

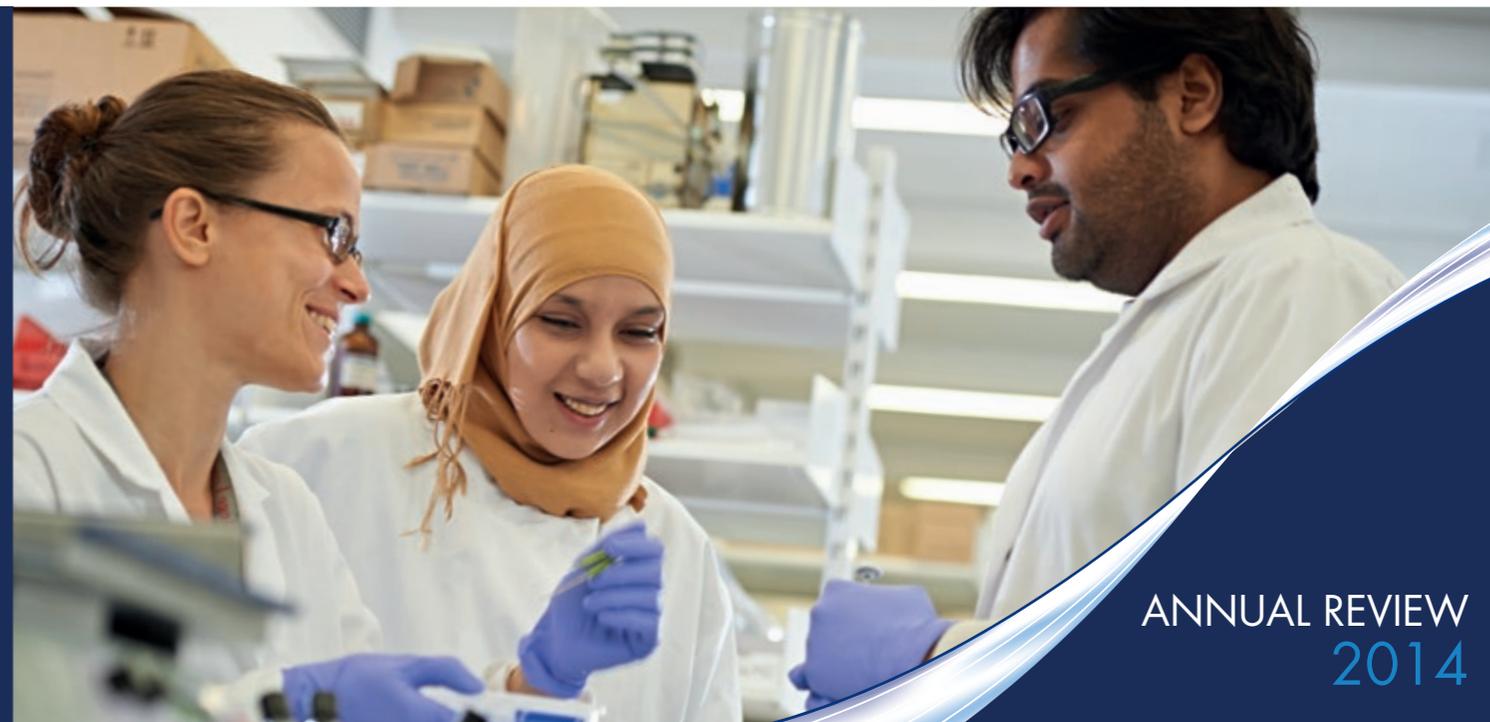


BRITISH
PHARMACOLOGICAL
SOCIETY

Today's science, tomorrow's medicines

Registered office:
The Schild Plot, 16 Angel Gate,
326 City Road, London. EC1V 2PT
t: +44 (0) 20 7239 0171
e: info@bps.ac.uk
w: www.bps.ac.uk

Charity registration number:
1030623
Company registration number:
2877400



ANNUAL REVIEW
2014



Contents

ABOUT THE SOCIETY'S MISSION	1
MESSAGE FROM OUR PRESIDENT & CHIEF EXECUTIVE	2
2014 IN NUMBERS	4
OUR GLOBAL COMMUNITY AT THE HEART OF PHARMACOLOGY	6
PUBLIC BENEFIT	18
PROMOTING PHARMACOLOGY	26
LOOKING AHEAD	36
FINANCIALS	38

ABOUT THE SOCIETY'S MISSION

The British Pharmacological Society (BPS) is the primary UK learned society concerned with research into drugs and the way they work. Our members work in academia, industry, regulatory agencies and the health services, and many are medically qualified. The Society covers the whole spectrum of pharmacology, including laboratory, clinical, and toxicological aspects.

BPS exists to promote and advance pharmacology (including, without limit, clinical pharmacology) and to be the leading Society for the presentation, promotion, and discussion of all matters relating to both pharmacology and clinical pharmacology and therapeutics (CPT). Specifically, the Society is concerned with the discovery, mechanism of action, use and safety of drugs in humans and animals, in order to contribute to education and the understanding and relief of suffering.



Professor Humphrey Rang, President

MESSAGE FROM OUR PRESIDENT & CHIEF EXECUTIVE

It was another busy and successful year at the British Pharmacological Society, with improvements to our systems and structures, and a raft of new services in support of our members and the discipline of pharmacology. Further detail on these initiatives follows our foreword, but there are a few we wanted to bring to your attention.

As ever, the Society was indebted to the members who volunteered to sit on committees, groups, editorial boards, and advisory panels – without whom the majority of our work would be impossible.

The Society's governing documents and processes are critical both to compliance and to effective management of its activities. In 2014, following extensive consultation and invaluable member input, new governance documents were produced and approved at our Annual General Meeting. This review aimed to speed up

decision-making, while ensuring appropriate oversight, and it is hoped that we outcomes will enable us to work more efficiently and effectively in the coming years.

Changes in governance were supplemented by an overhaul of our database and financial management technology. These will, in time, underpin a new website and provide more reliable member records. The governance review and IT developments were a major undertaking for the Society and should ensure that we are 'future proofed' for the years ahead.

Looking no fewer than eight years into the future, the Society successfully bid to host the World Congress of Basic and Clinical Pharmacology in 2022. The congress will be held in Glasgow, and will boost the impact of the Society on a global level. The collaboration of Officers, members and staff created an irresistible proposal, and

we look forward to hosting this showcase for international pharmacology.

Our policy work ensured contributions to a number of high-profile consultations and promoted the value of pharmacology to public health. A new report entitled A Prescription for the NHS: Recognising the Value of Clinical Pharmacology and Therapeutics was launched at the House of Lords. This considerable achievement for our Clinical Committee relates directly to our charitable mission, and confirms our belief in the critical role clinical pharmacology plays in patient care.

The Society remains reliant on its publishing portfolio to fund our activities and was again well-served by its journals: the British Journal of Pharmacology and the British Journal of Clinical Pharmacology remain in good health, financially and scientifically, and we were pleased to see Pharmacology Research & Perspectives

making great progress since its launch in 2013. All three journals were promoted by the Society to delegates at scientific meetings around the world and we will continue to promote our journals to an international market in the years ahead.

From an office perspective, a welcome facelift allowed us to create more desk space for staff – enabling us to expand in future if there is a demand – and created a flexible Members' Room and Welcome Area. Our staff provided a first-class service throughout the year, working productively, diligently and with creativity, and our thanks go to them.

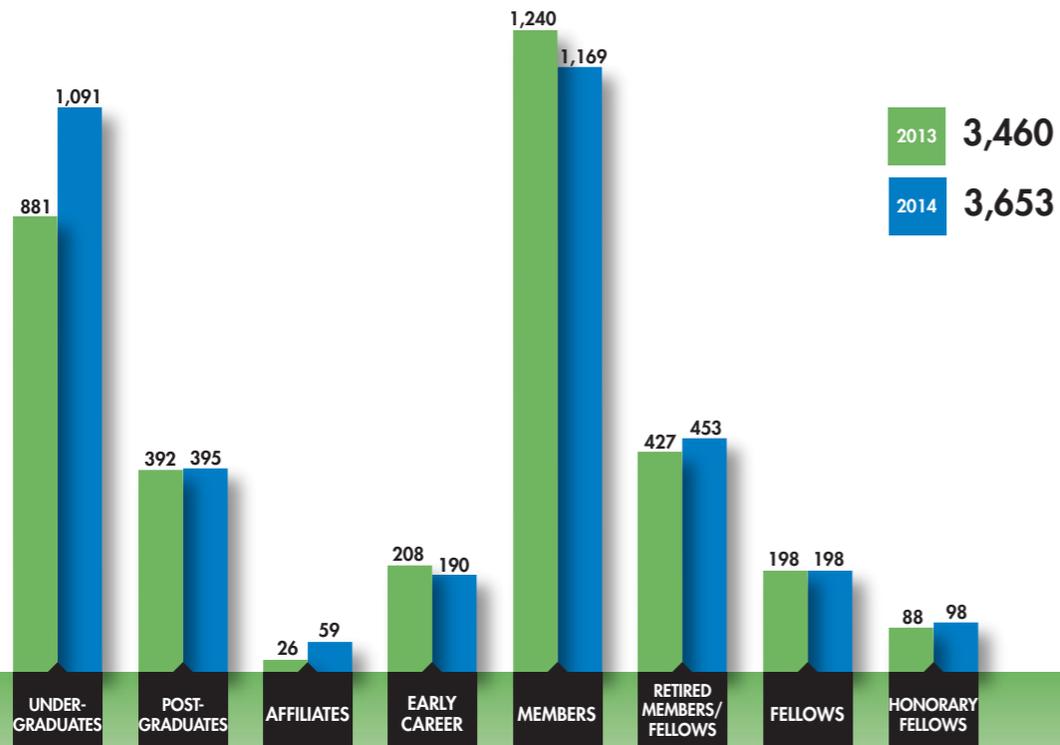
So, in summary, 2014 was a year of financial stability, root and branch review, and good progress in developing exciting programmes on behalf of pharmacology.



Jonathan Brüun, Chief Executive

OUR YEAR IN NUMBERS

The total membership on 31 December 2014 was 3,653, representing a rise of 6% in a year. The Society was sad to report the deaths of nine members.



Pharmacology 2014



1,036
registrants

82
speakers

25
exhibitors

- **95.5%** of surveyed delegates were very/satisfied with the symposia speakers
- **96%** of attendees said they would recommend *Pharmacology* to their colleagues

£55,520 allocated in bursaries to attend meetings

7 workshops

158 workshop delegates

5 new Diploma in Advanced Pharmacology students

3 Diploma in Advanced Pharmacology graduates

6 outreach grants awarded totalling

£6,090

Teaching grants totalling **£400**



30,111

downloads of *Pharmacology Matters*

The Society responded to **10** consultations

The discovery and impact of **12** UK drugs were brought to life in the Society's official calendar



3,752 Facebook followers



2,278 Twitter followers



451 LinkedIn members



265 YouTube subscribers



OUR GLOBAL COMMUNITY AT THE HEART OF PHARMACOLOGY

Highlights from our membership
activities throughout 2014

1. Keeping up-to-date
2. Representing members
3. Recognizing achievements in pharmacology

Members at work in their King's College London laboratory

1. Keeping up-to-date

The Society organized three scientific meetings during 2014:

5th Focused Meeting on Cell Signalling University of Leicester, 28–29 April 2014

The meeting attracted 161 registrants.
Registration breakdown: 58 members;
23 student members; 30 non-members;
22 student non-member; 15 speakers;
13 exhibitors.

"I am writing to thank you for organizing an excellent meeting. I know how much time and effort it takes. I enjoyed it very much, both the scientific program and the smooth way everything was run. As you know, this was my first time at a Society meeting, and my experience was overwhelmingly positive."

Vsevolod V. Gurevich, attendee

James Black Meeting: Inspired Biologics 2014

University of Cambridge, 18–19
September 2014

This meeting attracted 93 registrants.
Registration breakdown: 12 members; 2
student members; 3 student non-member; 54
non-members, 22 speakers/organizers.

"Absolutely amazing - well done.
This must set the trend for future
events like this."

Stephen Holgate, retired member and attendee

Pharmacology 2014

Queen Elizabeth II Conference Centre, London, 16–18 December 2014

The year ended with *Pharmacology*, our annual meeting. The meeting was fully booked for the third year running and we welcomed 1,036 participants.

Registration breakdown: 527 members; 284 student members; 55 non-members; 5 student non-members; 11 affiliates; 1 student affiliate; 82 speakers; 68 exhibitors; 3 press.

The feedback received on site as well as through the online survey continues to be very positive with 96% of surveyed delegates being very/satisfied with the symposia speakers, 96% of attendees would recommend *Pharmacology* to their colleagues and 98% liked the meeting's location.

"I have just returned from the meeting and wanted to tell you how much I enjoyed it and also, how well run I thought it was."

Terry Kenakin, Member, University of North Carolina

"I have been a member of the Society since I was a PhD student and it's by far the best and most fun conference to go to. It also has a family feeling to it."

Alexis Bailey, Member, University of Surrey

"We found the meeting organisation and venue superb, and the IT support for our session was excellent. Our session was well attended and had a lively Q&A session."

Robert Harvey, Member, University College London



Attendees at an exhibition stand during *Pharmacology 2014*

Poster session during *Pharmacology 2014*

Member events

Following the success of the Society's first Fellows' Reception in 2013 and feedback about the value of networking, the Society has supported an increasing number of networking events to help members stay up to date with developments in pharmacology and support the Society's role as a global community at the heart of pharmacology. Over 90% of attendees rated the series of events in 2014 as 'excellent' or 'very good'.

"It was a great pleasure last September to host with Professor David Webb a joint reception for members of the British Pharmacological Society and the British Toxicology Society, to coincide with the EUROTOX 2014 meeting being held in Edinburgh. David and I welcomed 50 members, and used the occasion to announce

a exciting scientific meeting that would be co-organised by the two Societies in October (5-6th) 2015. The National Museum of Scotland, with its roof terrace overlooking Edinburgh Castle at sunset, made a memorable and breath-taking location for catching up with colleagues and for networking between members of all categories – from undergraduates to Fellows!"

Heather Wallace, Fellow, President of the British Toxicology Society & President of EUROTOX 2014

“The British Pharmacological Society’s second Fellows’ Reception held at the Royal Society was a great opportunity for Fellows and Honorary Fellows to meet and enjoy the evening. It was also a chance to recognise the achievements of Tony Harmar, who was posthumously awarded the 2014 JR Vane Medal by the Society.

John Kelly and I were proud to speak in celebration of Tony’s life and work on behalf of his friends and colleagues, many of whom were among the 90+ British Pharmacological Society Fellows and Honorary Fellows in attendance. We celebrated his distinguished career in research and his major contribution

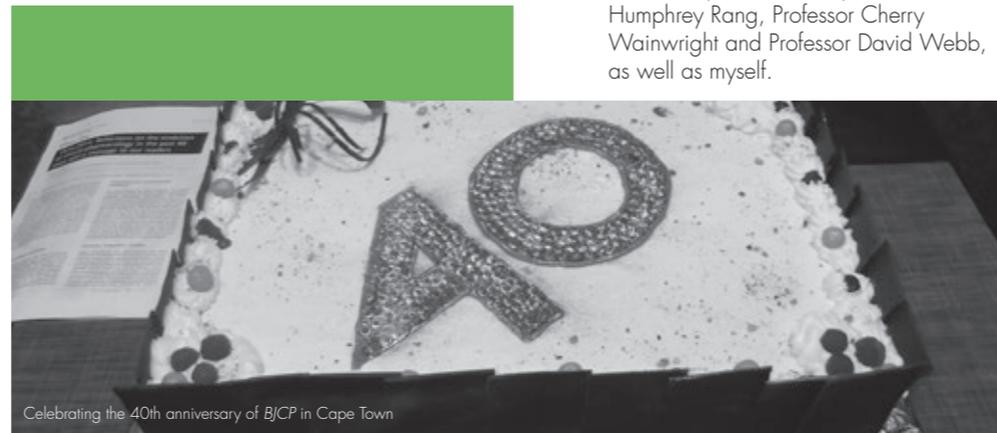
to the development of the ambitious drug target database (freely available online: www.guidetopharmacology.com), sponsored jointly by the Society and IUPHAR with support from the Wellcome Trust.”

Michael Spedding, Fellow, Secretary General of the International Union of Basic and Clinical Pharmacology

“The Society’s reception during the World Congress of Pharmacology in Cape Town was a highlight of celebrations marking the 40th anniversary of the *British Journal of Clinical Pharmacology* in 2014. Given the journal attracts papers and readers from around the world, it was an opportunity to share this milestone with members of the Society and colleagues

from pharmacology and clinical pharmacology societies worldwide as well as the IUPHAR Executive. The Society was also grateful for the support and attendance of His Excellency Mr Chris Trott, Her Majesty’s Consul General in Cape Town.”

Andrew Somogyi, Member, Australasian Editor of the British Journal of Clinical Pharmacology



Celebrating the 40th anniversary of BJCP in Cape Town

2. Representing members

Governance review

Chris Williams, Fellow & Former Trustee (2011–2014)

In 2014, the British Pharmacological Society updated its governance structures to implement the recommendations of an independent review completed the year before. The Governance Review Group appointed by Council, included Dr Robin Hiley, Professor Ray Hill, Professor Humphrey Rang, Professor Cherry Wainwright and Professor David Webb, as well as myself.

I was really excited to be able to contribute to this initiative, and was able to use insights and experiences from all aspects of my pharmacological career. The new constitution (including new Articles and Rules) is designed to:

- Simplify decision-making, empower our core committees and staff and align all our efforts to the strategic objectives
- Preserve the essential nature of the Society as a friendly, responsive and highly professional membership organization that is able to maintain its enviable reputation in the outside world, as well as fulfilling the needs of its members

The final constitution was agreed by Council and ratified by an overwhelming majority of members at the Annual General Meeting in December 2014, when of 289 votes cast only six were against and two were withheld. We would like to thank all those that took part in that consultation, which provided thoughtful comments and feedback.

Digital review

Robin Hiley, Honorary Treasurer

Digital channels are an increasingly important route by which the Society delivers its mission to promote and advance pharmacology in all its forms. The development of a new strategy in 2014 was a vital first step in enabling us to align our digital activities with strategic objectives. We aim to maximise the benefit that these channels bring to our members.

The digital strategy document was developed with the expertise and experience of our consultancy, Positive, and was based on an in-depth audit of existing projects and interviews with our publishers, trustees and staff. I look forward to the Society implementing this strategy throughout its activities so that we can be more confident and ambitious in our use of digital platforms.

CRM/member portal

Carolina Medal, IT Manager

Part of a two-year programme of modernisation for the Society's website, in June 2014 the technology behind the online Members' Area was updated in order to improve the ways in which members could interact with this password-protected part of our website. Changes to the Members' Area were introduced in phases to minimize disruption wherever possible, and the team was grateful to members for their patience and support during this process. Accurate member information is essential for the Society to operate effectively so it was reassuring that over two thirds (65%) of members logged on to the new Members' Area over the course of the next year to check that their profile was up-to-date and to provide additional information about themselves.



3. Recognizing achievements in pharmacology

Fellows and honorary fellows

In 2014, we welcomed the following new Fellows: Dr Maria Isabel Colado; Dr Jamie Coleman; Dr Paul Dargan; Professor James Docherty; Dr Michael Eddleston; Professor Albert Frauman; Professor Paul Gard; Dr Mark Giembycz; Professor Peter Holzer; Dr Lynne Lennard; Professor David MacEwan; Dr Michael Seed; Dr Patrick Sexton; Dr David Trist; Professor John Westwick; Professor Robert Widdop; Dr Christine Williams.

As well as new Honorary Fellows: Dr Jeffrey Aronson; Dr Thomas Blackburn; Professor Julia Buckingham; Professor Barry Cox; Professor Graeme Henderson; Professor Raymond Hill; Professor Charles Marsden; Professor Walter Nimmo; Professor James Parratt; Dr June Raine; Professor Philip Routledge; Professor Patrick Vallance.

Awards

Our 2014 winners are detailed below, congratulations to all of them.

We would not be able to offer the variety of prizes and awards without support from our sponsors: AstraZeneca, GlaxoSmithKline, Pfizer and Wiley-Blackwell.

Gaddum Memorial Award

Professor Terry Kenakin
University of North Carolina

Sir James Black Award for Contributions to Drug Discovery

Professor Gareth Sanger
Queen Mary University of London

Drug Discovery of the Year

The team responsible for the pharmacology behind obinutuzumab

JR Vane Medal

Professor Anthony Harmor
University of Edinburgh

"I was both surprised and delighted to learn I had been awarded the Rang Prize, particularly given that, as a registrar, I am still at a relatively early stage in my career. It is undoubtedly the most significant award I have received to date, and the one that I value the most because it is awarded for teaching – something that I feel is a particularly important area of work for a clinical pharmacologist. Prizes like this serve a dual purpose of encouraging and rewarding individual members for the contribution they make, while also advancing pharmacology by shining a spotlight on it."

Andrew Hitchings, Rang Prize winner, St George's

AstraZeneca Prize for Women in Pharmacology

Professor Sussan Nourshargh
Barts and The London School of Medicine and Dentistry

GlaxoSmithKline Prize for Research in Clinical Pharmacology

Professor David Williams
Royal College of Surgeons in Ireland

Rang Prize

Dr Samir Ayoub & Dr Michael Seed
University of East London
Dr Andrew Hitchings
St George's, University of London

Bill Bowman Travelling Lectureship

Dr Alexis Bailey
University of Surrey

BPS and ASCEPT Outstanding Young Investigator Award

Dr Leigh Stoddart
University of Nottingham

Integrative Pharmacology Fund Pump Priming Award

Dr Alexis Bailey
University of Surrey
Dr David Morgan
University of Keele

Dr Ilse Pienaar
Imperial College London

Dr Julie Keeble
King's College London

Dr Rebecca Trueman
University of Nottingham

Dr Sarah Flatters
King's College London

Dr Yvonne Dempsey
Glasgow Caledonian University

Vacation Studentships

Gabriel Gavin
University College London

Laura Mahoney Sánchez
King's College London

Jade Rainey
University of Strathclyde

Ravi Patel
University of Cambridge

AJ Clark Studentship

Xenia Kodji
King's College London

GlaxoSmithKline Award for Young Investigators

Sara Bonvini
Imperial College London

GlaxoSmithKline Prize for Oral Communications

Ann Marie Liddy
Trinity College Dublin

Poster Prize

Dominika Klisko
King's College London
Elena Tsisanova
University of Bristol
Francesca Rauzi
Barts and The London School of Medicine and Dentistry

Pfizer Poster Prize

Rebecca Knowles
Queen Mary, University of London
Leonardo Pinto
University of Sao Paulo

Schachter Award

Matt Udakis
University of Bath
Peter George
Imperial College London

BJCP Young Investigator Prize

Dr Floris Fauchet
Sanofi



Clinical Undergraduate Prize Winners

Kevon Parmesar

King's College London

Trisha Kanani

University of Nottingham

Benjamin McIlwham

Peninsula Medical School

Joshua Howkins

Peninsula Medical School

Ros Whelan

Royal College of Surgeons in Ireland

Adam Dyer

Trinity College Dublin

Killian John McCarthy

University College Cork

Kevin Yip

University College London

Samantha Drummond

University of Aberdeen

Jasmine Gan

Barts and The London School of Medicine and Dentistry

Edward Luff

University of Bristol

Joanna Collins

University of Cambridge

Sophie Walker

University of Cardiff

Catherine Beattie

University of Glasgow

Craig Ferguson

King's College London

Jibran Khatri

King's College London

Ryan Low

University of Liverpool

Daniel Aldcroft

University of Manchester

Henry Hughes

University of Oxford

Nicola McCallion

Queen's University Belfast

Hannah Leaver

University of Southampton

Azhar Ali

St George's, University of London

John Allen

University of Newcastle

John Dereix

University of Birmingham

Natasha Stephenson

University of Edinburgh

Jonathan Towler

University of Edinburgh

David Houghton

Hull York Medical School

Michael Foster

Imperial College London

Jonathan Bialick

University of East Anglia

Sophie Hazell

Barts and The London School of Medicine and Dentistry

Abhishek Dattani

Barts and The London School of Medicine and Dentistry

"When I learned about the Gaddum Award it immediately took me back to my first days as a graduate student. Straight from chemistry my mentor David Cook sent me to the library and ordered me not to emerge for a month until I had read 'classical pharmacology' from the masters... it was one of the sweetest months of my professional life and it forever transformed how I think about pharmacology... I did feel in a way I got to know Gaddum. These types of awards remind us of our pharmacological roots... it's quite humbling to think that these men and women, with animal organs, sticks and string, worked out ideas about drug action that we still use today."

Terry Kenakin, Gaddum Award winner, University of North Carolina

Prize for the Best National Young Investigators poster in Clinical Pharmacology

1st Prize - Craig Ferguson

King's College London

2nd Prize - Henry Hughes

University of Oxford

3rd Prize - Jasmine Gan

Barts and The London School of Medicine and Dentistry

BSc Pharmacology Prize Winners

Lauma Ramona

University of Aberdeen

Emma Bardsley

King's College London

Kazi Sultana Jahan

St. Georges's, University of London

Elizabeth Mann

University of Bath

Amy McDonnell

University of Bristol

Nicholas Burnley-Hall

University of Cardiff

Alice Hailwood

University of Edinburgh

John Cassidy

University of Glasgow

Katie Musialowski

University of Leeds

Charlotte Pearce

University of Newcastle

Rakesh Dodhia

University of Oxford

Theresa Christ

University of Strathclyde

Young Pharmacologists Committee Undergraduate Poster Prize

Jamie Cartland

MRC Technology

Lyndsey Killian

Royal College of Surgeons Ireland

Student Contribution to Pharmacology

Michael Daniels

University of Leeds

Ana Martinez Carron

King's College London

Student Choice Award for Excellence in Pharmacology Teaching

Dr Christine Edmead

University of Bath

About the Student Choice Award for Excellence in Pharmacology Teaching

Dan Reed and Tim Warner

British Pharmacological Society Young Pharmacologists Advisory Group

The younger members section now represents a third of the total membership of the Society. As the number of undergraduate students in the UK continues to grow the importance of excellent teaching to secure the future of pharmacology also increases. The younger members of the Society have all been inspired at some point by an exceptional teacher in some cases multiple exceptional teachers and we wanted to introduce an award through which these individuals could be recognised.

"I hope I can also speak for the other nominees when I say that it was lovely to hear the students' perspective of their learning experiences and to understand how our practice and approaches are inspiring a new generation of Pharmacologists. I hope that the awards and associated publicity will serve to promote and strengthen teaching, not only within our own discipline, but that through dissemination, the innovations and approaches will be adopted more widely to enhance teaching practice across the H.E. sector."

Christine Edmead, winner, University of Bath

"As a young scientist, I am sure that granting recognition to those who work hard or inspire others is very encouraging, and important for the advancement of pharmacology. Having made a successful nomination for a prize makes me very proud to be a pharmacologist and a member of a society that recognises the achievements of its beginners and its teachers."

Elizabeth Mann, nominating student, University of Bath

PUBLIC BENEFIT

Demonstrating the value of pharmacology to wider society

1. Publications
2. Prescribing Safety Assessment
3. Supporting industry
4. Supporting clinical pharmacology



"I feel extremely honoured to become Editor-in-Chief of the *British Journal of Clinical Pharmacology* at a time when there are great opportunities. The British Pharmacological Society's journals uniquely cover the whole field of pharmacology and the possibilities for delivering content in many forms are unlimited after we lost the limitation of paper and ink. I hope to contribute to the further improvement of our scientific and educational quality. I have great expectations that our editorial team is able to keep delivering a journal that has scientific papers that are well cited. I also hope we can keep attracting readers of our editorial and educational material. We should aim for *British Journal of Clinical Pharmacology* to be cited and read!"

Adam Cohen comments on his appointment

1. Publications

Graeme Henderson,
Vice President – Publications

2014 saw an important milestone for the *British Journal of Clinical Pharmacology (BJCP)*, celebrating its 40th anniversary, culminating with a reception at the IUPHAR World Congress in Cape Town. It is fantastic to see *BJCP* go from strength to strength, with it achieving its highest Impact Factor ever of 3.688 in its anniversary

year. Professor Jim Ritter completed his full term as Editor-in-Chief of *BJCP* at the end of 2014 and the Society thanks Jim for his commitment and leadership. We were delighted to appoint Professor Adam Cohen as Jim's successor.

The *British Journal of Pharmacology (BJP)* too had another excellent year, achieving an Impact Factor of 4.990 and publishing research papers, reviews and themed issues across a broad spectrum of

pharmacology. In 2014 *BJP* introduced a new feature to articles – at the beginning of each paper there is now a list of hyperlinks to the relevant targets and ligands in the *Guide to PHARMACOLOGY* database. This database is an up to date, expert driven guide to pharmacological targets and the substances that act on them. The hyperlink therefore directs readers to the most up-to-date information on that target or ligand.

In 2014 we received some interesting figures about our journals showing that in 2013, there were 3 million full text accesses to *BJCP* and 4.5 million full text accesses to *BJP*. Good news for our authors!

Thanks are due to the Editors-in-Chief, Senior Editors, Editors and manuscript reviewers for their hard work and commitment that ensure the high quality of papers that are published and thus the continued success of both journals.

Pharmacology Research & Perspectives

The open access journal *Pharmacology Research & Perspectives (PR&P)* that we publish in partnership with the American Society of Pharmacology and Experimental Toxicology and Wiley is continuing to grow and innovate. Submission rates have increased, as have full text accesses to the journal. *PR&P* has also been accepted for indexing in PubMedCentral during the course of 2014, an important progression for the journal.

In addition to all types pharmacology research papers *PR&P* accepts five types of special article including target validation papers and replication studies. Dr Mike Curtis, Editor-in-Chief of *PR&P*, ran a highly successful session at *Pharmacology 2014* entitled 'The paradox of replication – essential but eschewed.' A video of this session is available on the Society's YouTube site.

Thanks are due to all involved in making *PR&P* a success.



New BJCP Editor-in-Chief Adam Cohen



Front cover of *Pharmacology Matters* from December 2014

Pharmacology Matters

Dr Felicity Gavins took over from Dr Tim Atkinson as Editor-in-Chief of *Pharmacology Matters* in early 2014. During 2014 *Pharmacology Matters* published three issues that included articles covering the threat of antimicrobial resistance, pharmacology in emerging economies and new developments in the treatment of central nervous system disorders. The online version continues to receive a good open rate and during 2014 it achieved a high of 21,590 (April 2014). From 2015 *Pharmacology Matters* will be available online only and will focus on new ways of presenting content.

Felicity Gavins, Editor-in-Chief, *Pharmacology Matters*

“Over the years I have become more involved with the Society. When I joined in 2000, I was an active member, but as time has gone on, this activity has increased, but with a greater understanding of the Society itself and the needs of younger scientists coming through. I am passionate about pharmacology and the work that we do. I am also very passionate about the animal welfare, and as such I have been actively involved in this area of the Society (and in the universities that I have worked), helping to ensure that we perform our *in vivo* science to the best standards.

Networking with members of the Society has been extremely helpful in my career. I also have mentors that are distinguished members of the Society, whose advice, guidance and kindness have been instrumental.”

2. Prescribing Safety Assessment

The British Pharmacological Society and MSC Assessment announced at the end of 2014 that a record number of UK medical students participated in the 2014 Prescribing Safety Assessment. More than 7,100 final year students from 31 UK medical schools sat the assessment, compared with just over 4,900 students from 29 UK schools in 2013 – and this participation will increase further in 2015.

“The Prescribing Safety Assessment is the first large-scale national assessment of prescribing skills anywhere in the world and is an innovation about which British medical education can be very proud. Its introduction has been a major step forward in highlighting the importance of safe and effective use of medicines as a key clinical skill amongst new medical graduates and I believe that it will help to promote better patient care. On behalf of the British Pharmacological Society and MSC Assessment I should like to thank all the participating medical schools and their students for supporting the Prescribing Safety Assessment during its piloting and implementation.”

Simon Maxwell, Fellow, Medical Director of the Prescribing Safety Assessment, University of Edinburgh

“I’m not at all surprised that so many medical students have been keen to participate in the Prescribing Safety Assessment. It provides a unique opportunity to demonstrate our ability to prescribe safely and effectively before we qualify. I think the experience of sitting - and passing - the assessment will make me a safer and more thoughtful prescriber.”

David Houghton, a foundation year 1 doctor at the Salford Royal NHS Foundation Trust

3. Supporting industry

The Industry Committee acts as a coordination group for industry-related matters in the Society and is chaired by Dr Ann Hayes.

Notable achievements during 2014 included: working with the Society’s open access journal; a symposium at *Pharmacology 2014* on behalf of the Drug Discovery Pathway Group entitled, *Realizing the potential of new approaches to target identification and validation*; and the announcement of the third Drug Discovery of the Year Award. Drug Discovery of the Year was awarded to the team at Roche responsible for the development of obinutuzumab – a new treatment for chronic lymphocytic leukaemia.

“The British Pharmacological Society’s Drug Discovery of the Year award recognises the deep understanding of the pharmacology of obinutuzumab that was demonstrated by the team at Roche at every stage of the drug’s development: from the first study in humans through to larger clinical trials. There have been major advances in the treatment of chronic lymphocytic leukaemia over the past decade but the disease remains incurable and a significant number of patients die every year. This new drug is an exciting step forward in tackling this serious disease.”

Humphrey Rang, President



The Society hosted a reception during *Inspired Biologics* the James Black meeting in September. The reception took place at Robinson College, University of Cambridge where we were delighted to welcome Steve Bates, CEO of the BioIndustry Association (BIA) and Andrew Sandham, partner of Syncona Partners LLP, a healthcare specialist investment company and an independent subsidiary of the Wellcome Trust.



Professor Lord Robert Winston reading our report on the value of CPT in the NHS

4. Supporting clinical pharmacology

Munir Pirmohamed, Vice President-Clinical

2014 saw the launch of a major project with the objective of increasing the number of clinical pharmacology and therapeutics (CPT) consultants in the NHS. After a year of research we launched our report *A prescription for the NHS: recognising the value of clinical pharmacology and therapeutics* in the House of Lords.

The launch was hosted by Professor Lord Winston and was well attended by stakeholders such as NICE and NHS England, along with political representatives.

This report highlights six key domains in which CPT consultants can (and do) make a major contribution to the NHS but highlighted the fact that our workforce is too small to cope with current demand, never mind realising the potential of the specialty. The Society called for a steady and stable increase in trainee and consultant numbers across the four nations to meet current and future demands with an achievable target of 150 consultants over the next decade.

Our report and recommendations received strong support from a range of organisations such as the Royal College of Physicians, Royal College of Physicians of Edinburgh, APBI and Royal Pharmaceutical Society.

Throughout 2014 we held positive meetings with our stakeholders such as Health Education England and the launch was an important step in reaching out to national level stakeholders. We will continue with our engagement strategy, as well as regionalising the findings in 2015.

We have had a productive year in other aspects of our work with highlights including holding two meetings with our partners. Our 'Frontiers in Prescribing: 50 years of progress' meeting with the Royal Society of Medicine explored epidemiology, mechanisms and clinical consequences of drug-drug interactions. Our Ensuring UK leadership in experimental medicine meeting with the ABPI focussed on the current models,

capabilities and capacity, as well as needs in order to agree recommendations to ensure UK leadership in this field. We will be publishing a report of this meeting in association with the ABPI in 2015.

The Clinical Committee and colleagues have been heavily involved in a number of BPS' policy responses and continue to promote the specialty by ensuring expert input to public policy.

We have also supported ten meetings including the Golden Helix pharmacogenomics meeting in Cardiff and the Irish Association of Clinical Pharmacologists meeting, as well as undergraduate meetings in Southampton, Harrogate, Birmingham and Glasgow. We continue to be active at the RCP's Medical Careers day, as well as supporting members in their activities to promote careers in CPT.

We held our annual SiR (specialty registrar) training session at Pharmacology 2014 – covering clinical trials, drug development and regulation as components of the CPT specialty training curriculum - which received great feedback and was well attended, followed by the SiR assessment. We had a good attendance at the assessment, and we hope to see this grow in future.

Thank you to everyone who has contributed expertise to our reports, consultations or as speakers.



PROMOTING PHARMACOLOGY

Our mission to promote and advance pharmacology is integral to our activities

1. Pharmacology Hall of Fame
2. Putting UK Pharmacology on the Map
3. Policy highlights
4. Work with other societies
5. Diploma in Advanced Pharmacology
6. Outreach

1. Pharmacology Hall of Fame

The Pharmacology Hall of Fame was established in 2013, to raise awareness and understanding of individuals who have played key roles in the development of pharmacology. The Society's membership elects annually five distinguished individuals to the Pharmacology Hall of Fame, based upon their distinction and peer recognition in science and/or long and valuable service to our Society.

At the 2014 Fellows' Reception, President Humphrey Rang officially announced the names of the five individuals from the history of pharmacology who had been chosen by members.

"The British Pharmacological Society takes pride in announcing this year's additions to the Pharmacology Hall of Fame. The aim is to highlight the achievements of individuals who, in their lifetimes contributed not only to the distinguished history of UK pharmacology but also to the international standing of UK science and our economy. For the second year running, members have had their say on which distinguished individuals should be recognized."

Humphrey Rang, President



Bill Bowman

Sir Derrick Dunlop

Hans Kosterlitz

Heinz Otto Schild

Marthe Vogt

2. Putting UK Pharmacology on the Map

Putting UK Pharmacology on the Map celebrates the sites of special scientific interest linked to achievements in pharmacology identified since 2013 by an annual ballot of MPs, peers and senior members of the scientific community — providing an opportunity to engage external audiences nationally as well as locally to each site, and increasing awareness of the British Pharmacological Society and pharmacology.

The 2014 winning sites highlighted by this initiative, and judged to have made outstanding contributions to the discovery and development of medicines, were:

- **Marischal College, The University of Aberdeen:** Hans Kosterlitz and John Hughes isolated the first brain endorphins and demonstrated their release from nerve endings in the brain, revealing how the body deals with pain, analgesia and addiction.

Roger Pertwee's team is a world-leader in cannabinoid research, and paved the way for pioneering work in cannabinoid-based medicines.



From left to right: Graeme Nixon and Heather Wallace from the University of Aberdeen, Andrew Miller MP, Humphrey Rang, Jonathan Brüun



From left to right: Mark Evans from the University of Edinburgh, Andrew Miller MP, Humphrey Rang, Jonathan Brüun

- **The Department of Pharmacology, the University of Edinburgh:** Home to Sir John Gaddum and Marthe Vogt when they undertook their seminal research on neurotransmitters in the peripheral nervous system and the brain, which provided the basis of much modern psychopharmacology and improved our understanding of mental health.

- **The Department of Molecular & Clinical Pharmacology, the University of Liverpool:** In addition to research into drug metabolism and interactions, the team also discovered the genetic risk factors for severe hypersensitivity drug reactions and provides world-class training to the next generation of drug safety scientists, many of whom are leaders in academia and industry.



From left to right: David MacEwan and Munir Pirmohamed from the University of Liverpool, Andrew Miller MP, Humphrey Rang, Jonathan Brüun



From left to right: Chris Tang and Susan Lea from the University of Oxford, Andrew Miller MP, Humphrey Rang, Jonathan Brüun

- **Sir William Dunn School of Pathology, the University of Oxford:** The birthplace of antibiotics, where Howard Florey, Ernst Chain, Norman Heatley and colleagues first extracted and isolated penicillin. This was rapidly followed by production of therapeutic doses, allowing in 1940 the treatment in quick succession of experimental mice and the first human patient, a policeman with an eye infection. Florey and Chain shared the 1945 Nobel Prize with Alexander Fleming.

3. Policy Highlights

Over the course of 2014 the Society was involved in policy activities covering a range of issues important to our members.

In the first part of the year, the Society was a co-funder for the production of a report led by CaSE- (Campaign for Science and Engineering) examining the economic significance of the science base. This report provides compelling evidence that public investment in scientific research leads to:

- Economic growth through an increase in private sector productivity
- Beneficial economic and societal impacts through increased interaction between the academic and private sectors

“The UK research and science base should be regarded as a vital part of British infrastructure, delivering strong economic returns and helping economic growth.”

Jonathan Haskel, CaSE report co-author



The Society was involved in numerous events in Parliament during the year

The Society is also a signatory to the Concordat on Openness, along with 71 other signatories we have undertaken to fulfil the Concordat's four commitments:

1. We will be clear about when, how and why we use animals in research
2. We will enhance our communications with the media and public about our research using animals
3. We will be proactive in providing opportunities for the public to find out about research using animals
4. We will report on progress annually and share our experiences

We continue our constructive work with the Society of Biology's Animal Sciences Group and the UK Bioscience Collation. In 2014 this particularly focused on the consultation around revision to Section 24 of the Animals (Scientific Procedures) Act.

"For many years, the only 'information' or images that the public could access about animal research were provided by organisations opposed to the use of animals in scientific progress. This is why many people still think that animal research means testing cosmetics and tobacco, despite the fact that these have been banned in the UK for more than 15 years. The Concordat is an excellent opportunity to dispel these myths and give the public a chance to see the ground-breaking research that is being done on its behalf."

Wendy Jarrett, Chief Executive of Understanding Animal Research and Chair of the Working Group

The Society has been active in our policy work around the pharmaceutical industry with highlights including a joint statement with sector partners on supporting industry and a letter to George Freeman MP to call for the creation of a Drug Discovery Advisory Forum.

More broadly, the Society signed a sector-wide letter advocating for the position of Chief Scientific Advisor in Europe and joined the Learned Society on Antimicrobial Resistance which focusses on actions to support efforts to tackle this issue, championing best practice and rising awareness.

During 2014 the Society responded to ten consultations covering areas including skills, drug licensing and open access. Particular highlights include strong coverage of our response to the Medicines Innovation Bill and being invited to give evidence to the Research Council UK on our response to their consultation on implementation of their open access policy.

4. Work with other societies

Our meetings continue to strengthen our links with other pharmacological and related societies:

- The *5th Focused Meeting on Cell Signalling* (April 2014) was held in association with the Biochemical Society. We supported a session at the annual meeting of the Greek Pharmacological Society which was held in Athens in May 2014.
- At *Pharmacology 2014*, symposia were organized by the British Society for Cardiovascular Research and the British Inflammation Research Association. The Meetings Committee also continues to support external meetings with non-society symposia grants as well as supporting individual members to present their work at external meetings with bursaries. In addition to the *Putting UK Pharmacology on the Map* Parliamentary reception, the Society was supported events in Parliament on two other occasions.
- Four of our BPS young pharmacologists attended the third Voice of the Future event, organised by the Society of Biology, which allows young scientists and engineers to question MPs (including the then Minister for State for Universities and Science, David Willets and members of the House of Commons Science and Technology Committee) about science and policy. The discussion was streamed live on the Parliament channel.
- The annual Parliamentary Links Day was on the themed of science and public trust. This was to a packed room at the House of Commons, and provided a good opportunity for our members to engage with MPs. Links Day is organised by the Society of Biology on behalf of the science and technology community, bringing together scientists, learned societies and members of Parliament.

5. Diploma in Advanced Pharmacology

The Diploma in Advanced Pharmacology continues to act as the Society's flagship educational programme, attracting students from a range of backgrounds and from across Europe. The programme is designed to offer consolidation and advancement of skills and knowledge for those who have trained in the discipline, but also to provide an opportunity for those who have moved into pharmacology from other, related fields to gain core knowledge and skills. Three students graduated from the programme in 2014 and were presented with their certificates at *Pharmacology 2014*: Jonathan Ellery, John Mitchell and Kate Simpson.

"Science doesn't stay still, so as a scientist you can't stay still. You have to keep up with what's going on, you have to challenge yourself. Because the Diploma allows you to interact with people from other companies and academia, it's a good grounding to help you see the problems and work out the solutions.

The Diploma is incredibly useful for those working in industry. As you start to progress to the managerial side or to working in project teams, it's a real opportunity to gain experience from others about what it means to do drug discovery."

Jonathan Ellery, Diploma in Advanced Pharmacology graduate 2014



Diploma graduate Jonathan Ellery and others at *Pharmacology 2014*

"The aspects of the Diploma which I enjoyed most were the oral and poster communications, as they gave me an opportunity to present my research to a wider audience and to have several people evaluate my research. It also gave me more confidence in public speaking and in defending my work. I improved my problem-solving abilities through interactive discussions at workshops, and my ability to critically review literature through the dissertation. I also gained a lot of knowledge in areas I had no previous knowledge of."

John Mitchell, Diploma in Advanced Pharmacology graduate 2014

A key part of the Diploma programme is attendance at Society workshops, however these workshops are open to all delegates and are consistently popular both within and beyond the membership. Delegates from a wide range of backgrounds find the workshops valuable, from those working in academia or industry to those working in government and clinical pharmacologists. The workshops are small, interactive events and in 2014 covered seven core and specialist pharmacological topics; General and Advanced Receptor Theory, Drug Discovery, Bio-imaging, Statistics, Applying Receptor Theory to Drug Discovery and Pharmacokinetics and Pharmacokinetics. In total 158 delegates attended Society workshops in 2015.

These workshops are developed and delivered by volunteer members who are leaders in their field, and we are once again grateful to these members for their continued generous support and commitment. Students have the opportunity to interact with these workshop speakers and organisers both in a formal teaching setting and at informal workshop dinners, creating a powerful learning and networking environment.

"I attended the Pharmacokinetics and Pharmacodynamics (PKPD) workshop along with my Clinical Pharmacology trainee colleagues. We all felt the training was excellent. The day is hard work; there is a lot to take in and understand and much of it we had never experienced before in our day-to-day clinical practice. However it is all relevant and has really helped us to understand where dosing regimens come from and how those doses are calculated, which is important for all clinicians.

I highly recommend this workshop for all clinicians, especially those with an interest in the development of new drugs for the future which, lets face it, should be all of us. Bring your thinking cap, you'll need it!"

Lauren Walker, PKPD workshop attendee 2014

6. Outreach

The British Pharmacological Society's outreach activities continued to grow in 2014, with representation at a wide range of events including Brighton Science Festival, Edinburgh Science Festival, Cambridge Big Biology Day and Cheltenham Science Festival. Whether through volunteering to demonstrate activities and answer visitors' questions on hands-on stands, or delivering public engagement talks to adults or students, members generously gave their time to support the Society's work to help explain the importance of pharmacology in the modern world.

"Volunteering for the Society has been extremely beneficial for both my teaching experience and scientific communication skills. Demonstrating interactive activities taught me alternative methods of communicating often complex pharmacology, specifically drug actions, to young people and non-scientifically trained adults. The reach of these events is phenomenal, pulling in visitors as young as four to interact with the activities and welcoming school children and teenagers into the world of pharmacology. The Society is successfully making information accessible to young people, and increasing awareness of pharmacology as a career in new and innovative ways. I believe this is invaluable to the future of pharmacology and as such I will be continuing my volunteered support."

Hannah Wilson, member & outreach volunteer



Much of the Society's outreach and public engagement work in 2014 was delivered in collaboration with other organisations. As in previous years, the Society shared a space at the Cheltenham Science Festival Discover Zone with the Society of Biology, and at the Big Bang Fair joined forces with Venomtech, a company providing animal venoms to the drug discovery industry and started by BPS member Steve Trim, to deliver an activity looking at the use of venoms in pharmacological research. This included a real demonstration of how venom can cause blood to clot – which was very popular with the students! The latter part of the year was spent developing a hands-on activity to explain how painkillers work with the Biochemical Society. 'Medicine Makers', which has now been successfully delivered at a number of science festivals, invites visitors to make a model painkiller and see how it binds a receptor, and has been a hit with teachers and students alike.



The Society also awarded six outreach grants in 2014, totalling over £6,000, and these have supported a wide range of activities and events, from the Cambridge Hands-On Science Roadshow to a Science Slam at the University of Reading. A grant of £1000 was awarded to the Gillespie School in North London to support students in carrying out a mock clinical trial investigating the anti-bacterial properties of Manuka honey. The school is part of the Lab_13 network, which encourages students to take responsibility for their own science learning, with the support of a 'scientist-in-residence', and the Manuka honey trial was praised at the school's most recent OFSTED inspection as a good example of students showing a surprising depth of knowledge, skill and understanding.

Susan Duty and Sarah Salvage presented an evening looking at new treatments for Parkinson's disease at the Brighton Science Festival in February 2014.

'Sarah Salvage and myself met around 7pm in what appeared to be a rather off-the-beaten-track pub for our night of enlightening the public about pharmacology during the Brighton Science festival. The venue was quiet, but for the occasional 'boom' from the band warming up downstairs. Around 15 min before we were due to start, people started piling in and, with the final visitors accepting standing room only, we got started. We pitched our talk about Parkinson's disease and its treatment to an educated, but non-scientific audience and didn't shy away from talking about rodent models we used in the lab. The audience were an eclectic bunch of curious young folk and more senior people, some of whom had Parkinson's disease. They seemed really engaged and quizzed us afterwards about the basics and more in-depth aspects of the disease and future treatment options. Having to compete with the occasional 'boom' from the band downstairs simply added to the free-spirited atmosphere of the evening which I felt, and the audience's response suggested, had gone really well for us all. A big thanks to the Society's outreach team for this excellent opportunity!'

Susan Duty, member & outreach volunteer, King's College London



Pharmacologists at work at King's College London

LOOKING AHEAD

2015 and beyond.

Our 2015 objectives

Membership

- Define a grants and awards strategy that matches the needs of the Society's membership and supports pharmacology in the modern world, including through the provision of new or updated grant programmes
- Develop and agree a strategy to recruit more new members to the Society, for implementation from 2016
- Make recommendations to foster productive relations with the Society's international membership, and attract more international members to the Society

Education & Outreach

- Update the Society's core pharmacology curriculum with reference to broader bioscience teaching practices, including through QAA benchmarking
- Evaluate and implement options to produce a range of new learning opportunities for members and non-

members, including through subject-specific e-learning

- Build links and shared activities between the Society's journals and its Education function

Scientific Meetings

- Oversee the successful establishment of Affinity Groups and their input into the Society's Scientific Programme, as part of the Society's attempt to match its activities to the needs of its membership

Publications

- Take steps to ensure business continuity and development across a range of areas, including through appointments to key positions, and the negotiation of a new publishing contract
- Foster links and joint approaches across all of the Society's publishing output

Policy & Public Engagement

- Increase the Society's visibility and impact, including through enhanced Outreach, Media and Public Engagement activities
- Deliver a review of the Society's policy activities, and a plan to enhance them,

for example through the development of new and updated position statements

- Receive the recommendations of the branding review, and implement across the Society
- Redevelop and launch a new BPS website in line with the outcomes of the Society's Digital Strategy and Branding Review

Clinical Pharmacology

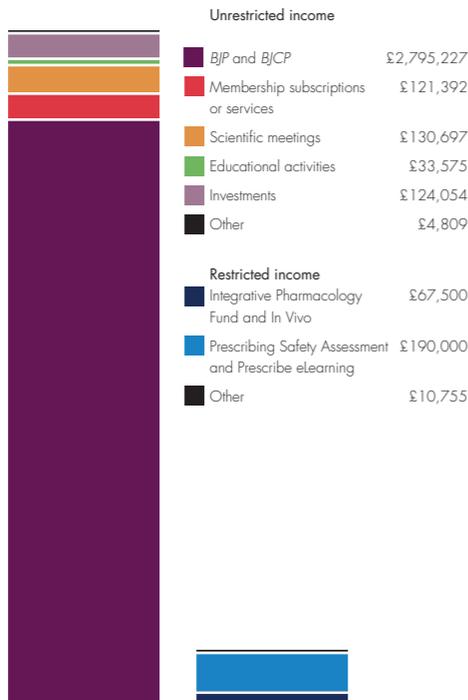
- Support the 2014 CPT in the NHS report, by ensuring its recommendations are taken forward appropriately
- Continue to demonstrate the role of clinical pharmacology in patient safety through the Prescribing Safety Assessment

Finance & Commercial

- Implement a new Financial Strategy to reflect the long term objectives of the Society
- Deliver new business development opportunities in support of the goal to diversify the Society's sources of revenue

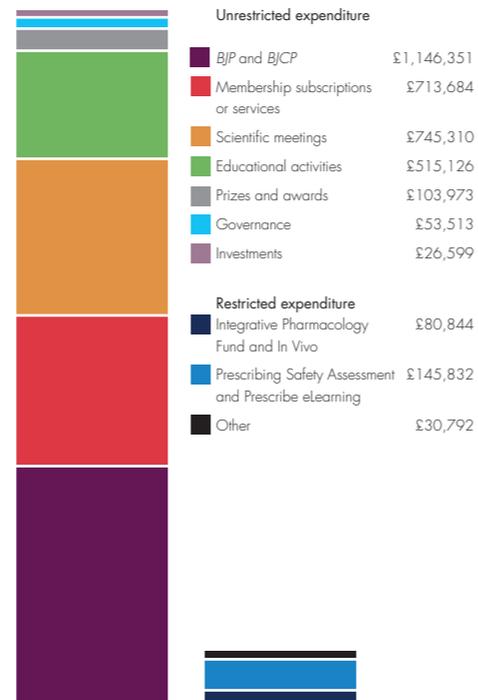


Unrestricted income
£3,209,754



Restricted income
£268,255

Unrestricted expenditure
£3,304,556



Restricted expenditure
£257,468

Total funds of the Society

The total funds of the Society have decreased by £12,517 (2013: increased by £379,654). The resulting balance of total funds at 31 December 2014 amounted to £6,360,793 (2013: £6,373,310) of which £5,867,266 (2013: £5,918,570) is the unrestricted funds of the Society.

Income

- Income for the year totalled £3,478,009 (2013: £3,352,484) which is an increase of 3.7%
- Importantly, charitable activity income from Journal publishing, which is the Society's main income source, has increased by 4.0% to £2,795,227 (2013: £2,688,431).
- Member numbers increased by 5.6% to 3,653 (2013: 3,460). The growth is predominantly in Associate Undergraduate Student numbers, reflecting the Society's longer-term approach to strengthening and growing the discipline of pharmacology.

Consistent with the approach, such members pay no subscription.

- Scientific Meetings income increased by £6,964 to £137,697 (2013: £130,733) reflecting the success of *Pharmacology 2014* as well as income from two other meetings.
- Voluntary income is mostly for educational activities and is entirely restricted funding; it reduced by £19,960 to £261,255 (2013: £281,215).
- Investment income was £4,516 higher at £124,054 (2013: £119,538) reflecting the higher amount invested throughout the year.

Expenditure

- Expenditure on charitable activities totalled £3,481,912 (2013: £3,251,172) which is a 7.1% increase of £230,740.
- Journal publishing costs increased by 6.7% to £1,146,351 (2013: £1,068,623); the direct costs have been carefully controlled and the increase in total costs is mainly a result

- of the higher net income from the journals which increased the amount payable to the publisher.
- Expenditure on educational activities reduced by £101,441 to £752,456 (2013: £853,897) predominantly due to lower levels of restricted fund activity for both the Integrative Pharmacology Fund and the In Vivo Short Courses Fund.
- Capital expenditure totalled £165,176 (2013: £67,920) of which £138,756 (2013: £53,458) is the cost of the new database and associated website functionality that is being developed to support the Society's services, effectiveness and efficiency. The new database went live "behind" the existing website in June 2014 and deployment of the new website is planned for mid-2015.
- In addition there were gains on investments totalling £71,498 (2013: £346,425), entirely attributable to unrestricted funds.

Donors

We are most grateful to the following organisations for donations to support our various activities including prizes and training courses:

Biotechnology & Biological Sciences Research Council
Growth Accelerator Service
Health Education England
Medical Research Council
The Physiological Society

Sponsors & exhibitors

Abcam
Actual Analytics
ASPET
AstraZeneca
Bio-Techne
BMG Labtech Ltd
Campden Instruments Limited
Centre for Human Drug Research
Danish Myo Technology A/S
Data Sciences International
Discover X
Eli Lilly & Company

Elsevier Limited
emka Technologies
Hello Bio
J Wiley & Sons
LabLogic Systems Limited
LI-COR Biosciences Ltd
Medimmune
Moor Instruments Limited
NC3Rs
Novus Biologicals
Promega UK Ltd
R&D Systems Europe Limited
Radnoti Limited
Rena Sci
Sarissa Biomedical Limited
Science Alert
Source Bioscience
The Royal Society of Chemistry
The University Of Liverpool
University College London
World Precision Instruments



Trustees 2014

Professor Humphrey Rang, President
Professor David Webb, President-Elect
Dr Robin Hiley, Honorary Treasurer
Professor Ann Daly, Co-opted Trustee
David Douglas, Co-opted Trustee
Professor Antony Galione, Co-Chair of CHOPT
Professor Richard Green, Elected Trustee
Professor Alyn Morice, Co-Chair of CHOPT
Dr Smita Price, Elected Trustee
Dr Michael Seed, Elected Trustee
Dr Christine Williams, Co-opted Trustee
Dr David Wood, Elected Trustee

Executive Committee 2014

Professor Iain Greenwood, Vice President – External Affairs
Dr Ann Hayes, Chair of the Industry Committee
Professor Graeme Henderson, Vice President – Publications
Professor Marzia Malcangio, Chair of the Women in Pharmacology Committee
Professor Barbara McDermott, Vice President – Meetings
Dr Ian McFadzean Vice President – Academic Development
Dr Patricia McGettigan, Vice President – Clinical
Professor Ian McGrath, *BJP* Editor-in-Chief
Professor Munir Pirmohamed, Chair of the Clinical Section
Professor Jim Ritter, *BJCP* Editor-in-Chief
Professor Tim Warner, Chair of the Young Pharmacologists Committee

You can obtain a PDF of the Society's financial statements for the year ended 31 December 2014 from the website www.bps.ac.uk or by contacting the office on info@bps.ac.uk or 020 7239 0171. The financial statements include the Financial Review, Statement of Financial Activities (SOFA) and Balance Sheet, together with the Notes to the Accounts. They show the overall financial performance of the Society and provides an analysis of the incoming resources and how they were applied in the performance of the Society's objectives.