested in science to think about the specific degree disciplines that they could pursue at King’s College London. This would help them to understand the bigger picture and to really think about which A Levels they would need to choose (i.e. Physics may be required for some disciplines but not for others).

**Pre-event:** Prior to the event, pupils will be asked to research one interesting fact about science (we can think about specifics when activities are finalised) and one question they have about university or studying science at university. They will bring these to the day which will be shared at the event – perhaps posted on a wall or shared verbally during a session/Q&A.

**Event format:**

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| **Time** | **Activity** | **Objective** |
| **10.30-11.00am** | Speed-dating/20 questions with King’s Alumni: Students to find out what jobs King’s Alumni are currently doing and what degrees they studied. | For pupils to be inspired and to have an understanding of where science degrees could take them. |
| **11.00 – 11.45am** | Zone 1: Series of short science activities related to X (3 activities, 15 minutes per activity). | Pupils to explore what this aspect of science entails and the different disciplines within this faculty. |
| **11.45 – 12.30pm** | Zone 2: Series of short science activities related to Y (3 activities, 15 minutes per activity). | Pupils to explore what this aspect of science entails and the different disciplines within this faculty. |
| **12.30 – 1.30pm** | Lunch: Pupils to have lunch with Alumni and Student WP Ambassadors. | An informal opportunity for pupils to ask questions about university life and different degree disciplines. |
| **1.30 – 2.15pm** | Zone 3: Series of short science activities related to Z (3 activities, 15 minutes per activity). | Pupils to explore what this aspect of science entails and the different disciplines within this faculty. |
| **2.15 - 3pm** | Q&A panel with current undergraduates: a panel discussion structured around the theme of progression routes. Topics to include STEM degree disciplines, entry requirements and career opportunities.  Pupils to evaluate the day. | To ensure that pupils have a sound understanding of how their A Level choices might affect their application to subjects at university. |

Activities will be short and interactive which showcases exciting, fun elements to studying that subject. For example, an activity could include an easy/basic science experiment or magic tricks that utilises mathematical skills.

**Post-event:** After the event, pupils and teachers will be asked to evaluate the day to enable Teach First and King’s College London to measure the impact on pupils. We will aim to compare the level of interest in university/STEM subjects that students held before and after the event.

1. **Student Volunteers:**

* Recruitment and training for student volunteers: King’s College London’s Widening Participation and Outreach department will identify suitable STEM WP Student Ambassadors who are able to commit to the training sessions and volunteering roles. They will receive training from Teach First on presentation skills, interacting with pupils and planning sessions/lessons. In addition to this, we will ask the volunteers to observe a lesson in the relevant subject at a local school to develop an understanding of how best to pitch a session to a year 11 group.
* Commitment from student volunteers: We are aware of the demand on students’ time – we envisage that their involvement in this volunteering opportunity will serve to enhance their skills and experience whilst at university. In light of this, we will request that volunteers attend two short training sessions and commit to the outreach day. The students will be responsible for planning and delivering short activities, related to their degree discipline, to pupils. We will also survey volunteers pre and post event to measure how they feel that the training/volunteering experience has enhanced their confidence and employability.

1. **Involvement from Academic Staff and Alumni:**

We would like to seek the expertise of academic staff to identify key activities that student volunteers can deliver to year 11 pupils. These suggestions will culminate in the creation of a science toolkit that could be used at other outreach events across the university. This would also be a great way to engage with alumni by asking them to attend a session in the morning to inspire pupils about where a degree in science could lead them.

1. **Cost and Logistics:**

The cost and logistics are variable. The focus of this project is to create a *model* for STEM outreach. Therefore, the below ideas are vague and are suggested activities if this model was implemented.

* The slightly later start of 10.30am will enable schools in London to travel free of charge to the venue (Transport for London provides free travel to school parties between 9.30am to 4.30pm).
* Training will be provided free of charge by Teach First – either on campus or at the Teach First offices. Observations in schools would be organised by Teach First at a school local to the College.
* Cost of consumables/refreshments would be covered by Teach First/WP budget.
* The small group of student volunteers will be paid through Kings College’s WP budget.

1. **Targeting Schools and Pupils:**

* Teach First currently works with 358 primary and secondary schools across England, which are located in areas of high poverty. We would look to target the schools that Teach First operates in within the boroughs local to King’s College by working with staff and Teach First participants at the school.
* To select pupils, we would ask teachers to select pupils who have the **potential** or are **likely to attain** the entry requirements of the institution at GCSE/A Level. These pupils may not necessarily already have a keen interest in pursuing STEM subjects at A Level as this event is aimed at encouraging pupils to consider pursuing STEM related A Levels and degree subjects.

**How this model could be adapted by other organisations?**

This model could be developed at any institution with a student ambassador/volunteering body and willing academics. Teach First is happy to offer support with training by providing skills sessions for student volunteers. The Graduate Recruitment team at Teach First currently works closely with 66 universities in the UK.

Key resources such as risk assessment forms, evaluation forms, letters to schools/pupils, and activity plans/resources will be made available after the pilot event at King’s College London in Autumn 2012. Teach First and King’s College London would be more than happy to share these resources with other institutions.

The model for this outreach day has been designed for 15-20 pupils but this could be up-scaled depending on the resources available at the institution (academics/number of volunteers).

Please be aware that the logistics of the event would need to be amended to suit the geographical location and budget of the university.

