



Figure 1 Some of the range of scientists featured in *A scientist just like me*

**Alison Trew, Kulvinder Johal and Alison Eley describe the PSTT's new resource, which introduces children to a diverse range of scientists and people who work in science-related jobs**

# A SCIENTIST just like me

## Introducing scientists to primary children

It is increasingly recognised that efforts to interest children in science, technology, engineering and maths (STEM) need to begin at primary school (Archer *et al.*, 2013). Some primary schools invite STEM Ambassadors (see *Weblinks*) or other science visitors into school, hoping that, through meeting a scientist, children will become more engaged, see that there is a purpose to studying science, understand scientific processes and possibly see the potential for a future career. However, it is not always possible to find someone who is able to come, or who can link their research in a meaningful way to the primary curriculum. It is also worth

mentioning that inviting a visitor who is not representative of the demographic of pupils to run a one-off session that does not relate to the primary curriculum is very unlikely to develop children's science capital (Trew, Shallcross and Redhead, 2020).

## Diversity in science research

According to a recent article in *Nature*, in the United States, while 13% of the population is black, black researchers comprise just 6% of faculty positions in STEM subjects and there are calls for principal investigators to actively engage in anti-racism work (Forrester, 2020). In the UK, black and minority ethnic students are less likely to progress to scientific jobs after graduating than white students

and, although women are not under-represented in the overall scientific workforce, they are highly under-represented in the most senior roles (Royal Society, 2014). In 2018–2019, another report conducted on behalf of the Royal Society found that there appears to be a drop-off of black and mixed-ethnicity STEM postgraduate students entering STEM academic employment at universities (Joice and Tetlow, 2020).

## A scientist just like me

The Primary Science Teaching Trust (PSTT, <https://pstt.org.uk>) has created a free resource designed to raise awareness of diversity in science-related jobs and to provide illustrated examples of a wide range of science-

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**Figure 2** Example slides from *A scientist just like me* featuring Dr Candy Jiang, an analytical chemist

based careers. *A scientist just like me* consists of a series of short slideshows, each one 'telling the story' of a particular scientist or person working in a science-related job (Figures 1 and 2). The people included share details of their work and their everyday lives, making their stories relatable to children. They describe their job, what they like about it, and the challenges they have faced on their career journeys.

The slideshows also focus on the skills, attitudes and habits needed to carry out the work, rather than on any expert knowledge, which may be daunting or seem out of reach to children. At the end of each slideshow, the children are encouraged to imagine and discuss what it might be like to do that job.

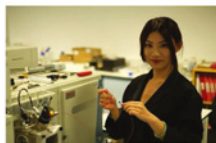
The whole set of slideshows includes people from a variety of ethnic backgrounds, and from many different fields of science. Using the search facility on the PSTT website, a slideshow can be selected on the basis of the job type, gender, ethnic heritage, disability and whether they are STEM Ambassadors.

The slideshows are intended to be used as discussion prompts, guided by a teacher. They can be used in different ways and for different purposes, for example:

- to show children an example of someone from a particular ethnic background working in a science job;
- to challenge gender stereotypes about science job;
- as part of a science topic that relates to the work of the scientist;
- as stand-alone 15-minute discussion activities;
- with a small group or the whole class;
- in a whole-school assembly.

## A scientist just like me

### Hi there! I am Candy Jiang – An analytical chemist



#### Where do I work?

I work in the chemistry department at the University of Bristol.

#### What did I like doing when I was at school?

I loved many things including creative writing and participating in science projects. My passion for promoting a sustainable environment motivated me to do a chemistry degree.

#### What do I like doing in my spare time?

I volunteer for a women's charity in Bristol, helping people with issues like mental health and domestic violence. I also enjoy long walks with my dogs, playing games and reading.

## A scientist just like me

### What do I do as an analytical chemist?



My research is about natural products. I study what makes up chemicals like antibiotics or proteins, and I try to identify other related substances. Analytical chemists work in areas such as drug discovery, food safety, and environmental monitoring.

### How does what I do make the world a better place?

The antibiotic that I am studying has been shown to kill breast cancer cells. Other chemicals in my research help to prevent common heart diseases and dementia. By understanding more about these, we contribute to better healthcare for everyone.

## A scientist just like me

### What I like about my job

The best thing about my job is working with a team. Being surrounded by other inspiring scientists, we often come up with ideas and design new experiments together. There is a lot of problem solving involved and working as a group helps with this.



### Challenges I have faced

Where I come from, the assumption and culture is that girls should be expected to achieve less than boys. By working hard towards my goal, I overcame a lot of stereotypes and showed that you could achieve anything as long as you work for it.



## A scientist just like me

If you want to be an analytical chemist, you need:

- ✿ to **be curious**. It all starts with asking questions
- ✿ to **be interested in nature**. Surprisingly, a lot of the drugs discovered originate from nature
- ✿ to **love to read**. Reading is very important so you learn about what others have done so far
- ✿ to **care about the world**. Many of the things we do are driven by making the world a better place



Where appropriate, the final slide includes suggestions about other linked resources that teachers might find useful.

The PSTT also produces '*I bet you didn't know...*' articles, which describe cutting-edge science research carried out across the world (see *Weblinks*). Where possible, the accompanying teacher guide includes an image and a little background about each scientist (Trew *et al.*, 2021). It will perhaps not be surprising that the majority of the *I bet you didn't know...* articles, selected based on their scientific merit and having an appropriate link to the primary curriculum rather than for gender balance or a broad ethnic representation, are inspired by research

led mainly by white male scientists. At the time of writing, PSTT has published 33 *I bet you didn't know...* articles. Of these, 27 of the principal investigators were white, five were Asian and one was Middle-Eastern; none was black. Also, 22 were male, 11 were female (one female working in a team with four males) and one unknown. (The teacher guides may also include details of co-workers who could be a different gender or ethnicity to the principal investigator.)

### Summary

Children's attitudes towards science are formed at primary school. Many children do not think that science is for them and this may be because

there are no role models that they can identify with. Showing children the faces of contemporary scientists in *A scientist just like me* could challenge some commonly held stereotypes, for example that science is done by clever white men. Sharing pictures and the stories of a diverse range of scientists could be inspirational for children, helping them to see that there is a place for everyone in the world of science and that they could be 'a scientist just like them'.

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### Weblinks

*A scientist just like me* slide shows freely downloadable from: <https://pstt.org.uk/resources/curriculum-materials/a-scientist-just-me>

*I bet you didn't know...* articles and teacher guides available from: <https://pstt.org.uk/resources/curriculum-materials/cutting-edge-science-primary-schools>

STEM Ambassadors: [www.stem.org.uk/stem-ambassadors](http://www.stem.org.uk/stem-ambassadors)

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