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| Annual Report of the Trustee Body 2019-2020 |
| The Association for Science Education |

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# Chair’s introduction

The impact of COVID-19 on ASE as an organisation has been significant, but we are proud of all staff and members for the way we have pulled together, to not just survive, but to thrive during this period.

This has been an extraordinary year, the like of which we have not seen before. A huge thank you to all the volunteers, the membership and the staff at ASE headquarters for the remarkable response to the impacts of the COVID-19 pandemic. As a community we have continued to support science education throughout this period and shifted our ways of working to produce some truly remarkable outputs. The year began with relative normality; we had bidden farewell to Shaun Reason, our previous CEO, and welcomed Hannah Russell to our fold. The year kicked off with activities designed to feed into a refreshed three-year strategy for the Association, building on the previous successful five years, but also reviewing and refining aspects of the strategy to enable ASE to continue to move forward.

The Chair Trio continued to work effectively as a unit, with the incoming Chair benefiting from the experience of the Immediate-past Chair and allowing the Chair-Elect to transition smoothly into the role. The Chair leads the Education Group and also engages with national committees and groups to build an overview of the Association's activities. All committees and groups were invited to contribute to thinking around the new strategy, adding expertise and experience from their particular areas. The Chair Trio brought together all Chairs and Heads of committees and groups at Education Group 2 in February 2020, to facilitate further partnership and communication to share their plans, identify opportunities to collaborate and to co-plan. This well-received session will be a fixture in future years.

National committees and groups were still meeting face-to face during the autumn term, implementing their plans for the year, which included making important contributions to the Annual Conference. The 2020 Annual Conference at the University of Reading marked the last year of the term of office for Honorary Conference Secretary, Susie Burr, and the Association continued to benefit from Susie’s guidance, organisation and stamina! Classroom teachers were highly visible at the conference this year, making contributions to a new programme from the Research Committee, including the popular research bites. Teachers new to presenting were invited by the 11-19 Committee to lead a Teacher Takeaway session. This proved to be a very successful vehicle for supporting new presenters and securing a new cadre of practitioner presenters.

Of course, 2020 was punctuated by the appearance of COVID-19, with the national lockdown implemented by the government on 26th March, which included the closure, or partial closure, of schools and colleges and a rapid conversion of teaching from entirely face-to-face to remote or blended teaching and learning. Students and teachers were required to transition very quickly, and ASE was right there to respond to their needs. Operations at ASE headquarters changed radically for staff and for committees, groups and ASE’s programme of events. The membership would like to extend their sincere thanks to Hannah and the ASE team for their dedication, flexibility and resilience in the face of COVID-19. Remarkably, the Association continued to produce its journals, to operate Booksales, to enable its committees and groups to meet via Zoom and to develop and launch an innovative and successful programme of courses, conferences and events, all delivered remotely. ASE set up the Coronavirus Hub to showcase new and existing resources, including the newly-developed downloadable Primary Remote Learning Resources, the free COVID-19 science education support webinar series, advice and guidance, and activities and competitions for children who might be at home or in changed circumstances in school. Our President, Professor Sir John Holman, launched a programme of “Sir John Holman in conversation with….” webinars – conversations with eminent scientists; our Field Officers ran a series of registration webinars that led to an upsurge in applications for professional registration, and teachers and technicians could access a plethora of remotely delivered events designed to support the science education community. There was a special COVID -19 edition of *Science Teacher Education,* which focused on how members, particularly those working in Initial Teacher Education, had responded to the impact of lockdown. Futures led the way in piloting our first wholly online conference – its success has inspired confidence in our plans to run our 2021 Annual Conference in a remote format. The summer term really proved to be a triumph for the Association and attracted new members or encouraged existing members to renew.

Feedback from our colleagues on our various committees and groups indicated that ASE projects continued to be popular. For example, the resources and professional learning activities from the Mary Anning project were very popular with schools. The project involves teaching resources and professional learning strategies for primary teachers of children aged 9-11 years to support their knowledge and understanding of the big ideas of evolution, the nature of scientific enquiry and the strengths and limitations of scientific knowledge. Teachers have reported the value of classroom-ready professional resources. The ASE Science Teacher SOS project is recruiting a second tranche of schools to take part in a pilot exploring how we can increase retention of teachers through supporting those who are considering leaving the profession; this is a timely initiative indeed, given the current circumstances.

Alongside the external-facing activity, ASE has been busy continuing to raise the profile of science teaching and learning and champion the needs of those working across science education in its advocacy role. After consultation with, and on behalf of its members, ASE responded to a number of consultations including, among others, on the *Awarding of GCSE & GCE Grades for 2020 (Ofqual)*, the *Initial teacher education inspection framework and handbook 2020: inspecting the quality of teacher education (Ofsted)*, *Shaping OECD policy and the PISA science programme* (OUP) and *The impact of COVID-19 on education and children’s services (Education Select Committee)*. The Association continued to work with trusted partners, including CLEAPSS, the Institute of Physics, Primary Science Quality Mark, Primary Science Teaching Trust, Royal Society, Royal Society of Biology, Royal Society of Chemistry and STEM Learning, among others.

**NSTA**

We welcomed Dennis Schatz, President of the National Science Teaching Association (NSTA), to the ASE Annual Conference at Reading in January, where we had the opportunity to discuss closer working across science education subject associations with a range of European partner organisations and to explore reciprocal arrangements to maximise our impacts. Unfortunately, the return visit by ASE to the NSTA annual conference in Boston did not happen, as the event was cancelled due to the Coronavirus pandemic. A great disappointment, but completely understandable and NSTA has also moved much of its provision online.

**#WearetheASE**

You will see that the ASE community has coalesced like never before during this strange year and we have overcome obstacles through our collegiality and common interests. Our committees, specialist groups and regions have risen to the challenge to ensure that ASE remains at the heart of science education. Please encourage your colleagues who are members to put themselves forward to apply to join one of these groups; I have learned so much through my active participation in ASE. The deadline for applications is 31st May each year.

A huge thanks to our CEO, Hannah Russell, who has led the organisation through such a tumultuous time. We are so grateful to be in safe hands.

It has been an honour, and a challenge, to be Chair of the Association at a time when its support has never been so important, and its community so unified.

**Janice Griffiths**

**Chair of the Association 2019/20**

# Highlights of 2019/2020

# In January 2020, the ASE Annual Conference returned to the University of Reading, with 2,835 delegate days of continuing professional development (CPD) over four days.

# Thanks to the energy and commitment of the staff team, our committees and wider volunteer network, we provided a wide range of support for our community in response to the COVID-19 crisis. Activities included a Coronavirus resources hub, new resources for primary and secondary audiences, a COVID-19 webinar series, online conferences, workshops and an Open Access journals offer.

# Through the support and dedication of our committees and Field Officers, we also held an impressive total of 113 face-to-face and online regional events across the UK, including regional conferences, smaller events, TeachMeets and TechMeets, reaching over 2,250 delegates. In addition to these events, the Field Officer team ran a further six online professional registration workshops and four SEND workshops, attracting 450 delegates.

# We also worked hard to represent the science education community, partnering with key stakeholders across the sector and engaging our members through focus groups and surveys. Our practical science surveys in June 2020 attracted nearly 900 responses from science teachers and technicians.

# Increases in membership numbers were seen across our primary (teacher and school), consultant and ITE educator (Futures) and international categories. As a result of our COVID-19 response activities, we also saw increases in 11-19 teacher and technician numbers over summer 2020.

# 2019/20 was a record year for professional registration applications, with 333 CSciTeach, 236 RSciTech and 124 RSci awards now made by ASE.

# In addition to the usual five issues, *Primary Science* published two more Open Access special issues: an Explorify issue supported by Wellcome and a Primary Science Teaching Trust special, celebrating the 2019 PSEC International Conference.

# The winning entry for the ASE Book of the Year Award was *The Molliebird* by Jules Pottle.

# Millgate House Education continued to provide a valuable addition to ASE’s publishing offering. The best-selling publication for Millgate House Education (MHE) in 2019/20 was, once again, *It's not fair*, which sold 438 copies.

# Despite the COVID-19 pandemic, the Association had another successful year of bidding for innovative projects. This included funding from the Gatsby Charitable Foundation to support our practical science activities, as well as additional funding to re-start the data collection for our ‘Science Teacher SOS’ pilot project (put on hold during lockdown), which will explore how using the Association’s SOS document can help to improve science teacher retention.

# Achievements and performance

With the arrival of COVID-19, 2019-2020 presented a number of unforeseen challenges both to ASE and to science education more broadly. Our trustees, staff and volunteers have worked tirelessly throughout the pandemic to continue to deliver against our four strategic goals. This has enabled us to respond quickly to changes as well as to the needs of our community.

Our current strategic goals are:

1. **Governance:** Sound leadership, financial management and project-sourcing to enable innovation, enhanced membership benefit and improved science education.
2. **Membership:** Increase engagement, retain members and grow membership.
3. **Advocacy:** Be the voice of science education professionals by promoting, influencing and contributing to science education policy at local, national and international levels.
4. **Professionalism:** Promote, provide support and recognise professional practice in science education.

The Association is structured as a charity, registered with the Charity Commission in England and with the Office of the Scottish Charity Regulator in Scotland and incorporated by Royal Charter. As such, ASE is obliged in law to confer public benefit – it does this through its aims, which are wholly concerned with education. The aims express a commitment to improving science education for all young people, primarily but not exclusively across the UK. This is achieved by supporting teachers, technicians and others concerned in the provision of science education in schools and colleges and by influencing components of society, including government, such that science education can flourish.

The Strategic Plan 2017-2020 was first presented to members at the January 2017 Annual General Meeting (AGM). ASE has its focus solely on science education and, as such, the Association is uniquely placed to support all the professions within science education. We give due regard to equality and the diversity of learners and are not bound to one area of science, reflecting the realities of science education.

Trustees seek evidence that progress is being made with the Strategic Plan and the Chief Executive provides a report to Trustees at their meetings.

**Goal 1: Governance** **– Sound leadership and financial management.**

During 2019-2020, ASE delivered its mission and charitable objectives through its staff and members, who were represented on the Trustee Body and across the Association’s committee structure.

The governance structure of the Association has continued to follow charity sector best practice.Trustees meet four times per year and are updated on a regular basis on their responsibilities, so that they are clear about their roles and able to deliver against the six key duties as set out in the ‘*The Essential Trustee’* (CC3) of the Charity Commission. A Trustee skills audit is completed and updated each September.

The Trustees have delegated the authority to manage the Association to the Chief Executive, who reports on the performance of the Association against the strategic plan approved by the Trustees. The Chief Executive is supported by the staff team and finance accountant. The major control documentations of the Association are kept up-to-date as appropriate.

#### There has been a continued emphasis on prudent, managed monitoring of finances. This has been particularly important given the impact of COVID-19 on our activities. Cash flow has continued to be keenly monitored by the Chief Executive, Finance team and Honorary Treasurer and reported to Trustees on a quarterly basis.

#### Trustees agreed in 2017-18 to invest in ASE’s ageing IT infrastructure that had been adopted in 2006. As with many new IT systems, the new systems have experienced a number of teething problems, resulting in increased costs for 2019/20 compared to those budgeted. A new support contract was put in place in 2020 to reduce these costs. From 2021, library journal subscriptions will also be managed through a separate platform, which is currently under development.

#### In response to the COVID-19 pandemic, all committee meetings have been held by video conference since March 2020. This has worked well and has enabled us to engage committee members who previously struggled to attend meetings at ASE Headquarters, as well as resulting in a financial saving to ASE. We will continue to hold committee meetings online until at least March 2021 and will move to a blended model going forward, with a mixture of face-to-face and online meetings for our national committees.

The Association is keen to encourage as wide a representation of its community as possible on its committees. Members are invited to apply for committee vacancies through announcements in the *Education in Science* magazine and on the website. Following the success of our activities in 2019/20, we have attracted a record number of applications this year.

#### In order to support the smooth running of ASE over the COVID-19 pandemic, the Chief Executive, Chair of Trustees, Chair of the Association and Treasurer met by weekly video conference between March – August 2020 to discuss progress and issues. Notes have been kept of these meetings and made available to all Trustees, with the wider Trustee body consulted on key decisions. For 2020/21, monthly management support meetings have now been put in place.

#### 2019/20 staff costs were below those for 2018/19 and we have also benefited financially from the Government Job Retention Scheme, allowing us to furlough four members of staff during summer 2020.

Trustees and the ASE staff wish to thank our members and partner organisations for their continuing support, and particularly our volunteers for their generosity with the time they commit to the Association.

### Goal 2: Membership – Increase engagement, retain members and grow membership.

#### Recruitment, retention and support for members remain key priorities. In 2019/20, the exceptional work of the ASE staff team, national and regional committees and other volunteer support enabled us to deliver a wide variety of activities at which ASE membership was promoted.

#### A new Communications, Marketing and Membership Officer role was introduced in 2019/20. This has been key in allowing us to increase our social media activity, as well as in supporting our online events and promoting our publishing activities across ASE and Millgate House.

#### As set out over the next few pages, the support provided to our community during the COVID-19 pandemic has allowed the Association to significantly increase our visibility and reach. This included a successful membership push through June and into early July 2020.

#### Across 2019/20 we have continued to see increases in our Primary teacher, Primary school, International Associate and Consultant/Initial Teacher Education membership groups. Although the number of 11-19 Teacher and Technician members were down at the end of August 2020, compared to August 2019, membership of both of these categories increased over the Spring-Summer 2020 period, reflecting the positive impact of our activities over this period.

#### Library subscriptions also continued to be strong, with 288 active libraries for 2019/20. Further Education (FE) membership remains an area for further development in 2020/21.

#### With the majority of children now back at school after lockdown, the 2020/21 school year promises to be like no other, with many teachers and technicians under significant stress as schools balance the logistical challenges resulting from COVID-19 alongside delivering high quality education, often both face-to-face and remotely. Having paused our Science Teacher SOS pilot during lockdown, we are grateful for the support of the Gatsby Charitable Foundation, which has agreed to fund us to re-start the pilot in 2020/21.

#### In recognition of the particular challenges that will be faced in 2020/21 by student teachers and newly qualified teachers (NQTs), we have refreshed our student and early career teacher offering across both primary and secondary and will continue to expand our support in this area over the coming months.

#### ASE also remains concerned about the situation with its technician members, particularly in light of COVID-19, which has led to many technicians being fearful of redundancy. Technicians play a key role in enabling students to access safe and effective practical science as well as providing vital support to science teachers. We will continue to advocate for greater support and recognition of those working in these roles.

#### Responding to feedback from our community, we will also be reintroducing science department membership in Autumn 2020, helping us to increase our support for teachers and technicians across the UK and internationally.

### Goal 3: Advocacy – Be the voice for science education professionals.

Advocacy has long been a key role for ASE, representing our members and wider community as the voice for science education professionals, helping to shape the science education landscape.

During 2019/20, three surveys were conducted, covering the Ofsted consultation on the new Initial Teacher Education inspection framework (34 responses), Education Select Committee inquiry on the implications of the Coronavirus pandemic for the education sector (11 responses) and practical science during and post-lockdown: (Technicians – 472 responses, science teachers and leaders – 410 responses), the last of which has led to the publication of our ‘Practical science post lockdown’ survey report and expert review of the Gatsby Practical Science benchmarks in September 2020, attracting coverage in the *Times Educational Supplement*.

In England, ASE continues to be one of the five partner organisations of the Education Policy Alliance (also including the Institute of Physics, Royal Society, Royal Society of Biology and Royal Society of Chemistry) and to work with the other bodies to achieve stated joint strategic aims, particularly around the science curriculum. During 2019-20 we supported an Alliance document on GCSE timetable models research and sent joint letters to the Secretary of State for Education and Chair of the Education Select Committee regarding the impact of COVID-19 on next year’s NQTs. We continue to lead on primary curriculum work on behalf of the Alliance.

In Scotland, ASE is represented on the Royal Society of Edinburgh’s Learned Societies’ Group on Scottish Science Education (LSG). In 2019/20 we supported the LSG response to the recruiting and training teachers enquiry and statement on COVID-19 disruption.

In Northern Ireland, members work closely with the Council for the Curriculum, Examinations & Assessment (CCEA), while in Wales, ASE Cymru was represented this year at *Science in the Assembly* as well as in Cross-Party Science Group and Curriculum Review meetings.

ASE also continues to be an active member of the Council for Subject Associations (CfSA) as well as a number of other steering and advisory groups.

In addition to these activities, in 2019/20, ASE responded to the following consultations:

* OUP consultation on shaping OECD policy and the PISA science programme
* Ofsted Initial Teacher Education inspection consultation
* Ofqual consultation on revised approaches for Summer 2020 grades for GCSE, AS and A-level
* OCR Natural History GCSE proposal
* Ofqual – Consultation on proposed changes to the assessment of GCSEs, AS and A-levels in 2021
* Education Select Committee consultation on the impact of COVID-19

The *Best Practice Guidance* documents produced by the Education Group also continue to provide a valuable source of information on key issues.

ASE has regular updates and briefings with DfE and Ofqual. In 2019/20 we were also invited to be part of Ofsted’s science subject working group, looking at the way subject-specific training guidance could inform inspection of each subject and the training of inspectors for this work.

ASE also has links with science associations from other countries, for example with the National Science Teachers Association (NSTA) and several sister associations across Europe, as much of our work has international relevance. We were delighted to be joined at the 2020 Annual Conference by representatives of many of these organisations. By developing these networks, ASE can gain insights into professional practice that can be used to benefit our members and support science education in other parts of the world.

### Goal 4: Professionalism – Promote, provide support for and recognise professional practice in science education.

### Committees and groups

#### Encouraging and supporting networking lies at the heart of many of ASE’s activities, recognising the value of bringing like-minded people together to share ideas and best practice. The importance of this peer-to-peer support has been particularly clear through the COVID-19 pandemic; although we have missed the conversations and mutual support gained from face-to-face meetings, members have continued to network online through local and regional groups and national committees, conferences and events, as well as through social media. These activities have provided vital opportunities to support each other as well as for continuing professional development, both for ASE members and the wider science education community.

#### National Committees

#### During the year, the Association’s committees continued to be active in furthering support and professional practice in science education.

The **Education Group** was ably led by the Chair of the Association. With contributions from relevant committees, the Group produced new *Best Practice* documents on Outdoor Learning and Assessment, which are available on the website. The Chair Trio (Immediate-past Chair, current Chair and Chair-Elect) were active in supporting other committees and regional events throughout the year. They continued to link their work closely to the aims of the Strategic Plan and provided valuable support in developing the new strategic plan, due to be published in January 2021.

A key success in 2018/19 for the **11-19 Committee** was supporting an increased number of classroom teachers in making their Annual Conference presenting debuts. Building on the new-voices initiative at the 2019 Annual Conference, the Committee ran a Teacher Takeaway event, allowing five new teachers to present short slots rather than a whole session. The aim was to open out the invitation to speak at conference to a wider community and to support those less experienced to take their first steps as conference presenters. Two of the presenters have gone on to submit proposals for whole sessions at the 2021 Annual Conference.

Over Spring-Summer 2020, 11-19 Committee provided vital input towards ASE’s COVID-19 response, including our highly successful webinar series, with many Committee members discovering hidden talents in terms of leading sessions or participating in online panels. Helen Harden (Chair) and Neil Wade from 11-19 Committee, together with Elizabeth Lupton, also led the development of the new BEST STEPS resource, a collaboration with the BEST (Best Evidence Science Teaching) project, providing valuable support to teachers in diagnosing misconceptions of returning Year 10 (age 15) students.

The **Primary Committee** includes representatives from all four countries of the UK, with a good blend of practising teachers, consultants and ITE providers. In 2019/20 members were once again actively involved in creating a full and varied programme for the Annual Conference, as well as supporting primary delegates during the conference and helping them to feel part of the primary community. As with 11-19, we were very grateful for the support from Primary Committee members for our COVID-19 activities, including with our webinar series, Coronavirus website Hub and particularly for the new primary remote learning resources, which have proved extremely popular.

The **International Group** ran another successful International Day and Dinner at the Annual Conference. Some of the group’s wider plans to increase ASE’s international activity have been put on hold during the COVID-19 pandemic. However, the *ASE International* journal has continued to go from strength to strength, with three issues published during the year, as highlighted in the section below.

The **Health and Safety Group** comprises an experienced set of members, including co-opted representatives from CLEAPSS and SSERC. The Group continues to provide vital support in reviewing journal articles regarding health and safety, as well as leading on articles for *Education in Science* and ASE’s health and safety-related publications. The new edition of *Safeguards in the School Laboratory* was published at the Annual Conference, which also saw another popular demonstration by the Group of practicals thought by many to be banned, restricted or too dangerous.

2019-20 was a busy year for the **Laboratory Technicians Committee**. Activities included a small twilight programme for technicians at the Annual Conference, based on the success of which we will be looking to have a full Technicians day at the online Annual Conference in January 2021. Having originally planned to run four regional technician conferences during the year, the COVID-19 pandemic meant that these had to be moved online. The resulting full day online conference proved very popular (attracting 106 delegates) and received excellent feedback. Online TechMeets run by the Chair-Elect, Simon Quinnell, were also over-subscribed, as were a number of other, technician leadership, workshops, attracting delegates from across the UK and internationally.

Outside of events, the Committee has provided a calm and supportive voice to the Technicians Facebook page helping new and nervous technicians to manage their prep room during lockdown, working alongside CLEAPSS. They have also helped to collate views and feed these into ASE’s advocacy activities.

The update of *The Preproom Organiser* was completed in 2019-20 and the Committee has started to work on a technician version of the ASE’s *Science Teacher SOS* document as well as continuing to provide copy for the two-page spread in *Education in Science.*

In 2019/20, once again the **Research Group** was active in conferences both nationally and regionally.  At the Annual Conference, the group hosted a morning workshop session offering both an insight into current educational research in science and a “clinic” service to assist science teachers with their own research.  This was followed by a keynote from Emily Yeomans and Professor Chris Harrison on the *EEF Improving Secondary Science* guidance report.  Group members also ran a workshop session at the ,Northern Conference and again at the online Futures Conference.  Articles were written for *SSR* and a regular continued contribution to *SSR* and *EiS* is planned for the coming year, with articles already in press.

The **ASE Futures Committee** includes representation from primary and secondary university ITE, consultants/advisers, practitioners and other organisations (including exam boards and PSQM). Two members of the Committee have been interim editors of *Science Teacher Education* with other members contributing articles. The Committee, in conjunction with ASE staff, has helped to create a new ‘Futures Directory’, which will be launched in 2020-21. The Group led their first online Futures Conference in summer 2020, which attracted 84 delegates. The Group looks forward to their involvement in formulating the ASE’s future plans for CPD, as well as raising the profile of Futures membership.

The **Registration Board** has met to award or reconfirm members for Chartered Science Teacher (CSciTeach), the Registered Scientist Award (RSci) and Registered Science Technician (RSciTech). Following a number of popular online professional registration workshops delivered by the Field Officer team, 2019/20 was a record year for professional registration applications, with 333 CSciTeach, 236 RSciTech and 124 RSci awards now made by ASE.

### Journals and books

In 2019/20, ASE journals rose to the challenge of supporting our community through the COVID-19 crisis, featuring key articles on science education during and after lockdown. For four months, we also made all journals (other than *EiS*) completely Open Access, a move that resulted in a high level of engagement beyond the membership.

***Education in Science (EiS)*** continued in its popular new format, with features such as Practical Science, the Curriculum, Conference and Coronavirus specials and more up-to-date and topical news stories.

***School Science Review (SSR)*** also continues in its new A4 format, covering themes including The Periodic Table and Epistemic Insight. A committee-wide survey was taken in June 2020 regarding further format changes and the outcome of this will be considered during 2020/2021.  
   
***ASE International***, our online journal for those working in the international arena, goes from strength to strength, bolstered by a rise in international membership. Original articles are now being submitted to add to the usual mix of pre-published ASE material. Once more, we thank our partner, Gratnells, for their continuing support, and of course the International Group for their hard work on the journal.  
   
***Primary Science*** continued with its usual five issues featuring themes including Science Behind the Wow, Science in Space, Technology and Science, Critical Thinking in Science and a lockdown-themed issue. Two more Open Access ‘special issues’ also appeared during the year: an Explorify issue supported by Wellcome, and a Primary Science Teaching Trust special, celebrating their 2019 PSEC International Conference. Another Primary Science Collection, on ‘Swap Shop’, was also published in 2019/20.  
   
The ***Journal of Emergent Science (JES)***, published in partnership with the Primary Science Teaching Trust, produced two issues, one in January and a second in July. We are very grateful to PSTT for their continuing support and were pleased to feature a Winter 2019/20 special issue celebrating their Primary Science Education Conference held in June. At the end of the year, we bade farewell to Amanda McCrory and Suzanne Gatt at the end of their 4-year stint as *JES* editors and, in September 2020, we welcomed Sarah Earle to the Editorship.  
   
***Science Teacher Education (STE)*** published three issues during the year – including one on science teacher education and Coronavirus, and a celebration of the first online ASE Futures Conference held in June 2020. This year’s issues have been edited by Interim Editors, Jane Turner and Alex Sinclair, and we will be advertising for the permanent editorship in the January 2021 edition.

As always, the ASE’s journals would not be in existence without the enormous amount of hard work from our editors, their editorial teams and the authors who so willingly make time to write for us.

2019/20 was a challenging year from a **booksales** perspective, with COVID-19 having a significant negative impact on sales. *Be Safe* remained our best-selling publication, selling 399 copies, followed by the *ASE Primary Guide to Science Education* (172 copies) and *ASE Secondary Guide to Science Education* (137 copies). We have started selling some of our books as digital products through our website and Ebsco, which we hope will enable us to boost sales and reach wider audiences going forward. We are also looking forward to the publication of the ASE/Hodder subject guides and the *ASE Research Guide* in the coming year.

The best-selling publication for **Millgate House Education (MHE)** in 2019/20 was *It's not fair*, which sold 438 copies. Other successful new publications included *Enquiring Explorers - Space* and new interactive digital book versions of *Spellbound Science 1*, *Made you look, made you think, made you talk* and *It's not Fair*. MHE’s *Concept Cartoons* books have continued to sell steadily and the electronic downloads of all *Concept Cartoons* resources are proving increasingly popular, with over 800 downloads this year.

ASE’s **Green Tick** programme continues to provide a growing income, whilst increasing the influence and reach from ASE. Suppliers are recognising the importance of the evaluation.

### Resources and competitions

As already highlighted in this report, we have been delighted to launch a number of new teaching resources this year, including:

* **Primary Remote Learning Resources** – an in-depth series of resources to help deliver lessons remotely;
* **BEST STEPS** – biology, chemistry and physics resources to help teachers of year 10 and 11 (ages 15-16) students test post-lockdown understanding of some key scientific concepts; and
* A series of fact sheets linking **RSPB’s Wild Challenge Award** activities to science curricula across the UK.

In addition to these resources, we also launched a special **Coronavirus resources portal** – a collection of resources and links designed to support our members, the broader science education community and the general public with science education during lockdown

We are also grateful for the continued support of the Pan London Assessment Network in enabling us to feature a number of PLAN resources on the ASE website.

We also continued to work with partners on a range of activities and competitions including the Great Bug Hunt (in partnership with the Royal Entomological Society), which attracted over 1,000 entries, and Farmvention, in partnership with the National Farmers Union.

### Annual Conference, events and TeachMeets

The ASE’s largest professional development event, the four-day **Annual Conference**, was held at the University of Reading in January 2020. 1,824 tickets were sold, representing 2,835 delegate days of CPD. In addition to the sessions already highlighted in this report, the 2020 Conference included the usual excellent range of high profile speakers, including ASE’s President, Professor Sir John Holman, primary science expert Dr Lynne Bianchi, Institute of Physics Chief Executive, Professor Paul Hardaker and physicist and diversity and inclusion champion, Dr Jessica Wade. The Conference also included a session for headteachers and governors on recruitment and retention, with a panel of experts including HM Chief Inspector of Education, Amanda Spielman. We were very grateful for the support of our Honorary Conference Secretary, Susie Burr, who came to the end of her seven years in this role. For 2021 we will welcome our new Honorary Conference Secretary, Professor Christine Harrison.

Of course, the Annual Conference is just one of ASE’s many events each year. Other successful national conferences in 2019-2020 included our online technician and Futures Conferences highlighted earlier in this section as well as our online Summer conference for teachers, with 120 attendees. To allow us to continue to expand our conferences programme going forward, a new Business and Events Officer role was introduced in 2019. This role has enabled us to continue our support for exhibitors as well as to develop our online events offering and support our booksales activity.

Thanks to the support of our region committees, Field Officers and other volunteers, in 2019/20 we held an impressive 113 face-to-face and online regional events across the UK (compared to 76 regional events in 2018/19), including regional conferences, smaller events, TeachMeets and TechMeets, reaching over 2,250 delegates. In addition to these events, the Field Officer team ran a further six online professional registration workshops and four SEND workshops, attracting 450 delegates.

In terms of face-to-face events pre-lockdown, the ASE Northern Conference in Sheffield attracted 77 delegates, while the West of England Conference attracted 61 delegates and the ASE Cymru Conference in Cardiff attracted 67 delegates, including an inspirational keynote from adventurer and author Tori James. ASE Cymru was also represented at three Christmas Fairs in Usk, Bargoed and Caerphilly, as well as at the Cardiff Science Festival and at a STEM Festival in Margam Park, Port Talbot in February 2020. In the North West region, the long running series of TeachMeets at Trinity High continued to attract a loyal following, while the North and East Midlands region hosted a popular half-day conference in October 2019, including workshops by Stuart Naylor and Jules Pottle. The Northern region continues to be very active, with events including termly Futures meetings, and a site visit to a biotechnology laboratory in York.

Unfortunately, due to COVID-19, it was not possible to hold the 2020 ASE Scotland Conference, but registration is now open for the 2021 conference, which will be held online. Our international conference planned for Thailand in February 2020 was postponed, and we hope to run this event in October 2021.

In addition to our regional events and national conferences, as part of ASE’s response to the COVID-19 pandemic we launched a series of webinars over the summer term. We were delighted with the response from the community, both in terms of speakers and delegate numbers. Across all of our online events in 2019/20 (including webinars, regional events and online conferences), we attracted over 7,000 live video sessions, with a further 5,000 post-event video views.

### Projects and initiatives

### Building on the success of recent years and despite the COVID-19 pandemic, ASE has continued to receive support for innovative projects related to science education. Project opportunities are regularly evaluated against their financial implications, their educational benefits and their likely impact on the reputation of ASE. When appropriate, bids are submitted.

### International projects & initiatives

* **Science Education for Action and Engagement towards Sustainability (SEAS):** This Horizon 2020 programme – SwafS-2018-2020 (Science with and for Society) is establishing, co-ordinating and evaluating collaboration among six open schooling networks led by universities and science centres, with partners in Austria, Belgium, Estonia, Italy, Norway, Sweden and the UK. The lead organisation is the University of Oslo. ASE’s role is in dissemination as well as contributing to the strategic direction of the project and evaluation of its impact.
* **I SEE** – Inclusive STEM Education to Enhance the capacity to aspire and imagine future careers. This Erasmus Plus (EU) three-year project ended in 2019. Positive aspects noted by the external evaluation included: the relevance, innovation and consistency of the outputs with respect to the goals; the framework of the project; the description of the teaching and learning activities plus their sustainability potential; and the internal evaluation of the project and the dissemination strategy. The project was coordinated by the University of Bologna, with partners in Finland, Iceland, Italy and the UK, and ASE’s role included leading the internal evaluation as well as dissemination.
* ASE has continued to provide the secretariat for **Science on Stage UK.** The latest of the biennial Science on Stage (SonS) Festivals was hosted by SonS Portugal in November 2019. Over 400 teachers attended from a wide range of countries. The UK was represented by sixteen people and included both individual projects and joint projects with colleagues from Portugal and Italy. Our thanks go to all the delegates and also to the funders who supported them to attend. The next Festival will be in 2022 and the SonS team are working to adapt the application process in light of COVID-19 and to continue to support and encourage prospective applicants.
* ASE administers the **Alexander Prize** funds (established in memory of Professor & Mrs Alexander for science education work in commonwealth countries). The prize is awarded to a female teacher of science, technology or mathematics who has made a significant contribution to the education of women or girls in situations of scarce resources. No prizes were awarded in 2019/20.

### Other key projects and initiatives

* The **‘Key moments in history – a fossil hunter’s story’** project is producing teaching resources and professional learning strategies for teachers of children aged 9-11 years, to support their knowledge and understanding of evolution, the nature of scientific enquiry and the strengths and limitations of scientific knowledge. This project is supported by the Big Questions in Classrooms initiative of the Templeton World Charity Foundation and partner organisations include the Primary Science Teaching Trust, Chartered College of Teaching, Canterbury Christ Church University, Learning about Science and Religion (LASAR), National Association of Teachers of Religious Education (NATRE), Schools History Project, British Science Association, Lyme Regis Museum, Jurassic Coast Trust and the Linnean Society.
* **ASE Good Practical Science – making it happen (benchmark 1)** Supported by the Gatsby Charitable Foundation, twelve schools have worked directly with the project team to develop case studies on how they produced a written policy for practical science and evaluated its impact. From almost 150 schools that expressed interest in taking part in this project, a large number have worked with the project’s resources and provided feedback on their effectiveness. The project’s resources – guidance and case studies – are available on the ASE website and we are now drawing together the evidence of impact for the final project report.
* **Good Practical Science (poster):** Alsosupported by the Gatsby Charitable Foundation, two posters were sent to all secondary schools and sixth forms in England in Autumn 2019, to promote the *Good Practical Science* report, ASE’s work on benchmark 1 and, more broadly, our position on effective practical work.
* **Good Practical Science (COVID-19**): In response to the significant impact of COVID-19 on practical science, we have been working with the Gatsby Charitable Foundation to carry out a series of activities. In 2019/20 this included a practical science webinar (>1,500 registrations) and a survey of science teachers and leaders, and technicians (attracting almost 900 responses).
* **Teaching and Leadership Innovation Fund Round 2 (TLIF2):** Targeted at priority areas, largely those of educational underperformance linked to social and economic deprivation. This project, in partnership with the Geographical Association (GA) ended in 2020 and exceeded all targets including for recruitment, retention and satisfaction.
* **Science Teacher SOS:** In January 2018, ASE launched a campaignto attempt to stem the flow of science teachers leaving the profession. Following a successful bid to the Gatsby Charitable Foundation, a project team, led by Andy Chandler-Grevatt from the University of Sussex and the 11-19 Committee, are piloting the framework in a number of secondary schools. Although the project had to be halted during lockdown, thanks to support from Gatsby we will now be restarting the data collection in the Autumn term.

# Plans for 2020/21

Supporting our members and the wider science education community remains at the heart of the ASE and has rarely been more important.

**The current strategic plan runs until the end of 2020, with our new three-year strategy (2021-2024) due to be published in January 2021. The new strategic plan has been developed in partnership between ASE Trustees, committees, members and staff and covers both ASE activities and those of Millgate House Education. It includes the following strategic themes: Organisational sustainability, Community, Advocacy and Professionalism, as well as highlighting a number of key challenges facing our community, which will form the basis of our policy and project activities over this period. Key activities for 2020-21 are highlighted below.**

### Organisational sustainability:

* Continue to respond to the implications of the COVID-19 crisis, exploring new ways to deliver our activities, support our community and ensure financial sustainability.
* Commence a review of our national committees to clarify the roles and responsibilities of each, maximise impact and improve links, both with other committees and with ASE Headquarters.
* Commence a review of the Association’s equality, diversity and inclusion (E,D&I) activities and practices. Strive to increase diversity and inclusion, for example through our conferences and events, to ensure that we are representing our community.
* Continue to develop consistent branding and engaging messaging across our activities, ensuring that we have a clear value proposition, increasing our profile and visibility and exploring new ways to engage teachers.
* Building on the success of our online activities in 2019/20, further develop our digital activity, including social media, blogs, webinars and podcasts, to ensure that we are maximising our reach.
* Continue to manage the Association’s finances prudently, to grow our reserves and ensure sufficient buffer against adverse risks.
* Continue to review and refine the Association’s systems, infrastructure, processes and operating procedures. Migrate the Association’s IT infrastructure to Microsoft Office 365.
* Review our membership processes to ensure that we are collecting the data we need to inform decision-making, for example around membership offerings, including regularly surveying, analysing and reviewing opinions of joining, exiting and returning members.
* Keep under review our business model for publishing books through ASE and Millgate House Education, to ensure that we continue to provide a valuable benefit for members, while also supporting organisational sustainability.

### Community

* Strive to increase membership recruitment and retention across all categories.
* Launch a new student teacher and early career offering across primary and 11-19, increasing support for these communities.
* Launch a new science department offering for 11-19 members, providing an opportunity to expand our support for teachers and technicians in secondary and FE science departments.
* Launch a reciprocal membership discount with the Royal Society of Biology, Royal Society of Chemistry and Institute of Physics, providing an additional benefit for our members and highlighting the strong partnership between our organisations.
* Continue to build links with partners working in Further Education (FE), school-centred initial teacher training and Multi-Academy Trusts, to identify how the Association can best support these groups.

### Advocacy:

* Continue to increase our policy and public affairs activities, capturing the views of our members on key policy issues and working in partnership with key stakeholders, including policy-makers, regulators, funders and learned societies, to help shape the science education landscape.
* Continue to focus our advocacy activities around the key challenges facing our community, particularly those exacerbated by COVID-19, such as student access to frequent varied and purposeful practical science. In 2020/21 this will include publishing the results of our practical science survey and expert review of the Gatsby *Good Practical Science* benchmarks through a COVID-19 lens.
* Assess and respond to major consultations (in partnership with other organisations where appropriate).
* Draw on the expertise of our Research Group to promote evidence-based practice, support with horizon-scanning and ensure that our policy activities are research-informed.
* Draw on the expertise of our Education Group to keep the ASE’s *Best Practice Guidance* current, relevant and useful to stakeholders and our community.
* Continue to advocate for further support for and recognition of those working in technical roles.

### Professionalism

* Continue to develop our popular conferences and events programme, increasing our capacity to deliver events partially or fully online to respond to delegate needs and broaden our reach.
* Building on the success of our COVID-19 webinar series, increase the use of webinars and video conferencing as part of our expanding CPD programme.
* Run the 2021 Annual Conference online, ensuring that the programme is structured in a way that maximises the potential of this major event for ASE, delegates and other stakeholders.
* Launch and promote our new register for teacher educator and consultant (ASE Futures) members.
* Continue to raise the profile of professionally registered members and increase opportunities for members with CSciTeach, RSci or RSciTech to get involved with our activities, for example as reviewers or consultants on projects and initiatives.
* Consider opportunities to support our members in developing economies with accessing continuing professional development, for example, through reduced Annual Conference fees.
* Explore ways to support authors looking to write for our journals for the first time.
* Continue to explore opportunities to collaborate and partner with other like-minded organisations to increase our Open Access journals offering.
* Continue to innovate with formats and outputs across our booksales portfolio, increasing our use of interactive digital books.
* Increase the number of books published each year, while continuing to ensure a high quality offering.
* Explore new opportunities to link and promote ASE and Millgate books and resources through our events, projects and journals.
* Increase capacity for delivery of projects and initiatives, focusing particularly on the key challenges facing our community and continuing to draw on the expertise of our professionally registered members.
* Continue to develop our reputation as leaders in practical science.
* Explore opportunities to place ASE at the forefront of embedding environmental sustainability into science education.
* Continue to develop and expand our accreditation activities through our Green Tick evaluation programme, ensuring a clear and robust process that supports both science educators and publishers/CPD providers.
* Build on our reputation as a gateway to high quality science education resources, including refreshing our schoolscience platform.
* Continue to explore other opportunities for revenue generation that align with ASE’s mission, vision and ethos.

**Honorary Treasurer’s Annual Report 2019/20**

This report is presented at a time of great uncertainty. We are facing a pandemic that has had a particular impact on charities. The Association has had to move to very different ways of working; with face-to-face meetings being replaced by on-line activities. The innovative measures introduced have done much to protect the finances of the Association. The rapid response from the Chief Executive and her staff has been recognised by the Trustees.

While membership remains stable, aspects of the Association’s business have been negatively affected, in particular book sales. Prudent monitoring of the Association’s finances continued to be a priority. A tight oversight of the finances has been maintained over the past year. Cash flow and spending are monitored on a monthly basis by the Chief Executive and her Finance Team.  Trustees have confidence in the current financial health of ASE. However, these are difficult and uncertain times and there needs to be continued financial vigilance.

The Association invested around £125,000 in the development of the website, and finance and Customer Relationship Management (CRM) system; this went live in August 2018. The new system is already enhancing our service to members. However, there continue to be some teething difficulties, which has led to higher ongoing costs than originally anticipated. The Association is working closely with the external IT providers to resolve these.

The strategic plan for the next three years sets out a vision for the Association. Trustees are committed to improving services to members while continuing to monitor costs. We want to ensure a high-quality service to members and to the wider science education community, both nationally and internationally. While Trustees have confidence in the longer-term future for ASE, there remains a need to act with prudence. The Association continues to look at ways to expand membership and develop new income streams. A break-even budget has been set for 2020/21, with a recognition of the uncertain times in which we are operating.

Thanks, as always, are due to the staff at Headquarters; their commitment ensures that the Association continues to meet the needs of our members. A particular word of praise for our Chief Executive who continues to provide steadfast leadership through difficult times.

***Roger McCune MBE*** *(Honorary Treasurer)*