

Chapter 1

Introduction

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When Chris Kirk, our Chief Executive, and I as Honorary Archivist first sat down in 2009 to discuss how best to update the historical record of the Society for the Centenary, we came to the conclusion that rather than trying to write a book covering the 100 years of its history, or emulate previous histories, we would limit ourselves to producing a book covering the last 25 years, i.e. from 1987 to 2011. This would be published in print with an online version being made available alongside a digitized edition of the comprehensive *History of the Biochemical Society 1911–1986* [1] that was written by Trevor Goodwin (Chairman 1971–1974) to mark the 75th anniversary of the Society.

There were in fact two earlier and detailed histories. In 1949, the same year that the First International Congress of Biochemistry was initiated by the Biochemical Society, R.H.A. Plimmer wrote *The History of the Biochemical Society 1911–1949* [2]. Plimmer, a founding member of the Society, had been Honorary Secretary from 1911 to 1919 and Chairman between 1922 and 1923 and also from 1939 to 1940. This was followed by R.A. Morton's more extensive *The Biochemical Society – its History and Activities 1911–1969* [3], written in 1969 to mark the Society's 500th Meeting. Morton, after whom the Society's Morton Lecture is named, was Society Chairman between 1959 and 1961.

I was initially tasked with writing this new history in its entirety – my suggestion that there were many better placed to do so was not seriously taken up at first. Fortunately, Chris Kirk subsequently offered to contribute a chapter on administrative and corporate developments (Chapter 2) and persuaded Ian Dransfield, the Honorary Meetings Secretary, to write a chapter on the evolution of the Society's meetings programme (Chapter 3), to which his predecessor, Brian Beechey, later contributed. My own chapter covers education, policy and other professional matters including the archives (Chapter 4) and Dianne Stilwell, who has a long association with the Society and Portland Press, has written about the development of publishing over this period (Chapter 5). Ian Dransfield also contributes, as an appendix to Chapter 5, an attempt to identify the most influential papers published in the *Biochemical Journal* over the last 25 years. In the final chapter, Colin Kleanthous, the current Chair of the Biochemical Society, shares with us his reflections on the present achievements of the Society and its future within the rapidly changing landscape it has been instrumental in creating.

Clearly, the writing of this book has been a collective effort! Much of what is covered in the various chapters is based on extensive mining of the collection of papers and records held in the Biochemical Society archive, now housed at the Wellcome Library in London (see page 70). Another valuable resource has been our thriving members' magazine, *The Biochemist*.

But historical analysis is not just a record, it is also an attempt to interpret, and it seems to me worthwhile reminding readers that the authors of this book, and its predecessors, are not historians. A proper history of the Society remains to be written from a much wider perspective, as part of a history of biochemistry in the UK, perhaps jointly by historians and biochemists. Or better still, by one of the growing number of professional historians (e.g. Michel Morange, a frequent contributor to *The Biochemist*) who were initially trained, and practised, as *bona fide* molecular life scientists. But of course, not everyone within the Society would agree there is a case for more history: "Science is about the present and future, not the past". (Discuss!). Some of the evidence from our own ranks suggests otherwise, *viz.* the popularity of the history sessions that were organized by a member of the Society at the IUBMB meetings in Birmingham in 2000 and Shanghai in 2009.

Finally, I would like especially to thank Sheila Alink-Brundson and Chris Kirk for their generous help and support from the very start of this book project, and latterly Kay Miller, our new Group Head, Membership Activities. Thanks also to several Society officers and members past and present, who kindly shared their reminiscences informally or in response to a questionnaire. I must admit to occasional self-censoring... Perhaps not surprisingly, emotions can still run high on events that took place quite recently or long ago, as Morton wrote in the preface to his history: "It was with considerable reluctance that I decided against quoting freely... but it is better perhaps to lose a little vigour than to stoke up fires that have nearly gone out".

References

1. Goodwin, T.W. (1987) *The History of the Biochemical Society 1911–1986*, The Biochemical Society, London
2. Plimmer, R.H.A. (1949) *The History of the Biochemical Society 1911–1949*, The Biochemical Society, London
3. Morton, R.A. (1969) *The Biochemical Society – its History and Activities 1911–1969*, The Biochemical Society, London

Chapter 2

Administrative and Corporate Developments

Chris Kirk

As I sat down to plan this short chapter on the administrative and corporate development of the Biochemical Society, I inevitably reached for Trevor Goodwin's excellent *History of the Biochemical Society 1911–1986* [1]. My own copy still contains the letter that I received, along with the book, as a young member of the Society from Hamish Keir, who was the Chairman in 1987. Re-reading this letter, the book and reflecting on 33 years of membership of the Society before I became its Chief Executive in 2005, I was struck by a number of recurrent themes, some of which seem to have been with us for much of the past 100 years.

The story of the Society is one of constant evolution – scarcely surprising as we are in the business of acquiring and disseminating knowledge in a branch of science that has developed greatly over its lifetime. In organizational terms, the Society started life as a dining club with an annual income of less than £70, at which the leaders in the emerging field of biochemistry could discuss their experimental findings. As participants in our scientific meetings today will know, dining, or at least socializing with food and drink, remains an important part of Biochemical Society life, but our total annual income in 2010 had grown to £6.2 million. Even after accounting for inflation, this corresponds to a 1000-fold increase over 1911 levels!

The means by which we present, discuss and advance our science have changed greatly, especially during the past 25 years. Changes in our approach to scientific meetings and publishing, although reported briefly here, are discussed elsewhere in this book, but there have been other developments that have been equally important in determining how the Society now operates. The growth of the Internet is probably the most obvious and the World Wide Web is now the preferred medium through which we communicate with our members, disseminate our journals, provide educational and other resources, and promote our scientific goals.

Some of the most important developments in the Biochemical Society in the past 25 years have been driven by the golden age of biological research in which we live. The dramatic growth in our understanding of the molecular basis of life in the past 50 years has been facilitated by biochemistry. A casual glance at Nobel Prizes awarded over this period, both in Physiology and Medicine and in Chemistry, will reveal the vital role played by our subject, and individual members of the Society, in the important advances that have been made in modern biology. Paradoxically, the very ubiquity of biochemistry in modern biological research has contributed to a diminution in its integrity as a subject – if nearly all biologists now use biochemistry as a tool in their research, what constitutes a *bona fide* biochemist in 2011? Comparing the landscape today with that of 25 years ago, we have many fewer separate Departments (or Schools) of Biochemistry and fewer degree courses described as “Biochemistry” (as opposed to “something” with Biochemistry or Biochemistry with “something”), but many more scientists use biochemical techniques to advance our understanding of the molecular basis of life. Is it, perhaps, the expansion of our discipline into all areas of modern biology that has contributed to fewer young bioscientists classifying themselves as “biochemists” and has therefore contributed to a slow decline in membership of the Society over the past 15 years?

Of course, ours is not the only subject that has been forced to adapt to these challenges. It is increasingly understood that the Victorian sub-divisions of biology that served our predecessors have

Table 1. The Biochemical Society's Honorary Officers 1986–2011

With a few exceptions, the periods of office ran from 1 January of the start date to 31 December of the end date. For reasons of space, most honours and post-nominals have been omitted. Sir Hans Kornberg, Sir Philip Randle, Dame Jean Thomas, Sir Philip Cohen, Sir Tom Blundell, Keith Gull, Chris Leaver and Steve Busby are FRSE. In addition, Sir Philip Cohen, Hamish Keir, Roy Burdon, Pete Downes, Chris Leaver and John Coggins are FRSE.

Chair	Vice-Chair (General Secretary until 1990)	President	Treasurer	Chair of PEC ¹	Honorary Secretary, PEPA ¹	Education Chair ¹	Policy Chair ¹	Publications Secretary (Chair of PPL after 1998)	Honorary Meetings Secretary	Honorary Membership Secretary
1987–1989	1987–1989		1987–1991	1984–1994				1987–1994	1987–1992	
H. Keir	R.H. Burdon		B. Spencer	H. Baum				C.I. Pogson	A.D.B. Malcolm	
1990–1992	1990–1992	1990–1995								
R.H. Burdon	A.D.B. Malcolm	Sir H. Kornberg								
1993–1995	1993–1995		1992–1995	1995–1997	1998–1999			1995–2004	1992–1995	
A.D.B. Malcolm	R.B. Freedman		R.B. Beechey	E.J. Wood	E.J. Wood			A.J. Turner	C. Rice-Evans	
1996–1998	1996–1998	1996–2000	1996–2001	1998–2002			1997–2003		1996–2000	
R.B. Freedman	K. Gull	Sir P.J. Randle	J.M. Wrigglesworth	H. Evans			C.J. Skidmore		N. Ryan	
1999–2001	1999–2001	2001–2005			2000–2003	2000–2003			2001–2005	
K. Gull	C.P. Downes	Dame J.O. Thomas			C.J. Skidmore	E.J. Wood			R.B. Beechey	
2002–2004	2002–2004		2002–2007			2003–2008	2003–2008	2005–2010		2003–2008
C.P. Downes	C.J. Leaver		I.P. Trayer			K. Gartland	J. Coggins	J. Clark		I. McEwan
2005–2007	2005–2007	2006–2008							2006–2011	
C.J. Leaver	M. Humphries	Sir P. Cohen							I. Dransfield	
2008–2010	2008–2010	2009–2012	2008–2012			2009–2014	2009–2011	2010–		2009–2013
M. Humphries	C. Kleanthous	Sir T. Blundell	J. Sayers			J. Newbury	C.P. Downes	J. Coggins		F. Michelangeli
2011–2013	2011–2013									
C. Kleanthous	S.J.W. Busby									

¹Until 1998, the Chairman of the PEC was the senior officer of the Society dealing with both education and policy. In 1998, this role was assumed by the newly created Honorary Secretary, Policy, Education and Professional Affairs (abbreviated to PEPA within the Society). The position of Chair of PEC remained until 2002, although separate Education and Policy Committees were first created in 2000. From 2003, the Chairs of the Education and Policy Committees became Trustees of the Society and sat on the Executive Committee.

little relevance in modern scientific terms. A number of other subjects have seen their boundaries blurred and their historic niches threatened. I think that the history of our discipline and of our Society over the past 25 years will show that we have responded more confidently to these changes than have some others. The Biochemical Society *has* evolved. It has looked outward to the wider scientific community and asked itself the question “how does the Biochemical Society need to change in order to play our role in the great bioscientific revolution of the 21st Century”.

In the rest of this chapter, I will review just how the Biochemical Society has adapted to these challenges. I will first consider how the internal organization of the Society has changed, especially over the period up to about 2003, when the Society adopted the basic structure that it retains today. I will also consider how we have adjusted our external relationships, especially those with related disciplines. Coincidentally, the greatest changes in these relationships have occurred in the past 10 years. As I hope will become obvious, the Society’s development in both these areas has reflected a desire on the part of those leading the Society to ensure that it has continued to support biochemistry and all those who work within it.

Internal Organization: Committees, Officers and Offices

Early days, 1986–1990 the Society moves to Portland Place

In 1986, when the Biochemical Society celebrated its 75th birthday, it had 6762 individual members, about 760 more than it has today, but nearly 2400 fewer than in the mid-1990s when membership reached its peak. The Society had occupied premises in Warwick Court, Holborn since 1966, when it moved its Editorial Department and solitary non-editorial employee from accommodation leased from the Medical Research Council in Park Crescent. The Society’s organizational nucleus was the ‘Committee’, whose principal officers consisted of a Chairman, Honorary General Secretary, Honorary Treasurer, Honorary Meetings Secretary and Honorary Publications Secretary. In the period up to 1990, the principal officers were elected by the membership, but the Chairman was elected by the Committee. The Honorary General Secretary was regarded as the most significant role in the Society and the incumbent usually became Chairman of the Society at the conclusion of their period of office. The separation of these two positions could be confusing to the outside world, and it is notable that the Honorary General Secretary position was abolished in 1990, when the position of Vice-Chair was created, the incumbent succeeding to the position of Chair after 3 years.



Warwick Court in Holborn, the Society’s London headquarters in 1987.

The individuals who occupied all these, and the subsequent officer positions in the Society that have developed from them, are listed in Table 1.

Thus the organization that started life as a 'dining club', had grown into a flourishing learned society that ran four main scientific meetings a year as well as refresher courses and Harden Conferences which, for the first time in 1987, were organized on the "open discussion but no publication" model familiar to those attending Gordon Conferences in the USA. By this time, the Society had also recognized a need to diversify its committee structure. A number of members felt that the Society should look beyond its traditional function of organizing meetings and play a role in education, research funding and influencing Government policy. Thus, in 1985, the Society had established the Professional and Educational Committee (PEC) that administered five Regional Sections around the UK, and organized schools lectures, pre-doctoral meetings and a range of other activities. A member of the Society who delivered an early school lecture on 'Genetic fingerprinting' in 1988 was Alec Jeffreys, who went on to win the Lasker Prize, is now an Honorary Member of the Society and is still on our list of schools lecturers! A full list of Honorary Members of the Society and those elected to Honorary Membership since 1959 can be found in Table 2. Other committees in 1987 were the Publications Board and the Finance Board, chaired by the Honorary Publications Secretary and Honorary Treasurer, respectively. At this time, the Society also had 16 Special Interest Groups that organized other activities, including meetings colloquia in particular subject areas. These groups held their own devolved budgets which, in some cases, grew to considerable sums over the years!

By 1987, the Society was also organizing an annual 'Heads of Biochemistry' meeting to bring together the Heads of the many separate university Biochemistry Departments that then existed to discuss matters of mutual concern and try to establish a policy consensus. In those early days, the Heads of Biochemistry meeting held an annual dinner with an after dinner speaker, so the 'dining club' ethos was still alive and well! In 1989, Sir Mark Richmond, the outgoing Chair of the Committee of Vice-Chancellors and Principals, spoke at a Heads of Biochemistry meeting on the funding pressures faced by UK departments, many of which would probably still seem familiar today. It is interesting to note that, in 2011, the Society continues to play a major role in organizing HUBS (Heads of University Biological Sciences) meetings, the body that seeks to organize the Heads of what has now become the most common organizational unit for our discipline in universities.

The internal structure of the Society in 1986 reflected these various activities and consisted of: Administration (eight staff), Meetings (six staff), Editorial (twelve staff) and Distribution and Society Membership (based in Colchester; nine Staff). By 1987, it was already becoming clear that the ambitions of the Society would outstrip both the available staff resources and the space at Warwick Court so a search was initiated for alternative office accommodation. In 1988, 59 Portland Place, an impressive Adam building, was identified as the favoured future home for the Society. The building was secured in 1989, but as it needed considerable refurbishment to make it fit for purpose. The building was officially opened on 13 December 1990 by Professor W. (Bill) Stewart, Chief Scientific Advisor to the Cabinet Office. The involvement of the Chief Government Science Advisor is noteworthy because two subsequent incumbents of this post became involved in a later move of the Society when it was seeking to establish joint offices and a London hub for UK biosciences in 2008/2009 (see page 19).

Warwick Court was ultimately sold at a paper 'profit' of £1.1 million, but the Society would discover over the next 20+ years that the value of its property holdings, like that of its equity investments, would fluctuate wildly during successive periods of national financial re-adjustment. During this period, a succession of Honorary Treasurers have been prepared to lead the Society into a variety of new ventures designed to both strengthen the finances of Society itself and also to increase its influence in the biosciences sector. Examples of such ventures have included: the launch of Portland Press Limited (PPL) and the expansion of the Colchester book depot to create Portland Customer Services, hosting international congresses for

Table 2. Honorary Members of the Society in 2011 and their years of election

In addition to those Honorary Members listed here, the following have also been elected to Honorary Membership since 1959 but are now deceased: Sir Henry Dale FRS (1959); Sir Rudolf Peters FRS (1959); Sir Charles Harrington FRS (1961); Sir John Gaddum FRS (1965); Sir Charles Dodds FRS (1965); Sir Robert Robinson OM, FRS, Nobel Laureate (1965); Sir Hans Krebs FRS, Nobel Laureate (1967); F. Dickens FRS (1967); Albert C. Chibnall FRS (1969); Walter T.J. Morgan FRS (1969); Luis F. Leloir ForMemRS, Nobel Laureate (1969); Albert Neuburger FRS (1973); Judah H. Quastel FRS (1973); Dorothy M. Needham FRS (1974); Thomas S. Work (1979); Sir Frank Young FRS (1979); M. Dixon FRS (1982); E.F. Hartree (1982); Trevor Goodwin FRS (1985); Roy Porter CH, FRS (1985); S.V. Perry FRS (1986); R.H.S. Thompson FRS (1986); Peter Campbell (1988); Claude Rimington FRS (1989); A.T. James FRS (1990); Lord Phillips of Ellesmere FRS (1991); D.V. Parke (1991); G.A.D. Haslewood (1993); Max Perutz OM, CH, FRS, Nobel Laureate (1994); César Milstein CH, FRS, Nobel Laureate (1998); Winifred Watkins FRS (2000); Helen Muir FRS (2001); Sir Philip Randle FRS (2001).

1969	Christian R.J.M. de Duve ForMemRS, Nobel Laureate
1984	Frederick Sanger OM, CH, FRS, Nobel Laureate
1987	Eric C. Slater FRS
1988	Henry R.V. Arnstein DSc
1993	William J. Whelan FRS
1996	Herbert Gutfreund FRS
1998	Sir John Walker FRS, Nobel Laureate
1998	Sir Aaron Klug OM, PRS, Nobel Laureate
2001	Sir Hans Kornberg Kt, Hon. FRS
2002	Sir Paul Nurse PRS, Nobel Laureate
2002	Sir R. Timothy Hunt FRS, Nobel Laureate
2002	Sir John Sulston FRS, Nobel Laureate
2003	Sir Sydney Brenner CH, FRS, Nobel Laureate
2003	Sir Philip Cohen FRS, FRSE
2003	Sir Alec Jeffreys FRS
2004	Dame Louise Johnson FRS
2004	Lionel Crawford FRS, FRSE
2004	Sir Michael Berridge FRS
2004	Sir Edwin Southern FRS
2007	Dame Jean Thomas FRS
2007	Sir Gregory Winter FRS
2008	Sir Martin J. Evans FRS, Nobel Laureate
2010	Bob Michell FRS
2010	Venki Ramakrishnan FRS, Nobel Laureate
2011	Sir Tom Blundell FRS
2011	Sir John Cornforth FRS, Nobel Laureate
2011	Ron Lasky FRS

the International Union of Biochemistry and Molecular Biology (IUBMB) and the Federation of European Biochemical Societies (FEBS), expanding the Society's education and policy work, the establishment of the UK Life Sciences Committee, the Biosciences Federation and the Society of Biology and successive moves to premises at Portland Place, Eagle House and Charles Darwin House. All of these are discussed in detail elsewhere, but they have occurred over a period when the Society has been forced to adjust to several periods of economic recession during which the value of the Society's reserves, and the income derived there from, have fluctuated greatly. The Society owes a considerable debt to Brian Spencer, Brian Beechey,



The Society moved to new premises at Portland Place in 1990.

John Wrigglesworth, Ian Trayer and Jon Sayers, all of whom have held the position of Honorary Treasurer over the past 25 years.

The move to Portland Place in 1990 was accompanied by further changes to the staffing structure of the Society. In 1989, the Society had set up PPL as a wholly-owned subsidiary company to undertake its publishing and book distribution activity from the Colchester Book Depot. Apart from maintaining the highest standards for the *Biochemical Journal*, its flagship publication, PPL also provided a vehicle through which the Society (a charity) could undertake commercial activities, thereby securing a stronger financial base. The first Chairman of PPL was Chris Pogson, who was also the Honorary Publications Secretary at the time. He was succeeded in the role by Tony Turner in 1994. When the Society moved to Portland Place, it also established a Professional and Educational Department, staffed by a Professional and Educational Services Manager, an Education Officer and a Secretary, to work with the recently established PEC. The other internal departments

of the Society remained as in 1986, with similar staff numbers as they had at that time. Although the names of some of these divisions have changed over the years, this is still, with one notable addition, the staffing structure that exists today. It is therefore possible to compare 2011 staffing numbers with that above as follows (1990 numbers are in parentheses):

- Education (and Policy) - 5 staff (3);
- Administration (including Finance) - 9 staff (8);
- Meetings and Membership - 7 staff (6);
- Editorial - 16 staff (12);
- Portland Customer Services (Colchester) - 32 staff (9).

The one major staff division that did not exist in 1990 is Information Technology (IT), where the Society currently has seven staff, with much of their time being utilised in support of the commercial activities of PPL. Apart from IT, it is clear that the biggest area for staff growth has been that of distribution and membership services in Colchester, reflecting the efforts of the Society and the management of PPL to grow this side of the business in recent years.

Time for an advisory Council: changes in governance from 1990

While planning the move to Portland Place, the Committee had also undertaken a major review of Society Governance and Committee structure. The principal officers of the day felt that the Committee had grown to the point that it was too big to effectively run the Society, but too small to fully represent all the membership, either demographically or scientifically. Initial proposals for a new structure were published in the *Biochemical Society Bulletin* (re-launched as *The Biochemist* in 1988), discussed amongst the membership and, following the 1989 AGM, the Committee that had run the Society for 80 years was



The reception at the House of Commons in 1998 on the occasion of 1997 Nobel Laureate Sir John Walker FRS becoming an Honorary Member of the Society. From the left: Keith Gull (Vice Chair of the Executive Committee, 1996–1998), Sir Philip Randle (President of the Society), Sir John Walker, César Milstein (Nobel Laureate 1984), Robert Freedman (Chair of the Executive Committee, 1996–1998).

replaced by an Executive Committee and an advisory Council [2]. The Council was chaired by the newly established position of President and, in addition to the members of the Executive Committee, included all the chairs of the 16 Special Interest Groups, the chairs of the Regional Sections and six members directly elected from the membership. The first President of the Society was Sir Hans Kornberg. The Council would receive regular reports on finance, administration and other matters from the Executive Committee and it had the formal power to appoint the Chair, Vice-Chair, President and some other positions. The formal and legal responsibility for running the Society remained with the slimmed-down Executive Committee, now strengthened by the addition of the President. The Executive Committee were the Trustees of the Society (with the creation of PPL, now an incorporated charity) and had the legal status of the 'Board' of the Society. The Chairman of the Executive Committee was the Chairman of the 'Board', but the creation of the Council was intended to strengthen links to the grassroots of the organization and to ensure the accountability of the Executive Committee.

During the early 1990s, the roles of other Society Committees/Sub-Committees were also evolving. In addition to overseeing the activities of the five regional groups, the recently established PEC, chaired by Harold Baum, was increasingly looking outward to the rest of the bioscience sector, to the Government and to those bodies that controlled the research environment of the day. In 1992, for example, this committee responded to consultations on genetically modified organisms (an issue that continues to demand attention from the Society and its committees to the present day), funding levels for the Higher Education

Funding Council and a Government White Paper on Science and Technology. Representatives of the committee also started attending science festivals and Mark Ferguson spoke on the rapidly developing subject of molecular biology (“...from the Cradle to the Grave”) at the 1993 British Association Festival. The Society has continued to support science festivals up to the present day, but the subjects covered have evolved as we have tried to appeal to wider audiences. For example, in 2009, the Biochemical Society, the Physiological Society, the Institute of Biology and the Biosciences Federation jointly sponsored a session at the Cheltenham Science Festival presented by TV and sporting personalities Ben Fogle and James Cracknell, which discussed the biochemical and physiological challenges associated with their trek to the South Pole earlier that year.

By 1994, there was growing concern at the ever widening range of biochemistry degrees on offer at UK universities and the curricula that underpinned them. The PEC launched a curriculum working party that would attempt to define a “core” biochemistry curriculum for the 1990s. This work was led by Ed Wood and Keith Elliot and the “core curriculum” was much debated by individual departments throughout the 1990s. A further update of the core curriculum was undertaken in 1999 and the Society still receives requests for this document to this day. However, since so much biochemistry is now taught as part of a wider biological discipline, there have not been further revisions to the 1999 document.

Let’s consult the members: another new strategy!

In 1992, the Society commissioned its first survey of member opinion. This was an attempt to find out what the then 8000 members thought that the Society should be doing in addition to its traditional activities of organizing meetings, publishing journals, etc. The outcome of this exercise led to the establishment of a working party on future strategy that highlighted a number of areas including ‘Science and Society’ as priorities. This exercise launched a regular pattern of seeking the opinions of members (and later non-members) through commissioned opinion polls with further exercises conducted in 2000 and 2009. These regular polls of member opinion fed into a fairly continuous process of strategy review so that the annual reports and committee minutes from about 1995 to the present day reveal a process of continuing refinement.

The 1992 survey led to a draft strategy paper in *The Biochemist* in 1994 [3], introduced by the Chairman Alan Malcolm, and entitled *Whither the Biochemical Society? A Strategy for the 21st Century*. Robert Freedman, who was Vice-Chair of the Society in 1994 and became the Chairman charged with implementing the new strategy in 1996, recalls that key players involved in formulating the new policy during 1995 were Chris Pogson, Brian Beechey, Harold Baum, Keith Snell and the Executive Secretary, Glyn Jones. The outcomes of this strategic review were probably the most far-reaching in the Society’s history and attempted to respond to the rapidly changing research environment in which biochemistry had become a discipline that was central to most biological research. The review prioritized engagement with other societies, developing joint working on careers, schools and other policy areas, not attempting to patrol the boundaries of biochemistry but embracing the whole of bioscience. Thus, one of the key planks of the 1995 strategy was for the Society to play a central role in fostering collaboration between the plethora of learned societies in the biosciences who were involved in a wide range of overlapping activities. This led to the launch in 1997 of the UK Life Sciences Committee, the vital role of which will be considered in detail later.

The 1995 review also led to a number of changes in internal organization that would equip the Society to better fulfil its role into the new millennium. In 1998, the new position of Honorary Secretary, Policy, Education and Professional Affairs (PEPA), whose role was to oversee the Society’s policy and education work, was created on the Executive Committee; the first incumbent was Ed Wood. This change further recognized the significance of learned societies in influencing the debate on national science policy, and

the fact that the Biochemical Society was leading attempts to enable the bioscience sector to speak with a single voice on the policy front. A new Policy Sub-Committee was established in 1997, with its own chair (Chris Skidmore), but sitting under PEC. By 2000, the Society had also established a separate Education Sub-Committee as part of PEC. However, PEC ceased to exist in 2003, and the Education and Policy Sub-Committees came under the auspices of the Executive Committee with their two Chairs (Kevan Gartland and John Coggins, respectively) sitting on that committee as Trustees of the Society. Also in 1998, the position of Honorary Publications Secretary was abolished and the associated position on the Executive Committee was filled by the Chairman of PPL. A further development arose from the decision that Society should attempt to become a serious publisher of biochemistry books. PPL did publish a number of successful books in the following years, but ultimately withdrew from this activity faced by the relatively small market for specialist books and competition from the major commercial publishing houses.

Within the office, the Policy, Education, Meetings and Membership functions were brought together under the heading of Society Activities and the leadership of a newly appointed Director, Sheila Mills. By 1998, the Society's policy staff of two included Mike Withnall, who was producing a monthly *Policy Digest* newsletter, for distribution to departmental heads, politicians and civil servants, and a bi-monthly Policy Matters article in *The Biochemist*. Major policy issues of concern in 1999 included the Research Assessment Exercise, 4-year PhD studentships and whether the Society should become involved in accrediting undergraduate degree programmes. Opinions on this latter subject were divided and remained so during subsequent periods of discussion in 2006 and 2009. The Society of Biology are currently involved in discussions with Government about degree accreditation across the sector and it will be interesting to see if these are any more conclusive.

The reforming zeal of the Society's officers in the late 1990s was not confined to the policy field. Up till 1997, the Society had held four main meetings a year at UK universities. In 1998, this changed to three, although the Society also begun organizing an annual meeting for the British Society for Cell Biology, a service it repeated in 1999 and has fulfilled for other learned societies since. Also in 1999, there began a review, under the chairmanship of Peter Downes, of the Special Interest Groups that had been the mainstay of academic planning for Society meetings for so long.

The early years of the new millennium were a busy time for the Society and its Meetings Board. In 1993, the Society had successfully bid to host the 2000 IUBMB Congress, which later became a joint congress with FEBS, attracting 3000 delegates. A planning team lead by Keith Gull put on an extremely successful Congress at the International Convention Centre in Birmingham. Up until 1999, registration for members at scientific meetings had been free but, from 2000, the Society has charged registration fees, a practice that is now nearly universal amongst learned societies. A further review of meetings strategy, informed by the outcome of a MORI poll of members in 2000, decided to hold a single main meeting of the Society each year, lasting up to 4–5 days and possibly tethered to a fixed location, together with a number of shorter Focused Meetings on specialist topics. This decision led to BioScience2004 and its successors in Glasgow (see Chapter 3) and set the stage for the Society's current and extremely successful programme of Focused Meetings. The latter took over as our principal meetings format in 2008 following a review chaired by Martin Humphries that decided to discontinue the annual meeting in response to declining delegate numbers.

Another 1999 review looked at the role and the operation of the Society's six Regional Sections. Successive reports of PEC had commented on a decline in regional activity as academics came under increasing demands in the workplace and both transport links and the Internet facilitated greater interaction beyond regional boundaries. In 2002, the review group recommended the establishment of Local Scientific Events Grants to rejuvenate regional activity. These operated successfully for a number of years but, with the growing difficulties associated with arranging events in school time, their future is



The Honorary Members Dinner 2008. The Chair of the Society, Martin Humphries, is flanked by new Honorary Member and former President Dame Jean Thomas (left) and Lynne Jones MP (right), former member of the Society who hosted the event at the Palace of Westminster.

once again under debate by the Education Committee in 2011. Of the original Regional Groups, only the Irish Area Section, a group that spanned the Irish border throughout “the Troubles”, continues to operate in 2011, and it maintains a thriving programme of events.

Into the new millennium

Following the MORI poll of members in 2000, the Executive Committee initiated a number of radical changes in response to a membership that had called for increased involvement with our younger members, strategies to encourage greater public understanding of our subject and closer working with other learned societies.

Communication with our members had been strengthened in 2000, with the appointment of a full-time Executive Editor for *The Biochemist* magazine. Concerns about our interaction with young biochemists ultimately led to the Young Researcher membership category, re-launched as Early Career membership in 2011, where we now find 18% of our members. The new millennium also saw the start of on-line consultations with the membership. Subjects covered by consultations in 2002 included: strategies for the retention of young biochemists, concerns about future research funding, the Research Assessment Exercise and the Roberts consultation for the Higher Education Funding Council. The Society continues to consult on-line with its members in 2011 and our Policy Department now maintains a database of member expertise that we use to inform responses to policy consultations by the Government, Research Councils and many other bodies.

In 2002, the Society supported initiatives to strengthen the public understanding of science by choosing ‘Scientific Communication in the Public Domain’ as the area for the award of the first Biochemical

Society Award Lecture (which was shared by Steven Rose and Bernard Dixon). The year 2002 also saw the initiation of a number of important changes to the Society's committee structure. These arose both from the Downes review of the Special Interest Groups started in 1999 and detailed discussions in the Executive Committee, Council and elsewhere. The Special Interest Groups were the academic groupings in which the topics of the Society's scientific meetings were normally conceived. Their numbers had grown considerably over the years as new research fronts developed. However, while new Special Interest Groups had been born, few had died! The outcome of the Downes review was the rationalization of these groups into seven overarching Theme Panels with refreshed membership that covered the breadth of biochemistry. The remits of individual Theme Panels were not intended to be fixed, but to respond to developments in the subject. With some changes in emphasis, these are the Theme Panels that still serve the Society today. The advent of the Theme Panels also saw the formation of the Meetings Board, chaired by the Honorary Meetings Secretary, and including the chairs of all the Theme Panels. Further changes in committee structure saw the establishment of separate Policy and Education Committees in succession to PEC (as described earlier in this chapter), the Chairs of which were members of the Executive Committee and the Council, as was the newly established Honorary Membership Secretary. All these changes were enshrined in alterations to the Memorandum and Articles of Association of the Society that were passed by the AGM in 2003.

Another important milestone in the life of the Society in 2003 was the retirement of Glyn Jones as Executive Secretary. A lawyer by training, Glyn joined the Society in 1984 and he steered it through all the changes described above with great skill, an outstanding period of service that was full acknowledged by the Executive Committee and Council at the time. Following Glyn's retirement, the Executive Committee decided that Glyn's successor would become the Society's first Chief Executive and began the process that led to the author joining the Society as a member of staff (as opposed to a member!) in 2005.

Time to move again!

At the AGM of the Society in 1999, Keith Gull, the then Chair of the Society, had predicted that the Internet would become a dominant part of the Society's communications strategy [4]. He was correct, and by 2003 IT was the central plank of all office activities. The premises at Portland Place had been acquired at the beginning of the computer age but, with its Grade II listed status and warren of rooms, it was poorly fit for purpose as an office base for a growing Society in the computer age. The search for another home was on and the Officers of the Society were keen to explore the possibility of sharing accommodation with another learned society. Discussions were held, notably with the Physiological Society, but they eventually came to nought. In the end, the decision was made to take a short-term lease in a modern office building called Eagle House on Procter Street in the Holborn area of London. It was the hope of the Executive Committee that, when the lease was up for review in 2010, the climate for sharing space with other societies might be more propitious. This hope was to be realized in due course.

The move to Eagle House coincided with the appointment of Chris Kirk to the position of Chief Executive of the Society. In addition to an academic career as a biochemist, Chris had previous experience as Chair of a major arts charity and an important early task was to ensure that the Society fully complied with the 2005 Charities SORP (Statement of Recommended Practice). A review of procedures led to the establishment of formal Sub-Committees of the Executive Committee for Finance (replacing the Finance Review Group), Audit and Remuneration. The Society established a risk register for the first time and put in place procedures for its regular review.

The Chairman in 2005, Chris Leaver, had two principal goals for the Society. He wanted to improve communication with members and potential members in individual departments and he was convinced of the need to find ways for the plethora of learned societies in the biosciences to speak with a single voice



The Society returned to Holborn with the move to Eagle House on Procter Street in 2005.

in the corridors of power. As will already be clear, neither of these concerns were new to the Society, but significant progress would be made in both areas over the ensuing years. It had long been recognised that communications to Departmental or School Heads about Biochemical Society business would often not achieve a very high position on the recipients “to-do” list. Indeed, the issue was discussed by Keith Gull at the 1999 AGM [4]. Recruitment of student members was also an issue, total membership having declined about 30% from its high point of 9145 in 1994. The days when new PhD students in biochemistry would be sat down in front of a membership application form by their supervisors on their first day in the lab were coming to an end, often because the research groups in which students were working were less clearly identifiable as owing their allegiance solely to biochemistry than in the past. Students were now undertaking biochemical research in labs that might see their primary allegiance as being to microbiology, genetics, plant biology, immunology or many other disciplines. It was therefore decided to establish a network of Local Ambassadors in various university and industrial departments to act as a conduit through which the Society could contact its members, and prospective members could contact the Society. Local Ambassadors, of which there are currently more than 70 worldwide, have proved an effective means of recruiting members to the Society and organizing local events since 2005.

1997–2011: looking out to the wider scientific community

The Biochemical Society has long been aware of its position as the largest discipline-based learned society in UK biosciences and it has taken seriously the responsibilities associated with this status. The Society had played a central role in the establishment of both the International Union of Biochemistry (later the

IUBMB) and FEBS in the 1950s and 1960s and, as noted elsewhere in this book, it has organized international congresses for both bodies over the past 25 years.

The Society was also quick to realise that it should provide support to those involved in teaching the next generation of future biochemists in our schools. Thus, schools lectures were launched in the 1980s and the Society began to publish a number of *Biochemistry Across the Schools Curriculum* booklets as a resource for teachers in secondary schools. These were enormously successful and set the pattern for continued work in this field. In 1995, PEC, in collaboration with the National Centre for Biotechnology Education and the Society for General Microbiology, launched ClubBio as a membership forum for School Science Teachers (see Chapter 4). Support for school teachers has continued to the present day, but the medium through which this support is offered changed following a strategic decision in 2000 to focus the Society's school resources on the Internet. The Society now hosts a variety of websites (www.scibermonkey.org, www.sciberdiver.edu.sg and www.sciberbrain.org) that provide resources for school pupils from ages 8 to 18, and schools membership is offered through the Society of Biology.

Further work with the schools community included the sponsorship in 1988–1990 of a Life Sciences Award at the Co-operative Retail Society's 'Let's make a Film' Festival for Schools. In the past 5 years, the Society has again harnessed the power of the performing arts to make science more accessible to young people in a collaboration with the Islington Community Theatre. Two plays, written in collaboration with members of the Society and young members of the theatre group, have explored the modern influence of Darwinism (*Hive 9* - produced to celebrate the Year of Darwin in 2009) and the contemporary debate about stem-cell research (*Little Miracles* - produced as part of our Centenary celebrations in 2011). Both have been performed to large audiences in school science laboratories and a variety of other locations.

In the late 1980s, the Society also offered School Teacher Fellowships that were designed to give teachers a period of time back in the laboratory to refresh their knowledge and skills. These were initially popular but, as the education cuts of the period began to bite, school teachers in all but the most well-funded private schools were unable to get the necessary time off to participate in the scheme, which fell into disuse. In the past 5 years, the Society has organized a variety of in-service training activities for teachers, mostly linked to our current web resources. However, the timing of these events now has to be carefully planned to avoid impinging on the school day and the Society sometimes funds the travel arrangements of teachers who wish to take part. Clearly the pressures on our school teacher colleagues have not diminished over recent years!

Fighting the corner of UK biochemistry

The political upheavals of the 1980s also served to remind those in charge of the Society of the importance of political lobbying in defence of our subject. The Society, through the PEC, frequently responded to Government consultations over this period on such subjects as the science budget and the Research Selectivity Exercise (later to become the Research Assessment Exercise and the Research Effectiveness Framework). The Society also took its message to the politicians whenever it had the opportunity.

In 1987 for example, it launched a booklet on the new technology of recombinant DNA at a reception in Parliament, and in 2002 Ian Gibson MP, the Chair of the House of Commons Science and Technology Select Committee, hosted a Society reception for the recent Nobel Prize winners (and Honorary Members), Sir Paul Nurse and Sir Tim Hunt.

It was, however, clear that there were at least two barriers to effectively communicating with our political masters. The first was that scientists, whilst in their element talking about their subject to their peers, are often uncomfortable when asked to defend the importance of their research to a lay audience or the press. In the 1980s, the importance of effectively presenting our science to these audiences was already

clear and the Society began to sponsor Media Fellowships organized by the Committee for the Public Understanding of Science (COPUS) that enabled research scientists to gain direct experience of how the broadcast and print media operated. In more recent years, the Society has supported the Science Media Centre and worked with Sense About Science to sponsor a project entitled 'Voice of Young Science' in which young scientists come together to learn the skills necessary effectively to communicate the significance of their research to the press and public. It is to be hoped that the emerging generation of young biochemists will be better able to communicate with politicians and the press than were their predecessors.

The second barrier to influencing political opinion is a consequence of the very diversity of bioscience. In 2011, there are about 90 learned societies in UK bioscience, not including those of a specifically medical nature. It is therefore difficult for the biosciences to talk to our political masters with a single voice. When the Government or a Select Committee opened a consultation on an issue in the 1980s and 1990s, they would frequently receive a number of responses from individual societies that said nearly, but not quite, the same thing. This tended to dilute, rather than amplify, our effectiveness as a sector. The physical and chemical sciences had already faced up to this issue in the 1970s when they resolved the matter by uniting under the twin banners of the Institute of Physics and the Royal Society of Chemistry.

Clearly the biosciences were a long way from achieving this kind of unity of organization and purpose, but the Biochemical Society was aware of the challenge. In 1987, the Society hosted a meeting of sister societies to agree a joint response to Government plans for the future of research support to the



The reception at the House of Commons in 2002 in honour of the 2001 Nobel Laureates Sir Paul Nurse, FRS and Sir Tim Hunt, FRS. From left: Sir Tim Hunt with his daughter (Aggie), Peter Downes (Vice-Chair of the Executive Committee, 1999–2001), Dame Jean Thomas (President 2001–2005), Sir Paul Nurse, Ian Gibson, MP, Keith Gull (Chair of the Executive Committee, 1999–2001).



The Prime Minister Tony Blair with Honorary Members of the Society Max Perutz, Fred Sanger and John Sulston at the Human Genome Project video conference which was held with US President Bill Clinton in June 2000. The event was used to announce the completion of the initial stage of work to identify all of the genes in the human body. Photo by Christine Nesbitt; reproduced with permission.

university and polytechnic sector which led to the formation of the (then) two funding councils. However, it was clear that the future demanded more than *ad hoc* joint responses to such Government consultations. Although the Institute of Biology (IoB) had held the Royal Charter in Biological Sciences since 1979 and there was an expectation among some that it could speak on behalf of the sector, the research community was not strongly represented amongst its membership and many felt that it was not equipped to fulfil this role. The 1995 draft strategy document entitled *A Strategy for the Biochemical Society for the 21st Century* [3] envisaged increased co-operation between the various societies representing the molecular life sciences and sowed the seeds for the formation of the UK Life Sciences Committee (UKLSC) to be their public policy face. Robert Freedman, who was Chairman of the Society from 1996 to 1998, put all his authority, skill and considerable energy behind the formation of UKLSC, which was finally launched in 1997 and enjoyed considerable support from learned societies in the sector. However, although a measure of co-operation was achieved between UKLSC and the IoB, the long-standing difference between the focus of the latter organization and the interests of the molecular life science community remained a problem in presenting a unified view on behalf of the life sciences as a whole. By 1999, the suggestion had emerged that the IoB and UKLSC should merge to form the Biosciences Federation (BSF) and thereby create a single umbrella organization that would represent the breadth of UK bioscience.

The BSF finally came into being in 2002 and the first subscribing members were the Biochemical Society, the IoB, the British Ecological Society, the British Mycological Society, the Linnean Society, the Physiological Society and the Society for General Microbiology. The Gatsby Foundation provided support of £20,000 *per annum* to get the organization going and the Biochemical Society seconded Mike Withnall, who was its Assistant Director (Policy), to run the new body on a full time basis. The monthly *Policy Digest* that Mike had previously prepared for the Biochemical Society was now circulated on behalf of the BSF. The creation of the BSF did make a difference to the way in which the sector presented itself to the



In 2009, along with co-owning sister societies, the Society for Experimental Biology and the British Ecological Society, the Society staff moved to Charles Darwin House.

the aid of the financial support pledged at Goodenough College, the BSF became increasingly noticeable as the voice of UK bioscience. It had now grown to a staff complement of 3.5 full-time equivalents, but was still considerably smaller than the IoB, which remained a ‘member organization’ of the BSF. By 2007, the BSF had grown considerably in stature and there was a general recognition that the obvious solution to the need to create a single voice for bioscience involved the formal merger of the BSF and the (physically larger) IoB into a single organization. A joint working party was set up under the chairmanship of Sir Brian Heap that worked for a year to create a plan that might be accepted by both organizations. The proposed merger required the agreement of the 50 or so learned societies that were now affiliated to the BSF and also of the IoB’s 11,000 individual members. After a great deal of work by the officers of both organizations, the decision to merge was ratified with the transfer of the amended Royal Charter on 15 July 2009, creating the Society of Biology as a new legal entity on 1 October of that year. Dr Mark Downs, a biotechnologist with a background working in Government and the private and voluntary sectors was appointed as the Chief Executive of the new organization and Dame Nancy Rothwell became its first President. The new Council of the Society of Biology had the current and two past Chairmen of the Biochemical Society as members, and the Society’s Chief Executive was an advisor to the group. The role of the Biochemical Society in helping to bring this new umbrella organization into being was clear for all to see.

outside world, but the organization still seemed like a relatively small appendage to the IoB (a true merger had not occurred) and the other Societies that supported it. Following the conclusion of the Gatsby Funding in 2005, a crunch meeting was held to decide the BSF’s future. Chris Leaver, the then Chair of the Biochemical Society, set the tone of the meeting by declaring that the learned societies in the sector must finally come together on the policy front if the biosciences were to thrive in the future. On behalf of the Society, he pledged a sum of £20,000 *per annum* for the next 3 years in order to maintain and develop the BSF. After some discussion, this sum was broadly matched by the Physiological Society and the Society for Experimental Biology. At a follow up meeting at London’s Goodenough College, a number of other organizations, including the Society for General Microbiology, the Society for Applied Microbiology, the British Pharmacological Society and the Society for Endocrinology also pledged substantial sums.

Mike Withnall had been appointed the first Chief Executive of the BSF and, when he retired in 2005, he was succeeded by Richard Dyer, formerly Director of the Babraham Institute in Cambridge. Under Richard’s leadership and with

A London hub for UK bioscience

Meanwhile, the Biochemical Society had been busy pursuing another route designed to foster closer working across the sector. With the encouragement of the Society's new Chair, Martin Humphries, discussions started in 2007 on the possibility of a number of learned societies co-habiting in a single office building in London. It was felt that such an arrangement would facilitate closer working in a number of areas and provide savings through the sharing of some services. It is interesting to note at this point that the Committee of the Biochemical Society first discussed the possibility of creating joint offices and a 'Science Centre' in the capital in 1950!

In the new millennium, informal discussions with a number of individuals close to the Government had suggested that this kind of move to unify the fragmented bioscience sector would be welcome and an informal working dinner was arranged with Sir David King, the Government Chief Scientific Advisor to explore ideas. At that dinner, which was held on the 19 June 2007 in Covent Garden, were Sir David, the Chairman and Chief Executive of the Biochemical Society (Martin Humphries and Chris Kirk), the Treasurer and Chief Executive of the BSF (John Coggins and Richard Dyer) and the Presidents of the Physiological Society (Ole Petersen) and the Society for Experimental Biology (Ian Johnston). All present were enthusiastic about the possibility of creating an office hub for learned societies in London and the BSF subsequently convened a meeting on 5 October 2007 to discuss the idea, to which all member organizations were invited. About six societies were represented at this and subsequent meetings, but it soon became clear that three societies in particular were committed to turning the dream of co-habitation into a reality.

In 2008, the Biochemical Society, British Ecological Society and the Society for Experimental Biology agreed a Memorandum of Understanding that committed the three organizations to closer co-working and the search for suitable shared office accommodation in London. This document was signed at the House of Commons in January 2009 by Martin Humphries, Malcolm Press and Ian Johnston (the Chair of the Biochemical Society and the Presidents of the British Ecological Society and the Society for Experimental Biology, respectively) in the presence of Lord Hunt (Deputy Leader of the House of Lords) and Phil Willis MP (Chair of the Science and Technology Committee). Following this agreement, the search commenced for a building in central London that might serve as joint offices for the three organizations, with additional space that could be rented to other societies in the sector and a flexible meetings suite. The search for a suitable building started in earnest in November 2008 and, in February 2009, the Chief Executives of the three societies first saw a property in Roger Street on the edge of Bloomsbury that appeared to satisfy their needs. It was a 1959 construction on five floors with a particularly large ground floor footprint that could provide the flexible meetings space. The four upper floors were open plan and spacious, providing sufficient accommodation for the three societies on the two upper floors and space



Sir John Beddington, Chief Science Advisor to the Government, opens the Society's new headquarters at Charles Darwin House in 2010.



Martin Humphries (Chair of the Biochemical Society, seated), Malcolm Press (President of the British Ecological Society, left) and Ian Johnston (President of the Society for Experimental Biology, centre) sign of a Memorandum of Understanding at the House of Commons in January 2009, with Lord Hunt of Kings Heath (right). This committed the three organizations to closer co-working and the search for suitable shared office accommodation in London, which eventually led to the acquisition of Charles Darwin House in 2009.

to rent on the lower two. Following the agreement of the Trustees of the three societies, the building was purchased for £4.1 million in June 2009, at what turned out to be a low point for the London property market. Refurbishment work started in July and, in November, the three societies moved into the upper two floors and the meetings area, which now boasted an auditorium for 120 people, a breakout area and a number of other meetings rooms. The building was named Charles Darwin House in honour of the bicentenary of Darwin's birth and the 150th anniversary of the publication of *On the Origin of Species*. It was an instant success, with all three organizations rapidly adjusting to the various opportunities for co-working that the building presented. On the 7 June 2010, Charles Darwin House was officially opened by the new Chief Government Science Advisor, Sir John Beddington, who thereby became the third holder of that office to play a role in the Society moving home! A second building contract in the summer of 2010, completed the refurbishment of the lower two floors of the building and all of the available space was taken by sister learned societies by June 2011.

A recent Society to move into Charles Darwin House as this chapter was being written is the Society of Biology who purchased a 12.5% share of the building from the other co-owners in February 2011. Thus the new umbrella organization for the biosciences is firmly embedded in what we now regard as the London hub for the sector. The Biochemical Society can feel proud that they have played their part in facilitating these important changes that will help to ensure that the influence of our sector in the corridors of power grows in the coming years to better match the importance of molecular bioscience to the wealth and well-being of the nation.

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Chapter 3

Communicating Biochemistry: Meetings and Events

Ian Dransfield and Brian Beechey

Scientific conferences organized by the Biochemical Society represent a key facet of activity throughout the Society's history and remain central to the present mission of promoting the advancement of molecular biosciences. Importantly, scientific conferences are an important means of communicating research findings, establishing collaborations and, critically, a means of cementing the community of biochemical scientists together. However, in the past 25 years, we have seen major changes to the way in which science is communicated and also in the way that scientists interact and establish collaborations. For example, the ability to show videos, "fly through" molecular structures or show time-lapse or real-time movies of molecular events within cells has had a very positive impact on conveying difficult concepts in presentations. However, increased pressures on researchers to obtain/maintain funding can mean that there is a general reluctance to present novel, unpublished data. In addition, the development of email and electronic access to scientific journals has dramatically altered the potential for communication and accessibility of information, perhaps reducing the necessity of attending meetings to make new contacts and to hear exciting new science. The Biochemical Society has responded to these challenges by progressive development of the meetings format to better match the needs and expectations of delegates, while maintaining delivery of high-quality scientific programmes.

Key personnel

The co-ordination of the programme of scientific meetings during the last 25 years of the Biochemical Society history has largely been achieved through the hard work of the Meetings Office and the voluntary contributions of the Meetings Committee (and latterly the Meetings Board) which is chaired by the Honorary Meetings Secretary (see Table 1)

The successful delivery of the full programme of Biochemical Society meetings is critically dependent on the dedication and hard work of the Society's staff. The first Meetings Officer, Doris Herriott, was appointed in 1961. However, the increasing demands of meetings organization required that a Meetings Assistant was also necessary. The first Assistant Meetings Officer was Robert Dale, who was followed by Kathy Gallagher (1987–1994) and subsequently by Luisa Hambley in 1994. Robert Dale was appointed Meetings Officer in 1988 and replaced by Lisa Palin, who held the role from 1996 to 1997, until the creation of the new role the Director of Society Activities in 1997.

Table 1. The Biochemical Society's Honorary Meetings Secretaries 1986–2011

Term of office	Meetings Secretary	Affiliation
1986–1991	Alan Malcolm	Biochemistry Department, St. Mary's Hospital Medical School, University of London
1991–1996	Catherine Rice-Evans	Division of Biochemistry, UMDS, Guy's Hospital, London
1996–2001	Norma Ryan	Department of Biochemistry, University College Cork, Ireland
2001–2006	Brian Beechey	The Physiological Laboratory, University of Liverpool
2006–2011	Ian Dransfield	MRC Centre for Inflammation Research, University of Edinburgh

The appointment of Sheila Alink-Brunsdon (then Mills) as Director of Society Activities was a key event in realizing many of the different ambitions and key changes in the Society's meetings programme and she remained in post until the spring of 2011, the centenary year. Working with several successive Honorary Meetings Secretaries, Sheila has seen aspects of the somewhat cyclic pattern of changes to meetings that have occurred over time. Under her direction, the Meetings team has been held together through many changes in staff (not to mention job titles!). The creation of the role of Conference Co-ordinator in 2000 allowed the appointment of Kay Miller (2000–2004) who was pivotal to the establishment of Focused Meetings and the success of the first BioScience meeting in Glasgow in 2004. Helen Davies took over this role in 2004 and subsequently, Christine Cook in 2006. Kay Miller, working together with Helen Davies on a job-share, returned to the role of Conference Co-ordinator in 2006. In 2011, following Sheila's retirement, Kay became Group Head of Membership Activities, and is responsible for implementing the Society's strategic plan as it relates to meetings, membership, the Society website, award lectures and international affairs. The centenary year has also seen the development of two new roles within the Society to ensure the communication of the Society's activities and engagement with its members: Amy Cox is now Communications Manager and Helen Davies is Head of Membership.

75 Years and beyond

In line with its mission to “advance the science of biochemistry by means of meetings and publications”, the Biochemical Society organized four meetings annually between 1986 and 1998. The Annual Symposium was hosted at one of the main meetings, which were usually held over 2–4 days and had a number of parallel sessions with colloquia on specialized topics. There were dedicated sessions



Kay Miller (current Group Head, Membership Activities), Sheila Alink-Brunsdon [Mills] (Group Head of Society Activities, 1997–2011) and Helen Davies (current Head of Membership).

where members had the opportunity to present short communications that related directly to these colloquia. In addition, there were open communication sessions, where members could present data on topics that were unrelated to the main colloquia topics. Another important feature of meetings was the inclusion of poster sessions, which were proving to be very popular as a means of presenting research findings. The quality of individual colloquia was very high, including presentations from scientists of truly international status. The Biochemical Society meetings thus provided considerable opportunities for undergraduate and postgraduate students to become exposed to high-quality, cutting-edge research and to present their work in front of an informed audience. In this way, Society meetings provided a splendid forum for the dissemination of biochemical research findings.

The Society's celebrations of its 75th year (1986) included main meetings held in Dundee, Liverpool, Cambridge and at University College London (UCL). In total, there were 40 separate colloquia in addition to the Annual Symposium and Harden Conferences, with around 400 speakers and 800 free communications. In contrast to the first meeting of the Society at UCL, which had 38 members in attendance, there were over 1200 members present for the UCL meeting in 1986. The Sir Frederick Gowland Hopkins Memorial Lecture, entitled 'Antibody diversity and maturation of the immune response', was delivered by César Milstein and was recorded on video for the Society's archives. In addition to the Annual Symposium on 'Molecular Pathology' (held jointly with the Wellcome Trust to celebrate its 50th anniversary), there was a host colloquium on 'Glycolytic enzymes in relation to their function in muscle'. At the Liverpool meeting, Trevor Goodwin discussed the Liverpool connection in terms of the origins of the Biochemical Society. The involvement of Swiss, German, Canadian and Swedish Biochemical Societies in colloquia organized at Cambridge and Trinity College, Dublin may have contributed to the higher than average attendance of overseas members at these meetings.

Although the meetings programme in 1987 appeared less intense than that of the 75th year, the science programme still comprised 34 different colloquia with over 700 free communications. At the main meeting in Leicester, Nobel Laureate Rita Levi-Montalcini delivered the Thudichum Medal Lecture on 'NGF and its place in developmental neurobiology'. The meeting held at University College Dublin exemplified what the Irish meetings could deliver with a successful pre-doctoral meeting in which the student prize-winner (L. Meacher) would have the opportunity to give her talk at the Education group colloquia. In addition, there were special lectures from Vincent Massey on 'Co-enzyme engineering' (Irish Area Section Lecture), Donald T. Elmore on 'Synthesis of peptides as a service to biochemistry and medicine' (Royal Irish Academy Lecture) and Joseph Monahan on 'Growth factors in development of cancer' (Pre-doctoral meeting lecture).

Challenges and problems

Some of the meetings that were organized by the Society were expansive in terms of the demands for facilities. Often there was a requirement for venues to house three concurrent sessions, each of which had a dedicated poster and/or oral communication session. Some universities simply did not have the necessary capacity to accommodate meetings of this size. Another headache for the Meetings Committee was trying to predict the numbers of delegates that would turn up for individual colloquia, a factor which could lead to severe overcrowding of lecture theatres and give rise to the potential discontent of delegates. In addition, the use of university venues required that meetings were held out of university teaching times, placing restrictions on timings of meetings. One particular problem that was faced by the Meetings Committee in 1986 was that it was becoming necessary to book venues well in advance of the meeting, causing problems for the reservation of accommodation. Following a review, it was decided that it would not be possible to guarantee accommodation for delegates and to set a reservation deadline 5 weeks prior to the meeting.



Meetings Secretaries Ian Dransfield (2006–2011) and Brian Beechey (2001–2005).

In the latter half of the 1980s, there had been a trend towards increased attendance of members at Society meetings and the numbers of papers presented as free communications. The growth in attendance at Society meetings was nicely illustrated by the 1988 meeting 'Gene Expression, Regulation at RNA and Protein Levels' in Nottingham which had nearly 1000 delegates. At this meeting, there was a dinner attended by over 300 members to mark the retirement of the Meetings Officer, Doris Herriott, who had been involved in meetings organization for many years. The Society also held its first 4-day meeting in 1988 at Sheffield University; the meeting title was 'Molecular Recognition' and fittingly, the R.R. Porter Memorial Lecture on the 'Immunoglobulin superfamily' was delivered by Alan Williams and the Ciba Medal Lecture by Tom Blundell on 'X-ray analysis, protein structure and drug design'. In 1988, a total of 400 invited speakers presented their work in 36 different colloquia and the Annual Symposium, with these meetings attracting over 900 free communications.

One key factor that was regarded as being very important to the ethos of Biochemical Society meetings was the absence of registration fees. Although attendees had to pay for accommodation and subsistence (teas/coffees and meals), the costs of hosting the meeting were met entirely by the Society. The use of different university venues around the UK to host Biochemical Society meetings provided an opportunity to showcase the research strengths of individual Biochemistry Departments. The geographical spread of locations for Society main meetings was remarkably diverse and at least one of the main meetings was held in Ireland each year. This laudable aim of dissemination of cutting-edge research in biochemistry around the UK was increasingly under threat as Government funding for universities was being reduced.

Traditionally, many universities had not imposed charges for use of lecture theatres and projection facilities, staff costs and provision of rooms/boards for posters etc., thus limiting the costs incurred by the Society. However, the situation was shifting as universities were increasingly required to recover the costs of those hidden activities associated with hosting a meeting. Eventually, the meetings costs to the Society would reach levels (considered in terms of per delegate costs) that were unsustainable, requiring the introduction of registration fees in 2001.

Battling the elements

Extreme weather, together with strikes and cancellations threatened to dampen enthusiasm for meetings activity in 1989. Closure of the Severn Bridge hampered travel to the meeting in Aberystwyth, which was a smaller meeting with only four colloquia. For the Guildford meeting in July, attendance was lower than expected with British Rail strikes and a heat wave combining to thwart delegate travel. Even the supply of refreshments at the meeting was short-lived when refrigeration in the ice-cream van broke. For the meeting held in Cork, there were severe delays due to storms, and cancellation of ferries and flights hampered delegates' travel plans. Those who did travel were subjected to a week of horizontal rain, although the high quality of the science and inevitable dark Irish beer did help revive the spirits.

The Ciba Medal Lecture 'Inositol lipids and phosphates in cell regulation' was delivered by Bob Michell at the December meeting at St. Bartholomew's Hospital Medical College, fitting well with the Annual Symposium on 'G Proteins and Signal Transduction'. In total, there were 600 free communications submitted to the 34 colloquia organized that year. A similar number of free communication submissions were made to Society meetings in 1990. Honorary Meetings Secretary, Catherine Rice-Evans noted that in addition to the main meetings and Annual Symposium there were eight independent group meetings, a trend it was hoped would continue.

Social aspects

A notable feature of the Society main meetings was the reception and dinner associated with the event. Often, there was an address from a distinguished speaker. For example, at the 621st Meeting at University College London, the speaker was Sir Hans Kornberg, then the Sir William Dunn Professor of Biochemistry at Cambridge University. On many occasions, there were addresses by representatives from overseas biochemical societies, for example Professor Yasutomi Nishizuka from Japan and Dr Elsa Reiner from Yugoslavia. The venues chosen for these events were memorable and included art galleries (e.g. Hunterian Gallery, Glasgow), museums (e.g. the Museum of the Moving Image, London and the Museum of British Transport, Coventry), industrial museums (Kelham Island, Sheffield), heritage sites (Roman Baths in Bath) and football grounds (Manchester United's Old Trafford). Many universities provided splendid facilities for dining (e.g. the Trinity College Dining Hall in Dublin), although the Society also made use of more sybaritic facilities such as the Waldorf Hotel in London. The presence of alcohol at these events was undoubtedly a significant factor in promoting scientific communication. There were visits to wine cellars, whisky tasting at meetings held in Scotland and the ubiquitous presence of copious quantities of Guinness at Irish meetings. Perhaps to counter these bacchanalian tendencies, there were recitals by choirs and string ensembles. Not to be outdone, notable academics have been known to turn their hands to magic to entertain, as exemplified by Professor Edwin Dawes at the 1986 Cambridge meeting.

A structure for meetings organization

The establishment of the Special Interest Groups (SIGs) in the late 1960s was recognized as a way of keeping the Society together during a period of rapid expansion of the discipline of Biochemistry. In 1999, these groups (listed alphabetically) were:

- Biochemical Immunology;
- Bioenergetics;
- Hormone;
- Education;
- Glycobiology;

- Industrial Biochemistry and Biotechnology;
- Lipid;
- Regulation in Metabolism;
- Membrane;
- Molecular & Cellular Pharmacology;
- Molecular Enzymology;
- Neuroscience;
- Nucleic Acids & Molecular Biology;
- Protein & Peptide;
- Techniques;
- the Irish Area Section.

It was the role of these groups to develop ideas for colloquia and present the case for support of these colloquia at the Meetings Committee. Until 1999, the SIGs each had their own budget and accounts, allowing them to have committee meetings and providing a considerable degree of flexibility in terms of meetings organization. The Society paid each group an annual subvention, together with an additional colloquium allowance that was paid to the group in support of the speaker and organizer costs, once the Meetings Committee had agreed to a colloquium. Groups were also able to raise their own funds from external sources, for example industry. However, some groups were more successful at raising funds than others and the maintenance of significant balances in group accounts was potentially in conflict with financial regulations relating to UK charities. A particular strength of the group structure was the potential for collaboration with other societies in the organization of meetings. For example, in 1988 there were



Tony Watts, Morton Lecturer for 1999, with Norma Ryan (Honorary Meetings Secretary, 1996–2000).

colloquia organized by the Membrane Group and the Phytochemical Society of Europe, and the Peptide and Protein Group and the Royal Society of Chemistry, In addition, the Techniques Group organized two joint meetings, one with the Irish Society for Electron Microscopy and the other with the Bioengineering Society.

The Meetings Committee was comprised of the secretaries of the 16 SIGs, and hence was colloquially known as the “Group Secretaries Meeting”. Importantly, the Society Meetings office was still responsible for arranging venues and other aspects of meeting logistics, including registration, catering and facilities for posters. The involvement of the Meetings Office permitted a similar high standard to be achieved at all meetings that were organized in the Society’s name. This strategy for meetings organization also enabled great flexibility for submission of proposals that could then be considered on a competitive basis by the Meetings Committee, which also assumed the role of programme committee. The criteria for judging whether colloquia were likely to represent successful topics were primarily scientific merit and timeliness, budget considerations, and a commitment for speakers to publish in the Society’s journal *Biochemical Society Transactions*.

Harden Conferences

The first Harden Conference was held in 1969 and this format of meeting was well established as the Society by the time of the Society’s 75th anniversary in 1986. Since the proceedings of Harden Conferences are not published and they are residential, the opportunities for informal discussion and establishment of scientific collaborations are facilitated and these conferences remain a very popular among delegates. One of the key strengths of the Harden Conferences is that the topic can be relatively focused and the participants can also explore exciting new developing areas without the requirement



Attendees at the 2011 70th Harden Conference, ‘Synthetic Biology: Design and Engineering Through Understanding held at Keele University, UK.

for publication. Up until 1993, the Harden Conferences were held at Wye College in Kent, but in that year the conference, entitled 'Regulation of Gene Expression by Oxidative Stress' was held in Scotland, at Nethybridge, near Aviemore.

During the period that Norma Ryan was Honorary Meetings Secretary (1996–2000), the Harden Conference Committee was dissolved and the task was subsumed by the Meetings Committee. The range of topics covered in Harden Conferences has been particularly impressive and these meetings have been organized by some of the leading scientists in their fields. For example, as Alan Malcolm began his term as Meetings Secretary in 1985, Alan Fersht, FRS and Greg Winter organized the 24th Conference on 'Protein Engineering and Site-Directed Mutagenesis'. As might be expected there was often fierce competition amongst potential organizers for the two available Harden Conferences each year. In 2011, the Society organized the 70th ('Synthetic Biology: Design and Engineering Through Understanding') and 71st ('Metabolic Pathway Analysis') Conferences.

There are recurrent themes that have been explored at Harden Conferences, including signal transduction processes. The 32nd Harden organized by Bob Michell on 'Inositol Lipids in Cell Function' in 1989 was revisited in 2005, when the 60th Conference on 'Inositol Phosphates and Lipids - Regulation and Functions' was organized by Peter Cullen and Robin Irvine.

In 1987, the first Harden Discussion Group Meeting entitled 'Mapping Large Genomes, Strategies and Applications' was held. These meetings were previously known as "Refresher courses" and were more focused on technological advances. Two further Harden Discussion Meetings were held in 1988, together with the first Harden Satellite Meeting entitled 'Extracellular Matrix Control of Cell Behaviour' held at Sutton Bonnington in Nottinghamshire, which complemented the Membrane Group Colloquium on 'Fibronectin–Cell Interactions'. A second Harden Satellite Meeting was held in conjunction with the British Photobiology Society entitled 'Towards a Molecular Basis of Skin Photobiology'. Although the Harden Conference Committee responsible for organization of these meetings noted the concerns of some Society members that the policy of limiting numbers attending was restrictive, participation of those at the forefront of a particular field was deemed necessary for their future success. The themes of all of the Harden Conferences are detailed in the Appendix to this chapter (Table A1; page 43).

Annual Symposia

Another long-standing feature of the Biochemical Society meetings programme is the Annual Symposium, which has traditionally been seen as the most prestigious event in the meetings calendar. The Symposia cover a selected topic at the forefront of research in some aspect of the cellular and molecular life sciences and are intended to be a timely coming together of recognized experts for a state-of-the-art meeting. Like the Harden Conferences, the topics covered in the Annual Symposia are impressive in their diversity (see Table A2 in the Appendix; page 45).

The proceedings of these were originally published as stand-alone volumes in the *Biochemical Society Symposia* series; however, as demand for print copy has diminished, in 2006, the Executive Committee took the decision that from 2007, the Annual Symposium would be held in December each year and that it would also be published as a separate volume of the *Biochemical Society Transactions*, effectively bringing the output of all the Society's meetings under a single title.

In 2004, the Annual Symposium 'Lipids, Rafts and Traffic' organized by Jeff McIlhinney and Nigel Hooper was held as part of the BioScience2004 meeting held in Glasgow. However, a highly successful meeting which had previously been held in the UK without Biochemical Society involvement 'Transcription UK' was chosen as the Annual Symposium meeting in 2005. In 2006, a meeting entitled 'The Cell Biology of Inositol Lipids and Phosphates' organized by Michael Wakelam at Birmingham University provided a vehicle to celebrate the pioneering work of Bob Michell in this research area.

Towards a new type of meeting

The early 1990s were a time of change in the Society, with a recent move to new London headquarters at Portland Place and the creation of Portland Press Limited. During this time, attendance at meetings continued to grow and was matched by a desire to produce a comprehensive meetings programme. The Education Group played a prominent role in Society meetings during this time. Examples of the educational treats facilitated in 1992 include the colloquium organized jointly with the British Association for the Advancement of Science at Southampton, entitled 'Communicating Science: the Role of the Press Officer' and a meeting organized jointly with the Physiological Society, 'New Directions for Biochemistry and Physiology Teaching', at the Royal Free Hospital meeting in London. In 1992, a full programme of meetings comprised 31 colloquia, an Annual Symposium, four independent group meetings, two Harden Conferences, a Harden Satellite Meeting and a Harden Discussion Meeting. The following year, the Society put together successful bids for the 4th International Congress of Biochemistry and Molecular Biology (IUBMB) conference on the 'Life and Death of the Cell' (to be held in Edinburgh in 1996) and the 18th IUBMB congress (to be held in Birmingham in 2000), which would radically re-shape the meetings programme in those years. Plans were already in place for a joint meeting with the British Society for Immunology in Harrogate in 1996 (discussed further later in this chapter).

In 1994, the Meetings Office processed approximately 2000 records of delegates wishing to attend the meetings; 49 days of science were organized and 400 speakers were invited to present their work. This level of output was difficult to sustain at a time when there was no fee for attending Biochemical Society meetings. In 1995, the meeting held at UCL recorded the highest numbers of delegates attending that year, while 600 delegates registered for that year's meeting in Dublin. In addition, submissions of free communications had increased by 7% from the previous year, and it was becoming clear that the rapid evolution of the Society required a move towards either a larger or different type of meeting. A Strategy Working Party was set



The 18th IUBMB Congress, held in Birmingham in 2000, was organized by the Biochemical Society.

up in 1993 comprising the Chairman of the Society, Alan Malcolm, Harold Baum, Brian Beechey, Robert Freedman, Simon van Heyningen, Chris Pogson, Catherine Rice-Evans, Keith Snell and Tony Turner, to consider the future directions of the Society. The group consulted widely within the Society to ensure that the views of members were taken into consideration. In view of the high level of demand on Society resources relating to organization of meetings, one key recommendation of the Working Party was that the number of main meetings be reduced from four to three. The implementation of the recommendations of the Working Party would be overseen by the Strategy Co-ordinator, Brian Beechey.

Into the naughties

There were particular challenges for Honorary Meetings Secretary Norma Ryan during her term of office, with many meetings being organized around the world to celebrate the new millennium, leading to fierce competition to attract scientists to attend. The Society played a pivotal role in the organization of the 18th IUBMB Congress in Birmingham in 2000. This 5-day meeting was the first joint meeting between the Federation of European Biochemical Societies (FEBS) and the IUBMB and had 52 scientific sessions and nine plenary lectures (see Table 2). To efficiently organize this meeting, a scientific programme committee was established with Keith Gull in the chair.

The hard work of the Society staff and organizers was paid off by attendance of around 3000 delegates and speakers. There were an enormous number of posters presented at the meeting, with over 1300 submissions. In addition, a Young Scientist Symposium was organized that preceded the main IUBMB congress, attracting approximately 120 young scientists from around the world. Keynote lectures at the Young Researcher meeting were presented by Bob Michell on cell signalling and Paul Nurse on the cell cycle. This innovative mechanism for engaging researchers in the early stage of their career is one that the Biochemical Society is still actively pursuing. IUBMB 2000 also included a novel experiment to introduce history sessions within the 'Education' section of the meeting. These were organized by John Lagnado and Peter Nicholls as one of the ancillary events, entitled '50 Years of Molecular Biochemistry', and attracted an unexpectedly large and responsive audience – we expected 50, some 200 came!

2000 was an eventful year, being the first year that abstract submission for Society meetings was undertaken electronically. As in previous years, when submissions were received in camera-ready format, the task of examining the abstracts for scientific robustness was undertaken by the Meetings Secretary and/or the SIGs responsible for organizing individual colloquia. This was a considerable undertaking for the staff of the meetings office and the meetings secretary, often requiring many hours of work to read the

Table 2. Key speakers at the IUBMB/FEBS meeting in 2000

Speaker	Lecture	Title
Craig Venter (Rockville, MA, USA)	Severo Ochoa	Decoding the human genome
Sir John Walker (Cambridge, UK)	Kunio Yagi	Rotary mechanisms of ATP synthesis
Dirk Gorlich (Heidelberg, Germany)	EMBO	Transport into and out of the nucleus
Anne Ephrussi (Heidelberg, Germany)	E.C. Slater	RNA localization and translational control in establishment of embryonic polarity
Thomas Steitz (Yale, New Haven, CT, USA)	Sir Hans Krebs Medal	Posthumous: Paul Sigler's work
Luis Herrera-Estrella (Mexico City, Mexico)	PABMB	Metabolic engineering of plants
Suzanne Cory (Melbourne, Australia)	Chester Beatty	Bcl-2 family: arbiters of life and death
Stanley Prusiner (San Francisco, CA, USA)	Osamu Hayaishi	Molecular biology and genetics of prions
George Poste (SmithKline Beecham)	Datta	Molecular medicine, population genetics and the future of healthcare delivery

piles of abstracts before the Meetings Committee meeting itself. For the IUBMB meeting, there were over a thousand submitted abstracts, providing Meetings Secretary Norma Ryan with many hours of hard graft.

Notable award lectures at the meetings in Leeds (April) and Sussex (December) of that year included those given by Jeff Watkins (the Thudichum Medal Lecture on 'Glutamate'), Martin Humphries (the Wellcome Trust Award Lecture on 'Integrin structure and function'), Kiyoshi E. Nagai (the Novartis Medal Lecture entitled 'Structure and function of the pre-mRNA splicing machinery' and John Sulston (the Sir Frederick Gowland Hopkins Memorial Lecture on 'Society and the human genome').

The publication of *Biochemical Society Transactions* free communications for each meeting as a booklet was highly regarded by delegates. With approximately 150 free communications per main meeting, together with papers from over 300 speakers, *Transactions* certainly had plenty of science to communicate. Furthermore, the potential for disseminating science through this combined meetings/publication strategy is exemplified by some 300 citations of the *Transactions* manuscript for Martin Humphries' Wellcome Trust Award Lecture.

A number of significant issues that became apparent around this time triggered further changes in the pattern of future meetings. In particular, the science programmes for meetings contained a wide mix of topics, with individual colloquia often restricted to a single day or half-day session. While this programme diversity might be considered as potentially attractive to delegates, there was a growing appreciation that delegates were choosing to attend meetings with content that was more relevant to their research interests. Norma Ryan first suggested that the Society might consider organizing meetings dedicated to single topics. This proposal specifically addressed some of the issues which were becoming potential drawbacks to the success of meetings. At a Biochemical Society strategy review meeting in 2001 chaired by Keith Gull, Brian Beechey (newly elected Honorary Meetings Secretary) suggested that the concept proposed by Norma Ryan be formally adopted and that a single large main meeting be organized. This high-profile meeting would allow Society members to come together and allow topics to be addressed within a wider context. It was therefore proposed to change from three main meetings per year to an annual flagship meeting and a series of stand-alone meetings which would be termed Focused Meetings. The rationale for such meetings may be similar to that for the introduction the Special Colloquia in 1984 which were originally intended to bridge the gaps in scientific coverage of the Interest Groups.

Early in the new millennium, a working party chaired by Peter Downes also began a detailed review of the role of the 16 SIGs. While no questions were raised as to the effectiveness of the groups in terms of quality of the colloquia that were organized at Society meetings, there were concerns that the scope of topics was somewhat restricted to the imagination of the individuals on the group committees. Furthermore, despite mechanisms for formation of new groups, the group structure had remained static for 15 years. Indeed, it was suggested that the list of titles for groups would have made an excellent contents page for an out-of-date textbook! More pertinently, group structure was felt to not adequately represent the research interests of members, with notable gaps in rapidly developing areas, for example bioinformatics and the use of transgenic animals to study biochemical processes. One implication was that there was a lack of connection between the SIGs and the grassroots membership of the Society. The working party set up to examine scientific coverage sought the opinions of Group Committee Members themselves, and of the membership at large. It concluded that to adequately represent such a lively, broad and dynamic discipline as biochemistry, a new structure comprising a number of Theme Panels should be established.

Although the main objective of the Theme Panels was to widen scientific coverage, there was intense debate as to how the groups could be re-structured to achieve this. One early proposal was that the existing Interest Groups should be re-aligned to newly formed Theme Panels as appropriate. However, the potential for this to simply maintain the *status quo* was an issue that needed addressing. The working party considered a suggestion from Ian Dransfield (then Chairman of the Biochemical Immunology Group) that the existing Interest Groups be done away with completely, allowing the Theme Panels to

cover wider subject areas. One advantage of this proposal would be the inherent ability of broad-ranging Theme Panels to adapt to future changes in research trends. The final titles that emerged for the seven Theme Panels were: (I) Genes, (II) Molecular Structure, (III) Bioenergetics and Metabolomics, (IV) Cell Biology, (V) Signal Transduction, (VI) Biotechnology and Bioinformatics and (VII) Development and Disease. Initially, the new theme panels were largely populated from existing members of the SIGs, perhaps softening the blow of their demise. In practice, this provided an almost seamless progression, particularly as turnover of members of the Theme Panels led to their repopulation with new members within a few years. The re-organization of the SIG structure in 2002 meant that meetings organization was now the responsibility of the newly-formed Meetings Board, comprising the chairs of the Theme Panels.

The emergence of Focused Meetings

The first meeting of the newly inaugurated Meetings Board (chaired by Brian Beechey) revealed some of the shortcomings of the previous system where colloquia for individual groups were almost guaranteed. In the new structure, there could be real competition for funding for proposals, with judgements made on scientific criteria. The Meetings Board and the newly-formed Theme Panels responded enthusiastically to the new challenges that arose. Financial considerations represented a significant additional challenge. As outlined previously, costs for venue hire and catering, speaker travel and accommodation were all increasing and placing considerable strain on Society budgets. Brian Beechey highlighted the possibility that charges for meetings would need to be introduced. By setting realistic budgets and charging delegates accordingly, meetings could be organized to be essentially cost-neutral, thereby ensuring future delivery of a programme of meetings annually. In the early days of adapting to this new meetings pattern, it was recognized that the Focused Meetings would need to be commissioned until the format became established. To provide support for Brian Beechey, who was tasked with the challenge of organizing the first of the flagship meetings, Ian Dransfield was appointed to a new post of Meetings Co-Ordinator. During this transitional phase, many Focused Meetings were commissioned and organized in close collaboration with pharmaceutical companies, including GlaxoSmithKline, Novartis, AstraZeneca and Organon. The collaborative organization of meetings with these companies



The 'Dynamic Cell' meeting in Edinburgh 2009.

Table 3. Analysis of the attendance for Focused Meetings from 2003 to 2010

Year	Number of meetings	Number of delegates	Number of delegates per meeting
2003	11	933	85
2004	10	677	68
2005	11	887	81
2006	11	694	63
2007	9	744	82
2008	14	1188	84
2009	12	1071	89
2010	13	1076	83

was extremely productive, with venues often provided free of charge and with considerable sponsorship. Although there are significant financial pressures within the pharmaceutical industry, maintenance and development of these important links between the Society and industry remain imperative. At a time when the establishment of BioScience (see the subsequent section) meetings was consuming considerable resources, the active involvement of these companies was very much appreciated.

The consensus view is that the Focused Meetings format has been a successful formula. The adoption of 'themed' meetings by other Societies in recent years is perhaps an acknowledgement of this fact. Table 3 summarizes a few key statistics relating to Focused Meetings from 2003 to 2010.

These data reveal some interesting results, for example, in 1996 there were three main meetings held in Bath, Dundee and Galway. In total, there were a total of 19 scientific sessions, with a different number of scientific sessions at each meeting. The total number of attendees (speakers and delegates) at these three meetings was 1620, an average of 540. This figure was fairly typical for meetings towards the end of the 1990s and early 2000s, although the 668th Meeting in 1999 in Glasgow had approximately twice that number. For the series of meetings from 1996 to 2001 for which detailed data are available, the average number of attendees for individual sessions was 85. The comparison is perhaps a little unscientific, but this figure is remarkably close to the average number of paying delegates registering for Focused Meetings (83) over the period 2003–2008. Plus ça change, plus c'est la même chose!

The BioScience meetings: 2004–2006

BioScience2004

In July 2004, the high-profile meeting called 'BioScience2004 - from Molecules to Organisms' was held at the Scottish Exhibition and Conference Centre (SECC) in Glasgow. The scientific organizers of this meeting (chaired by Robin Irvine) put together an outstanding programme of scientific speakers that focused on biochemical research aiming to provide a molecular explanation and understanding of a range of biological phenomena important in health and disease, a goal which could succinctly summarize one of the key missions of the Biochemical Society. The contribution of Robin Irvine, whose enthusiasm and energy was key to the success of this meeting, cannot be understated. Colin Blakemore, Chief Executive of the Medical Research Council, gave the welcome address on 'Research in the biomedical and life sciences over the next decade'. The keynote speakers included Roger Tsien, who set the scene with a lecture entitled 'Breeding molecules to spy on cells' and Graham Warren, who gave a talk on the 'Biogenesis of the Golgi apparatus'. With an early start being a feature of this meeting (8.30am on Monday morning!) Graham took the packed audience on a guided tour of the Golgi apparatus before focusing on the main part of his talk. Anthony Pawson provided a great lecture on the subject of modular protein–protein interactions in cell regulation.

There were also a number of award lectures, including the Colworth Medal Lecture, which is awarded to a person under the age of 35 annually for outstanding research in any field of biochemistry;

the 2004 winner, James Naismith, gave his Lecture on 'Chemical insights from structural studies of enzymes'. Peter Parker gave the Morton Lecture entitled 'Phosphorylating proteins and lipids' and the Biochemical Society Award Lecture was given by Sir David Lane, recounting '25 years of p53'. This was nicely complemented by Karen Vousden who talked about the potential of p53 as a therapeutic target. Stephen O'Rahilly discussed 'Human obesity and insulin resistance: lessons from experiments of nature'. Stephen explained that human patients have certain advantages over smaller species: "they tend to come to you, rather than you having to go to them, they tend not to be eaten by their parents, and we have sophisticated ways of phenotyping them, including talking to them". Finally, Chris Dobson delivered the EMBO Lecture on protein misfolding, epitomizing how interdisciplinary approaches can shed light on important disease processes. The range of colloquia topics covered at this meeting was impressive.

One strength of this meeting was a whole series of sessions on signal transduction processes, e.g. 'Regulators of GPCR' (two sessions), 'PI3-kinase in the immune system', 'GPCR-ion channel interactions', ' β -catenin-Wnt signalling', 'Insulin signalling' and 'Signalling: lipid-protein interaction'. In addition, there were sessions on 'Dynamic imaging', 'Cell trafficking at the atomic level' and 'Observing single molecules' which offered nice complementarities. There was also a focus on gene transcription and translation, with topics including 'Chromatin and gene regulation', 'Mechanisms of gene regulation', 'DNA repair and checkpoints', 'Transcription regulation in development/signalling', 'Nuclear RNA splicing', 'mRNA and protein synthesis localization', 'RNAi and RNAi applications' and 'Ribosomes and chaperones'. With additional interesting sessions on cellular processes such as 'Glycosylation', 'Cell cycle control', 'Cellular motors', 'Control of cell motility', 'Immune synapses', and 'Adhesion contacts and integrins', this meeting had a fabulous programme. BioScience2004 was attended by over 1200 speakers and delegates, with more than 500 poster presentations being made. In addition, a satellite meeting, 'GPCR Allosterism and Accessory Proteins: New Insights into Drug Discovery', held at Organon, Newhouse was also well attended and considered to be a great success.

An extensive programme of interactive shows and fun-packed hands-on science exploited the full potential of the SECC and the associated Glasgow Science Centre in the weekend preceding the main conference, with sessions co-organized with the Glasgow Science Centre entitled BioScience Kids: Bugs, Bananas and Body Bits. Some of the main highlights included Dr Bunhead performing his 'Exploding Vegetable Show' and energizing audiences with his visually dynamic demonstrations. The Biochemical Society also recruited a team of students from Glasgow University to help out with a microscopy session entitled 'What lurks in the murky depths?' and they needed little help in engaging the general public.

BioScience2005

BioScience2004 proved to be a hard act to follow. For the follow-up meeting, proposals for topics were sought from Theme Panels and from members of the Society at large and then put together into a cohesive programme. The range of topics selected for BioScience2005 was very impressive with a strapline 'From Genes to Systems'. A notable keynote lecture from Robert Lefkowitz, described the role of β -arrestins in receptor signal transduction. Two different approaches to the study of complex systems were presented: one by Mattias Mann, the EMBO Lecturer, who demonstrated the role that quantitative proteomics might have in systems biology and the other by Wolfgang Baumeister, who discussed how cryoelectron tomography would be used to map molecular landscapes. The Novartis Medal and Prize was awarded to Alan Hall, who presented his exciting work relating to control of cell behaviour by Rho family GTPases. Walter Kolch described elegant studies relating to the Raf kinase signalling pathway. The Colworth Medal Lecture was presented by Ian Collinson, describing work leading to an atomic model of the membrane-bound protein translocation complex SecYEG. Leslie Dutton presented an intriguing lecture 'Darwin at a molecular scale' which demonstrated how variance and selection occurred in the electron

transport system. Finally, David Stuart described the 'Lessons that could be learnt from the study of nature's pirates', providing insight into the complex regulatory machinery of viruses. There was an equally impressive line-up of speakers for the individual colloquia, covering topics such as the nucleus and gene expression, protein structure, stem cell biology and development. BioScience2005 also provided an opportunity for additional sessions covering Careers (CV clinics and 'Speed Data' sessions) and a 'Science in Society' colloquium. However, overall attendance at the meeting was disappointing, with fewer than 500 paying delegates, remarkably similar to the numbers attending "old-style main meetings".

BioScience2006

BioScience2006, which had the theme 'Bioscience for the 21st Century' was run back-to-back with a memorable 1-day meeting entitled 'Literature, Legacy, Life. Biochemistry for the 21st Century' organized by George Banting, Peter Parker and Guy Salvesen as part of the centenary year of the *Biochemical Journal*. The impressive line-up of keynote speakers included Mike Waterfield, who delivered the EMBO Lecture 'Cracking the mild, difficult and fiendish codes within and downstream of the EGFR to link diagnostics and therapeutics' and Louise Johnson, who discussed the potential therapeutic exploitation of protein kinases. Signal transduction was also a subject covered by both Donny Strosberg, who described new mechanisms of signal transduction modulated by G-protein-coupled receptors, and Steve Huber, who provided an insight into protein phosphorylation in plants. Alfred Goldberg introduced the proteasome, detailing the roles of protein degradation in immune surveillance and cancer therapy, while Mina Bissell discussed mechanisms relating to cancer development and metastasis. Stephen O'Rahilly gave an entertaining lecture entitled 'Translating metabolic biochemistry into the clinic' and Lewis Wolpert discussed the public's belief about biology. The whole event was a splendid celebration of the *Biochemical Journal's* centenary.

The Biochemical Society Award is presented to scientists who have "successfully challenged dogma, created a new field of research, elucidated a new paradigm or made a fundamental change to established thinking." There were two such awards made at BioScience2006. Sir Greg Winter described the impact of recombinant protein technology in his 'Antibody revolution' lecture, while the co-ordination of intracellular events during development was the theme of Martin Raff's lecture. James Barber discussed photosystem II structure and the insight provided into the hydrolysis process it catalyses in his Novartis Medal and Prize Lecture. Seamas Martin presented the increasingly complex regulation of apoptosis by caspases in his GlaxoSmithKline Award Lecture entitled 'Death by a thousand cuts'. Kim Nasmyth (in the Sir Fredrick Gowland Hopkins Memorial Lecture) presented work on sister chromatid cohesion and dissolution at anaphase and, in the Colworth Medal Lecture, Simon Boulton outlined the role of BRCA tumour suppressors in DNA repair. The Morton Lecture was given by Phil Hawkins who talked (almost compulsorily) about signal transduction via PI3-kinase in neutrophils.

As with BioScience2005, overall feedback from delegates attending this meeting was excellent. An impressive array of speakers covered topics ranging from the molecular basis of transcription, ion channels, nuclear receptors, information processing and molecular signalling, to the mechanisms underlying control of cellular process and the regulation of immunity. Such an exciting programme might have been predicted to attract large numbers to the conference but in fact, the number of paying delegates registered for this meeting was similar to that for the 2005 conference. One possibility was that this broad spectrum of research topics might not be the most attractive to Society members or other potential delegates with the increasing pressures on resources and time. As a debriefing exercise following the great deal of time, effort and financial resource invested in the BioScience meetings, the Society established a working party chaired by Martin Humphries, and comprising John Coggins, Ian Dransfield, Melanie Welham, Chris Kirk and Sheila Alink-Brunsdon, to consider possible future strategies for main meetings.

Working with other societies

LifeSciences2007

The Society has long recognized that working jointly with other societies represents an important way forward for the future of scientific meetings. In 2007, the annual Biochemical Society meeting was organized jointly with the Physiological Society and the British Pharmacological Society. This huge logistical undertaking was initially overseen by the Meetings Secretary (Brian Beechey) and his counterparts in the other societies, Stephen Hill for British Pharmacological Society and Bridget Lumb for the Physiological Society. The respective society staff involved were Louisa Hambley (British Pharmacological Society), Nick Boross-Toby (Physiological Society) and Sheila Alink-Brunsdon (Biochemical Society). The realization of this meeting, which was re-branded as LifeSciences 2007, was a great achievement. To facilitate organization and develop a coherent programme, an organizing committee along the lines of BioScience2004 was established, with two members of each society (David Beech, Stephen Hill, Prem Kumar, Mauro Perretti, Sheila Graham and Ian Dransfield). In total there were approximately 60 scientific sessions developed under 11 broad overarching themes: G-protein coupled receptors, exercise, signalling, cardiovascular, imaging, inflammation, ion channels, central nervous system, cancer, metabolism and education. In planning the programme, the organizing committee insisted that session organizers maximize opportunities for oral communications selected from submitted abstracts. With so many sessions, there were more than 150 oral communications and an impressive poster session with 600 submissions. As with the BioScience meetings of the previous 3 years, LifeSciences2007 was held at the SECC in Glasgow. The experience gained from these meetings led to an improved organization of posters and the trade exhibition and had a positive impact on the opportunities for networking. Despite the large venue and lower than expected number of delegates, the meeting had a real intensity and buzz about it. In total, there were 970 paying delegates at LifeSciences2007, and these gave overwhelmingly positive feedback after the meeting.

Young Life Scientists

Prior to the main LifeSciences2007 meeting, there was a 'Young Life Scientists' meeting organized by four young researcher members of the Biochemical Society, the British Pharmacological Society and the Physiological Society. These individuals were supported in their efforts by the Education Managers from the different societies and were given a limited budget jointly from all three societies.

Approximately 160 registered delegates from all regions of the UK and from around the world, including Japan, Australia, Canada, USA, Slovakia and China. The theme of the symposium was 'Advances in Signalling'. Phill Hawkins gave an insightful keynote lecture covering not only current research on membrane lipids and associated kinases, but also an insight into his own path into this area of research. Nina Balthasar gave an equally inspiring talk relating to her experience of the transition from a young researcher to an independent group leader and the establishment of a research programme in the field of neuronal pathways involved in control of metabolic balance. To complement these talks, 12 oral communications were selected from submitted abstracts allowing ongoing research in the areas of neuronal, calcium, cardiovascular and cellular signalling to be highlighted. In addition, there were two poster sessions showcasing almost 100 abstracts.

Other joint meetings

Differences in operating methods and requirements for publication of meetings proceedings represent operational difficulties that hinder UK societies working collaboratively in terms of meetings. Despite



The organizers and speakers from Young Life Scientists Symposium held in at the University of Birmingham on 26 May 2011: (from left to right) Will Rook, Andrew Holmes, Ella Stone, Prem Kumar, Doreen Hartwich, Keith Brain, John Coote, Steve Watson and James Fisher.

these issues, there have been some other notable successes. In 1996, the Society held a very successful joint meeting with the British Society for Immunology (BSI) in Harrogate with nearly 2000 attendees. The smooth organization of this meeting was facilitated by the ability of Norma Ryan and her counterpart in the BSI, Mike Kemeny, to talk freely and frankly about the problems of organizing a joint meeting. In addition, the close collaboration between Robert Dale and Lisa Palin in the Meetings Office and Kay Dorelli of the BSI really helped to ensure that this meeting was a success. Although there was some initial resistance from the Executive Committees of both societies, the persuasive efforts of Norma and Mike and their joint determination to see this meeting happen culminated in the realization of this joint venture. In total there were 22 colloquia over 3 days, many of which were organized in a truly joint manner with the BSI. There was a unique atmosphere created by bringing the two communities of biochemists and immunologists together and rough estimates of numbers attending each colloquia revealed that the average number of attendees per session was around 250, which was a remarkable achievement.

Similarly in 2000, a satellite meeting to the IUBMB congress was organized jointly with the British Society for Parasitology in Manchester. This meeting entitled 'Gene Action and Cellular Function in Parasitic Protozoa' was attended by 120 delegates and was very timely with the genome sequences for some species of *Plasmodium*, *Toxoplasma* and *Trypanosoma* having been recently defined. A repeat meeting with the BSI remains on the agenda given the obvious overlap between the two disciplines.

A series of discussions between Meetings Secretary Ian Dransfield and his counterpart in the British Society for Cell Biology (BSCB) Kairbaan Hodivala-Dilke, led to the formulation of a joint meeting 'The Dynamic Cell', which was held in Edinburgh in 2009. During discussions, it had become apparent that there was an opportunity for joint working as the British Society for Developmental Biology would not be organizing a joint meeting with the BSCB that year. A programme committee, comprising Robert Insall and Barbara Reeves (Biochemical Society) and Margarete Heck and Andrew McAinsh (BSCB), was established allowing the generation of a co-ordinated programme that would be appealing to delegates. For this 3-day meeting, it was decided not to badge individual sessions as being either 'Biochemical Society' or 'BSCB'. In addition, there would be plenary lectures and just two parallel sessions organized



Colworth medallists: (from left to right) Sir Philip Cohen (1977), Peter Downes (1987), Dario Alessi (2000) and Michael Ferguson (1991).

each day, allowing delegates from both societies to integrate fully. In total, there were about 250 delegates at this meeting held in Edinburgh, with 167 posters providing evidence of a high level of participation. A number of medal lectures were presented at this meeting, including one by David Komander, recipient of the Biochemical Society Early Career Research Award, who talked about 'Phosphorylation and ubiquitination in signal transduction events'. The Jubilee Lecture was given by Joan Steitz covering her work on the regulation of gene expression in vertebrates. In addition, there were two lectures supported by the BSCB, the Hooke Medal Lecture (awarded to Erik Sahai) and the Borden Lecture (awarded to Michael Bornens). There was a single final morning scientific session in the meeting relating to the impact that technological advances in imaging had made on the study of dynamic processes in cells, which together with the conference dinner (held at the Dynamic Earth exhibition centre) and inevitable Ceilidh, ensured that any divisions between delegates from either Society were minimized.

Biochemical Society award lectures

The first Biochemical Society award lecture was the Sir Frederick Gowland Hopkins Memorial Lecture, which was established in 1958. Subsequent years saw the introduction of a number of other award lectures, and those inaugurated in the past 25 years have included the following:

- the Heatley Medal and Prize, which recognizes work that makes biochemistry widely accessible and usable;
- the AstraZeneca Award, for work which, through biomedical advances, leads to the development of a new reagent or method;
- the Biochemical Society Award, which seeks to widen recognition of excellence to span more diverse fields of endeavour within, or related to, the biochemical sciences;

- the GlaxoSmithKline Award, which is given in recognition of distinguished research carried out in the UK or Ireland within the previous 7 years and that has led to new advances in medical science;
- Early Career Research Awards, which recognize the impact of research carried out by early career scientists within 5 years of obtaining their PhD;
- the Centenary Award, which is made to a biochemist of distinction from any part of the world; and
- The Sir Philip Randle Lecture, which recognizes a contribution to the understanding of mammalian metabolism.

Society award lectures have been delivered at a variety of Society meetings over the years and all the winners of these awards for the past 25 years are listed in the Appendix to this chapter (Table A3; page 46).



Nahum Sonenberg; the Centenary Award winner 2011.



Sir John Sulston, Sir Frederick Gowland Hopkins Memorial Lecturer for 2002, with Sir Philip Randle (President, 1996–2000).



Steve Busby (Vice-Chair, 2011–date) with Venki Ramakrishnan, winner of the Heatley Medal and Prize for 2008.

Independent Meetings

As the Society moved away from a large meeting format, there was a realization that the material available for publication in *Biochemical Society Transactions* would diminish. Plans to establish an Independent Meetings fund were made in 2005, allowing the financial support of the Society to be extended to meetings organized by other smaller groups and societies, with the option of providing manuscripts for publication in *Transactions* in return. The first meeting that was supported, held in 1996, was the '8th International Symposium on P450 biodiversity and Biotechnology' at Swansea Medical School. The Society has supported 46 independent meetings to date, including regional meetings (e.g. the North of England Cell Biology

Forum), postgraduate discussion meetings (e.g. Christmas Bioenergetics/Photosynthesis Meeting) and international meetings (e.g. the European Conference on Tetraspanins). Support of Independent Meetings can help to raise the profile of the Society both nationally and internationally and the Society continues to support these conferences, offering finance for named lectures, poster prizes and travel grants.

Looking forward

The success of the Biochemical Society meetings' organizational structure results in a timetable that is filled many months in advance. To address this issue, the Society has introduced "Hot Topic" meetings, for which the time from consideration of the proposal to hosting the meeting is greatly shortened. The Hot Topics approach will facilitate organization of meetings on topics in rapidly developing areas of research, a format that is likely to be adopted by other societies in the near future. As cross-discipline approaches to answering research questions become commonplace, collaborative meetings represent an excellent way to move forward.

While conference organizers inevitably wish to fill their programmes with high-profile speakers, encouraging and promoting development of talented younger researchers is also important. The Biochemical Society aims to encourage organizers to consider providing more speaker slots for 'elevated' abstracts, offering opportunities for those researchers actually doing the work to present their research findings. It is important that the success of the Society's meetings programme is not judged solely by the number of delegates who attend. There is presently sufficient flexibility to support meetings of high quality in 'niche' areas which yield positive feedback from delegates, despite below average attendance.

At the end of 2009, the Society moved into a refurbished building in Central London, Charles Darwin House. As part of the re-fit of the building, a dedicated conference suite was included, offering new opportunities to host meetings and workshops either alone or jointly with other societies. By the end of 2011, Charles Darwin House has been the venue for a wide variety of different meetings, including a joint meeting held with the Society for Experimental Biology and the British Ecological Society ('Stress Responses: Molecules, Organisms, Environments'), a workshop ('MicroRNAs'), a Young Life Scientists meeting ('Fatty Acids: Medicine and Menace') and the first Biochemical Society Hot Topic event ('Pseudokinases'), in addition to Focused Meetings ('Lysosomes in Health and Disease' and 'mTOR signalling') and an Independent Meeting (Metabolism: Present and Future). Feedback from delegates regarding the venue has been overwhelmingly positive and all of the meetings have been well attended, with registration having to be closed early for some events.

One of the strengths of the Biochemical Society has been its willingness to embrace change and move forward, something that will be critical in shaping the future pattern of scientific conferences for the communication of biochemical research.

Appendix

Table A1. Harden Conferences 1969–2011

Number	Date	Title
1st	1969	The Structure and Biological Role of Proteins
2nd	1970	Cell Walls and Cell Membranes
3rd	1971	The Cell Nucleus
4th	1972	Morphogenesis Pattern Formation in Animals and Plants
5th	1973	Phospholipids
6th	1973	A New Look at Virus Latency
7th	1974	Enzymes, Evolution, Specificity and Control
8th	1975	Control Systems in Normal and Malignant Cells
9th	1976	Plasmid Recombinants in Molecular Biology
10th	1977	The Molecular Genetics of Immune Response
11th	1977	Neural and Humoral Receptors and their Mechanism
12th	1978	Mechanisms of Action of the Reproductive Hormones
13th	1978	Specificity and Plasticity in Brain Development
14th	1979	The Delivery and Targetting of Therapeutic Agents with Particular Reference to Liposomes
15th	1979	Sequence Organization and Transcription in Eukaryotes
16th	1980	Microtubules and Microfilaments Structures and Function
17th	1981	Interferon
18th	1982	Cell Cycles
19th	1982	Applications of Spectroscopy to Biological Problems
20th	1983	Molecular Basis of Virulence in Bacteria and Certain Parasites
21st	1983	Structure and Biology of Lymphocyte Membranes
22nd	1984	Plant Genes Structure, Expression, Mobility
23rd	1984	Molecular and Cellular Aspects of Reproduction
24th	1985	Protein Engineering and Site Directed Mutagenesis
25th	1985	The Cytoskeleton Expression, Organization and Dynamics
26th	1986	Cellular and Molecular Responses to Growth Regulating Factors
27th	1986	The Biochemical Basis of Herbicide Action
28th	1987	Collagen
29th	1987	Regulation of Plant Gene Expression
30th	1988	Nucleic Acids and their Interactions with Proteins
31st	1988	Microbes Under Stress: Metabolic and Developmental Choices
32nd	1989	Inositol Lipids in Cell Function
33rd	1989	Cellular Barriers and Drug Targetting
34th	1990	Free Radicals Cell Growth, Disease and Repair Mechanisms
35th	1990	Cell–Cell Interactions in the Nervous System
36th	1991	GTP-Binding Proteins
37th	1991	The Molecular and Structural Basis of Regulation in Photosynthesis
38th	1992	Haemopoietic Cell Growth Factors

contd..

Table A1 continued

Number	Date	Title
39th	1992	The Secretory Pathway
40th	1993	Regulation of Gene Expression by Oxidative Stress Implications for Health and Disease
41st	1993	Photoinhibition of Photosynthesis Molecular Mechanisms to the Field
42nd	1994	Viruses Their Regulation and Control
43rd	1995	Nuclear and Cell Division Molecular Mechanisms and Machinery
44th	1996	The Biochemical Basis of Microbial Morphogenesis
45th	1996	Gastrointestinal Function in Health and Disease
46th	1997	Structure and Mechanisms of Oxidases and Related Systems
47th	1997	Regulation of Carbohydrate Metabolism in Normal and Diseased States
48th	1998	The Nutrient Regulation of Gene Expression
49th	1999	Functional Aspects of Energy Metabolism in Brain Relationship to Brain Development and Neurodegenerative Disease
50th	1999	The Annexins
51st	2000	Fatty Acids Desaturases: Form, Function and Future
52nd	2000	Signalling in Plants
53rd	2001	Proteoglycans
54th	2002	Emerging Trends and Future Prospects
55th	2002	Dynamics of Membrane Traffic
56th	2003	Biological Electron and Proton Transfer
57th	2003	Proteinase Structure and Function
58th	2004	(EMBO Workshop) Telomeres and Genome Stability
59th	2004	(Joint EMBO Conference) The Ubiquitin–Proteasome System in Health and Disease
60th	2005	Inositol Phosphates and Lipids – Regulation and Functions
61st	2005	(EMBO Workshop) Molecular Motors: Structure and Function
62nd	2005	(Joint EMBO Conference) NO; a Radical in Control. The Biological Diversity of Nitric Oxide Metabolism and Signalling
63rd	2007	Protein Folding and Assembly <i>in vitro</i> and <i>in vivo</i>
64th	2007	(MiP2007) Mitochondrial Physiology
65th	2008	Enzymes: Nature's Molecular Machines
66th	2008	Ion Channels and Synaptic Function
67th	2009	Decoding the Biology of Heparan Sulphate Proteoglycans
68th	2010	Autophagy: from Molecules to Disease
69th	2010	RNAP2010 – Structure, Function and Evolution of RNA Polymerases. A joint Biochemical Society/ Wellcome Trust Conference.
70th	2011	Synthetic Biology: Design and Engineering Through Understanding
71st	2011	Metabolic Pathway Analysis 2011

Table A2. Annual Symposia 1986–2011

Number	Year	Topic
53rd	1986	Molecular Pathology*
54th	1987	Krebs' Citric Acid Cycle
55th	1988	Gene Expression
56th	1989	G-Proteins and Signal Transduction
57th	1990	Protein Structure, Prediction and Design
58th	1990	The Archaeobacteria
59th	1991	Neurochemistry of Drug Dependence
60th	1992	Molecular Botany
61st	1993	Free Radicals and Oxidative Stress
62nd	1994	Extracellular Regulators in Differentiation and Development
63rd	1995	Mammary Development and Cancer
64th	1996	Cellular Responses to Stress
65th	1997	Cell Behaviour, Control and Mechanism of Motility
66th	1998	Mitochondria and Cell Death
67th	1999	Neuronal Signal Transduction and Alzheimer's Disease
68th	2000	From Protein Folding to New Enzymes
69th	2001	Glycogenomics
70th	2002	Proteases and Regulation of Biological Processes
71st	2003	Free Radicals: Enzymology Signalling and Disease
72nd	2004	Lipids Rafts and Traffic
73rd	2005	Transcription
74th	2006	Cell Biology of Inositol Lipids and Phosphates
75th	2007	Structure and Function in Cell Adhesion
76th	2008	DNA Damage
77th	2009	Organelle Biogenesis and Positioning in Plants
78th	2010**	Recent Advances in Membrane Biochemistry
79th	2011**	Frontiers in Biological Catalysis

*This was held jointly in honour of the 75th anniversary of the Biochemical Society and the 50th anniversary of the Wellcome Trust.

**The Annual Symposia for 2010 and 2011 took place in January 2011 and January 2012 respectively.

Table A3. Biochemical Society Award Winners 1987–2011

Award	Year and recipient
AstraZeneca Award	2010: Bonnie Wallace 2007: Michael Stratton 2005: Noreen Murray 2001: Steven Oliver 1998: Steven Homans 1995: C. Nick Hales
Biochemical Society Award	2011: Sir Michael Berridge 2008: Gurdyal Besra. 2006: Martin Raff and Gregory Winter 2004: David Lane 2002: Steven P.R. Rose and Bernard Dixon
Centenary Award	2011: Nahum Sonenberg
Colworth Medal	2011: Sarah Teichmann 2010: Mark Dillingham 2009: Giles Hardingham 2008: John Rouse 2007: Frank Sargent 2006: Simon Boulton 2005: Ian Collinson 2004: James H. Naismith 2003: David J. Owen 2002: Thomas Owen-Hughes 2001: Andrew D. Sharrocks 2000: Dario R. Alessi 1999: Nigel S. Scrutton 1998: David Barford 1997: Stephen P. Jackson 1996: Sheena Radford 1995: Jonathan Pines 1994: R.L. Stephens 1993: Nicholas C. Tonks 1992: Angus I. Lamond 1991: Michael A.J. Ferguson 1990: David W. Melton 1988: Hugh R.B. Pelham 1987: C. Peter Downes
GlaxoSmithKline Award	2010: Gideon Davies 2008: Stephen Jackson 2006: Seamus Martin 2004: David A. Lomas

contd..

Table A3. Biochemical Society Award Winners 1987–2011

Award	Year and recipient
Heatley Medal and Prize	2008: Venki Ramakrishnan
	2000: Roger Sayle
	1996: Peter Dunhill
	1994: Keith May
Keilin Memorial Lecture	2010: Andrew Halestrap
	2007: Hartmut Michel
	2005: Martin D. Brand
	2003: Peter R. Rich
	2001: Stuart J. Ferguson
	1999: Shinya Yoshikawa
	1997: Martin Wikstrom
	1995: P. Leslie Dutton
	1993: L. Ernster
	1991: W. Hol
1989: Q.H. Gibson	
1987: R. Huber	
Morton Lecture	2010: Peter Cullen
	2008: Roger Williams
	2006: Philip Hawkins
	2004: Peter J. Parker
	2002: Robert H. Michell
	1999: Anthony Watts
	1996: R.M. Evans
	1995: M. Kates
	1994: Robin F. Irvine
	1992: S.-I. Hakomori
1989: R.E. Pagano	
1987: J.N. Hawthorne	
Novartis Medal and Prize	2011: Angus Lamond
	2010: D. Grahame Hardie
	2009: Louise Johnson
	2008: Stephen West
	2007: Adrian Bird
	2006: James Barber
	2005: Alan Hall
	2004: Jean D. Beggs
	2003: Ian D. Campbell
	2002: Michael S. Neuberger
2001: Stephen Halford	
2000: Kiyoshi .E. Nagai	
1999: Christopher J. Marshall	

contd..

Table A3. Biochemical Society Award Winners 1987–2011

Award	Year and recipient
	1998: Richard N. Perham
	1997: Ronald Laskey
	1996: John E. Walker
	1995: Christopher F. Higgins
	1994: J. Subak-Sharpe
	1993: T. Rabbitts
	1992: Philip Cohen
	1991: Paul Nurse
	1988: Robert H. Michell
	1987: Thomas L. Blundell
Sir Philip Randle Lecture	2011: Stephen O'Rahilly
Thudichum Medal	2008: Eric Barnard 2000: Jeff Watkins 1996: P. Greengard 1983: V.P. Whittaker
Early Career Research Awards	2011: Alena Krejci – Theme Panel I: Genes 2011: Taufiq Rahman – Theme Panel V: Signal Transduction 2010: M Madan Babu – Theme Panel VI: Biotechnology and Bioinformatics 2010 Rene Frank – Theme Panel II: Molecular structure and function. 2010: Jeremy Carlton – Theme Panel IV: Cell biology 2009: Araxi Urrutia – Theme Panel I: Genes 2009: Paul Curnow – Theme Panel III: Bioinformatics and Metabolism 2009: David Komander – Theme Panel V: Signal Transduction
Sir Frederick Gowland Hopkins Memorial Lecture	2008: Karen Vousden 2006: Kim Nasmyth 2004: Christopher Somerville 2002: Edwin Southern 2000: John Sulston 1998: Darwin J. Prockop 1996: Alec Jeffreys 1994: T. Hunter 1992: Thomas Cech 1990: R.J.P. Williams

contd..

Table A3. Biochemical Society Award Winners 1987–2011

Award	Year and recipient
Wellcome Trust Award	2002: Tony Kouzarides
	2000: Martin J. Humphries
	1998: J.A. Todd
	1996: K. Davies
	1994: R.A. Dwek
	1992: S. Humphries
	1987: A.W. Segal
Jubilee Lecture	2009: Joan Steitz
	2007: Anthony Pawson
	2005: Richard Jackson
	2003: Erkki Ruoslahti
	2001: Sara Courtneidge
	1999: Vincent Massey
	1997: J. Rothman
	1995: D. Chapman
	1993: Alan R. Fersht
	1991: P. Reichard
1989: S.A. Kornfeld	
1987: M.Z. Atassi	

Chapter 5

Publishing, Portland Press Limited and Portland Customer Services

Dianne Stilwell

The *Biochemical Journal*, the Biochemical Society's flagship publication, predates the formation of the Society itself. It was founded in 1906 by Benjamin Moore, the holder of the first Chair of Biochemistry in the UK, at Liverpool University. The Biochemical Club, the precursor of today's Society, met for the first time in 1911 and almost immediately started to negotiate with Moore to take over the publication of the Journal. After lengthy discussions, noted by Trevor Goodwin in *History of the Biochemical Society, 1911–1986*, the Biochemical Club took over publication of the Journal in 1912 from volume seven onwards.

Professor Tommy Moore, Benjamin Moore's son, attended the Society's 75th anniversary celebrations in 1986, and had his father also been there he would easily have recognized 'his' Journal, as essentially little had changed from the early years of the century: paper and printing ink, copy marked up by hand, manuscripts, postal delivery – all were still in use. However, if Benjamin Moore could attend the Society's Centenary celebrations he would find his *Biochemical Journal*, and indeed the Society's other publications, altered out of all recognition. The past 25 years have seen a complete transformation in publishing, and in the field of science, technology and medicine (STM) publishing, the Society's publishing subsidiary, Portland Press Limited, has been at the forefront of that transformation. One thing which has not changed however, is that now, as then, publishing is key to the Society's activities, both as the core source of funding, but also as an essential component of the Society's mission to promote biochemistry and the molecular life sciences.

Something of these technological changes was foreseen by Goodwin in his chronicle of the Society's first 75 years. The chapter on the Society's publications concludes with the following prophecy:

“...but one is also aware of ongoing, vast technological (electronic) changes in the printing and communications industry. This could mean that eventually a 'soft' version of the Journal would be available at the authors' own computer terminals. This development, unless prudently handled, would undoubtedly increase costs and reduce circulation and, probably, revenue...”

It is fair to say that the Society handled these developments, and more, prudently.

In 1986, the publishing programme of the Society was managed, as it had been since its inception, by an Editorial Board for the *Biochemical Journal* overseen by a Publications Committee chaired by the Honorary Publications Secretary, who was a member of the Society's main Committee. The position of Honorary Publications Secretary changed hands in 1986. Professor Chris Pogson, who was employed by Wellcome at Beckenham, took over the post on the death of Dr Brian Ansell who had held the position since 1980. Before this, Chris had been Chair of the Editorial Board of the *Biochemical Journal* for 5 years. He was to be instrumental in driving forward the biggest change in the Society's publishing history: the formation of Portland Press Limited as a separate, limited company that would covenant its profits back to the Society for the furtherance of its charitable aims. Chris recalls that it was lucky that, at the time, he was working for what colleagues dubbed, “the University of Beckenham”. Certainly his employers allowed him an enviable degree of freedom to pursue activities such as the Society's publishing programme.

The founding of Portland Press Limited

The launch of Portland Press (www.portlandpress.com) with its own Chair and Managing Director rendered the old Publications Committee redundant, although the post of Honorary Publications Secretary was not officially abolished until 1997 when it was decided that, as Portland Press was engaged in commercial publication activities, it was important for it to have a Chair who had some publishing or commercial background.

Glyn Jones, then Executive Secretary of the Society, recalls that there were practical administrative reasons for separating publishing and distribution into a distinct, limited company. The charity commissioners had been showing interest in the trading activities of charitable societies like the Biochemical Society, so forming a company would “keep the books straight”; indeed, other learned societies such as the Royal Society of Chemistry and the Institute of Physics had already gone down this route. Glyn saw no reason why the Biochemical Society shouldn't follow suit.

The first mention of the possible formation of the new company came in the minutes of the Executive Committee meeting of November 1987. Chris Pogson presented a report from the consultants, Comedia, on the feasibility of starting a publishing company. The report advised that the Society should steer well clear of the undergraduate and school textbook area as production would be expensive and there were many glossy books already available.

As the Society already published monographs there was enthusiasm to expand in this area. Trade sales were thought to be a specialist area in which the Society was unlikely to be successful. More enthusiasm was shown for moving into niche market areas. Journal expansion should be considered and co-publishing ventures should be developed further. The report expressed enthusiasm for the production of more videos, but warned against expanding into computer software. There were strong recommendations to employ marketing and commissioning staff.



Former Chairs of the *Biochemical Journal's* Editorial Board: (from left to right) Tony Turner (1987–1994), Chris Pogson (1982–1987), George Banting (2004–2007), Peter Parker (2000–2003) and Ken Siddle (1995–1999). Chris Pogson and Tony Turner were also the first two holders of the position of Chair of the Board of Portland Press Limited (1990–1994 and 1995–2004, respectively)

The Committee agreed to set up a working party to construct an implementation plan with a budget of £7,500 for 1988. The working party was to consist of George Lunt, Brian Spencer (then the Society's Honorary Treasurer), A.J. (Tony) Turner, Richard Walker, Glyn Jones and Alan Beedle (the Editorial Manager), with Chris Pogson chairing. The company's unique selling point was to be that the Society's own members would choose to publish with it, providing a strong base from which to grow. Looking back, Glyn Jones thinks that, with hindsight, this was an over-optimistic aspiration. Nearly a year later, in September 1988, the working party reported back to the Committee. The main recommendations of their report were as follows:

- The Society will form a separate, wholly owned trading company to be known as Portland Scientific Press Limited¹.
- The purpose of Portland Scientific Press will be the establishment and maintenance of a coherent programme of publishing (including marketing and distribution) in biochemistry and related disciplines.
- Portland Scientific Press will aim to provide the Society with a secure source of income to support and augment the full range of its activities.
- Portland Scientific Press will advance the interests of biochemistry and related subjects by the dissemination of appropriate materials and information to specific readerships and audiences.

The report's general objectives stated that "it is likely that the appointment of a Commissioning Editor and/or a Production Manager will be necessary within 2–3 years". In the margins of his Committee papers, Glyn Jones had written, "What happens meantime?" This caution in re-organizing the Editorial Department and making new appointments may have been a contributing factor to what some members of the Portland Press Board were later to see as an unacceptably slow start to the business.

The report stated that the company would organize its affairs so as to repay the initial investment and move into profit within 5 years. The publishing activities of the fledgling company were grouped into the following areas:

- *Journals publishing.* The *Biochemical Journal* was to be the cornerstone of a publishing programme that would also include *Biochemical Society Transactions* and *Clinical Science*. The possibility of publishing a review journal in biochemistry and molecular biology would be considered.
- *Symposia.* Publication would move from one volume a year to three or four.
- *Specialist texts.* The publication of a series of short texts in a uniform series for the advanced undergraduate teaching market would be investigated. This programme would start in Year 3 at the earliest and ten volumes a year was thought to be a realistic target.
- *Handbook publication.* This would be determined by market research and it would be a considerable period before first volume could be published.
- *Videos.* A further two series of videos were planned, one for the school/university interface and the other aimed at the undergraduate market. Financial support for these would be sought from outside agencies.

The company's Board of Directors would consist of a Chair, Managing Director, Financial Director and three eminent scientists. These would be Society members who did not hold any other positions within the Society and who would be paid an honorarium. The post of Chair would be non-executive and could be considered as a parallel position to the Chair of the Publications Committee.

In the early period of growth, the position of Managing Director would be held by the Executive Secretary. It was envisaged that he might stand aside in favour of a full time executive appointment when the operation had expanded sufficiently. It was considered that specialist financial advice would probably be needed and would have to be brought in. In the event, this did not happen and Chris Finch, then the Society's Finance Manager and later Director of Finance and Planning, also became Finance Director of Portland Press.

¹The name was originally to be Portland Scientific Press in anticipation of the move to offices at Portland Place; this was changed to Portland Press a year later in September 1989 when it was discovered that the initials PSP were already being used by another organization.



The Society's Colchester premises.

The new company would take over most of the functions at the Society's membership and distribution depot in Colchester. The Society's charitable objective of promoting biochemistry and the molecular life sciences presented a problem for the Colchester side of the Society's operations: it was unnecessarily restrictive as they had the expertise and the capacity to handle publications on any subject matter. By separating the Society's publishing activities into a limited company, not bound by charitable status, opportunities to enlarge the distribution operations could be developed.

At the time "Colchester" seemed somewhat remote and isolated, and not only geographically. There was only minimal interaction between the Society's two offices and what there was could often be uneasy (the Society's membership was managed from London, but the membership records were held at Colchester), which at times led to tensions. When Glyn Jones arrived at the Society in 1984, he could see that the Colchester depot had potential and made a point of visiting regularly; he recalls that he had always felt that there would be long-term benefit in supporting Colchester even though a lot of the Executive Committee were ambivalent about its existence and probably quite favoured passing this area of the Society's operations over to the Royal Society of Chemistry. Glyn thought that if other organizations could make money from distribution and membership management there was no reason that the Biochemical Society couldn't do so as well.

Early days and conflicts

Portland Press was officially launched in 1990; the minutes of its first Board meeting record that Chris Pogson was its first Chair and Glyn Jones, the Society's Executive Secretary, was Managing Director. Professor Peter Campbell, Professor Peter Garland and Dr Athel Cornish-Bowden were the three Society-nominated Board Members. Staff in attendance were Chris Finch, the Society's Finance Director, Alan Beedle, the Editorial Manager, Sarah Andrews, the Executive Secretary's PA, and the newly appointed Marketing Manager, Edward Twentyman. Initial clients were The Company of Biologists, the *Journal of Reproduction and Fertility* and the Society for Experimental Biology. This first meeting also discussed contracts with the Federation for American Societies for Experimental Biology (FASEB), with the *Journal of Biological Chemistry* for the production of mini reviews and with the International Council for Scientific Unions. It was confirmed that *The Biochemist*, the Society's membership magazine, would continue to be produced by the Society, but would be distributed by Portland Press.

Portland Press had had to change its name before it even came into being (see footnote on page 77); however, later in 1990, an unexpected problem arose when the Society received a letter from a Mr Harry

informing the Society that he owned a publishing company, also named Portland Press, publishing in the science and technology market, and laying claim to the name. Vigorous legal correspondence ensued, as it appeared that this 'other' Portland Press had yet to publish anything at all. By November that year an out-of-court settlement had been reached to avoid the costs of a lengthy court case and nothing further was ever heard of Mr Harry and his publishing company.

From the beginning there were to be tensions between the commercially orientated company and the Society as its more academic parent body. In the first year, some members of the Portland Press Board felt that the company should distance itself from the Publications Committee of old by adopting a more aggressive commissioning policy and replacing the Executive Secretary as Managing Director with someone with more experience of commercial publishing.

The minutes of the Portland Press Board Meeting of September 1990 record that Glyn Jones explained to the Board that it was unlikely that the Society's Trustees would approve of any move to loosen the Board's ties with the Society by removing the Executive Secretary from his position as the Managing Director. He explained that the Executive Committee must retain the ultimate authority over the publishing company as the relationship between the Society and Portland Press was not that of a strictly commercial company, and that the Executive would not want to divest itself of control over a large sector of its activities. Despite this advice, the Board moved to vote on the matter with the votes splitting 50:50. With the knowledge that any decision made by the Board with regard to the Executive Secretary continuing as Managing Director of Portland Press would be overruled by the Society's Trustees, Chris Pogson recalls that he had little option but to use his Chair's casting vote to preserve the *status quo*, much to the chagrin of those Board members who were keen to pursue a more independent path. In fact, the position of Managing Director of Portland Press continued to be held by the Society's Executive Secretary until 2000, when Rhonda Oliver assumed the position, which she held until 2010.

Past Chairs of the Portland Press Board recall that it was often difficult to persuade the members of the Society's Executive Committee to take the necessary risk and provide sufficient investment income for the publishing subsidiary. An early example of where the Executive's prudence came into conflict with the more entrepreneurial spirit of Portland Press was with the Minerva project. Conceived by Chris Pogson, Minerva (named for the goddess of science) was to be an intermediary step between *Current Contents*, with its simple listing of journal contents pages, and the published full reviews of *Trends in Biochemical Sciences*. A team of in-house writers would write articles featuring and setting in context papers about to be published in leading peer-reviewed journals, not just those of the Biochemical Society. As these articles would act as an advertisement for the forthcoming paper it was thought that the journal publishers would welcome the raising of their profile. However, the project was regarded with scepticism by the staff members of the Board. Members of the Portland Press Board were supportive of the project, as were some members of the Society's Executive Committee. However, the Society was being asked to put money into an untried project at a time when the *Biochemical Journal*, the main source of income, was making less money than it had done previously, and so support was not forthcoming.

Book publishing

Portland Press' business plans for the first years of its existence focused on book publishing. Journals, especially the flagship *Biochemical Journal*, were to be sustained, but the company saw its future in books.

Following the retirement of the Editorial Manager A.J. (Tony) Evans, his then deputy, Alan Beedle, had been promoted to the position in 1987 and Rhonda Oliver joined the Society as Deputy Editorial Manager in the same year. Portland Press had only been in existence for a few months before the management realised that it was not practical to run a book publishing programme on the back of the existing journal work and so Rhonda Oliver took on new responsibilities as Commissioning Editor for book publishing.



The *Making Sense of Science* children's books. The first book, *Microbes, Bugs and Wonder Drugs*, was published in 1995. Among the contributors to the series were (left to right) David Walker (author of *A Leaf in Time*), Mike Painter (author of *Satellite Fever*), Fran Balkwill (Series Editor and author of *Microbes, Bugs and Wonder Drugs* and *SuperCell*), David Bellamy (author of *Poo, You and the Potoroo's Loo*), Helen Sharman (author of *The Space Place*), David Phillips (author of *Light Up Your Life*) and Mic Rolph (Series Illustrator).

At the time, serials publication was facing a crisis: the burgeoning discipline of biochemistry was generating more and more published papers, leading to vastly increased print and production costs. This was at a time when, in the UK at least, academic library budgets were being cut. The Society needed a publishing strategy that could help it sustain and if possible grow its income (in 1986, 93% of income came from publishing and membership income was falling).

Book publishing was an attempt to diversify and to move away from being a one-product company. At the time, there appeared to be no opportunities forthcoming to start or acquire new journals. The company had excellent worldwide biochemistry contacts and high-quality editorial staff, so a move into monograph production seemed logical; other publishers were also taking this route. There were plans to break into the textbook market, despite the earlier advice from consultants on the establishment of Portland Press (see page 76); as a learned society it was felt that, through the members, Portland Press would have greater access to the market than commercial publishers.

The programme started well; some books, Athel Cornish-Bowden's *Fundamentals of Enzyme Kinetics* for example, were best-sellers (4,400 sales). Other best-sellers included a study guide by Rob Beynon, *Postgraduate Study in the Biological Sciences*, with sales of 4,493 and *Understanding Metabolic Control* by David Fell (3,985 sales). Some titles have had a remarkably long life: *The Biology of the Tardigrades* edited by Ian M. Kinchin, was first published in 1994 and print-on-demand copies are still being sold today. The year 1993 saw the company start to publish books on behalf of other societies – one of the first titles was *Women Physiologists*, published on behalf of the Physiological Society, which attracted critical acclaim. By 1994, 11 titles had been published.

A significant departure from the normal pattern of scholarly publishing came in 1994 when the *Making Sense of Science* series of children's books was launched. Conceived by Chris Pogson and commissioned by Rhonda Oliver, this series of colourful illustrated books covering a variety of scientific topics was a big success; eventually over 27,123 copies would be sold and the rights to translated versions sold in several

countries. For example, the Turkish version is currently on its 19th reprint and the company recently received a royalties cheque for £25,000 for this version. Professor Fran Balkwill, then Professor of Cancer Biology at St Bartholomew's Hospital and the London Queen Mary's School of Medicine and Dentistry, acted as the Series Editor and wrote the first book in the series, *Microbes, Bugs and Wonder Drugs*, which has accounted for 9,325 of the series' sales. A key feature of the series was Mic Rolph's fun and lavish illustrations. *Microbes, Bugs and Wonder Drugs* was launched with a reception at the Royal Institution and a photocall at the Wellcome Collection featuring botanist and television personality David Bellamy, who was himself to write a later title in the series, *Poo, You and the Potoroo's Loo*. Indeed the author list for this children's series reads as a roll call of eminent UK scientists with Steven Rose (*Brainbox*), David Phillips (*Light Up Your Life*) and Helen Sharman, British astronaut (*The Space Place*), among the authors of the eight titles commissioned for the series. External recognition for the series came in 1996 when *Microbes, Bugs and Wonder Drugs* was shortlisted for the Rhône-Poulenc Junior Science Book Prize.

Portland Press Inc.

Within the first year of its existence, Portland Press was looking to expand into the American market and recruited Bill Whelan to the Board as a US representative. Although initially intended to benefit the *Biochemical Journal* by increasing its visibility and consequently submissions and subscriptions, it was soon realised that an American presence was necessary for the development of the books publishing programme too. Glyn Jones recalls that, at the time, the Biochemical Society was not the best badge to have in the USA. In America, there were elements of affirmative action – American universities were buying preferentially from American publishers. It was thought that if publishing and distribution could be incorporated in the USA as a not-for-profit company, there would be tax advantages and sales in the American market would benefit.

Tony Turner, then Chair of the *Biochemical Journal* Editorial Board who was to take over as Portland Press Chair on the retirement of Chris Pogson in 1994, agrees with this reasoning: the *Biochemical Journal* was not seen as an international journal, it tended to be regarded as “The British Biochemical Journal”. The aim of developing Portland Press Inc. in the USA was to make the journal truly international.

Portland Press needed an American partner. Edward Twentyman, who had been appointed the company's first Marketing Manager, visited the USA and presented the Board with a shortlist of possibilities at its September 1990 meeting. The chosen option was to go into business with Neil Patterson who ran a small, specialist publishing company in Chapel Hill, NC, and who had a track record in biochemical publishing, having published the standard textbook by Lehninger. The minutes show that all the Board members felt some residual doubt as to why Patterson should present such a favourable proposal that seemed to have only modest benefit to himself; however, they decided that a proposal would be put to the Executive Committee that Portland Press Inc.



Tony Turner; Chair of the *Biochemical Journal* Editorial Board (1987–1994) and Chair of the Portland Press Board (1995–2004).

should be formed in the States in partnership with Patterson's company. By February 1991, the company had been formed and Neil Patterson had published *A Blueprint for a Cell* with 750 copies to be sold under the Portland Press imprint. Patterson was considering the publication of another textbook and Portland Press was initially keen to replace 'Lehninger', which was considered rather dated by some. However, the cost of marketing, printing and distribution were prohibitive and the project was eventually considered too high risk and abandoned. In 1993, *Clinical Detective Stories* was published by Patterson and Portland Press Inc., the only book to be published by the company from America. Distribution and warehousing in America were handled by Ashgate Publishing from a converted farm in Vermont. After the takeover of Neil Patterson's company by Simon and Schuster in 1992 the partnership waned.

For book sales to have really taken off, a significant investment would have been needed in marketing and distribution in the USA. Portland Press could not justify this investment. This may have been one of the contributing factors to the decline in book sales. In due course, the *Biochemical Journal* would open an Editorial Office at the Burnham Institute in La Jolla, CA, in 2001. This was a significant step for the Journal, but Tony Turner notes that for this office to have worked well in terms of more general publishing, the Society would have needed to have invested more money, which would not have been appropriate or affordable; however, as an Editorial Office, the arrangement has worked well.

In 1996, when books were costed to an individual level for the first time it was realized that they were not really adding anything to profits. The book programme was scaled back leaving titles such as *Essays in Biochemistry* that had a solid reputation and more energies were put into acquiring new journals. In 1997, the company's publishing portfolio was restructured following the decision to cut back on books.

More than one of the past Chairs of Portland Press has commented that the more cautious, academic approach of the Society's Trustees led to commercial opportunities being missed. There were often tensions between Society officers and the Portland Press Board, as might be expected with the strong personalities on both the Board and on the Executive Committee. A common complaint from the Portland Press side was that people did not see the broader picture and regarded the *Biochemical Journal* primarily as a source of income. Some doubted the Executive's ability to see that Portland Press could broaden the portfolio of the Society – the prevailing view was held to be that the Society was 'meetings', and 'meetings' were the Society, with other things being regarded as peripheral and not central to the Society's aims.

Portland Press sought to establish itself as an independent, professional company. Display stands at international meetings, which were initially shared with the Society, were soon replaced by independent, professionally designed stands. The company's first stand at the 1991 ASBMB (American Society for Biochemistry and Molecular Biology) meeting was regarded as very amateurish; Tony Turner recalls that "it made us look like eccentric Brits against the professional, slick stands of the other publishers; we realized we had to get more professional".

IT and electronic publishing

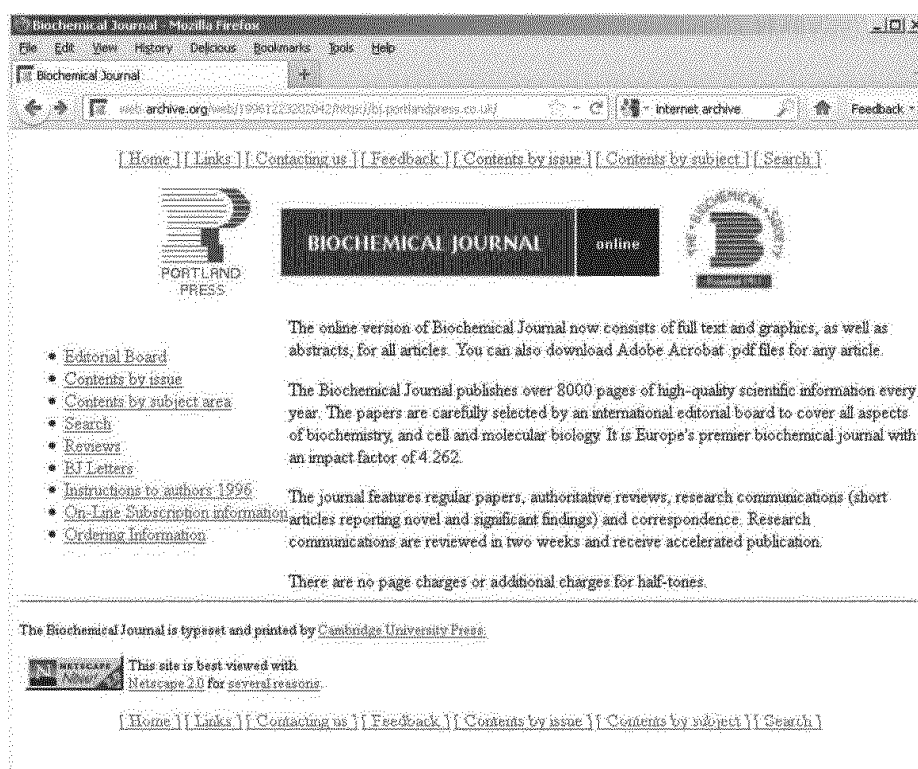
It was at another ASBMB meeting, in 1995, when the defining moment came that was to set the seal on Portland Press' development into a respected innovator in STM publishing. The *Biochemical Journal's* rival, the *Journal of Biological Chemistry*, had gone online in April of that year. At the ASBMB meeting the following month, there was a demonstration of the online journal, and Rhonda Oliver, who was at the meeting, recalled that the *Journal of Biological Chemistry* stand was mobbed every day. She came back from the meeting convinced that online was the way to go.

The Society and Portland Press had long appreciated the need to invest in up-to-date IT (information technology). Both for the production of publications and for managing membership and distribution, good computing systems were vital. Investment in IT had, at least in the early days, mixed results. The minutes of a Society committee meeting in 1987 record that although the computer consultants employed to upgrade the

Society's IT were finalizing the editorial system, faults had delayed its introduction, while the cost of replacing the membership and distribution system in Colchester looked likely to be in the region of £100,000 rather than the £30,000 originally quoted. The meeting unsurprisingly took the decision to cancel the agreement and to upgrade the existing hardware and software for £20,000 instead. However, by the beginning of 1989, the Committee minutes were able to record that the Editorial Office computer system was running well and enquiries to use it had been received from Nature Publishing and Blackwells.

The system eventually chosen by the then Marketing Manager, Edward Twentyman, to run membership and distribution at Colchester was called VISTA. Although agreement had been reached to install it, delays ensued and, in March 1992, the Committee learned that installation was running 2 years behind schedule; in practice, the system was in use by the end of 1993. VISTA always had problems and when it was realized that the system had significant 'Y2K' compatibility problems it was replaced with the TIMSS subscription and membership management and products inventory system. This was a huge investment for the Society at around a quarter of a million pounds, but it proved to be a key development as it enabled Portland Customer Services (as the Colchester end of Portland Press became in 2000) to offer membership management services for external client organizations. The first such client was the International Water Association, who had initially been just a journals fulfillment client as the VISTA system could not be used for membership management. However, as TIMSS could handle the Association's complex membership requirements, it would be possible to offer this service to others. The TIMSS system was deployed very rapidly: although its implementation only started in 1999, by June 2000 it was live. The growth in business at Portland Customer Services, overseen by Adam Marshall (Group Head of Marketing and Customer Services), has seen the number of clients increase to about 40 by 2011 and the number of staff in the Colchester office increase from 10 in 2001 to 32 in 2011.

In the Executive Committee's report to the 1997 AGM, there is just one, almost incidental sentence "The Society now has a home page on the World Wide Web". It is interesting to speculate whether anyone



The *Biochemical Journal* homepage when it went live on the Internet in 1996.

at that meeting had any idea as to the profound changes that the Internet would so soon bring to science research and publishing. But even before the Internet revolution, changes were being introduced to the publishing process. As Chair of Portland Press, Tony Turner introduced the use of fax for the submission and peer review of rapid communications for the *Biochemical Journal*. There was concern that the reproduction quality would not be good enough, but it worked well because, unlike cell biology, most biochemistry papers did not contain micrographs. For the small percentage of papers where this was not the case, the authors still had to send in the figures for their papers in hard copy for the reviewers to see.

In 1995, despite the *Journal of Biological Chemistry's* innovative use of the Web, people were still very unsure as to how it would develop. The *Journal of Biological Chemistry* had been publishing on CD ROM, and there was a lot of pressure for Portland Press to follow suit with the *Biochemical Journal*. Rhonda Oliver and John Day (who had become IT Director for the Biochemical Society in 1995) resisted this as they felt that the Internet was the way to go, even though this required quite a leap of faith.

Initially Cambridge University Press, who typeset and printed the *Biochemical Journal*, did not have the technical know-how to put material on the Web. Rhonda Oliver and the editorial staff believed they would have to code the papers themselves and embarked on a SGML mark-up course. Eventually Cambridge University Press were persuaded (by the threat of removing the business) to undertake the required Internet markup, but this had to be done by hand. John Day recalls how, in 1995, nothing was available "off the shelf" as far as Web publishing was concerned; everything had to be built in-house.

One of the challenges in publishing scientific content on the Web was how to display special characters e.g. Greek letters and subscript and superscript text. In 1995, the Web browsers of the time could not display these characters and they had to be replaced with images representing the characters. The nature of the *Biochemical Journal's* content meant that it would be impractical for this to be done by the typesetter. The release of the Netscape browser version 1.2 enabled the use of subscript and superscript text. This development meant that the typesetter did not have to create images of text in this format, but merely for special characters such as Greek letters.

In October 1995, the initial trials of publishing *Biochemical Journal* review articles online were successful and by January 1996 the Journal had gone online. The whole process had taken just 7 months from start to finish. John Day recalls that the initial website was a machine under his desk in the office: "The early *Biochemical Journal* website was held together with duct tape and string as we wondered whether the Internet would be a fad. Over the next decade we built the electronic journal platform that forms the basis of our electronic publishing in 2011". One of the key developments was the access control system, IPCheck, which allowed Portland Press to provide seamless access to the journals for scientists at subscribing institutions. This provided the first insight that maps of the IP addresses of customers would become the subscriber lists of the 21st Century.

In 1998, before the arrival of Scholar One™ and similar peer-review systems, ASBMB had developed their own in-house Online Submission and Peer Review System (OSRS). Portland Press licensed this system from ASBMB in 2001 and modified it to suit their requirements. By 2005, the limits of the underlying technology of OSRS led Portland Press to migrate this system to a new platform. Andy Gooden and Allan Conybeare developed the replacement system, Sirius, an entirely Web-based peer review system, and this went live in 2007.

From the beginning, Portland Press showed a real understanding of the potential and benefits of the emerging technologies. They were one of the first publishers to offer online access that was initially free. A key decision that was taken early on was not to split electronic and print subscription. The *Journal of Biological Chemistry's* Editorial Board had estimated that print copies would stop by 2000, but although most new journals tend to be online only, print still exists in 2011. The acknowledgment that the company's success was dependent on innovation and development in IT meant that Portland Press would continue to press the parent Society for sufficient investment. For example, in November 1992 the Executive Committee

COMPONENT MOLECULES

Desmosomes have five major component proteins, the Dcs (desmosomal catheherin), DSG (desmoglein) and DSC (desmocollin), the plakin family cytolinker DP (desmoplamin), and the arm (armadillo) proteins PK (plakophilin) and PPK (plakophilin). DSC and DSG are the desmosomal adhesion molecules, DP links the desmosomal plaque to the IF cytoskeleton, and PK and PPK are adaptor proteins that link between the adhesion molecules and DP (ESG03.3 and 5).

DSC and DSG share 30% amino acid identity with each other and with classical catheherins [1] and have the EC5 intracellular catheherin repeats (containing Ca²⁺-binding sites and a Cys²-rich site) recognition site [1, 15]. Homology models for the DSC2 and DSG2 EC domains were generated using the crystal structure of *Xenopus* C-cadherin as a template [16, 17]. These models imply that the DCS, like the classical catheherins, [18, 19] possess a conserved C-terminal region containing a proline-rich region. This is supported by a conserved alanine residue and implications for cell adhesion mechanisms. Science, 2006, 310(5813):1313-1314.

The cytoplasmic domains of DSCs possess a conserved C-terminal region containing a proline-rich region (catheherin-binding domain) and a DSG-specific region containing a proline-rich region. A series of unique 28-amino-acid repeats and a terminal domain. The DSG-specific region is disordered in solution, but shows weak specific interactions with PK, the plakin domain of DP, PKP1 and the cytoplasmic domain of DSC1 [15]. Alternative splicing produces 'a' and 'b' forms of DSCs, the 'a' form being shorter and generated by insertion of a 100-residue containing a stop codon. The 'a' form binds PK through its catheherin-binding domain, which the truncated cytoplasmic domain of the 'b' form lacks [15].

There are four DSG isoforms in humans (as in mice) and three isoforms of DSC: DSG2 and DSC2 are ubiquitous, expressed in all desmosome-bearing tissues and the predominant isoforms in simple epithelia [22, 23]. In stratified epithelia, the distribution of DSC2 mirrors that of DSC3 (see below), whereas expression of DSG2 is confined to the basal cells. DSC1, DSG3 and DSC4 and DSC3 are restricted to stratified epithelia [22, 23]. Reflecting tissue differentiation, DSC1 and DSC3 are strongly expressed in the granular and spinous layers of the epidermis, and more weakly in the lower layers, whereas DSG3 and DSC2 are expressed strongly in the basal and immediate suprabasal layers, decreasing towards the stratum granulosum [22, 23]. When co-expressed, different isoforms occur within the same desmosomes [22].

PK has 12 arm repeats each consisting of three helices (two in repeats 1 and 7) flanked by unstructured N- and C-terminal tails. These arm repeats share 85% amino acid identity with β -catenin that associates with β -catenin junctions. PK can substitute for β -catenin in β -catenin junctions with similar affinity, but PK has higher affinity for DSG suggesting why it, rather than β -catenin, localises to desmosomes [22]. The arm repeats of β -catenin form a superficial positively charged groove, the catheherin-binding site, and PK binds to β -catenin in a similar manner [22].

Figure 3 Structure of desmosomal proteins

A Desmosomal catheherins

DSC2a, DSC2b, DSG1, DSG2a, DSG2b

B Anneslin proteins

PG, PKP2a, PKP2b

C Desmoplamin

DPM, DSP

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EESI-View, launched by Portland Press for the *Biochemical Journal* in 2004, provided an alternative to the traditional way of displaying and reading online journal articles.

agreed to spend £60,000 on hardware and software for on-screen editing as it was estimated that this would lead to around £75,000 per annum savings over the following 4 years. It was this sort of investment in innovation that kept the *Biochemical Journal* ahead in its field.

In 2004, Portland Press launched EESI-View², which provided a non-linear way of viewing an article as it was realised that people did not read a scientific paper from beginning to end; usually they would look at the title, the authors, images and the reference list (to see if they were cited) – and only then would they read the abstract. Peter Parker, who had become Chair of the *Biochemical Journal* Editorial Board in 2000, was instrumental in the development of EESI-View and the Board credits it with being one of the main reasons that Sir Michael Berridge approached Portland Press to publish *Cell Signalling Biology* (see page 93). The software was developed in-house by John Day and Andy Gooden, and was truly innovative. In some ways it was perhaps ahead of its time as it was Web-based at a time when WiFi was not used and portable Web access didn't exist. People were also committed to the portability of PDFs. Portland Press staff consider that Elsevier's recently launched 'article of the future' is in fact very similar to EESI-View. By 2006, EESI-View was in use across all the online journals published by Portland Press and had been shortlisted for the Association of Learned and Professional Society Publishers (ALPSP)/Charlesworth Innovation Award, a category in which it was highly commended. A UK patent was granted in 2006.

Another development was Orion, a Web-based reporting tool developed by John Day and Adam Gibson. Orion allowed Portland Customer Services clients to access their own member or sales statistics and to download their own reports. Portland Press has remained an innovator in publishing IT; more recent developments have included The Semantic *Biochemical Journal*, launched in 2009 (see page 88).

²EESI-View, Enhanced Electronic Serials Interface.



John Clark: Chair of the Portland Press Board, 2005–2010.

The *Biochemical Journal*

The first line of the *Biochemical Journal's* "Instructions to authors" states "The *Biochemical Journal* publishes papers in English in all fields of biochemistry and cellular and molecular biology, provided that they make a sufficient contribution to biochemical knowledge". Since its foundation in 1906, the *Biochemical Journal* has certainly contributed to biochemical knowledge, and also contributed to the success and prestige of the Society and Portland Press. Continued innovation and commitment to high editorial standards has helped to keep the *Biochemical Journal* in the forefront of biochemistry and the cornerstone of the Society's publishing portfolio.

In 1985, the Journal changed printers and underwent a substantial change in format. Changes continued with 'rapid papers' being replaced by 'Research Communications' in 1991, which in addition to receiving accelerated treatment, had to

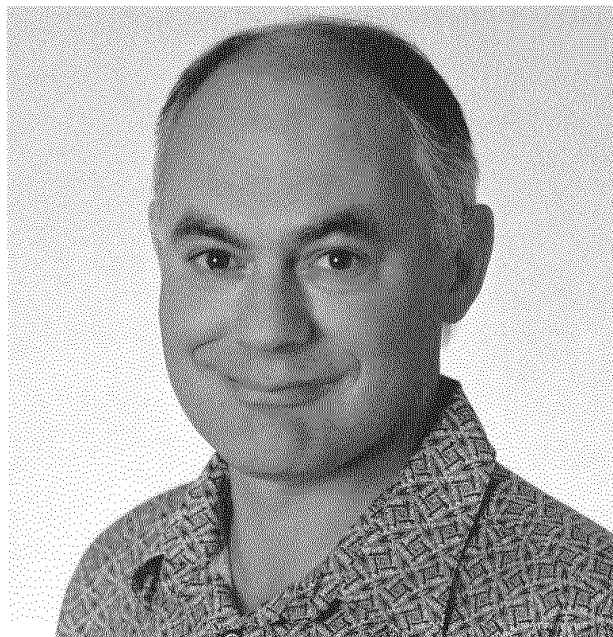
satisfy stringent novelty and significance criteria. After going online in 1996, hyperlinking of references to other MEDLINE® journals had been implemented in 1997.

Speed of turnaround of papers is crucial to the Journal's success. By 1998 the handling times on the *Biochemical Journal* had improved so that for Research Communications the average time from acceptance to publication was a little over 7 weeks with full papers taking around 12 weeks. Electronic versions of papers were posted 1 week before the issue date, thereby further reducing handling times.

Services to subscribers and Society members continued to improve. In 1999, electronic access to the Journal archives was made freely available; free colour reproduction was offered to members and to authors of Research Communications. Online subscriptions were introduced in 2000 and included free personal online subscriptions for Society members to the Journal and to *Biochemical Society Transactions*. During this time, the profile of author submissions to the *Biochemical Journal* changed significantly. In 1994 citations had shown that the Journal was the premier journal in Europe for biochemistry. By 1997, there had been a marked decrease in the number of submissions from the UK (23% of total in 1992; 16% in 1997). In 1997, 38% of submissions came from the rest of Europe, 26% from North America, 8% from Japan and 12% from the rest of the World. The decline in UK submissions was attributed to the adverse effect of the Research Assessment Exercise, where research excellence in UK universities was measured in part by publication in journals with a high Impact Factor. The Portland Press Board's strategy to counter this decline was to continue to try to improve the impact of the journal.

In order to offer a better service and to encourage more submissions from both North and South America, Guy Salvesen, from the Burnham Institute, La Jolla, CA, was appointed as Vice-Chair for the Americas, and an Editorial Office was established at the Burnham Institute. The new office opened in January 2001 and was launched at the Experimental Biology Meeting in Orlando, FL, in April of that year. By 2002 submissions to the *Biochemical Journal* from North America had increased to 27.5% of the total (the UK accounted for 14.5%). By this time, the Journal's Impact Factor had gone up to 4.589, an improvement, but still short of the magic figure of 5 that would lead to it being deemed a high-impact journal for research selectivity purposes.

The *Biochemical Journal* celebrated its Centenary in 2006. The first event to mark the Centenary was a reception in London at the British Library on 18 February to celebrate the digitization of the complete archive of the *Biochemical Journal* from 1906. The project was sponsored by the Wellcome Trust and JISC and the archive was deposited in PubMed Central as well as being made freely available on the Journal's website. Celebrations in the anniversary year continued with a full-day symposium held as part of the BioScience2006 meeting in Glasgow. The symposium, entitled 'Literature, Legacy, Life... Biochemistry for 21st Century', featured presentations from Mike Waterfield, Louise Johnson, Alfred Goldberg, Mina Bissell, Donny Strosberg, Steve Huber, Stephen O'Rahilly and Lewis Wolpert. In addition, a 'BJ Classics' series of articles, edited by Dick Denton, was launched in 2006. The series comprises commissioned articles written by contemporary researchers highlighting seminal papers that have been published in the *Biochemical Journal* since its founding in 1906. Robert Freedman took over as the Editor of this series in 2010.



Guy Salvesen became the *Biochemical Journal's* first Vice-Chair, the Americas, in 2000.

Innovation continued into the Journal's second century with the introduction of a new Web interface in February 2007. This '21st century' *Biochemical Journal* had seven so-called "Knowledge Environments". Each Knowledge Environment acts like a virtual journal with its own Editorial Board, under the overarching *Biochemical Journal* umbrella (BJ Central) and allows authors and readers to identify with their own



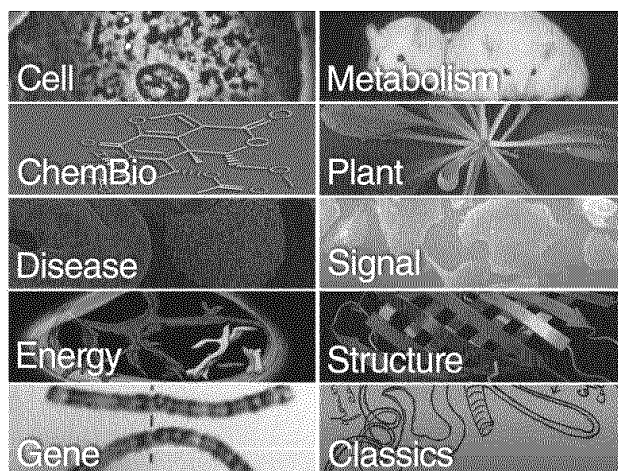
Sir Philip Cohen (President of the Biochemical Society) presents the *Biochemical Journal's* digitized archive to Lynne Brindley (Chief Executive of the British Library) in February 2006.



The Editorial Board of the *Biochemical Journal*, along with senior Portland Press staff, at the celebrations that marked the Journal's Centenary in Glasgow in July 2006.

community. Two further Knowledge Environments, BJ Metabolism and BJ ChemBio, were launched in 2009. The continued innovation and progress made by the Journal has achieved external recognition. In September 2007, the *Biochemical Journal* won the ALPSP/Charlesworth Award for Best Online Journal and in June 2010 the landmark Impact Factor of 5.155 was achieved.

The most recent innovation is The Semantic *Biochemical Journal*, developed in a collaboration between Portland Press and the University of Manchester. This uses new software, Utopia Documents (<http://getutopia.com>), to link documents dynamically to research data, enabling readers to interact with and manipulate the information in the Journal's scientific papers more effectively. The Utopia software differs from other semantic publishing programmes by having editorial staff carry out text mark-up, ensuring rigour and consistency. It 'overlays' the additional, semantic data on to the existing PDF version of articles, rather than embedding it into the text initially where it cannot be subsequently altered. Static images, tables and text are turned into objects that can be linked, annotated, visualized and analysed interactively. Terms and phrases in the paper are linked to external websites, glossaries and databases. Extra data such as images and videos can be embedded into the text and there are links to interactive tools to manipulate protein sequences and to see molecular structures in 3-D.

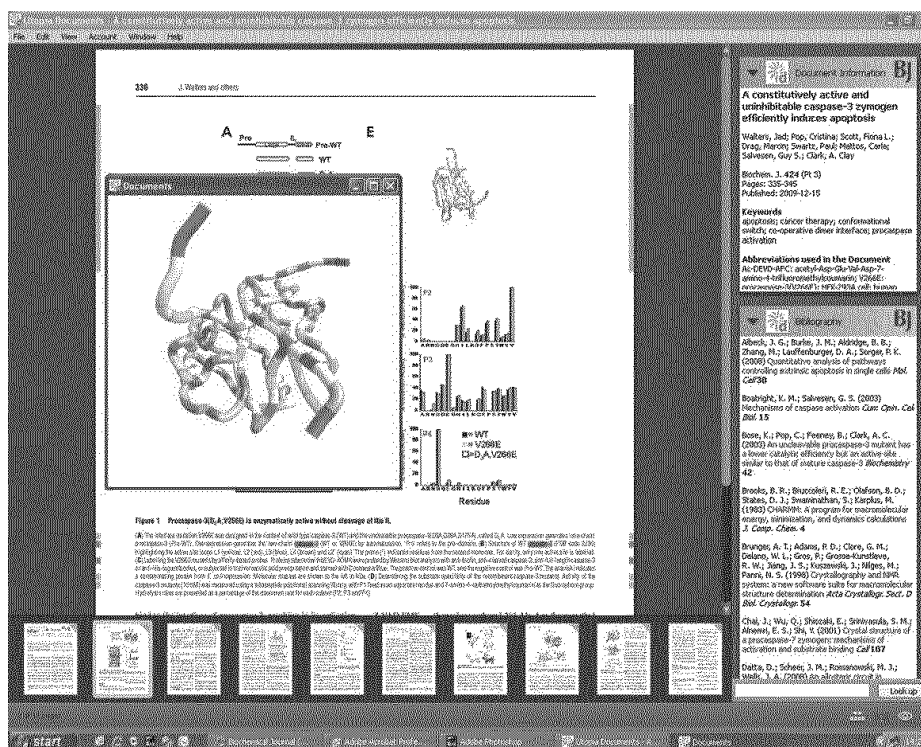


The nine Knowledge Environments (plus BJ Classics) that constitute the *Biochemical Journal* in 2011.

A talk on data mining by Peter Murray Rust at the Frankfurt Book Fair was the starting point for Portland Press' interest in the semantic web. Realizing that this was an area that could be developed, the *Biochemical Journal* Editorial Committee set up a technology sub-committee; this sub-committee identified Professor Terri Attwood and her team at the University of Manchester who were already working on the Utopia software. The Semantic *Biochemical Journal* was launched at a reception at the British Library in December 2009. As well as giving the Journal a competitive edge, the Utopia software can be licenced to other publishers, providing an additional revenue stream for Portland Press.



Portland Press staff and George Banting (Chair of the *Biochemical Journal* Editorial Board) with the 2007 ALPSP/Charlesworth Award for Best Online Journal: (left to right) Pauline Starley, Mark Thorne, Rhonda Oliver, John Day, Audrey McCulloch, George Banting and Andy Gooden.



The Semantic *Biochemical Journal*. When viewed with the Utopia Documents software, the PDF versions of articles are enriched semantically in a variety of ways that help to enhance the user's online reading experience.

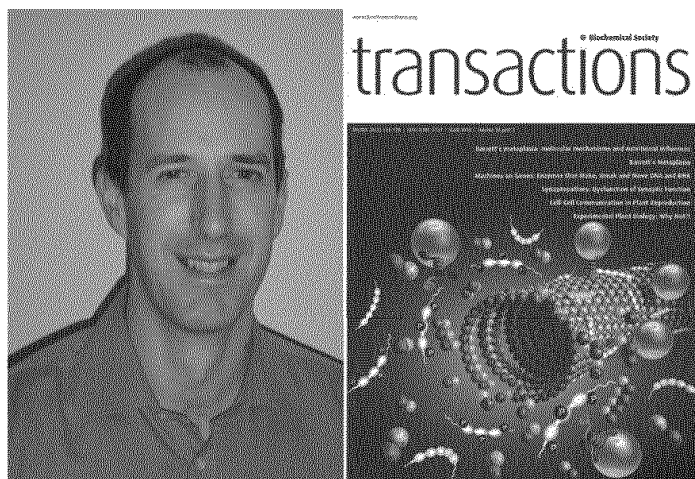
Biochemical Society Transactions

Over the past 25 years *Biochemical Society Transactions* has been transformed. It started the period as the means by which the Society recorded the communications at its scientific meetings. This led to a degree of unpredictability in the size and therefore cost of issues as they were dependent on the number of speakers and posters at meetings. In addition, as the papers were not peer-reviewed, there was a real and perceived lack of quality. The first turning point came in 1988 when the Publications Committee set up a working party to look at how *Transactions* could be improved. The working party consisted of Chris Pogson as Chair, Glyn Jones, and Alan Malcolm (the Society's Chairman). The Editor of *Transactions*, Dr David Watts, and Alan Beedle (the Editorial Manager), aided them. The working party distributed 1000 copies of a questionnaire to members (360 replies were received). In general, authors were content but recommended that systems of refereeing should be investigated. This would cause problems, as refereeing short communications would be very difficult given the timescales involved. The minutes of the Executive Committee meeting when the working party's proposals were reported show that there was some disagreement about how to proceed. After a vote it was decided that only one of the working party's recommendations – the immediate appointment of a Managing Editor – would be adopted and that the changes proposed by the other recommendations would be deferred until the Managing Editor was in place. However, it was agreed that Free Communications would no longer be published in the journal. Dr Catherine Rice-Evans took up the post of Managing Editor of *Transactions* on 1 January 1989, and in March 1991 the first issue of *Transactions* appeared in its new format.

The next round of major changes for *Transactions* came at the start of the new millennium. In 2000, the journal became fully online. Problems were soon to arise however and John Wrigglesworth who took over the editorship in 2002 from Keith Snell (Editor since 1993) was faced with the effects that the Society's planned changes to its meetings programme would have for *Transactions*. In 2001, it was announced that there would be a new structure to Society meetings. While 2003 would be a transitional year, in 2004, the pattern of meetings would consist of one main meeting, with stand-alone Focused Meetings dispersed throughout the year. This would obviously have implications for the frequency and quantity of papers for *Transactions*. The journal was marketed to subscribers on the basis of six issues annually and it was essential that sufficient copy would continue to be supplied so that this could be fulfilled.

Initially there was optimism about the new arrangements. Focused Meetings had proved to be very successful and it was hoped these would provide enough science content to fill the issues in the future. However, by 2003, Rhonda Oliver was reporting to the Portland Press Board on the failure of the new meetings structure to provide adequate copy for *Transactions* in 2004. To overcome the problem, it was proposed that the papers from the BioScience2004 meeting should be split between two hard-copy issues. To prevent the loss of credibility with speakers that would occur if publication of their manuscripts was artificially delayed, these issues would be published online simultaneously. But to avoid claims from institutional subscribers there would have to be a slight delay between the manufacture and despatch of these print issues. As well as the pressure that these arrangements would put on the editorial and production staff, the Board's unanimous opinion was that this sort of *ad hoc* action to protect *Transactions* was in danger of damaging the professional reputation of Portland Press. It was agreed, that if this situation could not be resolved, the Board would recommend that publication of *Transactions* should cease.

Another option to cover the predicted shortfall in papers was the possibility of combining *Transactions* and the *Biochemical Society Symposia* series. There were positive aspects to this solution: all the science from the meetings programme would be published in one place, rather than spread over two separate publications. *Symposia* authors would still get a dedicated publication, albeit in a different format, and it was also likely that this would have a positive effect on the Impact Factor for *Transactions*. However, there would be logistical problems in that the Annual Symposium would have to be held at the beginning of the year to



David Richardson, Honorary Editor of *Biochemical Society Transactions* in 2011.

enable papers from it to be fitted into a publishing schedule that had to cope with a large summer meeting. It was also noted that 85% of subscriptions to *Transactions* were combined subscriptions with the *Biochemical Journal*. This would need to be stressed to the Society's Executive Committee when discussing any move to discontinue publication of *Transactions*. The journal brought in a substantial amount in copyright sales and single-issue sales were also very popular. Eventually, in 2008, *Biochemical Society Symposia* was incorporated into *Transactions*, but with the online *Symposia* series available via subscription if required. The *Symposia* volumes continue to be made available as hardback books.

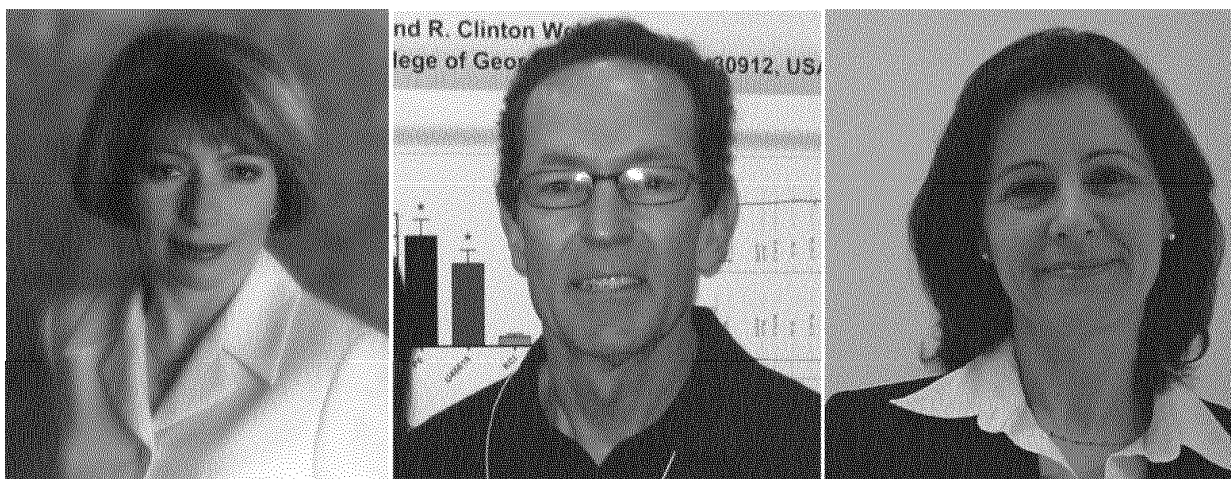
David Richardson from the University of East Anglia who was appointed Honorary Editor in 2005 has done much to improve the quality of *Transactions*, appointing an Advisory Panel and turning the journal into a respected educational resource. Its Impact Factor reflects this, increasing from 2.579 in 2004 to 3.989 in 2011, which is high for a journal of this type.

Manuscripts are written as mini-reviews, so that speakers are not precluded from publishing their primary data elsewhere. All the science in *Transactions* is meetings-led; it is the Society's Meetings Board that selects the topics for meetings from proposals from its Theme Panels. The production of a manuscript is a pre-condition of being awarded a Society Award (see also Chapter 3). Currently around 79% of speakers contribute manuscripts. *Transactions* is seen as a membership benefit for the Society and publication in *Transactions* contributes to the charitable objective for the Society to disseminate the science of biochemistry.

Clinical Science

The Biochemical Society and the Medical Research Society (MRS) had owned *Clinical Science* jointly since 1960. It was governed by a Committee of Management whose Chair alternated between the MRS and the Society. As decisions had to be taken jointly, its development was hampered; the MRS gave copies to their members as a membership benefit and had no real interest in developing the journal. By 2001, the Board of Portland Press had realized that *Clinical Science* could be a growth area and set in train negotiations that were to result in a Portland Press buy-out of the title from the MRS in 2002 for the very reasonable sum of £20,000. In practice, the cost to the Society and Portland Press was negligible as the fee Portland Press had received for the publication of the proceedings of the 'Endothelin-7' conference as a special supplement had almost covered the cost of buying the journal.

By July 1998, the journal was fully online and in 2004 the US Editorial Office at the Burnham Institute was extended to include *Clinical Science*. On taking over the journal, Portland Press proceeded to market it successfully and has tripled its turnover and increased its Impact Factor to 4.613 by 2011. These achievements



Key figures in the development of *Clinical Science*: (left to right): Anna Dominiczak, (Editor-in-Chief, 2004–2007), Clinton Webb (Editor-in-Chief, 2008–2011) and Rhian Touyz (Reviews Editor, 2005–2011).

are due in large part to the efforts of Anna Dominiczak (University of Glasgow; Editor-in-Chief 2004–2007), R. Clinton Webb (Georgia Health Sciences University; Editor-in-Chief 2008–2011) and Rhian Touyz (University of Glasgow; Reviews Editor 2005–2011), as well as the hard work by Portland Press staff.

Biotechnology and Applied Biochemistry

The Biochemical Society took over the publication of *Biotechnology and Applied Biochemistry* (*BAB*) on behalf of the IUBMB from February 1993. The journal had never been particularly successful and Portland Press debated as to whether its publication made commercial sense. It was agreed that, while it might not be profitable, its contribution to overheads was such that its continuation was worthwhile.

BAB was re-launched in 2003 with a new Editor-in-Chief, Parviz Shamlou (University College, London). Significant promotional activities were undertaken and the publication frequency increased resulting in an 88% increase in submissions to the journal in 2003 (230 papers compared with 122 in 2002). This increase was in no small part due to Parviz Shamlou's efforts in encouraging his colleagues and contacts at conferences to submit papers. *BAB* returned a small operating surplus in 2004.

However, in 2010, the IUBMB put the journal out to tender and Portland Press decided not to bid to renew the contract. The journal has now moved to Wiley-Blackwell who took over its publication from January 2011.

Biology of the Cell

In 2004 Portland Press won the contract to publish *Biology of the Cell* on behalf of the Société Française des Microscopies and the Société de Biologie Cellulaire de France. At the time that Portland Press began publishing *Biology of the Cell*, the journal had an Impact Factor of 2.23; this had increased to 4.898 by June 2011. During its time within the Portland Press portfolio the journal was rebranded and developed, increasing its international recognition. In 2011, the owners took the journal out to tender and from January 2012 the publisher will be Wiley-Blackwell.

Essays in Biochemistry

Essays in Biochemistry had started in 1965 under the editorial guidance of Peter Campbell who continued as Editor until 1985 when Keith Tipton of Trinity College Dublin took over. Academic Press had published *Essays* on behalf of the Society until 1991 when its publication was taken in-house by Portland Press. The following succeeded Keith Tipton from 1995 onwards: David Apps, Steve Higgins, Tom Cotter and since 2005, Melanie Welham.

Essays provides undergraduates and first-year postgraduates with a single source of information on the latest research in rapidly moving areas of biochemistry and molecular biology. Each chapter is written by an expert on the area of research and is a self-contained summary of the state-of-the-art of that topic. To date, 51 volumes of *Essays* have been produced and the series continues to sell well.

Other titles

Throughout its existence, Portland Press has sought new publishing ventures, either by starting new publications or seeking to publish existing journals on behalf of other organizations. Notable successes have included acquisition of the *Practical Methods in Electron Microscopy* series from Elsevier in 1994 and the launch in 2006 of an online reference work for students and researchers, *Cell Signalling Biology* written by Sir Michael Berridge. In 2010, *Cell Signalling Biology* was made freely available with sponsorship by the *Biochemical Journal*.

Bioscience Reports a journal owned by the Biochemical Society but published by Springer, was brought back in-house from January 2009. The current Editor-in-Chief is Wanjin Hong (A*STAR, Singapore).

In 2010 Portland Press took over the publication of *Cell Biology International* and launched *Cell Biology International Reports* on behalf of the International Federation for Cell Biology.

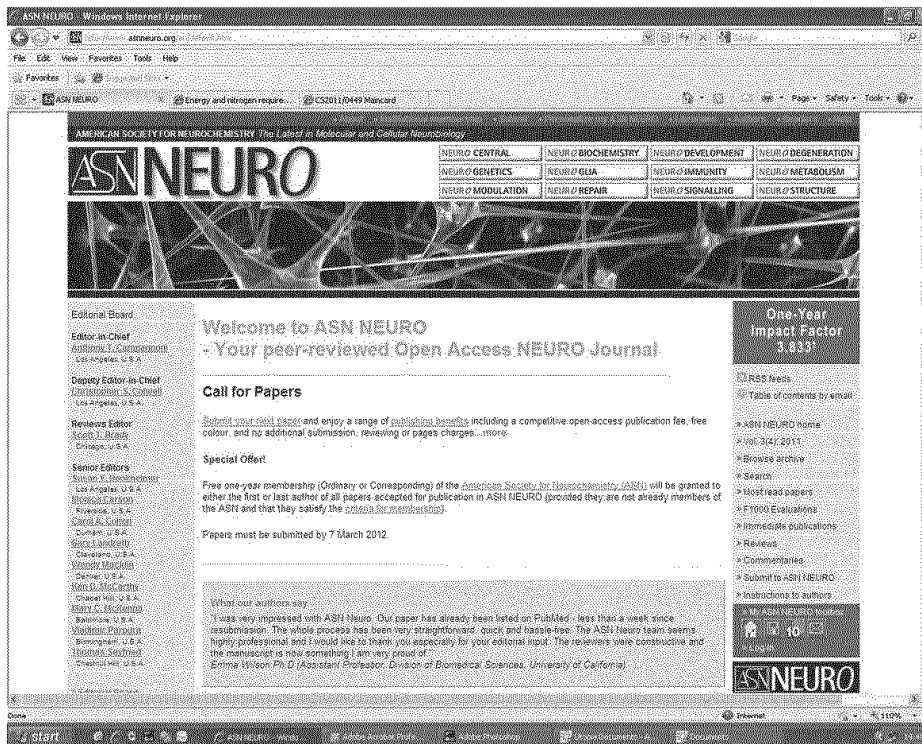
ASN NEURO was launched in March 2009 as a Gold Open Access online-only journal. Portland Press had been successful in its bid to publish this new journal on behalf of the American Society for Neurochemistry after a tender process in March 2008. In November 2010 *ASN NEURO* was accepted for indexing in MEDLINE®, and in June 2011 received a one-year Impact Factor of 3.833.

Some ventures have not been so successful; in 1997 a new journal, *Genes and Function*, was published by Portland Press and Blackwell Science Publishers as a co-operative venture between the Society, the Genetical Society and the Physiological Society. The journal had problems from the start as Blackwells simultaneously started a similar journal with the Genetics Society of Japan. The Editorial Board of the journal seemed reluctant to publish in it, further weakening its standing. Eventually it was decided to abandon the venture with a possible relaunch in 1999, but this did not happen.

The Biochemist

In 1985, the predecessor of *The Biochemist* was the *Biochemical Society Bulletin* (a publication that had metamorphosed from the old *Agenda Papers*) and as both names suggest, the *Bulletin* had been very much a vehicle for informing members about forthcoming meetings – and that was about it. It came out four times a year, to coincide with Society main meetings, and it is fair to say that its design values were not the highest. There was no thought given to securing any advertising revenue.

Robert Dale had joined the Society in 1985 as Assistant Meetings Officer to the redoubtable Doris Herriott. One of his responsibilities was to take over editing the *Bulletin*. Soon after this transfer of responsibilities, Glyn Jones, the Executive Secretary, set up a staff working party consisting of Robert, Dianne Stilwell, then Research and Information Officer, and Alan Beedle, the Editorial Manager, to look at ways in which the publication could be improved. Their recommendations (a new title, colour printing,



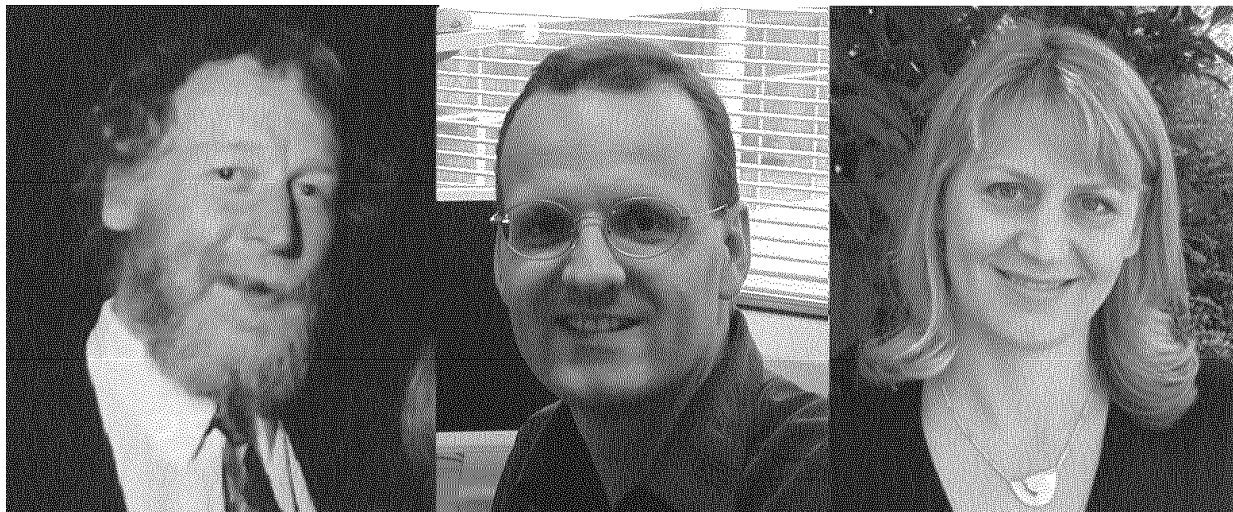
ASN NEURO became the first Gold Open Access online-only journal to be published by Portland Press when it was launched in March 2009.

a redesign and far more feature articles) were not at first approved by the Society's Executive Committee, who felt that the *Bulletin* did its job and they were reluctant to authorize the additional spending needed for the overhaul. Undeterred, the staff, especially Robert, proceeded to solicit advertisers, and, by 1987 the *Bulletin* was replaced with *The Biochemist*, a magazine with a colour cover. The changes were paid for by advertizing revenue and there was no additional cost to the Society. The members liked the transformation and the Executive Committee gave it its blessing. Publication moved to the current six issues per year.

Editorial responsibility for *The Biochemist* was split between the Society Honorary Secretary, then Roy Burdon, and the Meetings Secretary, Alan Malcolm. By 1989, Harry Bradford from Imperial College London (also the Society Archivist) had become Features Editor and in 1992 John Lagnado became Book Reviews Editor. As the magazine moved away from its origins as a meetings-focused publication, it was realized that to keep the content fresh and interesting, a dedicated Advisory Board was needed. Harry became General Editor of *The Biochemist* and chaired the Advisory Board meetings; he held this position until 1994 when Frank Burnet (University of the West of England) succeeded him.

One of the features of Frank's editorship was the Christmas-themed issues. Following the December 1991 issue where Dianne Stilwell had co-ordinated a series of articles relating to the biochemistry of Christmas, in which Richard Bruckdorfer provided his memorable piece on the biochemical secrets of the Christmas pudding, including the hitherto unknown organelle the 'pudosome', other Christmas issues dealt with the biochemistry of the seven deadly sins (1995), the biochemistry of fairy stories (1996), and the biochemistry of a Victorian Christmas (1998).

Christmas was not the only time the magazine took a more light-hearted approach to its subjects. A series of 'acrimonious debates' between Frank Burnet and David Weitzmann on 'course accreditation' held by the Society's Education Group and Professional and Education Committee at the December meeting in 1991 was heralded by a featured 'dialogue' in *The Biochemist*, illustrated with cartoons of the



Three of the General Editors of *The Biochemist*: (left to right) Frank Burnet, Richard Reece and Freddie Theodoulou.

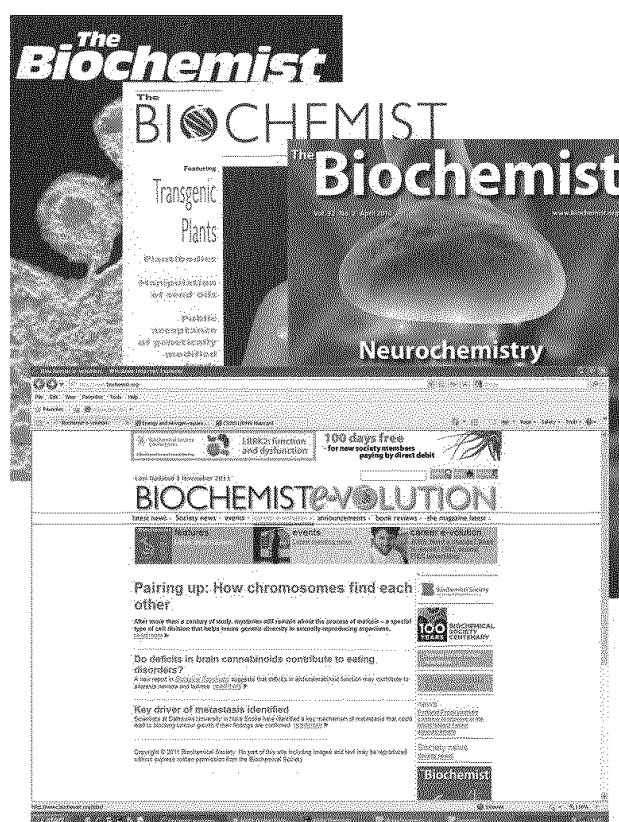
two protagonists. Other issues contained features discussing aspects of other topics close to biochemists' hearts – 'chocolate', 'cheese' and 'the movies' were three such issues.

As well as features, *The Biochemist* retained its primary role of informing the membership about Society activities. There had always been a letters page, but the information flow became a little less one-way when, in 1995, the Meetings Office (which still retained responsibility for production) started to accept email correspondence. By 2000, production and editorial responsibilities had passed to Portland Press.

The Biochemist got its first full-time editor in 2000 when Gary Burd became Executive Editor. Richard Reece (University of Manchester) took over as General Editor from the first issue in 2002 and continued until the last issue of 2009.

The year 2002 also saw the launch of the magazine's online counterpart, *Biochemist e-evolution* (www.biochemist.org). As well as the content of the magazine, the site carries a daily news story and announcements of jobs, events and more. The idea was to allow greater interaction with members and the promotion of 'hot' *Biochemical Journal* papers and other Society initiatives. *E-evolution* was 'highly commended' in the publishing innovation category of the ALPSP/Charlesworth Awards in 2003.

Until this time, advertizing revenue had seen a steady increase. However, from around 2002 revenue started to fall off. Different advertizing agencies were tried but nothing seemed to bring a revival. The overall economic



Since its launch, *The Biochemist* magazine has undergone several redesigns. Its online counterpart *Biochemist e-evolution* was launched in 2002.

conditions no doubt played a part, but the changing profile of the Society's membership, with greater emphasis on students and young members (who do not control purchasing budgets) may also have been a contributing factor.

In 2003, Gary Burd was succeeded as Executive Editor by Mark Burgess. Mark oversaw the first redesign of the magazine for nearly a decade in 2007; this was largely the work of Peter Jones, who was Manager of Portland Press' design Studio at the time. After Richard Reece's term of office ended in 2009, Freddie Theodoulou of Rothamsted Experimental Station took up the reins as General Editor at the start of 2010.

The future

The year 2010 saw significant re-organization at Portland Press. John Coggins replaced John Clark as Chair of the Portland Press Board, and Sue Thorn and John Cox (both of whom have a lifetime's experience in scientific publishing) were appointed Non-Executive Directors. Rhonda Oliver left the company to take up a position as Managing Director of the RCN Publishing Company, and the post of Group Head of Publishing for the Biochemical Society and Managing Director of Portland Press was filled by Caroline Black in September 2011.

One of the highlights of 2011 was the opening in May of an Editorial Office for the *Biochemical Journal* at the prestigious Institute for Biophysics at the Chinese Academy of Sciences, in Beijing. China is seen as a burgeoning market and it was felt that an Editorial Office under the auspices of Tao Xu, the Journal's Vice-Chair, Asia-Pacific, would provide a real presence for the Journal which would help attract high-quality Chinese papers. The office was launched with a mini-symposium at the Institute for Biophysics followed by a reception for VIP guests.



Peter Shepherd (Chair of the Editorial Board of the *Biochemical Journal*) presents Tao Xu (the Journal's Vice-Chair, Asia–Pacific) with a plaque to commemorate the opening of the China Editorial Office in May 2011.

Portland Press staff

The achievements of Portland Press would not have been possible without the dedication and expertise of its staff in the Editorial, IT and Marketing Departments and in Portland Customer Services, many of whom are long-serving. Members of the Editorial Boards, authors, clients and the Portland Press Board have spoken unfailingly about the professionalism and competence of the staff; “The most professional group of people I’ve worked with”, as one ex-Chair of the *Biochemical Journal* Editorial Board put it.



Portland Press staff based in London (top) and Colchester (bottom) in November 2011.

Appendix

What were the most important papers published in the *Biochemical Journal* between 1986 and 2011?

Ian Dransfield

Identification of the most influential papers published in the *Biochemical Journal* in the last 25 years would appear to be a relatively straightforward task. However, changing trends in publication during this time frame make it more difficult to compare papers published over the years. In addition, the influence of biochemistry as a discipline has altered as the emphasis of worldwide research effort has shifted towards multi-disciplinary approaches to tackling biological problems.

It is clear that the science of biochemistry was dominant in terms of cutting-edge research that was being published at the beginning of the 1970s. In the last 25 years, there has been increasing emphasis on the biochemistry underlying cellular and whole animal physiology and also biomedical research. In addition, there has been a proliferation of the number of titles and articles that are published. When Eugene Garfield wrote his seminal analysis of the criteria for measurement of the impact of scientific publishing in 1972 [1] the *Biochemical Journal* was ranked 74th overall with an Impact Factor (IF) of 3.060. In terms of the frequency of citations, the *Biochemical Journal* was ranked as the 10th most cited journal. The journal with the highest IF in Garfield's analysis was *Advances in Protein Chemistry* (IF 23.0) and the journal ranking 152nd had an IF of 1.948. The range of IFs is now much greater and in the 2010 Journal Citation Reports (JCR), the journal with the highest impact is *CA-A Cancer Journal for Clinicians* (IF 94.333), while the journal ranking 152nd has an IF of 9.743. According to the 2010 ISI database, the *Biochemical Journal* is now ranked 493rd overall, with an IF of 5.016. It remains a highly cited journal, now ranking 81st in the list of journals with the highest number of total citations.

In addition to IF, there are a number of other metrics that may shed some light on the papers that have been published in the *Biochemical Journal*. The Cited Half-Life (which reveals the median age of articles that were cited in a particular JCR year) for the *Biochemical Journal* is > 10. Thus, papers published between 2000 and 2010 account for 50% of total citations to the *Biochemical Journal* in 2010, perhaps providing an indication of the cited longevity of published papers when compared with other journals with a similar IF like *Journal of Biological Chemistry* (Cited Half-Life 8.8), *British Journal of Pharmacology* (Cited Half-Life 7.8) and *Journal of Cell Science* (Cited Half-Life 6.9). Another useful comparator is the Immediacy Index, which provides an indication of how quickly published articles are cited and thus the reporting of "cutting-edge" science. Again, the *Biochemical Journal* compares well with competitor journals, having an Immediacy Index of 0.842.

There have been some papers published in the *Biochemical Journal* that have received enormous numbers of citations. At the top of the list are methodological papers. Indeed, the top 10 cited papers all relate to methods that are widely used in research. For example, Burton's 1956 paper entitled 'A study of the conditions and mechanism of the diphenylamine reaction for the colorimetric estimation of deoxyribonucleic acid' [2] which has 16,990 citations. Similarly, Greenwood and Hunter's paper from 1963 on 'Preparation of ¹³¹I-labelled human growth hormone of high specific radioactivity' [3] has received more than 10,181 citations. There are also highly cited papers published in the Journal that document major advances in our understanding of biological processes. For example Berridge's 1983 paper relating to signal transduction mechanisms, 'Changes in levels of inositol phosphates after agonist-dependent hydrolysis of membrane phosphoinositides' [4] (2,192 citations) and Sanger's 1949 paper on the 'free amino groups of insulin' [5] (2,180 citations).

The publication of review articles in the *Biochemical Journal* has a key role in the dissemination of scientific knowledge. The top ten reviews from the last 25 years have been cited more than 13,500 times between them, representing an average of >1300 cites per article. Some of these articles have been published relatively recently, and therefore have very high average citations per year. For example, ‘Caspases: the executioners of apoptosis’ [6] by Gerald Cohen has been cited more than 180 times per year. Similarly Knowle’s review on ‘Nitric oxide synthases: structure, function and inhibition’ [7] has been cited in the region of 130 times per year since publication. Although the designation of review article should be relatively straightforward, two seminal articles from the group of Philip Cohen which provide a comprehensive analysis of inhibitors of signalling intermediates have also been heavily cited. These papers by Davies et al. ‘Specificity and mechanism of action of some commonly used protein kinase inhibitors’ [8] (2,704 citations) and Bain et al. ‘The specificities of protein kinase inhibitors: an update’ [9] (745 citations) stand out from other primary research articles. In a similar manner, Henrissat’s articles on the use of amino-acid sequence similarities to classify glycosyl hydrolases [10,11] with 1,680 and 1,335 citations respectively also rank alongside the best reviews in terms of impact.

Looking at the five most highly cited *Biochemical Journal* papers (not including review articles) for each year reveals that papers relating to signal transduction predominate. As the absolute numbers of citations will tend to increase with age of publication, comparison between years is somewhat difficult as illustrated in Figure A1.

However, there have been some notable papers in terms of their impact upon their field. In particular, the paper from Bialojan and Takai in 1988 on the mechanism and action of okadaic acid [12] which has over 1300 citations. Similarly, the description of the mechanism of action of wortmannin and its effect on neutrophil responses by Arcaro and Wymann [13] and the impact of wortmannin on mitogen-activated protein kinase pathway in regulation of insulin growth factor-1 signalling by Cross et al. [14] have also been very influential. Other papers reporting the mechanism of action of inhibitors of signalling pathway intermediates include Merritt’s paper on Ca²⁺ channel inhibition by SKF96356 [15] and a paper describing the lack of effect of pertussis toxin on Ca²⁺ mobilization and phosphoinositide signalling following muscarinic receptor stimulation by Masters et al. [16].

A significant number of important papers published in the *Biochemical Journal* report novel mechanisms of action of signalling intermediates. Irvine and Moor’s report in 1986 [17] relating to the

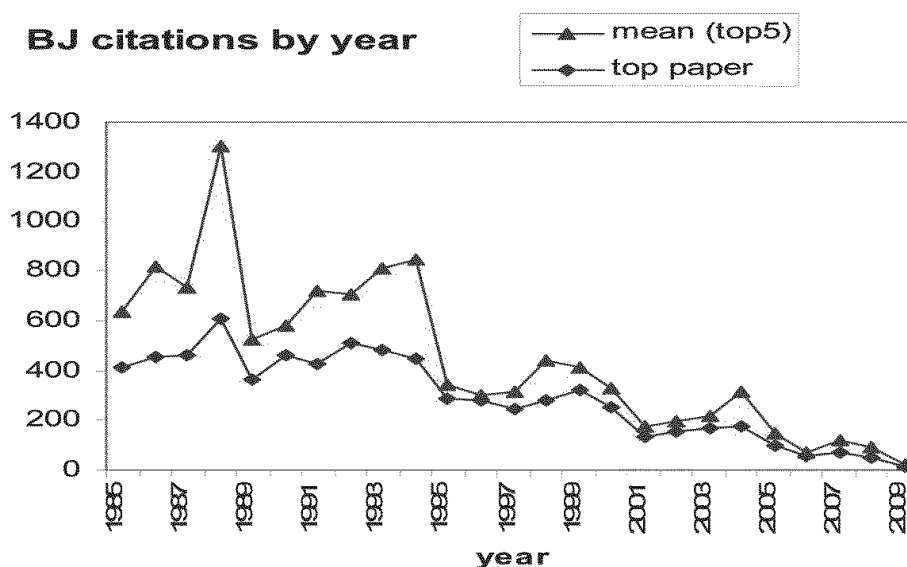


Figure A1. Citation trends for *Biochemical Journal* articles over the period 1995–2009.

requirement for extracellular calcium for the activation of sea-urchin eggs following micro-injection of 1,3,4,5-tetrakisphosphate is a good example. Indeed, a series of papers from Robin Irvine relating to the metabolism of inositol lipids, in particular inositol 1,3,4,5-tetrakisphosphate, in the mid-1980s represented key advances in our understanding of signal transduction processes in mammalian cells [18-20]. New mechanisms relating to regulation of signal transduction include the report from Young et al. [21] documenting the role of increased proteolytic degradation of protein kinase C as a mechanism for down-regulation. In addition, the identification of key new pathways such as the mammalian target of rapamycin being a substrate for protein kinase B (by Navé et al.) have had a major impact on contemporary research [22].

In addition to signal transduction processes, molecular cloning and sequence analysis has allowed identification of novel proteins or new protein family members leading to papers that are often highly cited as a result, for example the report of Meyer et al. on a new class of glutathione transferases [23] and the cloning of human glutathione transferase θ in 1994 by Pemble et al. [24]. These approaches can also reveal the relationships of protein families to other molecules, as in the paper by Price et al. reporting four new monocarboxylate transporter homologues [25]. The molecular cloning of human stromelysin and collagenase [26] and the characterization of the role of stromelysin in the activation of pro-collagenase [27] represent landmark papers in the study of protease function. The identification of the different extracellular matrix substrates for the matrix metalloproteases was also reported [28], as was the important observation that transforming growth factor β was released following matrix metalloprotease-mediated degradation of decorin [29]. Examination of functional aspects of proteins containing specific sequence motifs can also provide important insight, for example Dowler's paper on plekstrin-homology-domain-containing proteins and their binding to phosphoinositides [30].

Novel mechanisms associated with programmed cell death and their contribution to disease processes have been the focus of some very exciting papers published in the *Biochemical Journal*. For example, Gerald Cohen's report of apoptosis in the absence of intranucleosomal DNA fragmentation by endonucleases [31] and the role of mitochondrial permeability transition to lethal injury by Nieminen et al. [32]. Detailed investigation of the role of thiol groups present on the adenine nucleotide translocase by McStay et al. added to our understanding of the mechanism of the mitochondrial permeability transition pore [33]. Papers defining the role of caspases and calpains in neuronal apoptosis [34] and the influence of the MAPK pathway in controlling the cellular response to stress [35] demonstrated how analyses of signalling and proteolytic pathways can have a significant impact on our understanding of cellular process. There have also been important contributions detailing the molecular mechanism of cytochrome *c* release from mitochondria during apoptosis, e.g. Antonsson et al.'s 2000 paper [36] and the description of the mechanism of action of Z-VAD.FMK in blockade of CPP32 degradation by Slee et al. [37].

The production and release of hydroxyl radicals has been examined in a number of papers. In 1989, McCall et al. reported the mechanisms of production of nitric oxide from neutrophils and the potential for interaction with superoxide anions [38]. A few years later a report of hydroxyl radical generation when nitric oxide and superoxide were released simultaneously was published [39], as was a report identifying a role for the GTPase Rac1 in reactive oxygen species generation [40]. The mechanisms by which mitochondria generate and release superoxide anions was subsequently defined by Han et al. [41], and Kushnareva et al. [42] elucidated the role of complex I in reactive oxygen species generation. Control of complex I S-nitrosylation was also the subject of a paper by Burwell et al. [43] that is likely to represent an important advance in our understanding of mitochondrial function and ATP generation. The impact of free radicals on cellular function, e.g. fibroblast proliferation [44], was of key interest, as was their contribution to development of diseases such as atherosclerosis [45]. The mechanisms of development of disease have also been the subject of key papers published in the *Biochemical Journal*. In 1988, Hunt and colleagues published a manuscript describing the role of glucose autoxidation in protein modifications

that contribute to diabetes mellitus and aging [46]. In the early 1990s, there was considerable interest in the cyclo-oxygenase enzymes that regulate prostaglandin and thromboxane generation. The structure of the cyclo-oxygenase gene was published in the *Biochemical Journal* in 1994 [47] and the following year, Gierse et al. published a study of the constitutive and inducible forms of the enzyme [48].

Predicting future classics from more recent papers is more difficult. The paper by Garcia-Martinez and Alessi relating to the mechanism of action of mTOR complex 2 [49], the report by the same group of a specific inhibitor of mTOR signalling [50] and Barnett and colleagues' paper on Akt isoenzyme-specific inhibitors [51] are likely to be influential papers in the field of signal transduction. Papers relating to signalling mechanisms that will undoubtedly be influential in the future include that by Sanders et al. defining the mechanisms of AMP activation of the AMP-activated protein kinase cascade [52] and Fredé's report defining the role of HIF-1 activation by lipopolysaccharide in human monocytes [53]. The mechanisms relating to disease pathogenesis remain an important focus of research, for example characterization of kinase activity of LRRK2 mutants found in Parkinson's disease [54] and the impact of mutations in WNK1 and WNK4 in Gordon's hypertension syndrome as described by Vitari et al. [55]. New reagents for the study of important cellular processes are also likely to be the subject of *Biochemical Journal* papers that will be important in the future; for example Khan's analysis of the specificity of histone deacetylase inhibitors [56]. Furthermore, technological advances, such as the description of far-red fluorescent tags for use in imaging by Shcherbo et al. [57], may also become future citation classics.

In summary, the *Biochemical Journal* has a long history in the dissemination of key advances in the life sciences and continues to be an important conduit for science communication. Papers elucidating the mechanisms of cellular and molecular biological mechanisms will continue to represent a major focus for the future.

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Chapter 6

One hundred down and more to go: reflections on the present and future*

Colin Kleanthous

As is abundantly clear, the Biochemical Society has come a long way in the 100 years since 1911, when one of the drivers for its formation was to bring together researchers working on the “animal and vegetable sides” of the emerging subject of physiological chemistry. Throughout this time, the Society has (with the exception of the focus on meat and veg) stuck to the defining principles laid down by its forebears. With over 5000 members, a third of whom are distributed worldwide and including undergraduate and postgraduate students, industrial scientists, academics and retired members, the primary aim of the modern-day Biochemical Society is to “advance molecular bioscience” which, not entirely coincidentally, is its current strapline.

The current activities of the Society are well described in the preceding pages, but 2011 has been a special year, marking as it does the Centenary of the Society. In celebration of this milestone, the Society organized a veritable cornucopia of exciting activities, events and meetings scheduled throughout the year and culminating with our Centenary Awards meeting at the Royal Society in December. Some of the highlights of these events have been:

- An exhibition, *Women and the Beginnings of Biochemistry*, honouring the achievements of early women biochemists in the UK. In addition to being the Society’s Centenary, 2011 is also the 150th anniversary of the birth of Frederick Gowland Hopkins, who won the 1929 Nobel Prize for his work on vitamins, was the first Chairman of the Biochemical Society (1913–1914) and also a powerful advocate of women scientists in the early 20th Century. The exhibition will be installed initially at the Society’s headquarters in Charles Darwin House, but later will be available to be moved around the country for future Society events.
- Since 2009, the Society has enjoyed a close collaboration with the Islington Community Theatre, with whom we have explored the societal issues surrounding hot topics in science through the medium of theatre. As part of this ongoing collaboration, the Society has commissioned and funded the production of a new short play written by a young playwright, Joy Wilkinson, which explores the potential impact of the use of stem cells in medicine. The play, *Little Miracles*, performed by professional actors, has appeared in universities and schools around the country as well as at Charles Darwin House.
- Another Centenary event that falls under our outreach programme is ‘High-Sci’, a series of lectures given by prominent scientists to A-level students (see Chapter 4; page 65). The idea of these lay-lectures is to enthuse and inspire the bioscientists of the future and of course to indulge in a bit of publicity for the best science subject of all to study at university!
- As part of our Centenary celebrations, the Society has recorded interviews with several of our Honorary Members, many of whom are Fellows of the Royal Society and Nobel Prize

*This article is based, in part, on the author’s preview of the Centenary Year that first appeared in *The Biochemist* (2010) **32**(6), 46–49.

winners. The ‘Eureka Moments’ interviews record the recollections of Sir Tim Hunt, Sir Michael Berridge, Sir Alec Jeffreys, Sir Greg Winter and Sir Tom Blundell of the key moments in their scientific careers, the highs as well as the lows. These have been made available for download as 5–10-minute podcasts from the Society’s website (<http://www.biochemistry.org/Centenary/EurekaMoments>) and they will remain available after the Centenary year. Apart from their value as an important historical and educational archive, the podcasts make for fantastic viewing.

- As noted in this volume, a major activity of the Society is the organization of scientific conferences and these have continued apace throughout the year, many in collaboration with sister societies. Two meetings have been organized specifically with the Centenary in mind. The first was a Joint Sino-UK Conference in Shanghai on 6 and 7 May organized by the Biochemical Society and the Chinese Protein Society, which focused on structural biology and drug discovery and was also a satellite of the 3rd Asia Pacific Protein Association Conference. The second meeting which will close our Centenary celebrations is to be held on 15 and 16 December 2011 at the Royal Society in London. This meeting will feature a key-note speech from Nobel Laureate, Tim Hunt, and lectures from all our award winners in 2011 as well as contributions from the winners of poster-prizes at the Society’s Focused Meetings and Young Life Scientists Symposia held in 2011.

So what of the future? As the dust from the Government’s Comprehensive Spending Review settles in 2011, it is already clear that budgets in universities and research institutes are going to be squeezed in ways that hark back to the darkest days of the 1980s. The following quotation captures my own personal view of the approaches being adopted by the coalition Government: “Such austere and rigid economy is altogether incompatible with first-class creative work”. These



Images from 1911, the year that the Society was founded: (clockwise from the top) Nanjing Road (Shanghai) during Xinhai Revolution; a British suffragette selling newspapers; Roald Amundsen at the South Pole.

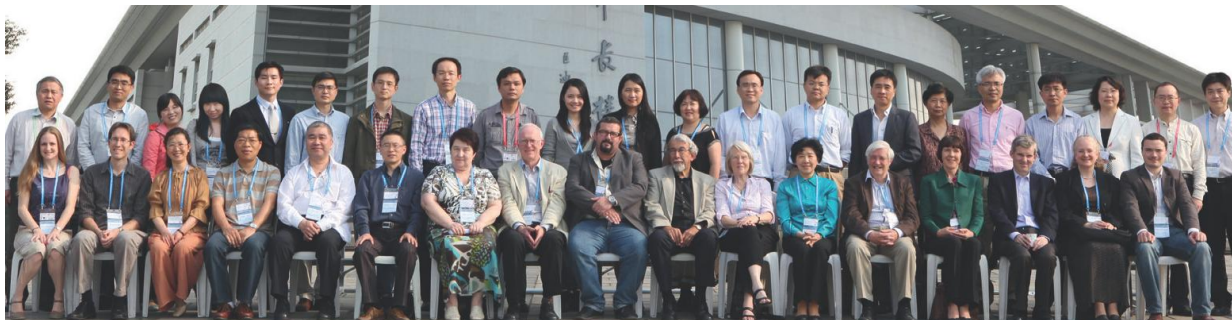


The cast of *Little Miracles*, a play about stem cell research.

are the words, from December 1911, of Benjamin Moore, the first Professor of Biochemistry in the UK (at the University of Liverpool) and the founder of the *Biochemical Journal*. Scientific austerity is, it seems, cyclical if not also cynical. But how should we respond to such cycles in order to better position the biosciences? Certainly, making our voices heard by the Government of the day is essential. Our physics and chemistry colleagues learnt this lesson a long time ago as each discipline speaks with one representative voice through the Institute of Physics and the Royal Society of Chemistry, respectively. The biological sciences community by contrast speaks with over a hundred voices. In a bid to bring some coherence to the sector, the previous Chairman

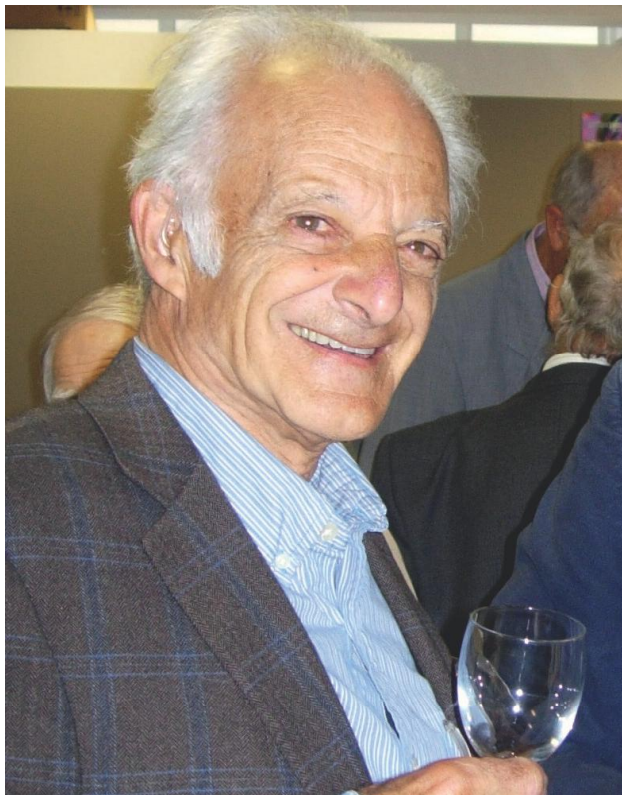


The Eureka Moments interviews. Michael Neuberger talks to Sir Greg Winter about his role as a pioneer of therapeutic antibodies.



Delegates and speakers at the Joint Sino-UK Protein Symposium held in Shanghai in 2011.

of the Society, Martin Humphries, along with the Presidents of the British Ecological Society and the Society for Experimental Biology, had the foresight in early 2009 to sign a Memorandum of Understanding that binds the societies to work together in areas of common interest. It soon became apparent that closer working between the three societies would be best achieved if they were co-located and this happened in late 2009 when the three societies jointly purchased 12 Roger Street in Central London, now re-christened Charles Darwin House. A fourth co-owner has since moved in, in the form of the Society of Biology, which was created by the merger of the Biosciences Federation and the Institute of Biology in 2009 in order to become the unified voice that biosciences have lacked in the past. These four societies are working more closely than ever on a variety of fronts, including the organization of meetings, science policy and education, and on capitalizing on the economies of scale that co-location brings. Charles Darwin House is rapidly



John Lagnado, the Society's Honorary Archivist and editor of this book, at the Centenary Emeritus Members lunch at Charles Darwin House in 2011.

becoming a hub for the UK bioscience sector and the Biochemical Society has been instrumental in bringing this about.

So let me ask the question again, what of the future? Clearly, the landscape of learned life science societies is changing, and not just in response to the tough financial climate we find ourselves in, but also because the boundaries of our discipline are becoming increasingly blurred with every new advance in biology. For instance, where does biochemistry end and cell biology begin? Most bioscience researchers would say this is a non-sensical question since biology is a vast continuum ranging from the macro to the nano. Yet this continuum continues to be represented by a plethora of learned life science societies. The development of Charles Darwin House as a bioscience hub is, we hope, the spur the sector needs to take a long hard look at how we as bioscience researchers are represented. Biological research is key to the UK economy and to the training and education of our future biologists, as well as for sound and robust policy advice to

Government. With such a vital role maybe the question we should be asking ourselves is whether the biological sciences community is best served by being represented by dozens of societies? The Trustees of the Biochemical Society believe that a drive for greater coherence across the sector over the next few years is not only desirable but also essential if we, collectively, are to ensure sensible decisions are made by central Government on training, education and research funding. That is not to say we do not want and strive for a strong Biochemical Society. The vision of the Society, however, must transcend the traditional boundaries of the life sciences to bring us ever closer to other societies and the ultimate goal of speaking with a single, unified voice. It is for this reason the Biochemical Society will continue to be a strong advocate of the Society of Biology while not losing sight of its primary responsibility to our own membership.

As described in the preceding pages, scientific publishing has and will continue to be a major activity of the Society. It was a strong belief of those with the foresight to create the Biochemical Society that a learned society should publish leading, peer-reviewed research, and this remains the view of those now entrusted with navigating the Society 100 years on. The *Biochemical Journal*, under the guidance of the current Chair of its Editorial Board, Peter Shepherd, goes from strength-to-strength as do many of the other journals, such as *Biochemical Society Transactions* and *Clinical Science*, published by Portland Press Limited. The success of the Biochemical Society's publishing activities is paramount as these form the financial bedrock upon which the Society delivers much of its portfolio of charitable activities across the life sciences. Scientific publishing has undergone profound change in the last 20 years. In response to these changes the Society along with the Board of Portland Press Limited recently undertook a year-long review of publishing strategy, the first in many years. We are now implementing the recommendations of this review, which are aimed at strengthening our most cherished publications while capitalizing on new initiatives and opportunities.

Last, but by no means least, I would like to highlight the contribution of the staff at the Biochemical Society to the success of this venerable institution. Trustees of the Society such as myself are merely well-intentioned amateurs when it comes to the day-to-day running a learned life science society. The real work is done by the highly professional work force of the Biochemical Society who (among other things) make sure that: high quality research papers are published on time and with the minimum of fuss; conferences organized around the latest advances in our subject run smoothly and within budget; online educational materials and resources are available for schools and universities across the UK and that national events which reach out to the lay public are fostered and supported; travel grants, summer bursaries, prizes and awards are administered and distributed; the membership is kept informed of the Society's activities and are alerted to government legislation that affects the life sciences through a variety of media (*The Biochemist*,



The Biochemical Society's Centenary Medal. Nahum Sonenberg who was awarded the medal in 2011 was the first recipient of the award.

email, podcasts, the Society's website, Twitter, blogs); and, of course, that the events organized around the Centenary go ahead as planned and are well-publicized.

I am immensely proud and honoured to be Chair of the Society during its Centenary year. At 100 years of age, the Society is in rude health. Our members have much to be proud of and so 2011 has been as much about blowing out the 100 birthday cake candles as it will be about blowing our trumpet about the collective accomplishments of the Society. But the coming years will be a pivotal time in the Society's history. Molecular bioscience has never had a higher profile or been so important to the health and wealth of the nation. The Biochemical Society has been central to the recent changes in the sector that have helped to underpin public understanding of this fact. We will all be working to build on this foundation to make the next century even more successful.

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