



 INTRODUCTION

It would be logical to assume that teachers could get more ideas and extra assistance with their science lessons if they buddied-up with some practising scientists. A good way to get some REAL science in the classroom. So how easy it is to do this? This section will give you a few schemes, pointers and ideas to help you join forces with the scientific community...





The [Teacher Scientist Network](#) established in 1994, and regarded nationally as a beacon of best practice in this area, matches up scientific staff from the Norwich Research Park with science teachers across Norfolk area (and even into Suffolk).

This unique collaboration allows scientists to interact with teachers and children, to get real science into the classroom, and to get a chance to learn more about what science topics are taught in schools.

As an added bonus, they get to disprove the 'stereotyped theory' that all scientists are old, white-haired eccentrics.

The network get together each year at their October Annual Meeting, a chance for teacher and scientist to meet socially and with others in the network to share ideas and experiences.

This vibrant evening includes an entertaining science talk and a giveaway of surplus resources.

Scientists can talk directly to the students about what it's like to be a scientist, help the teacher develop new investigations, and drop the topic of Real World Science into the average classroom.

Talking about their actual research always goes down well, and it not only shows students how science is really valuable, but also offers the scientist some new perspectives including getting the opportunity to go away thinking, "Hmm, I'm not doing a bad job after all!"

The Teacher Scientist Network, based at the John Innes Centre (JIC), Norwich is funded by the Gatsby Charitable Foundation.

Coordinator Dr Phil Smith, himself a partnered scientist with a teacher in Essex, reveals the key to the success of TSN, "we truly believe in responding to what our teachers ask for."



Find out more about [Dr Mimi Tanimoto](#), a student who did a research placement at JIC, a world leader in plant and microbial sciences, by looking at the first Real Science section on The Nuffield Bursary Scheme.

Teachers getting in on the act!

Why should students be the only ones to get researching?

The TSN also offers mini-grants to allow teachers to develop classroom ideas and activities based on topics they think need more attention, or could do with being brought to life. With the help of their partnered scientist...

Dr Charles Hill used to be Head of Biology at Wymondham College, Norfolk and was a TSN-partnered teacher for ten years – one of the originals.

He was awarded a [Robinson College/SAPS Schoolteacher Fellowship](#) which allowed him to work for a term at Cambridge in the plant science department.

Charles wanted to continue this work one day a week, so he decided to approach Dr Wendy Harwood, his TSN-partnered scientist.



He completed a project in extracting DNA from plants, and has developed other molecular biology protocols for schools at the John Innes Centre with advice from staff there.

For details of Dr Hill's work on using PCR in schools to identify dwarf and tall Arabidopsis plants, have a look at: <http://www.embo.org/scisoc/tw03Hill.pdf>. PCR stands for Polymerase Chain Reaction which is a molecular biology technique used to replicate a specific piece of DNA.

Dr Hill has also used these practicals in BBSRC-funded and TSN-supported [National Science Week](#) events for his own pupils and those from other schools.



Dr. Phil Smith says, *"The scientist working in partnership with a teacher becomes a normal person, someone willing to talk to the pupils, work with them and help design their investigations and make the science REAL. Equally, for the teacher too, there are tremendous professional development opportunities."*

Various schemes can help you get a real scientist into the classroom:

[SETNET's Science and Engineering Ambassadors \(SEAs\):](#)

SETNET is a UK charity aiming to make sure all young people get some really good STEM (science, technology, engineering and mathematics) experiences. They run the Science and Engineering Ambassador scheme to promote STEM in schools by recruiting vetted volunteers from academia, industry and all sorts of STEM companies to be role models in the classroom, and they offer their thoughts on science and science careers. SEAs is funded by the Department for Trade and Industry and is supported by the Department for Education and Skills. So, why not invite a scientist, technologist, engineer into your classroom to tell all the class about what it's like to be a scientist and what they do!



[Undergraduate Ambassadors Scheme \(UAS\):](#)

This scheme enables STEM undergraduates to gain credit towards their degree by working in local schools. Undergraduates gain an insight into the teaching profession and transferable skills, and schools gain young, enthusiastic role models who can show school students that you can have fun doing science at University.



Researchers in Residence

Researchers in Residence is funded by Research Councils UK and the Wellcome Trust, and is now managed by the University of Edinburgh.

The scheme encourages all PhD students and postdoctoral researchers in the field of STEM to spend time in a secondary school. This gives students another chance to chat directly to positive role models, as well as learn a bit more about current research.

Researchers also love the chance to work with teachers to develop more activities that students can do in the classroom.

If you'd like to find out more about the scheme contact info@rcuk.ac.uk, or go to the Researchers in Residence Website: <http://www.rinr.ac.uk>

Researchers in Residence will be evolving to integrate its activities with other established schemes for school science and engineering enrichment. The main candidates will be our friend the BA CREST awards and the Science and Engineering Ambassadors scheme (SEAs).

School Teachers who are Research Fellows too!

Dr. Mo Afzal knows what it means to do Real Science, and the importance of getting students interested when they're young. He is Head of Science at Warwick School but is also a Research Fellow at Warwick University.

Mo runs research projects to give his chemistry students a real experience of lab work.

One example includes discovering novel ways to make aspirin so that it's cheaper to produce for third world countries.

Gatsby Teacher Fellowships

As mentioned earlier, **Anne Sweeney**, a teacher at Herries School, is a Gatsby Teacher Fellow as well as a Royal Society Partnership Grant awardee.



Twelve fellowships are offered in one academic year, offered by the Gatsby Technical Education Projects (GTEP). Up to £3,000 is on offer to enable teachers to be creative, inspiring and motivating and develop novel methods of teaching their subject (either mathematics, science or design and technology).

This can even be in the form of developing new project materials and experiments. Fellows also have the chance to network with their fellow Fellows, and enjoy mentoring by wiser souls and buddying up for extra support and advice.

There's more...

Information on the **Royal Society Partnership Grants** is also featured in this Real Science collection.



LINKS

The Teacher Scientist Network

<http://www.tsn.org.uk>

Science Learning Centres

<http://www.sciencelearningcentres.org.uk>

SETNET's Science and Engineering Ambassadors (SEAs):

<http://www.setnet.org.uk/cgi-bin/wms.pl/29>

Undergraduate Ambassadors Scheme (UAS):

<http://www.uas.ac.uk/>

Researchers In Residence (RinR)

<http://www.rinr.ac.uk>

Gatsby Teacher Fellowships:

<http://www.gtf.org.uk/>

Royal Society Partnership Grants

<http://www.royalsoc.ac.uk/page.asp?id=1948>