

The Royal Society of London

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General

The Royal Society is the world's oldest scientific academy in continuous existence, having been at the forefront of enquiry and discovery since its foundation in 1660. The backbone of the Society is its Fellowship of the most eminent scientists of the day elected by peer review for life and entitled to use FRS after their name. There are currently more than 65 Nobel Laureates amongst the Society's approximately 1300 Fellows and Foreign Members. Throughout its history, the Society has promoted excellence in science through its Fellowship, which has included Isaac Newton, Charles Darwin, Ernest Rutherford, Albert Einstein, Dorothy Hodgkin, Francis Crick, James Watson and Stephen Hawking.

The Society is independent of government, as it has been throughout its existence, by virtue of its Royal Charters. In 1663, 'The Royal Society of London for Improving Natural Knowledge' was granted its Arms and adopted the motto *Nullius in verba*, an expression of its enduring commitment to empirical evidence as the basis of knowledge about the natural world. A Council of 21 Fellows, headed by the President, Lord May of Oxford OM AC Kt, and four Officers who are also Vice-Presidents – Treasurer, Physical Secretary, Biological Secretary and Foreign Secretary, governs the Society. The Executive Secretary, Stephen Cox CVO, heads the Society's permanent staff.

Scholarship has always been at the heart of the Society's activities as a learned body. It publishes five internationally respected peer-reviewed journals, including *Philosophical Transactions of the Royal Society*, the world's oldest scientific title, which first appeared in 1665. Since 1731, the Society has rewarded outstanding achievement through its medals and prizes and now makes 17 awards each year. The Society also hosts conferences, lectures and discussion meetings for a wide variety of audiences and houses one of the world's most important collections of 17th and 18th century scientific journals and books in its library.

As a funding agency, the Society supports more than 460 post-doctoral fellowships and 17 professorships. It also provides grants for more than 3000 scientists from the UK and abroad to undertake research and participate in visits, projects and conferences. These are complemented by the Society's science policy and communication activities.

As the UK's independent national academy, the Society represents the British scientific community within Britain and in relations with individuals and groups of scientists throughout the world. The Society is a registered charity and has an endowment from which it runs much of its work. It receives money each year as a parliamentary grant in aid to support specific activities

Objectives

The objectives of the Society are to:

- recognise excellence in science
- support leading-edge scientific research and its applications
- stimulate international interaction
- further the role of science, engineering and technology in society

- promote education in the sciences and actively engage the public in scientific issues
- provide independent authoritative advice on matters relating to science, engineering and technology
- encourage research into the history of science

A Brief History of the Royal Society

The origins of the Royal Society lie in a group of men who began meeting in the mid-1640s to discuss the new philosophy. Its official foundation date is 28 November 1660, when 12 of them met at Gresham College after a lecture by Christopher Wren, the Gresham Professor of Astronomy, and decided to found 'a College for the Promoting of Physico-Mathematicall Experimentall Learning'. This group included Wren himself, Robert Boyle, John Wilkins, Sir Robert Moray, and William, Viscount Brouncker.

The Society was to meet weekly to witness experiments and discuss what we would now call scientific topics. The first Curator of Experiments was Robert Hooke. It was Moray who first told the King, Charles II, of this venture and secured his approval and encouragement. The name the Royal Society first appears in print in 1661 and in the second Royal Charter of 1663, the Society is referred to as 'The Royal Society of London for Improving Natural Knowledge'.

The Society found accommodation at Gresham College and rapidly began to acquire a library (the first book was presented in 1661) and a repository or museum of specimens of scientific interest. After the Fire of 1666 it moved for some years to Arundel House, London home of the Duke of Norfolk, and it was not until 1710, under the Presidency of Isaac Newton, that the Society acquired its own home, two houses in Crane Court, off the Strand.

In 1662 the Society was permitted by Royal Charter to publish and the first two books it produced were John Evelyn's *Sylva* and Robert Hooke's *Micrographia*. In 1665, the first issue of *Philosophical Transactions* was edited by Henry Oldenburg, the Society's Secretary. The Society took over publication some years later and *Philosophical Transactions* is now the oldest scientific journal in continuous publication.

From the beginning, Fellows of the Society had to be elected, although the criteria for election were vague and the vast majority of the Fellowship were not what we would regard today as professional scientists. In 1731 a new rule established that each candidate for election had to be proposed in writing and this written certificate signed by those who supported his candidature. These certificates survive and give a glimpse of both the reasons why Fellows were elected and the contacts between Fellows.

The Society moved again in 1780 to premises at Somerset House provided by the Crown, an arrangement made by Sir Joseph Banks, who had become President in 1778 and was to remain so until his death in 1820. Banks was in favour of maintaining a mixture among the Fellowship of working scientists and wealthy amateurs who might become their patrons. This view grew less popular in the first half of the 19th century and in 1847 the Society decided that in future Fellows would be elected solely on the merit of their scientific work.

This new approach meant that the Society was no longer just a learned society but also de facto an academy of scientists. Parliament recognised this in 1849 by giving a grant to the Society of £1000 to assist scientists in their research and to buy equipment. Therefore a Parliamentary Grant-in-Aid system was established and a close relationship began while still allowing the Society to maintain its autonomy, essential for scientific research. In 1858 the Society moved once more, to Burlington

House in Piccadilly, with its staff of two.

Over the next century the work and staff of the Society grew rapidly. Therefore in 1967 the Society moved again to its present location in Carlton House Terrace, with a staff which has now grown to over 120, all working to promote innovative scientific research and to encourage public awareness and understanding of science.

Corporate Management

Executive Secretary

Mr Stephen Cox (stephen.cox@royalsoc.ac.uk)

Policy and strategy, resource management, Accounting Officer for public funds, spending reviews, overall management of the Society and its business.

Director Communications

Dr David Boak (david.boak@royalsoc.ac.uk)

Policy and strategy for the Society's communication activities including relation building, press and public relations, and science communication.

Director Finance and Operations

Mr Ian Cooper (ian.cooper@royalsoc.ac.uk)

Policy and strategy for resources; financial management; human resources, administrative services, information technology.

Director Science Policy

Dr Peter Collins (peter.collins@royalsoc.ac.uk)

Policy and strategy for Council and Fellowship matters, science advice and relations with other scientific academies; international policy.

Finances

The Parliamentary Grant-in-Aid represents that share of the Science Budget voted annually since 1849 by Parliament, which is administered by the Society. The Grant-in-Aid is negotiated annually through the Office of Science and Technology (Department of Trade and Industry) to be used by the Society for a variety of agreed purposes. Expenditure is subject to review and examination by the Government's Office of Science and Technology and the National Audit Office.

Arrangements for the administration of the principal activities and programmes supported by the Grant-in-Aid are made by Council.

Trust and Specific Purposes Funds are further analysed between Unrestricted, Restricted and Permanent Endowment Funds. The Parliamentary Grant-in-Aid is treated as a Restricted Fund. *Unrestricted Funds* are those over which Council has discretion for the use of both their capital (comprising the original gift) and income. *Restricted Funds* may be used only for purposes specified by the original donor or contributor of the funds, either under the terms of a Trust or as a specific condition attaching to a gift, etc.; both endowed funds and accumulated income may be spent. Restricted funds also include income

arising from Permanent Endowed Funds. *Permanent Endowed Funds* are funds given to the Society to be invested and the income only is available to be used by the Society. Such income will itself comprise an unrestricted or restricted fund according to the definitions above. *General Purposes Funds*, including the surplus of income over expenditure from Society publications and other trading activities, are used at the discretion of Council to provide for the running of the Society's operations, maintenance of its assets and the upkeep of its premises. *Trust & Funds Specific Purposes* are established by order of Council from bequests, gifts or other donations, the assets of which are held in trust, and are subject to restrictions as to the use of capital and/or income by their donors or from annual grants and contributions given to the Society. Their use is restricted to the purpose and conditions imposed by the donors or Council, normally for activities and programmes directly in support of science.

Activities

Grants

The Society administers a number of UK and International grant schemes.

UK Grants

The Society supports a number of research appointments at various levels:

- (i) Research Professorships;
- (ii) Research Merit Awards;
- (iii) Senior Research Fellowships (including one-year Leverhulme Trust appointments);
- (iv) Research Fellowships;
- (v) University Research Fellowships;
- (vi) Dorothy Hodgkin Fellowships;
- (vii) Industry Fellowships;

The Society has no research institutes of its own, and its appointments are held in universities or other institutions. The appointments are supported either from the Society's private funds or from its Parliamentary Grant-in-aid; in particular a number of research fellowships are funded by contributions from industry. Most appointments carry with them start-up or annual grants for research support, or both. Vacancies occur irregularly and are advertised on the Society's web site and in the scientific journals. Applications can only be made when vacancies are available and must be submitted electronically via the Society's electronic Grant Application and Processing (e-GAP) system.

Research Professorships

The Society supports 17 research professorships – five from private sources and 12 from the Parliamentary Grant-in-aid. Royal Society research professorships are awarded to those with not only a past record of excellence in research, but also an undoubted future potential for continuing long-term achievement in research of the highest quality. In making appointments Council seeks

evidence that the candidate is prevented from achieving full research capability by factors that would be removed if he or she were appointed to a Royal Society research professorship. The professorships enable those appointed to devote their time purely to research.

The privately funded professorships are the Foulerton Research Professorship (for original research in medicine or such other sciences as are connected with the discovery of the causes of disease and the relief of human suffering), the GlaxoSmithKline Research Professorship (for research into molecular aspects of medicine), the Edward Penley Abraham Research Professorship (especially, but not necessarily exclusively, in relation to research in physiology and pharmacology), the Napier Research Professorship (for research into the causes of cancer including any corresponding or allied disease and the means of its prevention, cure and alleviation), and the Wolfson Research Professorship (unrestricted but since its establishment in 1960 used to support research in physics or chemistry at their interfaces with biology).

These professorships are subject to the general regulations governing Royal Society Research Professorships, and the Grant-in-aid provides for the salaries of the professors and, in some cases, their immediate supporting staff and for an annual sum for research expenses for each professor.

In 1994 Council agreed that the Society would pay for the first 10-15 years of the appointment, following which financial responsibility would pass to the host university, which would continue to employ the professor until retirement.

Research Merit Awards

The Research Merit Awards aim to provide UK universities with the flexibility and financial capability to retain and attract to UK universities scientists and industrialists of outstanding ability and potential.

These awards, launched in 2001, are jointly funded by the Wolfson Foundation and the Office of Science and Technology and administered by the Royal Society. The awards offer salary enhancement and discretionary research expenses to individuals nominated by UK universities who are current employees or whom they wish to recruit from overseas or from industry. Nominees may be in any discipline within the remit of the Office of Science and Technology, and of any nationality. All nominees must have their basic salary wholly funded by the university and have a post guaranteed for five years. The institution must also meet the pension and National Insurance costs of any salary element of the award.

Around 40 awards are made a year. The initial funding available for the awards totals £20m over five years.

All nominations must be approved by the Vice Chancellor or Principal of the University concerned. Full details about the application procedure are available on the Society's website.

Senior Research Fellowships

There are currently seven one-year Leverhulme Trust Senior Research Fellowships (for those in regular academic employment in UK universities to have one year free from teaching and administrative duties).

Research Fellowships

The Society supports 18 individually named research fellowships, 17 funded from private sources and one from the Grant-in-aid. There are eight privately-funded research fellowships currently being supported: the Locke Research Fellowship (for research in experimental physiology and pharmacology); the Robert and Joan Case Research Fellowship (for brain research in its widest aspects); the Eliz Challenor Research Fellowship (for research in chemistry, physics, biology or medicine); the James Ellis Research Fellowship (funded by Government Communications Headquarters for research focused towards the practical implementation of Quantum Computation); the Rosenheim Research Fellowship (for research in biological chemistry); the Olga Kennard Research Fellowship (for research in crystallography or structural molecular biology, funded by the Board of the Cambridge Crystallographic Data Centre and designed to be particularly attractive to women) and the Rink Research Fellowship in clinical science (particularly degenerative disorders and diseases of later life, supported by the Rink Trust). In addition, appointments to the Royal Society-British Academy Postdoctoral Research Fellowship in the History of Science are made jointly by the Councils of the Royal Society and the British Academy. A further ten privately-funded research fellowships are currently in abeyance as the funds are insufficient to support full-time appointments.

University research Fellowships

These appointments are funded by the Grant-in-aid and are tenable for up to ten years in departments of science, mathematics, engineering and technology in universities in the UK. Those appointed are expected to be strong candidates for permanent posts in higher education when vacancies arise. Flexible terms and conditions of tenure permit up to two years of working abroad and fellowships may, subject to approval by the Society, be transferred between UK universities.

International Grants

The Society runs a number of international grant schemes, with the overall aim of raising our profile and ensuring that the UK engages with the best science around the world. A growing area is that of cooperation with UK public or private organisations, and partnering overseas academies to stimulate scientist-to-scientist networking through meetings on emerging areas of science. We make grants available to cover the marginal costs of international collaboration, operating in many cases in association with UK and overseas funding partners, often through memoranda of understanding.

Grants are usually made available for the purposes of visits by scientists to or from the UK, and fall into the general categories of short visits, joint projects, fellowships, international networking initiatives and themed international events.

Publications

The Society has published scientific journals since 1665, when the Philosophical Transactions were founded. The Society now publishes five refereed journals: Philosophical Transactions and

Proceedings, each in two series, one covering mathematics, the physical sciences and engineering, the other the biological sciences; and Notes and Records, a journal for the history of science. In addition, the Society publishes annually Biographical Memoirs, containing definitive accounts of the life and work of recently deceased Fellows and Foreign Members; the Year Book; a Review of the Year; and Excellence in Science, a newsletter on the Society and its activities. The Society also supports the British Association for the Advancement of Science in the publication of the quarterly magazine Science and Public Affairs. The Society publishes the reports of Study Groups and of some ad hoc groups, established to report on particular matters or to draw up submissions to governmental and other enquiries, as Occasional Publications. In addition, the Society has published several reference works on the Society itself or on science.

Science Communication

The Section aims to promote science and the reputation of science by pursuing a series of focused activities directed at the Society's target audiences in order to improve the UK climate for scientific development, and to reward outstanding scientists. This includes the education and science in society programmes; the award of medals and prize lectureships; scientific discussion meetings; the summer science exhibition and soirées; public lectures and debates; media and communication skills training courses; and grant schemes for science communication activities.

Science Advice

The Fellows' wealth of scientific experience and knowledge enables the Society to make significant and authoritative contributions to debates and inquiries on scientific or technological subjects. The Science Advice Section provides an explicit focus for policy advice activities from postgraduate level onwards: the promotion of education in science at earlier stages and actively engaging the public in scientific issues are handled by the Science Communication Section.

The form of the Society's advisory activities includes:

- Direct meetings with Ministers and other high-level decision-makers
- Evidence and submissions to Government and Parliamentary and other official inquiries
- Studies and statements on issues identified by the Society itself as important to scientific aspects of public policy, or policy for science
- Seminars and meetings to draw attention to emerging policy issues and to develop thinking about them
- Participation in national and international networks providing advice.

Beyond these formal mechanisms, the numerous direct contacts of individual Officers and Fellows with senior policy-makers in Government and elsewhere constitute important channels through which the Society can bring its influence to bear for the good of the UK. The Society also plays a valuable role as a forum for general policy discussions, either on its own or in conjunction with bodies such as the Foundation for Science and Technology. Where it is important for the Society's views, or the issues themselves, to be widely disseminated and discussed, publication of findings or recommendations plays an important role. Where appropriate, therefore, Council will authorise publication of reports or other material to make the data and views of the Society widely available.

International Policy

The Society's international work is led by the Foreign Secretary. The purpose of the International Policy Section is to manage the Society's bilateral and multilateral relations with the overall aim of raising our profile and ensuring that the UK engages with the best science around the world. A growing area is that of cooperation with UK public or private organisations, and partnering overseas academies to stimulate scientist-to-scientist networking through meetings on emerging areas of science, in cooperation with the Society's International Grants Section. Particular strands of focus for the Society's international policy work are Asia, Europe, Capacity Building and maximizing our interaction with global and multilateral organisations.

Collections

Archives

The Society has maintained detailed records of its activities since its foundation in 1660. These include the Journal Books from 1660, which record the proceedings of the ordinary meetings, the Register Books (1661 to 1738) and Letter Books (1661 to 1740) into which scientific papers submitted to the Society and correspondence were copied, the originals also being held. There is also an impressive collection of manuscripts ranging from one of the great treasures, Isaac Newton's *Principia Mathematica*, to scientific papers, notebooks and personal papers of Fellows of the Society including Robert Boyle, Robert Hooke, Antoni van Leeuwenhoek, John Herschel and John Smeaton, and a growing collection of the papers of twentieth century Fellows, such as Howard Florey, CTR Wilson and Paul Dirac. An on-line catalogue is now available through the Library pages of the Society's web site. With funding from the Andrew J.Mellon Foundation we aim to complete the cataloguing of the archives by the end of 2005. The on-line catalogue being expanded regularly with monthly updates.

Raymond and Beverly Sackler Archive Resource

The Resource is a database of biographical information about the Fellows of the Royal Society, principally those elected 1660–1952, drawn from published and unpublished sources. It was created with the generous support of the Sackler Foundation. Expansion of the Resource is ongoing and it is already a unique and valuable research tool. It can be used to generate a biographical record of an individual Fellow, a list of Fellows who share a common research field or a list of contemporaneous Fellows; it can also demonstrate relationships between Fellows. This database is available on-line through the library pages of the Society's web site www.royalsoc.ac.uk/sackler.

History of Science – Books and Journals

The practice of Fellows giving their books to the Library started in 1661 and continues to this day. The collection now contains both the original scientific works and analyses of them. The subjects

Library and Information Services

Covered by the 71,000 books extend beyond the main sciences to such areas as travel, expeditions, and biography (over 4,000 volumes of the lives of scientists). While the greatest strength of the collection lies in the 17th and 18th centuries, the coverage goes well beyond these periods. The Library has a significant collection of 19th century books and journals and holds some

important works dating from before the Society's foundation. Many of the latter came to the Library in 1667 as part of the Arundel collection, the private library of Henry Howard, later to become the sixth Duke of Norfolk.

Science Policy

This is the most rapidly growing collection in the Library. Information is gathered from both official and independent sources, nationally and internationally, to support the work of the Society in its role as the UK academy of science. Although the emphasis is on an active current information service, a historic collection of science policy material is being developed. The collection's strength is its breadth, with coverage of science education, science communication, science funding, European science issues and key individual topics such as energy, biotechnology and the environment.

Picture Collection

The Library holds over 6,000 historical photographs, engravings and portraits of scientists dating back to the 16th century. Reproduction rights are available for sale and used mainly by publishers and the media. New photography of other drawings and items can also be arranged – see below or contact christine.woollett@royalsoc.ac.uk for assistance.

Artefacts

The Society has a collection of portraits and busts of eminent scientists and these can be found displayed around the premises of Carlton House Terrace. In addition the collection includes medallions, clocks and various historical scientific instruments.

Access

Researchers from all over the world are welcome to visit us and use our unique resources on a reference basis. New users are encouraged to discuss their area of research with the Library staff in advance and on their first visit will be asked to register and produce identification, which includes a photograph (such as a passport).

Telephone 020 7451 2606 or email library@royalsoc.ac.uk

On-line Catalogues

The Library catalogue and the Archive catalogue (which incorporates the Sackler Archive Resource) are all available on-line via the Library pages of the Society's web site www.royalsoc.ac.uk/library. Work commenced on cataloguing the archive collections in Autumn 2001 and is progressing. The on-line catalogues are all updated monthly. The Royal Society has also collaborated with two projects, which add its catalogues of the archive collections to the Access to Archives (A2A) virtual catalogue for England at www.a2a.gov.uk and to the AIM25 (archives in London and the M25 area) at www.aim25.ac.uk

History of Science Grants, Meetings and Research Projects

The Library manages the annual grant applications for history of science research projects and meetings. Applications for funding should be made by 15 August for notification of the outcome in December; payment is made in the following April.

The Society provides funding for one or two-day meetings, up to a maximum of £5000 or half the cost of the meeting. Applicants should be learned societies in the history of science or scientific bodies in the UK. Funding requires that a Fellow or other representative of the Society should be

on the organising committee and that meetings should be open to the public, preferably free.

The Society currently sponsors three major research projects in the history of science:

- The Banks Archive Project
- The Charles Darwin Correspondence Project
- The National Cataloguing Unit for the Archives of Contemporary Scientists (NCUACS)

Conference Facilities

The Conference Facilities component of the Section manages a variety of rooms suitable for meetings, lectures, seminars and exhibitions of a scientific nature. Up to 300 people can be accommodated in the Wellcome Trust Lecture Hall or smaller numbers in other rooms.