

Summary of DISC workshops in year one

Science Communication Barriers

1. Lack of market intelligence

The science communication community does not know where to start. They do not know BME audiences and as such can make assumptions about groups based on little evidence. Market intelligence is needed on:

- publicity avenues
- suitable venues
- gender issues
- suitable timings (time of day, time of year)
- making things relevant to the diversity of ethnic groups

2. Current organisational culture and lack of strategic approach

Organisational culture was identified as a key barrier to engaging with BME groups due to lack of staff skills and a clear understanding of why we need to communicate to BME groups.

- staff issues
 - not enough staff, or no staff, with the right skills in this area (staff generally white middle class)
 - staff do not having right contacts
 - organisation does not have an infrastructure to support (enough) outreach workers
 - organisations so not have an official policy to address inclusion issues or there is limited internal communication about this
- clear strategies
 - organisation afraid of losing its current audience
 - not actively dealing with different expectations and meeting the needs of community groups
 - solutions will not happen overnight - time is needed to build relationships and partnerships with BME groups for trust to develop
 - lack of strategic planning

3. Current representation of science

The portrayal of science is limited by way of:

- finding appropriate role models
- lack of diversity of science presented, not just physics or chemistry etc
- Eurocentric view of science is only presented. There is a lack of presentation in museums of the (historical and contemporary) scientific contributions of black scientists
- images of science in media

4. Restrictive formats of engagement

The barriers are knowing the right kind of engagement level and being able to commit to follow up work (this relates to organisational strategy). It is easier to reach school students with fun activities but it is more difficult to connect teachers, parents and students without alienating adults and providing meaningful experiences. Furthermore there are language barriers.

5. Lack of resources

The lack of resources applied to both science communication organisations and BME groups.

- science communication organisations
 - restrictive funding options and opportunities
 - some organisations have to charge which can provide a financial barrier
- BME groups sometimes fold during course of a project, due to lack of ongoing funding

6. Lack of willing scientists

- Some scientists ask 'what is in it for me?'

7. Lack of awareness of science occurring in developing nations

BME barriers

1. Current organisational culture and limited strategic approaches

Barriers were found with both BME groups and the science communication community in relation to organisational culture.

- BME community
 - A lack of consistency and coordination amongst BME groups and between science communication and BME. There are no standard dissemination mechanisms to communicate between the groups therefore no knowledge of who does what
 - BMEs tend to have a short term vision of science and technology and have a lack of ownership of science and these barriers need addressing to establish a need to participate
 - lack of parents speaking up if unhappy with child's education (e.g. if teacher not delivering in class room)
 - not knowing how to involve all players: e.g. teachers/students/parents
- science communication community
 - lack of past experience with science communication organisations – who need to show and prove their seriousness and genuine commitment to involve BME groups, and follow through on promises
 - the need to overcome racism in power structures

2. Current representation of science

Representation includes the image of science and how it is made relevant to BME communities. Many BME groups do not value science.

- relevance
 - what is the relevance of science to their lives? what drives scientists?
 - culturally appropriate examples are needed e.g. need to look at how BME cultures have developed health remedies, chemistry of African hair products etc
 - lack of identification is further exacerbated by kids being encouraged to pursue things they are good at such as sport and music
 - lack of materials in curriculum to make science relevant
 - lack of recognition of science's relation to art and design
- images

- lack of empowering images and messages about black contribution to science
- lack of role models
- mentality of decision makers and opinions formers restricting true representation of black contributions
- majority of images are white scientists and (for example in a museum) blacks depicted as just slaves in cotton trade
- science seen as elite and scientific language used reinforces exclusivity
- diversity
 - limited portrayal of science in terms of careers options that involve science (e.g. to study sports physiology you need science)

3. Restrictive formats of engagement

The barriers surrounding formats of programmes included development time, suitability, location and awareness.

- lack of ownership of processes for BME groups – relationships and partnerships need to be built over a period of time to enable trust to be developed
- lack of initiatives and activities for BME groups that introduce science in new and different ways
- lack of publicity and communication about what activities are currently taking place
- locations currently used to communicate science (within scientific institutions) can intimidate some BME communities

4. Lack of resources

Resources relate to funding, people, equipment and training

- funding
 - time and energy spent on filling out applications for funding that may not be successful
 - not being able to meet the costs of science centres
 - limited money out there for funding BME's
 - lack of knowledge of what funding is available
- lack of staff
- lack of equipment and training opportunities

5. lack of confidence and low aspirations

This barrier is similar to organisational culture except that it is about individuals lack of confidence.

- teachers have low expectations of BME students
- parents and peers don't value science particularly science careers. There are limited horizons of what science can offer (need to show that science offers careers more than just being a doctor)
- parents lack confidence in regards to their own knowledge of science to assist with and share activities with their children

Overcoming the barriers and the role of DISC

Based on the listed barriers above, identified in the workshops, four points were examined further to investigate how we could remove the barriers and overcome challenges. Areas where DISC could play a role were highlighted and recommendations proposed.

- a. Organisational culture and strategic approaches
- b. Representation of science
- c. Market intelligence
- d. Appropriate follow up

a. Organisational culture and strategic approaches

- Staff development package for BME groups and science communicators that addresses:
 - staff training
 - how to diversify staff (recruitment)
 - how to motivate scientists
 - finding funding
- need for greater number of outreach workers
- increasing priority of communication with BME

DISC: to develop the staff development package, based on outcomes of year one, that will form the Year 2 strategy of DISC. Science communicators and BME groups will participant in joint development workshops. It is envisaged that the staff development package will take two days, as opposed to originally planned one day. The package will include a list of BME media to advertise jobs.

b. Representations of science

Generic strategies (such as increasing number of BME role models within Science and Engineering Ambassadors, SEAs) have not worked and a specific targeted approach is needed.

- Work to be commissioned to find x number of BME role models. Work to be carried out by BME group, in order to build capacity in this area.
- Work to be commissioned to identify and produce materials that detail black contributions to science, both contemporary and historical. This will be a web-based resource that continues to evolve. Work to be carried out by BME group, in order to build capacity in this area.
- identify publishers of science education materials and invite them to a seminar on black contributions to science,
- Raise the profile of BME scientists by working with the Science Media Centre
- Develop a strategy with the BA on improving reward and recognition for scientists involved in communicating, particular with BME communities

DISC: to work with Science Media Centre to identify BME scientists who can talk to the media and encourage the media to use them

DISC: link in with ASE and Maths Society networks to promote materials that explore black contributions

DISC: to produce a list of exciting careers e.g. sports science (finding out what careers young people are interested in and relating science to them as well as producing a list of careers we think)

c. Market intelligence

- Lack of core funding and relevant funding to collate this information. Chicken and egg syndrome, need the information to do the project, but need the project to get the information
- commercial organisations are better at reaching diverse audiences
- lack of sharing of information and good practice

DISC: to commission and produce appropriate market intelligence and distribute through the DISC website

d. Appropriate follow up

- Always plan an 'exit strategy' for your attendees by providing them with details on where else they can go for more activities or more information. Build on partnerships regionally and nationally, signpost attendees to these at the end of an event.
- Share good practice within and outside of scicomm, learn from the arts
- Show breadth of different careers that involve science

DISC – newsletter to communicate strategy for DISC