

Chair of the Association 2019/20

ASE is in a period of change, so it's a particularly exciting time to be Chair of the Association. As we say a fond goodbye to our departing CEO, Shaun Reason, it is time to wholeheartedly welcome Hannah Russell to our community. As part of the Chair Trio in 2018/19, I have seen the underpinning strengths of ASE as the leading science education organisation: the Education Group, which has grown in confidence and influence; the many committees and specialist groups that provide expertise and advice to ASE and its members; the staff at Headquarters who keep the whole organisation functioning and, most of all, the membership, who are the lifeblood of ASE. I am also honoured to be working with Professor Sir John Holman as President.

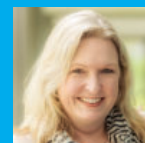
I am a biochemist/pharmacologist by training, with a previous career in the pharmaceutical industry and later as a secondary science teacher. I moved into management of professional development with the University of Southampton-led Science Learning Centre and continue to lead the Mathematics and Science Learning Centre (www.southampton.ac.uk/mslc), which delivers a wide range of local and regional CPD projects and programmes.

My focus for the coming year (in addition to supporting new ideas) is on regional engagement and membership. Many subject associations are experiencing a reduction in membership, which might seem understandable in the context of social media and online resources.

My response is that, in addition to the tangible benefits (see www.ase.org.uk/join), it is the intangibles – networking, influence, opportunities to lead CPD or become an author, which members benefit from when they actively participate in ASE. This reflects the #wearetheASE message developed by the Immediate-past Chair, Mary Whitehouse. Of course, ASE will continue to support the whole science education community through its advocacy and services.

I would encourage all those interested in science education to get involved with ASE this year – we are moving on from a secure footing to new and exciting times. There will be more news in the November edition of *EiS*.

Janice Griffiths
ASE Chair 2019/20



I SEE project update



It's your time to imagine the futures

We are now in the dissemination phase of

this EU Erasmus + project led by the University of Bologna. ASE plays a role in the project's evaluation and dissemination. Key teacher workshops took place at ASE's 2019 Annual Conference and regional conferences of the Institute of Research in Schools. During these workshops, teachers were introduced to I SEE's teaching modules on artificial intelligence, climate change and carbon sequestration, and quantum computing.

To find out more about the project, visit www.ase.org.uk/resources/i-see-inclusive-stem-education

NFU Farmvention Prize Winners

Farmvention (when farming meets invention), the national STEM competition run by NFU Education and aimed at primary school children, relaunches this September.

There are three new exciting problem-based challenges each year that can be entered by individual children or in teams. Each challenge is designed to make children think about the day-to-day issues faced by farmers and growers in England and Wales, as well as the wider environmental challenges faced by the world's growing population. Each challenge is supported by curriculum-linked resources created in partnership with ASE and teachers can download the packs from the Farmvention website: www.farmvention.com

This year, children at a primary school in the centre of London had their

playground turned into a farmyard for the day. Pupils ditched their textbooks and donned wellies to take part in exciting farming activities, thanks to NFU Farmvention prizewinner, Afeefa Haroon.

As part of 8 year-old Afeefa's grand prize for winning the competition this year, her school underwent a transformation from urban primary school to rural farm in July (for more about Afeefa's winning entry, see page 6 in the May 2019 issue of *EiS*). Children learned what it takes to be a British farmer and a custodian of the countryside, while having fun.



ASE Science Teacher SOS

In January 2018, ASE launched its Science Teacher SOS campaign to attempt to stem the flow of science teachers leaving the profession; many are becoming disillusioned due to a range of factors. There are now severe shortages of science teachers and this is only set to worsen with the secondary-age school population in, for example, England forecast to grow by around 19% by 2026.

The SOS Campaign was initiated by the ASE 11-19 Science Education Committee, led by its Chair, Helen Harden, which includes practising science teachers and subject leaders who each had anecdotes of good teachers choosing to leave, whether Newly Qualified Teachers or those with decades of experience. The launch of ASE's SOS guide document, which is still freely available to download at www.ase.org.uk/sos,

was accompanied by a Twitter (#SciTeacherSOS) campaign.

The campaign has been well received and was picked up in England by the Department for Education (DfE). The DfE was full of praise and commented on the quality of the materials and wondered why their staff hadn't thought of producing something similar! They expressed a desire to work with ASE in order to reach a wider science teacher audience and, if successful, to consider its potential to be adapted for other subject areas and primary teachers. As a result, the Gatsby Charitable Foundation was approached and, in June 2019, Gatsby agreed to provide funding of up to £45,000 to support further work by ASE on the SOS project.

Andy Chandler-Grevatt from the University of Sussex, and the member of ASE's 11-19 Committee who had

produced the initial draft of the document, will be funded as the Project Management Lead on a 0.2 f.t.e. fixed-term contract.

Andy will be supported by two other committee members, also on 0.2 f.t.e. contracts: Rob Butler (ASE Field Officer) and Sarah Longshaw (consultant).

Given the shortages faced by science departments up and down the country, it is hoped that the project will provide non-judgemental advice for teachers to support a good work-life balance and a long-term positive experience of teaching. The project also aims to share good practice and support school leaders at all levels in developing frontline strategies that improve teacher retention in schools.



Good Practical Science – Making it happen

The Gatsby Charitable Foundation's Good Practical Science report identified what schools should do to achieve good practical science. At the heart of their recommendations is that all schools should have a policy document explaining the purposes, outcomes and methods of using practical science in their teaching. The process of producing the policy is as important as the policy itself.

The ASE's *Making it happen* project supported Benchmark 1 (planned practical science) in the report by producing resources for use by science departments to help them consider different aspects of writing and reviewing a policy for good practical science. The ASE project has

produced two resources to support schools that are considering their own written policy:

- Supporting resources for use by teachers, departments and others as professional development



to explore different aspects of practical science, with guidance on how to create an effective policy. Each module contains presenter notes, a presentation and supporting materials (see page 12 in our Feature section).

- Case studies of how five very different departments went about creating their policies, and the impact that these processes had on their teaching. Each case study includes a copy of their policy.



Visit www.ase.org.uk/resources/good-practical-science-making-it-happen to download these resources and the Good Practical Science report, with its ten benchmarks and recommendations for schools, government and policy-makers.

Open-ended investigation post-16: making it count

Students often gain their first experiences of learning like a scientist through open-ended investigative work in the final years of high school. There is no longer any requirement to carry out open-ended investigative work at A-level, so many students may now be missing out on opportunities to carry out investigative work.

The Gatsby Charitable Foundation commissioned the University of York Science Education Group to speak to twelve science teachers to find out how and why they continue to offer open-ended project work, what they intend students to learn, and how they negotiate the barriers to such work. You can read about teachers' creative ways to include open-ended investigations post-16 and make them count at <http://eprints.whiterose.ac.uk/146914/> and, if you are interested in sharing your stories of open-ended project work, please contact the authors of the report.

Gresham College's free science lectures 2019/2020

Gresham College is a charitable trust that was set up in 1597 to bring free education to the public in London, and today live-streams its public lectures to reach a global audience. The Royal Society was founded by its members and first met in its early years at Gresham College.

In a new initiative, Gresham is encouraging schools and colleges to book seats for lectures that are otherwise first-come, first-served to the public – you can get in touch on enquiries@gresham.ac.uk; the lectures are also live-streamed online and available after the event via the event page on www.gresham.ac.uk. You can also sign up for updates about lectures here: <http://gres.hm/schools>

Astronomy series 2019-20:

In this series, Astronomy Professor Katherine Blundell will be looking at how concepts developed in physics and cosmology have led to some of our most surprising discoveries about the Universe:

Wednesday 2 October 2019, 1pm,
Museum of London
Faster than light?

Wednesday 23 October 2019, 1pm,
Museum of London
Frozen in Time?

Wednesday 20 November 2019, 1pm,
Museum of London
The end of matter?

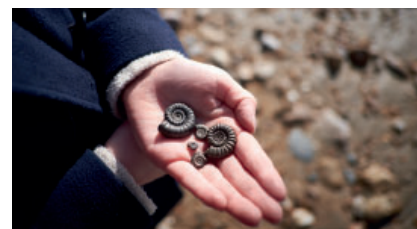
Wednesday 20 January 2020, 1pm,
Museum of London
Shapes of Free Fall

Wednesday 4 March 2020, 1pm,
Museum of London
Simple Laws, Spectacular Astrophysics

Wednesday 20 May 2020, 1pm,
Museum of London
Perceptions, expectations and discoveries

Wanted!

Teachers of children aged 9-11 years to join the Phase 2 pilot of ASE's *Key moments in history and science: a fossil hunter's story*.



The ASE project team is looking for science leaders and teachers in primary schools to trial the teaching resources with professional learning strategies (including teaching through enquiry and dialogic teaching), during the spring term (from 17th February onwards) or during the summer term of 2020.

The project consists of the 15-minute film introducing the young girl Mary and 5 two-hour teaching resources, plus a number of enrichment resources. These resources can be used flexibly, but we recommend working with the resources during one week so the children can benefit from an immersive learning experience.

To express your interest in taking part in our Phase 2 pilot, please complete our 5-minute survey at: www.ase.org.uk/evobigidea

New Awards

ASE is proud to announce the following awards, granted since May 2019:

RSciTech
Matthew White
Paula Grimes

RSci
Sasikaran Thamothersampillai

CSciTech
Jennifer Marchant
David Boyce

Pupils join forces to save the planet!



'Ideas to Save the Planet' topped the bill at this year's Maritime Academy Trust Invention Expo as 600 eco-warriors aged 4-12 from 7 schools spanning Blackheath, Gillingham, Eltham, Greenwich, Woolwich and Plumstead joined forces to showcase and celebrate ingenious inventions to make our world a better place.

Creations ranged from a whale designed to consume plastic waste from our seas, robotic bees to pollinate plants in the face of global bee extinction, an eco-friendly washing machine driven by pedal power and a tree-cloning machine designed to generate much-needed oxygen for our planet.

See www.maritimeacademytrust.org/expo for more details.



The Great Bug Hunt 2019



The winners of this year's Great Bug Hunt competition have been announced! The competition, brought to you by ASE and supported by the Royal Entomological Society (RES), takes science learning out of the classroom and brings it to life outdoors.

The children explored habitats to discover and record some fascinating invertebrates. Their finds were then explained and displayed in workbooks, posters and factsheets using graphs, photos, pictures and poems.

First prize of an 'insect day' at the school goes to the Convent of Jesus and Mary Catholic Infant and Junior School in Willesden, London, who also won the Year 1 and 2 category.

The winners of the other groups are as follows:

Year 3 & 4 – St Gregory's Catholic Primary School, Chorley

Year 5 & 6 – Templars Primary School, Coventry

They win a goody bag from the RES, and all the children who entered receive a certificate.

'We were delighted to take part in this amazing project, which not only encourages outdoor learning and awareness of bugs in the local habitats, but also enables the children

to use their scientific skills across the curriculum. The children were excited to venture into the hidden world of minibeasts around the school grounds. They were engaged in a range of activities, which included data branching, sorting, data collecting, identifying and classifying.

They were also inspired by their findings to undertake projects about a variety of bugs such as ladybirds and aphids' (Malgorzata Saiz, The Convent of Jesus and Mary RC Infant School, Willesden).

'I enjoyed leaning new facts. I know that insects have 3 body parts and 6 legs but arachnids have 2 body parts and 8 legs' (Jack).

'I didn't even know we have so many bugs in our school garden!' (Nichole).

'I know that bees are very important so we must not hurt them. I was surprised to see that they like small blue flowers' (Axel).

The winning day will take place in September, with an insect day provided by the Royal Entomological Society.

Details about the ASE 2020 Great Bug Hunt will appear in the pages of future issues of *EiS*, as well as on the ASE (www.ase.org.uk) and National Insect Week (www.nationalinsectweek.co.uk) websites.

Look out for ASE's Good Practical Science A2 posters this term. We are sending two posters to maintained secondary schools and sixth form colleges in England with support from the Gatsby Foundation.