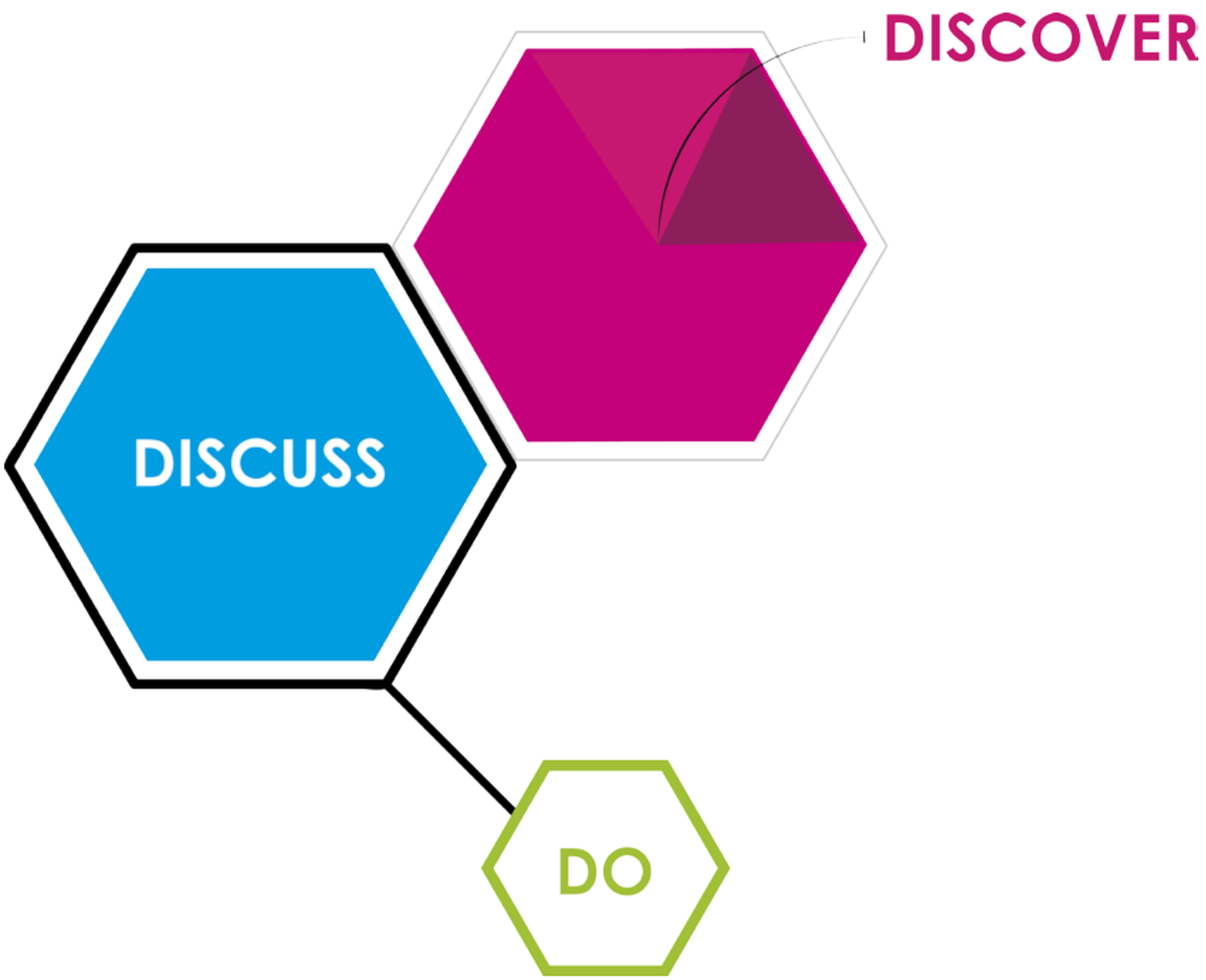
Collected Thoughts 2014:
Essays inspired by the annual Science Communication Conference



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The Science Communication Conference is organised by the British Science Association's Science in Society team in partnership with the Wellcome Trust.

The Science in Society team manages an ever-changing programme including the long-running Media Fellowships scheme, delivering community-based events and policy analysis for Sciencewise. The team delivers a wide range of activities for those involved with public engagement including training for researchers, engineers and clinicians to give them the skills and confidence to engage the public with their work.

The Science in Society team consists of Alice Taylor-Gee, Mónica Lobo and Toby Shannon and we'd like to thank all the delegates and speakers that attended the 2014 Conference.

This collection of essays represents a small selection of the topics covered at the 2014 Conference and we're delighted to showcase them here.

If you'd like to contact any of the authors of this book, please email sis@britishscienceassociation.org and we'll be happy to put you in touch.

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The people, the people, the people: engaging under-served audiences

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Know (and respect) your audience

It was the picture that defined a royal trip down under: the demure and stylish Catherine, Duchess of Cambridge, blithely shaking hands with a Maori warrior dressed only in a thong and liberal body art (ta moko) [1]. The striking image is truly memorable, but it also represents a central principle in science communication – not everybody is like you.

If we are to engage all groups of people in our society, it means we sometimes need to think about who we are, in order to understand who we may not be reaching. Working with under-served and non-traditional audiences requires shifting your viewpoint in order to see the world from their perspective. It requires deep respect for your audience and is perfectly summarised by a Maori proverb (whakatauki):

He aha te mea nui o te ao?
What is the most important thing in the world?

He tangata, he tangata, he tangata.
It is the people, it is the people, it is the people.

Truth as a shared vision

Changing our perspective to put the audience first also means shifting how we enable engagement with science. Established science usually follows a positivist paradigm, meaning that knowledge is deemed to be created through ongoing systematic enquiry[2]. This philosophy differs from emotional and belief-based cultures and social groups, where knowledge is tacit and implicit, shared between people, like Kaupapa Maori[3].

This can generate conflict when communicating science. If science is viewed as coming from the establishment, it can be experienced as leaving communities voiceless, marginalised and even stupid. Yet really, any society's 'truth' is relative – meaning needs to be co-constructed through our joint experience, better known as 'social constructionism'[4]. This approach highlights that different groups have their own knowledge, systems and values. We can't assert that others' ways of thinking are wrong; simply that we need to agree what is appropriate together.

Engaging with disadvantaged young people

Taking this approach means firstly you need to truly understand the people you want to engage with. The Wellcome Trust's Review of Informal Science Learning[5] identified three key under-served audiences with respect to science engagement:

1. under 5s
2. adults, and
3. disadvantaged groups.

The latter group, in particular, stood out to the Trust as a group where we, as a community, can do better and this is something the Trust is keen to support.

To better understand some of the barriers in engaging with disadvantaged young people, the Trust commissioned research comprising a literature review[6] and original research[7] to examine the challenges and opportunities posed by engaging with this audience. While much is known about the outcomes for young people from lower socioeconomic status (SES) backgrounds, less is known about what they do in their free time. This is important, as at the peak of a young person's education, around 80 per cent of their time is spent outside of the school environment[8], presenting a significant opportunity for engagement.

Research findings

The research highlighted that young people from low SES backgrounds are not a single homogeneous whole; rather there is a diversity of backgrounds, engagement with education, and ambition. An engagement activity that aims to engage with all types of low SES young people will inevitably fall short for most, if not all, of its intended audiences.

It is therefore critical to work with your audience in both the development and undertaking of the project to help ensure buy-in and enthusiasm from participants. The research identified ten key recommendations for engagement practitioners, shown in Figure 1, as well as two key recommendations for funders:

1. develop funding processes that allow activities to be young person-led
2. create an online central resource system for sharing informal science knowledge and tools.

Fundamentally, a close working approach and mindfulness of the local circumstances should be a seam that runs throughout any engagement project, for example:

- using a local champion or role model – young people are, perhaps surprisingly, not overtly influenced by celebrities
- do the project within the community, not at your organisation – for many disadvantaged young people, travelling much beyond their local area is a significant barrier, potentially financially but also emotionally; if you want people to fully engage, they should feel comfortable and this is more likely to be achieved in familiar surroundings.

Developing an on-going relationship with an audience can be one of the most productive ways of engaging with them. Rather than a one-off intervention (even one that lasts for a week or two), regular, expected interactions build trust and increases the impact on young people.

From a science engagement perspective, it is particularly interesting to note that many young people are put off by 'science' – the word itself often has negative connotations to uninspiring or difficult lessons at school. However, young people greatly enjoy doing experiments and practical activities. In addition, particular aspects of science, such as space or dinosaurs, do not seem to have these connotations. As such, developing activities that are intrinsically but not explicitly scientific could help encourage more people to get involved.

Know your objectives and your audience	Engage a champion and be mindful of family audience
Ensure the activity is young person-led	Ensure the activity is relevant and pitched at the right level
Invest in long-term relationships for maximum impact	Make it practical and interactive
Facilitate socialising with friends	Be financially and geographically accessible
Celebrate and reward success	Communicate carefully and through trusted channels

Figure 1: Ten recommendations for practitioners to consider when seeking to engage with low SES young people.

Communication with purpose (kaupapa)

These principles rang true for the 'Students as Researchers' project in New Zealand, which aimed to engage Maori in a neuroscience festival[9]. Maori are the indigenous people of Aotearoa (NZ) but through years of social injustice, they're also one of the most deprived groups, enduring stark health inequalities and lower life expectancy[10]. Issues of Western power along with cultural barriers, result in Maori being the group least likely to attend or engage with mainstream communication efforts[11]: only 2% at the science festival despite comprising 17% of the population[12].

Working with community champions, the project leaders co-developed a schools programme, empowering pupils as researchers to design, collect and analyse psychological experiments at the festival. The teenagers were 'agents of change' – placed in positions of respect and trust they were able to connect with their community and present health research in appropriate language and cultural contexts[13].

So what can we learn from this here in the UK? Be it differences in age, class, language, gender or race, we need to remember that our 'truth' is not necessarily perceived as such by someone else. We hope that these recommendations will be of use to the community in developing innovative new engagement activities that reach disadvantaged young people. Science communicators need to listen before speaking; working towards shared visions and goals with under-served audiences will ultimately create a more inclusive science engagement.

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