Our approach is bold – the discipline of pharmacology is evolving, and it is our responsibility to define, redefine, and advance the discipline.

In 2021, the Society’s team, with continued and valuable support of its members, worked towards four key objectives, as set out by Council.

- Strengthen the voice of our members in all that we do.
- Live the values of, and communicate and implement, our Vision for Equality, Diversity and Inclusion in pharmacology.
- Co-create stable, diverse and ethical income streams that support the Society’s position as a charity with a mission to promote and advance the whole spectrum of pharmacology.
- Review and improve how we communicate impact and champion excellence in pharmacology, underpinned by robust technologies and procedures.

Our Council agreed to review and refresh the strategy a year early, taking account of the effects of the pandemic, changes to working patterns, and leadership in the previous year. Throughout 2021, we embarked on discussions with Council, our committees and members and key stakeholders to identify what was working well, what we could improve and how a new strategy could build on the visibility of pharmacology over 2020 and 2021 to showcase the importance of pharmacology to tackle challenges facing human and animal health. We worked hard to develop a new strategy with a flexible framework that would allow us to emerge stronger and more relevant than ever before. The details of our new strategy, built on our values of bold, nurturing, professional, and inclusive, can be found in the ‘looking ahead’ section of this review.

The constant thread throughout all our lives in 2021, the COVID-19 pandemic, was in deed demanding and difficult, yet it allowed us to highlight the importance of pharmacology in human and animal health. Many of our members actively contributed to the remarkable achievements that have had such a positive impact on saving lives and reducing the effects of COVID-19. We would like to thank all those who have been working tirelessly during this time and who have continued to contribute to the Society’s work.

During 2021, the Society has continually delivered results and achievements that fulfil the needs of our members and of wider society, despite the ongoing challenges brought about by COVID-19 around the world. We are proud of our work with, and for, our members in 2021 – the year in which we celebrated 90 years since the Society’s foundation. This milestone anniversary was a chance for us to reflect on our history, consider our current position, and look forward to our future – keeping our members and the wider pharmacology community at the heart of everything we offer. We are delighted to share this Annual Report, which outlines the activities and improvements that we undertook in 2021 to meet our vision and objectives.

A note of thanks to our outgoing President, Professor Sir Munir Pirmohamed from Rachel Lambert-Forsyth, CEO

I would like to thank Munir for his unfailing commitment during these past two years. Munir served his term throughout the pandemic, providing important leadership in a time of great uncertainty, alongside also personally contributing significantly to the global response and management of COVID-19 as Chair of the Commission on Human Medicines. Further, his work with the Clinical Pharmacology Skills Alliance to ensure that the development and growth of clinical pharmacology is considered a priority for the UK, has been pivotal this year. The Society’s members and staff, remain indebted to Munir and the impact of his work in pharmacology and beyond.
Our 2021

**JANUARY**
The Society welcomes the announcement that Wiley, the publisher of our journals, has updated its policy regarding author name changes with the aim of supporting the trans and non-binary academic community, and contributing to an inclusive research environment.

**FEBRUARY**

**MARCH**
Start of education workshops programme with Pharmacogenomics in Drug Discovery.

**APRIL**
Society opened applications for new Inclusive Pharmacology Education Steering Group.

**MAY**
Prize winners announced, including second EDI Prize.

**JUNE**
Cheltenham Science Festival and Members recognised in 2021 Queen’s Birthday Honours including our Industry Trustee.

**JULY**
Findings of 2021 member survey shared with members.

**AUGUST**
The announcement of the new UKRI Open Access (OA) policy.

**SEPTEMBER**
Pharmacology 21 Annual Conference held virtually and British Journal of Clinical Pharmacology publishes a joint editorial calling for urgent action to tackle the global environmental crisis, in partnership with leading health journals worldwide.

**OCTOBER**

**NOVEMBER**
The Society launches antimicrobial prescribing resource with the British Society for Antimicrobial Chemotherapy.

**DECEMBER**
BPS 90th Anniversary and 75th birthday of the British Journal of Pharmacology celebration event.
Our year in numbers

Member numbers
The total membership on 31 December 2021 was 4,768, representing an increase of 4% in the space of a year and the Society's highest ever number of members. The Society was sad to report the deaths of 17 members.

Of those 4,768 members:
- 59% were early career pharmacologists (2020: 57%)
- 27% were international (2020: 25%)
- 36% identified as female (2020: 38%)
- 31% identified as minority ethnic origin (2020: 30%)

Website:
- Page views: 1,027,798 (2% decrease compared to previous year)
- Sessions: 196,066 (3% increase compared to previous year)
- Users: 142,646 (5% increase compared to previous year)

Measuring our progress in diversity, equity and inclusion
We are committed to holding ourselves to account on our diversity, equity and inclusion objectives, and have been actively reviewing how and why we diversity collect data and where is it reported. Our strategy is evolving and we will refine how we report in future annual reports.

Social media
The Society saw enormous increases in the number of users viewing and engaging with our Facebook content in 2021, which is fantastic to see. Equally on YouTube, a much larger number of users viewed our content, and viewed it for longer periods than in recent years. We also gained a much larger number of subscribers than in 2020. Due to the pandemic, we have been hosting most of our events either online-only or hybrid, and we made the decision to upload the recordings of meetings on our YouTube channel, so that the content is more widely accessible. It is fantastic to see that so many users are watching this content and finding it useful. The Society's Twitter account saw a slight dip in the number of users viewing and engaging with content, however while this isn't of any immediate concern, this is something we are continuing to monitor.

Awards
- £179,382 was awarded through prizes, grants and awards (2020: £299,680)
- 94 applications were received (2020: 118)
- 62% of applications were for female candidates (2020: 62%)
- 93 prizes were awarded (2020: 118)

UK PSA figures:
- 9295 individual UK PSA sittings
- 9073 medical students in UK
- 222 foundation sittings in UK

Pharmacology 2021
- 600 virtual registrations
- 44 Countries
- 1179 total unique viewers on Day 1

Including:
- 194 undergraduate members
- 153 early career members
Meetings and events

As highlighted in the President’s message, the continued COVID-19 restrictions in place around the world and within the UK led to another challenging year for the events industry. However, thanks to the experience that we gained in 2020, our meetings team provided a vibrant series of virtual and hybrid events for members.

90th Anniversary Celebration event

The Society celebrated its 90th anniversary with its first ever hybrid meeting on 1 December 2021. The programme celebrated the history and global impact that pharmacology has had since 1931 and looked to the future of pharmacology and therapeutics in a rapidly changing world.

The meeting celebrated the significant contributions to clinical pharmacology of two pioneers, Sir Colin Dollery and Sir Alasdair Breckenridge. We were also delighted to celebrate the impact of virtual events. The Society also network in-person after two years of no in-person meetings. The opportunity to attendees to attend a drinks reception and dinner, giving 184 people joining us online. The meeting also had over its 75-year history.

At the start of the year, the WCP Executive Group and BPS Management Group began discussing the risks surrounding COVID-19 and the pandemic’s potential impact on the event, which was due to be held in July 2022 with more than 3000 international attendees. Following a robust review, and after consultation with the International Union of Basic and Clinical Pharmacology (IUPHAR), we took the decision to move the Congress from 2022 to 2-7 July 2023. At the heart of our decision was the continued COVID-19 and the pandemic’s impact and scope for successful translation.

World Congress of Basic and Clinical Pharmacology: milestones in 2021

In 2021, planning continued for the 19th World Congress of Basic and Clinical Pharmacology (WCP2023).

In October, we launched the scientific programme for WCP2023 which focuses on collaboration, innovation, and discovery – all of which are underpinned by outstanding science. The Scientific Organising Committee selected a fantastic line-up of around 500 speakers and chairs, from more than 35 countries and six continents, who are renowned for their expertise and leadership in pharmacology. We also launched 63 symposia, 25 keynote lectures, 18 workshops and three debates across 10 major content themes.

In addition to our annual conference, the Society also hosted a series of successful webinars and online focused events in 2021, which were well attended by members across the world:

Programme of events

A great deal of work has gone into selecting our programme, so there should be innovative world class science to suit all interests. Alongside our symposia and keynote lectures we have a packed schedule of abstract presentation, networking opportunities and of course the all-important social programme, to catch up with, and make new friends from across the globe.

Professor David Webb, WCP2023 President

Our focused events:

- **BPS & THE SOCIETY FOR MEDICINES RESEARCH (SMR) JOINT MEETING**: Exploring the status of animal models of psychiatric disorders – their validity and scope for successful translation
  - 24 February 2021
  - 92 registrations
  - 17 countries
  - 87 unique viewers

- **BPS & THE LABORATORY ANIMAL SCIENCE ASSOCIATION (LASA) JOINT MEETING**: Animal models of psychiatric disorders – their validity and scope for successful translation
  - 09-10 June 2021
  - 69 registrations
  - 13 countries
  - 70 unique viewers

- **BPS & ELRIG JOINT MEETING**: Translating Ideas in Therapy
  - 28-29 June 2021
  - 968 registrations
  - 64 countries
  - 279 unique viewers

- **POLYPHARMACY WORKSHOP**: 09-10 November 2021
  - 29 registrations
  - 12 countries
  - 38 unique viewers

Annual meeting: Pharmacology 2021

Pharmacology 2021 took place over three days in September with delegates using our innovative online platform to join sessions, watch speakers, and present their research.

We were honoured that Professor Dame Sarah Gilbert, who led the development of the Oxford University-AstraZeneca COVID-19 vaccine, joined us to deliver the closing plenary on development of the ChAdOx1 vaccine platform and its use against SARS-CoV-2.

As with 2020, we used our online member Community site to host networking and informal sessions, including an education symposium, talks on equity, diversity, and inclusion, and updates from Society Ambassadors around the world. Attendees participated in our social event, ‘Musical Bingo Extravaganza’, where many prizes were won.

At the start of the year, the WCP Executive Group and BPS Management Group began discussing the risks surrounding COVID-19 and the pandemic’s potential impact on the event, which was due to be held in July 2022 with more than 3000 international attendees. Following a robust review, and after consultation with the International Union of Basic and Clinical Pharmacology (IUPHAR), we took the decision to move the Congress from 2022 to 2-7 July 2023.

At the heart of our decision was the safety and wellbeing of everyone involved, as well as accessibility. Several countries around the world had begun to implement vaccination programmes to tackle the spread of COVID-19, and ultimately to bring the pandemic to an end. We were determined that there should be as few barriers as possible to delegates joining us in Glasgow and were keen to allow vaccination programmes to take their course, so that as many people as possible would be able to attend in 2023.

In addition to our annual conference, the Society also hosted a series of successful webinars and online focused events in 2021, which were well attended by members across the world:

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5.

Journals and publications

75 Years of the British Journal of Pharmacology

In 2021, the British Journal of Pharmacology (BJP) celebrated its 75th birthday, marking more than seven decades of leadership in experimental pharmacology.

For the occasion, the Journal held two webinars about its contributions to reproducibility and transparency, one of which was organised in partnership with the Brazilian Society of Pharmacology and Experimental Therapeutics (SBFTE).

The BJP concluded its celebratory year with a lecture given by its Editor-in-Chief, Professor Amrita Ahluwalia, at the Society’s 90th Anniversary celebration event. In her lecture, Professor Ahluwalia discussed the Society’s leadership through several of its key initiatives, including:

- release of the latest edition of the Concise Guide to Pharmacology 2021/2022
- development of guidelines on the citation of preprints
- inviting Dame Sarah Gilbert to give the plenary lecture at Pharmacology 2021
- publication of eight themed issues

Growing presence of our journals

In 2021, our Editorial Boards, with members from 30 different countries, worked consistently to consolidate the journals’ global reach, and to ensure their relevance and accessibility to pharmacologists across the world. For example, the British Journal of Clinical Pharmacology (BJCP) has translated some of its key commentaries from recent years for re-publication in Chinese journals. Both BJP and BJCP commissioned and highlighted important topics from authors in specific regions, such as the BJP’s themed issue on ‘Neurochemistry in Japan’.

Similarly, the journals have focused on growing their coverage of all areas of the discipline. Initiatives include the launch of BJCP’s ‘Pro/Con’ debates in clinical toxicology, guided by the incoming Senior Editor, Professor James Dear, and Pharmacology Research & Perspectives (PR&P)’s successful new series on pharmacology innovation.

Finally, the BJCP has taken the lead on addressing the responsibilities of pharmacology in the climate crisis. Together with a statement from the Society, the journal published two editorials calling for action on the environment and started a new series on ‘sustainable medicines development and use’.

Changing publishing landscape

The announcement of the new UKRI Open Access (OA) policy in August of 2021 occasioned a revisit of how the Society responded to the consultation for the policy back in May 2020, and a review of subsequent changes to the landscape since that time.

In 2021, there was a marked increase in the number of OA articles published within the Society’s journals. The proportion of OA articles within the BJP and BJCP has increased, from one in 10 back in 2017, to more than one in three in 2021. Together with the increase in size of PR&P, our fully open access journal, this means that the Society’s publishing portfolio is, for the majority, completely free to read.

Pharmacology Matters

In 2021, the Pharmacology Matters Editorial Board grew in number and breadth, adding twelve new members who bring a wide range of interests and perspectives to the magazine.

Across the year, we published several interviews and articles covering all aspects of pharmacology, careers and activities at the Society. This year, the publication once again ran its Junior Science Writing competition, which received over 120 wonderful entries from children aged 7-11. The articles from the winner and two runners-up will be published in 2022.

In September, the magazine highlighted its contribution to the Society with a dedicated session at Pharmacology 2021, entitled ‘What can Pharmacology Matters do for you?’, which covered all aspects of its activities. The session heard from existing contributors who shared their positive experiences of working for and with the magazine.
Creating an agile working environment to help our employees thrive

In 2021, as with each year, we continued to review our employment practices to ensure that we have a high-functioning team who can deliver the Society’s strategy and serve our members.

Following the disruptions brought by COVID-19 in 2020, we launched an Agile Working Policy which trusts employees with autonomy over how they can best work in a hybrid manner to be productive in their roles. As part of this, we no longer require that employees must be employed for a significant period before they can make a flexible working request. Colleagues can now ask for this from their first day onwards, and further, all employees can apply for flexible working.

Employee wellbeing remains a priority

We are committed to nurturing a healthy, happy, and well-supported team. To support that aim in 2021, we implemented the following new wellbeing initiatives:

- **Able Futures**: a Government funded programme offering support for employees whose circumstances or mental health may affect their wellbeing or work performance.

- **Mental Health First Aiders**: two employees were trained to be Mental Health First Aiders.

Diversity, equity and inclusion

Our new Agile Working policy and all-staff Mental Health Awareness training both reflect our commitment to an inclusive approach among our staff.

Further, through our continued membership of EDIS Group, we have also been able to offer places for Race Reflections training.
7.

Equity, diversity, and inclusion

Following the launch of the Society’s Vision for Inclusive Pharmacology in October 2020, we made excellent progress on inclusivity objectives in 2021, spanning our role in pharmacology as an organisation and as an employer. We carried out several impactful initiatives, designed to place equity, diversity and inclusion at the heart of pharmacology, whether in terms of the opportunity for a successful career or in benefitting from pharmacology research.

Meetings and Events

Also at Pharmacology 2021, we heard a lecture from Dr Catriona Waitt, who earlier in the year became the second-ever winner of the BPS Equality, Diversity and Inclusion Prize. “There is a danger [of reducing] equality, diversity and inclusion to certain individual characteristics because as we all know, you may have two individuals who look the same on paper but who have entirely different perspectives and life stories to tell. I believe each one of us is actually a complex mixture of all the stories that we have, they make us who we are. Each one of us can bring something into society and the workplace that nobody else can bring.” Excerpt from Dr Catriona Waitt’s Prize winning lecture.

We also built on our experience running accessible online events, reinstating our programme of training workshops and expanding our webinar series to improve accessibility and reach. We have also changed our overall approach to meetings, with in-person events moving to a hybrid format.

Education

The Society established an Inclusive Pharmacology Education Steering Group to inform a full review of our undergraduate pharmacology curriculum, and to advise on its inclusive implementation. We funded an education grant for ‘a simple student-generated resource to initiate conversations about decolonising the pharmacology curriculum’ and sponsored the EDIS Group 2021 Symposium, which included a talk on inclusive pharmacokinetics.

Policy

In 2021, we continued to embed inclusivity into our policy work. For example, we submitted evidence to the government’s Women’s Health Strategy consultation, and we sponsored the All-Party Parliamentary Group on Diversity in STEM, submitting evidence to its inquiry on ‘Equity in the STEM Workforce’ and welcoming the report on its publication.

Society and Staff

To monitor our own progress in inclusivity, the Society has been progressing a review of its diversity monitoring data collection and reporting and developing a new data strategy to inform the next stage of work. Further, we are also building on our new code of conduct with a specific focus on our committees and journal editors, and additional guidance on inclusive chairing.

A challenged world is an alert world and from challenge comes change. So let’s all choose to challenge. How will you help forge a gender equal world? Celebrate women’s achievement. Raise awareness against bias. Take action for equality.

Dr Catriona Waitt

International Women’s Day
Choose to Challenge
#IWD2021

Mixture of all the stories that we have, they make us who we are. Each one of us can bring something into society and the workplace that nobody else can bring.” Excerpt from Dr Catriona Waitt’s Prize winning lecture.
Society training workshops
The Society plays an important role in supporting and providing training for early career pharmacologists in all career paths, clinical, industry and academic.
In 2021, following the disruptions of 2020, we were able to re-introduce our full programme of training workshops via a mixture of online and in person meetings.
We established monthly online training for those in the clinical specialty of ‘Clinical Pharmacology and Therapeutics’ and delivered new industry-relevant content.
The following popular and successful training workshops were delivered in 2021, attracting up to 30 delegates per course:

- Pharmacogenomics in Drug Discovery – March 2021 (online)
- Pharmacokinetic and Pharmacodynamics (PKPD) – September 2021 (Liverpool)
- Pharmacology and Drug Discovery – October 2021 (online)
- Experimental Medicine – October 2021 (online)
- AI and Computational Drug Discovery – November 2021 (online)

Whilst they were mainly delivered virtually, we managed the core learning objective by utilising pre-course learning and breakout groups during the training to facilitate discussion and networking. Online delivery of these workshops prompted increased international attendance, and our focus for 2022 is on introducing new topics based on this successful format.

- I wanted to feed back how much I enjoyed and gained from the PKPD training workshop. It was a great example of pharmacological skills training."
  Industry Scientist, PKPD training workshop attendee

- Really informative talks, and the workshops made it very interactive and engaging. The most engaging online event I have attended this year!"
  Industry Scientist, Experimental Medicine training workshop attendee

Curriculum Review
The Society’s educator networking meetings have provided an ideal platform to gather feedback on the use of the Society’s undergraduate pharmacology core curriculum, as part of our curriculum review.
This process is due to complete in 2022 and will provide better support for teaching all the elements of knowledge, skills and attitudes identified in the curriculum.
The work is focusing on the needs of educators and will provide:
- An inclusive approach to teaching pharmacology (via resources and language)
- Learning Objectives to support educators
- Examples, resources and templates against each core attribute

Through feedback in 2021, we also identified gaps that we need to address, either via future elearning or content such as videos or experiment templates.

Research Animal Sciences Education Scheme (RASES)
We have previously recognised the knowledge, skills and attitudes in this core curriculum. The discovery will be a leading focus for 2022.

Online experiment benefits:
"I took the time to actually go through all the steps of the experiment and understand why we do each step. Honestly, if I hadn’t, I wouldn’t have been as confident doing this experiment in person at all.”
On the value of live in-person practicals:
"I think just knowing how the mice behave was super beneficial because there’s only so much written words and videos can give you. There’s just some things you have to experience yourself in person.”
Undergraduate pharmacology students’ feedback: pros and cons of online and in person experiments:
Clinical Pharmacology Week 2021

During Clinical Pharmacology Week this year, which took place from 10-16 October, the Society hosted a series of webinars, to showcase the many ways in which this small but growing specialty is making an impact for healthcare outcomes and patients. These included:

Safe Prescribing

This is a topic very close to the Society’s heart. The session, chaired by Professor Simon Maxwell, Medical Director of the Prescribing Safety Assessment (PSA), covered crucial areas including polypharmacy, pharmacovigilance and the interpretation of evidence and its application to practical prescribing.

Clinical Trials

This webinar focused on innovation in clinical trials and delivering studies that are agile and informative. It was chaired by Dr Daniel Marks of University College London Hospitals NHS Foundation Trust and AstraZeneca, and Dr James Fullerton from the University of Oxford. This topic was especially timely considering the pivotal role agile clinical trial design has played in developing vaccines and treatments for COVID-19.

Pharmacogenomics

The final webinar focused on pharmacogenomics and its implementation in the NHS. The session was chaired by Society President and clinical pharmacologist, Professor Sir Munir Pirmohamed. It provided an excellent overview of the current state of pharmacogenomics adult and child health, and the gaps in education and training. (This skills gap is the focus of a joint working party between the Society and the Royal College of Physicians.) Discussions included the use of pharmacogenomics in paediatrics and the importance of forming international consortia to generate robust evidence, and the need to recognise that pharmacogenomics education and training needs are not confined to only one specialism or one profession.

To discover more about clinical pharmacology, visit our careers pages or follow the hashtag #ClinPharmWeek on twitter.
Careers and Engagement

Careers
In 2021, the Society launched multiple digital and print careers resources for a range of audiences. These resources, found on our website, can be used to inform careers fairs, schools, university departments or event stands. We look forward to the materials being shared at future careers events. https://www.bps.ac.uk/ambassadors/resources-for-promoting-careers

Engagement
Despite continued COVID-19 disruption in 2021, the Society, its ambassadors and members successfully delivered engagement activities at over 20 careers fairs and virtual events, raising awareness of pharmacology for all.

One of the year’s highlights was our collaboration with the Cheltenham Science Festival, resulting in a debate on the theme of ‘How to age well’ at their hybrid event.

This event was a perfect home for the Society, because many clinical pharmacologists lead polypharmacy clinics around the country.

Engagement in 2021 – our key activities:
• June 2021 ‘How to age well’ Cheltenham Science Festival, June 2021 (Chair, Society member Dr Lauren Walker)
• June 2021 ELRIG/BPS Early Careers Scientists Webinar, Careers in Industry Webinars (Speaker, Society member Dr Amanda Kennedy – MSD)
• Sep 2021 Glasgow Science Festival, Medicine Makers (Speaker, Society Ambassador Dr Yvonne Dempsey)
• Nov 2021 Bioscience Careers Day (Session Chair, Society member Emily Hobson)
• Nov 2021 BPS Connect Online Engagement Conference (Keynote Speaker, Society Vice President Engagement Dr Sarah Bailey)

We would like to recognise the efforts of many members and ambassadors who led school engagement activities, science fairs and careers events throughout the year. A number of these were held virtually, so can be watched back online and will therefore continue to reach new audiences.

Planning for future engagement
During 2021, the Society’s Engagement Committee supported our staff in creating plans to future-proof and prioritise our engagement activities.

At our virtual annual meeting, Pharmacology 2021, the Committee led a session to gather feedback on the ‘who, how and why’ of our engagement with others.

A key priority for the future is to support and build a community of ‘pharmacology engagers’ across the BPS membership.

In our future engagement plans we aim to:
• Train members in effective engagement
• Reach diverse public audiences
• Use inclusive resources
• Evaluate activities across a range of events to assess impact.

Dr Sarah Bailey
Vice President - Engagement

Member networking
Another great success from 2021 was the growth of the digital Undergraduate Network in the BPS Community platform. Driven by a small team of effective and enthusiastic leads, this network reached over 100 members in 2021.

The network leads organised two online meetings, principally to meet each other and share experiences, but also to remind new pharmacology undergraduates to join both the Society and the BPS Community network for free.

One of the original Network leads, Alina Zorn has since been appointed the new Early Career Trustee on our Council. Additionally, we had our first undergraduate Engagement Committee member join this year.

Drug Discovery of the Year
Each year our Industry Sub-Committee awards the prestigious ‘Drug Discovery of the Year award’ to recognise the achievements of pharmacologists and scientists who work together in drug discovery and development to launch innovative new medicines.

In 2021 the Sub-Committee reviewed 70 new approved drugs, and chose to recognise the team of scientists who developed Evrysdi® (risdiplam) – an oral treatment for Spinal Muscular Atrophy (SMA). This drug was developed by Roche in collaboration with PTC Therapeutics and the SMA Foundation. The Society welcomes this collaborative approach to drug discovery.

“...”
11.

Policy

In 2021, the Society’s policy team continued its vital work in advocating for the critical role of clinical pharmacology, particularly in addressing the challenges and opportunities of the next decade.

Working with our partners in the Clinical Pharmacology Skills Alliance (CPSA), we made a representation to the Spending Review, seeking investment in a ten-year workforce strategy for clinical pharmacology, which proposes doubling the number of clinical pharmacologists in the NHS by 2031. This investment would help enhance the UK’s capacity to deliver clinical research in partnership with the NHS, strengthen the UK as a development base for new therapeutics and support patient care through the safe and effective use of medicines.

In a meeting with Sir David Behan (Chair of Health Education England) and Sir Andrew Morris (Acting Chair, NHS Improvement) we discussed the important role of clinical pharmacology in helping the UK to recover, grow and respond to priority health challenges, and won their support to ‘think big’ about a strategic approach.

This work led to collaboration with NHS Improvement and Health Education England to develop a vision for a multi-professional medicines service network embedded in all Integrated Care Systems and across devolved nations; this aims to address multimorbidity and polypharmacy, pharmacogenomics, and precision medicine, and improve NHS research capability.

This proposal for a medicines service ... rightly identifies that we need to make investments in clinical pharmacology and clinical genetics now, because these are some of the critical skills we will need for the future – we cannot delay.

I fully support the proposed investments – and am keen that the NHS and the wider sector grasp the opportunity to come together and think bigger as we develop this work.

Sir Andrew Morris
Acting Chair of NHS Improvement

The UK government’s Spending Review also provided an opportunity for the Society to continue to support cross-sector calls for investment in research and development.

Our policy efforts in 2021 also included public support for two related government strategies: the UK Life Sciences Vision and Future of Clinical Research Delivery that aim to “create an environment in which industry can grow and succeed in the UK, and patients and the NHS can receive a real benefit” and embed clinical research into care. We were pleased to see that cross-sector advocacy and evidence submissions to the Care Quality Commission led to an increase in prominence of research in their new strategy.

Further, during the year, the Society published a series of case studies on the contributions of clinical pharmacology, particularly during the COVID-19 pandemic, that demonstrate how the discipline can help deliver ambitions for research and patient care. We complemented this work with a cross-sector evidence submission and advocacy to inform the Health and Social Care Bill, calling for a strengthened mandate on research delivery, and with continued campaigning on the role of clinical pharmacology in supporting healthy ageing – including at the Cheltenham Science Festival event. We were also pleased to see that in response to our evidence submission, the Scottish Heart Action Plan highlighted the role of clinical pharmacologists in delivering for heart disease patients.

The Society published a statement on the climate crisis and sustainable health technology evaluation and published in the British Journal of Clinical Pharmacology – as highlighted above. Further, we signed a letter published in The Times in support of MBR Acres – a laboratory in Cambridge that is experiencing friction from protesters about the use of dogs in research.

As a member of the Inequalities in Health Alliance, the Society signed a letter to the Prime Minister calling on government to create a cross-government strategy on health inequalities.

As a member of the UK’s commercial cyber security strategy for the NHS and further in response to the COVID-19 pandemic, the Society was also pleased to see the government’s commitment to improve the UK’s cybersecurity capabilities.

We continued working with our members to ensure pharmacology expertise was communicated through relevant inquiries, responding to thirteen in total on a range of topics including Women’s Health, barriers to legitimate research on controlled drugs, the sustainable use of pesticides, health technology evaluation and the reproducibility and integrity of research.

Investing in a multi-professional medicines service network in Integrated Care Systems and across devolved nations is a progressive step and will ensure we get the best value and outcomes from medicines.

Sir David Behan
Chair of Health Education England (HEE)

Enabling industry, regulators, academia, and the NHS to work together is the only way we will tackle big health challenges. COVID-19 has demonstrated this powerfully, and it is now received wisdom that we need to learn these lessons as we move through recovery and towards growth.

The new Life Sciences Vision sets an ambition to develop a strong talent pool with the variety of skills that are needed to drive better health outcomes and build on the UK’s scientific excellence and attractiveness to industry. Clinical pharmacology is one of these critical areas and investing in this workforce proposal will go a long way in addressing this long-standing skills gap.

Professor Sir John Bell
Regius Professor of Medicine at Oxford University and Chair of the Life Sciences Industrial Strategy Implementation Board.
UK PSA

Prescribing Safety Assessment (PSA):
The Society’s PSA team, alongside partners Medical Schools Council (MSC) once again faced the challenge of delivering significant national online medical assessments during a pandemic. However, despite COVID-19 disruption, the PSA was successfully delivered to 9,295 candidates, made up of 9,073 medical students and 222 foundation level candidates. As with 2020, remote sittings were a feature of the assessment, because many medical school facilities were unavailable, and some candidates were invigilated in their own homes. The process of item peer review, Assessment Boards and Standard Setting was also undertaken remotely, to ensure that the item bank was replenished and ready for 2022. The continued participation in the PSA by the Irish and Maltese medical schools was welcomed. The Society’s PSA team is extremely grateful to our authors, reviewers, and medical school staff, who showed remarkable commitment and flexibility in 2021. The same applies to all candidates around the world, who embraced the challenges faced.

The Prescribing Safety Assessment (PSA) has been delivered seamlessly throughout the pandemic, with many students sitting remotely due to social distancing requirements. We are enormously indebted to everyone involved for continuing to support the PSA, particularly given the additional pressures that many staff and students have faced in their NHS and university roles during this period. We are looking forward to welcoming everyone back to face-to-face meetings and assessment events in 2022 and beyond.

Dr Lynne Bollington
Lead Consultant, Prescribing Safety Assessment

BPS Assessment (BPSA)

A Global Business
We continued to build our sales pipeline among medical and pharmacy schools, Royal Colleges and hospitals worldwide, responding to growth in demand for distance learning and online assessment. Throughout the year we worked with customers in fourteen countries to successfully deliver 145 exam sittings involving almost 6,000 students.

International PSA
For the first time, an international standard-set assessment was launched for summative use. The International PSA (IPSA), which is equivalent to the UK PSA, began gaining traction in the Middle East in 2021, as well as among UK Trusts. While principally aimed at supporting the financial sustainability of the UK PSA, this product nevertheless extends BPS Assessment’s portfolio across summative and formative assessments and will form a component of new packages underpinning new sales opportunities.

Platform development
The platform has been updated to support the sale of our products to individual students, including the ability to display items as courses and provide discounts for multiple purchases. We continue to refine our metadata and other back-end improvements, which will ultimately enable our content to be made available with more flexibility and to more customers.

The global pandemic continued to have a major impact on customer budgets. 2021 sales closed at £196,692, against a requirement of £301,000 for BPSA to be on target to reach breakeven by the close of 2023. A thorough costing exercise for various sales scenarios was undertaken during the year which enabled the Society’s Finance Committee to reconfirm underpinning financial support for BPSA for two further years, with clear targets for sales set. Despite challenges in the market, the basis for solid growth in 2022 was laid with the launch of new products and services aimed at further supporting our UK and international business activities. Our international reach was greatly expanded by partnering with representative agencies covering Southeast Asia, Australia and New Zealand, the Middle East and Turkey which will further drive growth in sales.

We built and launched a new shop interface which has allowed us to expand our training resources in the UK which we can now offer directly to the customer. We also developed a set of eLearning sessions, accessible via the new shop, which are targeted at UK medical students sitting the Prescribing Safety Assessment (PSA). PSA Prep consists of a collection of nine eLearning sessions that provide a detailed outline of each of the question styles found in the exam, tackling areas commonly found difficult by students.

To accompany PSA Prep, new Prescribing Practice Papers were also launched consisting of 120 questions split across three papers, including one full two-hour practice exam. All three papers were written by UK experts and have been aligned to the British National Formulary. We hope that these practice papers, alongside PSA Prep, will form the perfect revision materials for final year medical students within the UK who are preparing to sit the PSA. For summative assessments, we continued to provide options for remote invigilation.
14. Governance and committees

Committees and groups
During the year, the Society’s committees and groups continued to hold meetings online due to disruption and restrictions brought about by COVID-19. The following committees and advisory groups operated during the year:

• Finance Committee
• Engagement Committee and Industry sub-committee
• Education and Training Committee
• Clinical Committee and StR sub-committee
• Meetings Committee
• Early Career Pharmacologist Advisory Group
• International Advisory Group

Trustees during 2021:
The following Trustees commenced their term at the start of 2021:

• Professor Jamie Coleman, Clinical Trustee
• Professor Ana Alfirevic, Senior Academic Leadership Trustee
• Professor Steve Watson, Research Dissemination Trustee

The following Trustees demitted at the end of 2021:

• Professor Sir Munir Pirmohamed, President
• Dr Laura Ajram, Early Career Trustee

Treasurer Elect and Honorary Treasurer Term of Office
The Society’s 2021 Annual General Meeting approved changes to the term of office for the following positions to better fit in with other officer roles:

• Treasurer Elect, from two to one year
• Honorary Treasurer, from four to three years.

Annual General Meeting (AGM)
The Society’s Annual General (AGM) meeting took place as a hybrid event, both online and in-person, on 30 November at The British Library in London. This was the first time in many years that the AGM has taken place as a standalone event. It usually takes place in December as part of the Society’s Annual Meeting, which was held in September on this occasion.

The event included an additional session titled, ‘In conversation with Professor Sir Munir Pirmohamed’. This informal conversation moderated by Professor Reecha Sofat, incoming Vice President, Clinical covered Sir Munir’s work in clinical pharmacology, his personal career lessons and leadership approach, tackling not only the changing landscape of pharmacology but the human story behind his extraordinary career to date.

15. Sponsors, donors and meeting partners

Focused meeting partners
10x Genomics
ACS Pharmacology & Translational Science
Actual Analytics
Aelian Biotechnology
AstraZeneca
bit.bio
Collaborative Drug Discovery
Elsevier
GSK
Instem plc
Laboratory Animal Science Association
Liverpool ChinChem
Milenyi Biotec
Nuvisan
Society for Medicines Research
The Psychiatry Consortium
WuXi AppTec

WEBINAR meeting Partners
• BPS Live – Natural Products in July – with BJP & BJCP
• BPS Live – ECR prize winning research in Nov – with BJP & BICP

Sponsors
Abcam plc (P21 Partner)
ACS Pharmacology & Translational Science (P21 Partner)
Actual Analytics
AstraZeneca (P21 Partner)
Actual Analytics
BMG Labtech Ltd (P21 Partner)
Elsevier Limited (P21 Partner)
Instem plc
J Wiley & Sons Limited (P21 Partner)
MDPI Pharmaceuticals (P21 Partner)

Society Donors
Medical Research Council
The Physiological Society
The Royal Society
Our 2021 award winners are detailed below – many congratulations to all of them:

**Prizes**

**BJP Prize for Early Career Researchers**
Dr Liliana Raimundo, University of Porto

**BJP Editors’ Performance Award**
Dr Mark Dallas, University of Reading
Dr Stephen Harmer, University of Bristol
Professor Claudio Mauro, University of Birmingham

**BJCP Prize**
Dr Franca Morselli, King’s College London

**BJCP Editors’ Performance Award**
Dr Rob ter Heine, Radboud University Medical Center

**BPS Equality, Diversity and Inclusion Prize, sponsored by AstraZeneca**
Dr Catriona Waitt, University of Liverpool

**The Dunlop Prize Lectureship**
Dr Thomas Buters, Centre for Human Drug Research

**BPSP Editors’ Performance Award**
Dr Richard Turner, University of Liverpool

**Best Oral Communication Prize winners**
Nikita Patel, Queen Mary University of London
Jade Vince, St George’s, University of London
Shireen Mohammad, Queen Mary University of London

**The Lilly Prize**
Professor Csaba Szabo, University of Fribourg

**Vogt Prize**
Dr Chloe Peach, New York University

**Wellcome Gold Medal**
Professor Julia Buckingham, Brunel University

**Zaimis Prize**
Dr Dave Lewis, University of Leeds

**Best International Oral Communication prize winner**
Dr James Currie, Galway University Hospitals

**Flash poster prize winners**
Dr Laura Lemel, University of Nottingham
Eleanor Dixon, University of Edinburgh
Justine O’Brien, University College Dublin

**Top 3 Undergraduate Poster Prize winners**
Melissa Alimkunni, St George’s University of London
Charlotte Thomas, St Georges, University of London
Carys Roberts, University of Bath

**Top 3 Young Career Poster Prize winners**
Nokomis Ramos-Gonzalez, University of Bristol
Norah Alhosan, University of Bristol
Eleanor Dixon, University of Liverpool

**Best Education Oral Communication prize winner**
Dr Anne Burke-Gaffney, Imperial College London

**Student Choice Award for Excellence in Pharmacology Teaching**
Dr Martin Hawes, University of Surrey

**Vane Medal**
Professor Csaba Szabo, University of Fribourg

**Shire Prize**
Dr Chloe Peach, New York University

**Wellcome Gold Medal**
Professor Julia Buckingham, Brunel University

**Zaimis Prize**
Dr Dave Lewis, University of Leeds

**Pharmacology 2021 prizes**

**Best oral communication prize winners**
Nikita Patel, Queen Mary University of London
Jade Vince, St George’s, University of London
Shireen Mohammad, Queen Mary University of London

**Best clinical oral communication prize winner**
Dr James Currie, Galway University Hospitals

**Best international oral communication prize winner**
Dr James Currie, Galway University Hospitals

**Best education oral communication prize winner**
Dr Anne Burke-Gaffney, Imperial College London

**Late breaking poster prize winners**
Aas Aligami, University of Nottingham
Dr David Ryan, St George’s, University of London
Charles Lay, University of Nottingham
**Lectureships**

**ASCEPT Lecture**  
Jennifer Martin, University of Newcastle  

**BPS keynote lecture at ASCEPT 2021**  
Professor Andrew Tobin, University of Glasgow

**Grants**

**Education grants**  
Dr Anne Burke-Gaffney, Imperial College London  
Dr Christine Edmead, University of Bath  
Dr Nicolas Freestone, Kingston University  
Professor Kang Nee Ting, University of Nottingham Malaysia

**Student prizes**

**Clinical Undergraduate Prize**  
UK Medical students, including intercalating students, are recognised for their performance in examination, the Prescribing Safety Assessment, or their work on a pharmacology research project or special study module.  
Muhammad Aadi Bin Nooray Adboul, Queen Mary, University of London  
Rami Abbas, Imperial College London  
Sophie Abraham, University of East Anglia  
Laith Al Azawi, University of Dublin  
Matthew Bartlett, University of East Anglia  
Erin Boyle, University of Edinburgh  
Laura Docherty, University of Glasgow  
Orla Fanchorpe, Queen’s University Belfast  
Chloe Fear, University of Leicester  
Gemma Grier, University of East Anglia  
Ian Huyet-Sayers, Newcastle University  
Hui Li Askvil, University College Cork

**Undergraduate Pharmacology Prize**  
UK Students are nominated by UK universities and are recognised for their performance in the final year of their degree, which includes a pharmacology research project.  
Abhay Sawarn-Sidhu, University of Westminster  
Annabel Cardno, University of Cambridge  
Beth Newby, Newcastle University  
Charlotte Ellison, University of Leeds  
Courtney Hillman, University of Portsmouth  
Elena Perticucci, University of Oxford  
Elizabeth Forrester, St George’s University of London  
Emily Forrest, Cardiff University  
Eryn Burns, University of Huddersfield  
Isabelle Bailey, University College Dublin  
Katie Lui, King’s College London  
Nicholas Willetts, University of Aberdeen  

Dr Rustam Aryoodi, University of Herfordshire  
Sophie Rouvray, Swansea University  
Thadoe Thukua, University of Dundee  
Torben Meier-Klodt, University of Central Lancashire  
Victoria Kamperi, University of East Anglia  
Yuxing Xue, University of Strathclyde

**Student Contribution to Pharmacology**  
The following UK Students are recognised for their efforts to promote the discipline of pharmacology.  
Jak Eades, Newcastle University  
Ellie Hyde, University of East Anglia  
Sophie Inthinathan, Queen Mary, University of London  
Aerin Lee, King’s College London  
Romessa Mahmoud, University of Swansea  
Sarah Nichol, University of Glasgow  
Finley Reilly, University of Dundee  
Hannah Roughley, University of Leeds  
Thanacha Sooriaraputh, University of Westminster  
Alina Zorn, University of Aberdeen

**Honorary Fellowships and Fellowships**  
In 2021, we announced 14 new Honorary Fellows and 26 new Fellows.  
Honorary Fellows are elected for their contribution to Society life, they inspire and support members at earlier stages of their career or study.  

**Honorary Fellowships**  
• Dame Kate Bingham, SV Health Investors LLP  
• Jonathan Brun, Royal College of Anaesthetists  
• Professor Brenda Costall, Formerly University of Bradford  
• Dr Clive Dix, C4X Discovery Plc  
• Dame Sarah Gilbert, University of Oxford  
• Professor Roland Jones, University of Bath  
• Dr Melanie Lee, Lifestyles  
• Professor Ian McFadzean, King’s College London  
• Professor Graeme Milligan, University of Glasgow  
• Professor Jane Mitchell, Imperial College London  
• Sir Mene Pangalos, AstraZeneca  
• Professor Robin Plein, University of Strathclyde  
• Professor Anthony Smith, University of Newcastle  
• Professor Susan Wonnacott, University of Bath

**Fellowships**  
• Dr Dorothy Aidulski, STEM  
• Dr Sarah Bailey, University of Bath  
• Professor Victoria Chapman, University of Nottingham  
• Dr Brian Cox, Uniformed Services University  
• Professor Sven-Erik Dahlén, University College London  
• Dr Andrew Hitchings, St George’s, University of London  
• Dr Vanessa Ho, St George’s, University of London  
• Dr Simon Hollingsworth, AstraZeneca  
• Dr Niall Hyland, University College Cork and APC Microbiome Ireland  
• Dr Phil Jeffrey, Bicycle Therapeutics  
• Dr Emma Kidd, Cardiff University  
• Professor Vincenzo Libri, University College London  
• Dr Selvanyagam (Niru) Nirthanan, Griffith University  
• Dr Esther O’Shea, Universidad Complutense de Madrid  
• Professor Kevin Pfeuger, Harry Perkins Institute of Medical Research  
• Dr Sarah Pontefract, University of Birmingham  
• Professor Mike Riedler, University of Western Ontario  
• Dr Matthias Schwab, Dr Margaret Fischer Bosch Institute for Clinical Pharmacology  
• Dr James Paul Spiers, University of Nottingham  
• Dr Fiona Thomson, Glasgow University  
• Dr Derek Trezise, Sartorius

**Schachtner Award**  
Rebecca Budgett, University of Glasgow  
Justine O’Brien, University College Dublin

**Pickford Award**  
Dr Samantha Cooper, University of Nottingham

**Vacation Studenthip**  
Ruth Alexis Goh, Imperial College London  
Olivia Luciano, Queen Mary University of London  
Chloe McCormack, Dublin City University  
Kenzo Motohashi, University of Tokyo  
Euan Purdie, Glasgow Caledonian University  
Selina Tray, University of Nottingham  
Sophie Truman, King’s College London  
Ayla Yetkin, Brunel University London  
Georgia Walsh, Durham University

**Study awards**

AJ Clark Studentship  
Maria Cristina Ardelean, University College London  
BPS & ASCEPT Outstanding Young Investigator Award  
Dr Harriet Allan, Queen Mary University of London  
Dr Nicholas Hunt, University of Sydney  
AJ Clark Studentship  
Maria Cristina Ardelean, University College London  
BPS & ASCEPT Outstanding Young Investigator Award  
Dr Harriet Allan, Queen Mary University of London  
Dr Nicholas Hunt, University of Sydney
Recognising achievement
Financials

Income and Expenditure for 2021

Unrestricted Income £4,418,393
Unrestricted Expenditure £4,060,137

Restricted Income £104,886
Restricted Expenditure £158,000

Total Income £4,523,279
Total Expenditure £4,218,137

Income

- Income for the year totalled £4,523,279 which is an increase of 2.4% over 2020.
- Importantly, charitable activity income from journal publishing, which is the Society’s main income source, increased by 2.2% to £3,879,981 mainly because of income from the journal publishers on completion of a new agreement.
- Member numbers increased by 3.7% to 4,768 and membership subscription income increased by 2.8% to £125,154. This is primarily attributable to the increase in the number of Early Career Members who pay a lower subscription than other paying members. The overall improvement in membership reflects the Society’s longer-term approach to strengthening and growing the discipline of pharmacology.
- Scientific meetings income increased by £25,485 to £76,161 as the easing of COVID-19 restrictions meant that some additional meetings and events could be held after the cancellations and postponements in 2020 due to the pandemic. Pharmacology 2021 was again held as an online event with lower fees charged to reflect the virtual format.
- Voluntary income totalled £35,000 and is mostly for educational activities.
- Investment income was £4,758 lower at £72,526 due to the impact of COVID-19 on the markets.
- In addition, there were net gains on investments totalling £359,468.

Expenditure

- Expenditure on charitable activities totalled £4,194,316 which is a 0.1% decrease of £4,194.
- Journal publishing costs decreased by £85,167 to £1,362,652 as in-person reflecting publisher costs and careful control of other direct costs.
- Expenditure on educational activities at £1,822,296 was a 1.3% decrease of £24,868 over the previous year.
- Projects and awards expenditure at £186,892 was a 0.7% decrease of £1,359 over the previous year.
- Scientific meetings expenditure at £636,069 was a 29.1% increase of £143,512 over the previous year.
- Capital expenditure totalled £58,352 which is all for the development cost of the online platform that began supporting online assessment services in 2017.

Total Funds

The financial performance reported here is of the “Group”, which means the Society together with its trading subsidiary, BPS Assessment Limited.

The total funds increased by £664,610 and the resulting balance of total funds at 31 December 2021 amounted to £6,675,815 of which £6,357,984 is unrestricted funds.

Financial effect of COVID-19 in 2022

The financial effects of the COVID-19 outbreak are expected to depress the Society’s potential income in 2022 as universities worldwide in particular are expected to have less funding available for the Society’s established published content and emerging educational content delivered by BPS Assessment Limited. In the short term these adverse income effects are expected to be offset by cost reductions associated with conducting scientific meetings and other activities online. The Society is therefore redoubling its efforts to develop and diversify sustainable ethical income streams.
With 2021 marking the end of the Society’s 2018-2022 strategy, we are well-prepared and ready to embark upon a new and exciting set of plans for the next three years. The strategy for 2022 to 2024 aims to raise even greater awareness of the impact of pharmacology, particularly in the wake of COVID-19, as well as bringing pharmacologists more closely together, and supporting and celebrating pharmacologists’ scientific advances for the health of humans and animals.

The strategy comprises three pillars, which are underpinned by our values of bold, nurturing, professional and inclusive.

1. Progressing our pharmacology priorities
   What we will achieve:
   - We will advance the discipline of pharmacology, communicating its beneficial impact on animal and human health.
   - We will bring pharmacologists together to make advances in priority research areas.
   - We will work with our community and stakeholders to make progress on issues that matter.
   How we will get there:
   - By supporting training, workforce development, and multi-professional partnerships.
   - By driving an innovative programme of commissioned and member-led content.
   - By curating, and where necessary expanding, content into thematic priorities, which are joined up across policy, publishing, education, training, and meetings.
   - By leveraging our strengths in the production and delivery of quality content, to disseminate cutting-edge science worldwide.

2. Celebrating and connecting our community
   What we will achieve:
   - We will foster and celebrate a diverse pharmacological community, flexing our provision to meet its changing needs.
   - We will anticipate the changing needs of the pharmacological community, recognising and supporting all individuals, at all stages of their careers.
   - We will dismantle barriers to inclusion if we identify any within the Society.
   How we will get there:
   - By harmonising our education, training, and engagement projects in collaboration with our community across all settings by aligning them to our thematic priorities.
   - By focusing on removing barriers to inclusion and building equity throughout the Society.
   - By inspiring the new generation with stories that articulate the breadth and depth of pharmacology.
   - By embracing digital opportunities to grow membership and expand engagement.

3. Sustaining our society
   What we will achieve:
   - We will secure our future, to support the next generation of pharmacologists, and to continue to champion the importance of the discipline.
   - We will build our financial and structural resilience with sustainable decision frameworks, diversified funding streams and robust governance.
   How we will get there:
   - By developing and adapting our publishing portfolio, ensuring we provide a place to publish for all pharmacology researchers.
   - By building BPS Assessment Ltd into the premier assessment and learning business for prescribing skills.
   - By adopting best practice environmental, social and governance policies and practices.
   - By pursuing ethical income opportunities and developing targets to reach Net Zero.
ABOUT THE BRITISH PHARMACOLOGICAL SOCIETY

The Society is a charity with a mission to promote and advance the whole spectrum of pharmacology, and leads the way in the research and application of pharmacology around the world. Connecting over 4,500 members from more than 60 countries, it is a global community at the heart of pharmacology.

British Pharmacological Society
The Schild Plot, 16 Angel Gate, City Road, London EC1V 2PT
info@bps.ac.uk
+44 (0)20 7239 0171

www.bps.ac.uk