



Biotechnology Group Newsletter

May 2019

Formed in 1987 the Biotechnology Group furthers the interests of academic and industrial members of the RSC in the area of biotechnology.

This is primarily achieved through the organisation of conferences and courses promoting the advancement of knowledge of biotechnology and facilitating the networking of its members.

More information about the group and its activities can be found on the RSC website (www.rsc.org) by following the links to Members and Networks.

Or you can go direct to the Biotechnology Group page using the link below:

[Biotechnology Group](#)

Welcome

The RSC Biotechnology group has organised conferences and workshops for over 30 years on a wide range of topics including biotransformation, systems biology, biotherapeutic approaches to neurological disorders, glycotecnology, stem cells, natural products as leads for drugs and agrochemicals, freeze-drying, and biodiversity.

So that we can best tailor our future conferences for our membership, it is important for us to keep in touch with you and hear about your interests and needs. Please let us know your thoughts by email to our secretary [Dr Colin Bedford](#).

Please see details below on how to become a member of the committee.

The conferences organized already for 2019/21 promise to be very exciting and we look forward to meeting you at some of these.

Paul Dalby (Chairman)

Call for new Committee Members

We are actively seeking individuals from both industry and academia who are interested in joining the RSC Biotechnology Group Committee. (Current members are listed below.)

We meet three times a year at Burlington House, usually in January, June and October.

We are currently under-represented in food chemistry, biomaterials, and cell and gene therapies (CGTs), and also in areas such as the chemistry important to vaccines, targeted drug delivery, and tissue engineering.

Committee members play an active role in organising conferences, as well as enthusiastically pursuing RSC's policy on biotechnology, and we would welcome new members with the passion, energy and drive to keep the ball rolling in terms of delivering an agenda that sustains Biotechnology for RSC members. Maybe this could be a development opportunity for yourself, a colleague or for a member of your staff!

Please contact by email our secretary [Dr Colin Bedford](#)

Member News

Felix Franks Biotechnology Medal

This year sees the inauguration of the RSC Biotechnology Group Felix Franks Medal to be awarded annually to an Early Career Researcher from industry or academia who has made an outstanding contribution over the previous five years in the field of Chemical Biotechnology. The award is in Commemoration of Cambridge University Professor, Felix Franks (1926-2016), a highly distinguished former Chairman of the Biotechnology Group, and is a result of the generosity of his family who have agreed to provide the medals. Felix was a world authority on water, and became known as ‘Water Franks’ – with his 7 volume series *Water: A Comprehensive Treatise*, which will stay as the main text in the field for a very long time to come. He became a leading authority both on polysaccharides, or as he intuitively called them carbon *polyhydrates* to emphasize their closeness to water and freeze-drying - one of his well-known catchphrases was ‘what is dry?’. He was also an excellent teacher who always found time for discussions with students.



Left: Professor Felix Franks at an RSC workshop in Nottingham with a class of MSc Biomolecular Technology students. *Right:* The Felix Franks Medal which will be engraved with the name of the winner, the year and the RSC Biotechnology Group Felix Franks Medal.

Applications for the 2019 award* are to be advertised shortly (closing date 30 September 2019) and will be reviewed in October by a panel of seven Chaired by Committee member Professor Stephen Harding, University of Nottingham who worked closely with Professor Franks for many years.

Stephen Harding

*A nomination form can be obtained from the Hon. Secretary of the RSC Biotechnology Group, Dr Colin Bedford (University College London) and should be returned to him with the supporting evidence (including a short CV of the candidate) via c.t.bedford@ucl.ac.uk

Forthcoming Events

Forthcoming events being organised by the Biotechnology Group in 2019/21 are:

Antibiotic Resistance, RSC Chemistry Centre, Burlington House, London, 9 December 2019

Formulation and Analysis for Biotherapeutics, RSC Chemistry Centre, Burlington House, 13 December 2019

Protein Misfolding, RSC Chemistry Centre, Burlington House, London, April 2020 (tbc)

Microtechnologies for Diagnostics & Therapeutics, RSC Chemistry Centre, Burlington House, London, Dec 2020 (tbc)

Biotransformations: From Science to Industrial Application II, RSC Chemistry Centre, Burlington House, London, 15 December 2020

Bioengineering of polymers for archaeological conservation, RSC Chemistry Centre, Burlington House, London, September 2021 (tbc)

Recent Events & Proceedings

The following conferences/courses were organised recently by the Biotechnology Group. Reports are available for many of them on the [Biotechnology Group](#) website.

Introduction to Glycotechnology, University of Nottingham (with BioUpdate) 27/28 May 2017 and 24/25 Mar 2018

Chemistry, Stem Cells and Regenerative Medicine, RSC Chemistry Centre, Burlington House, London, UK, 11 September 2017

Biotransformations: From Science to Industrial Application I, RSC Chemistry Centre, Burlington House, London, UK, 19 December 2017

Biotherapeutic Approaches to Neurological Disorders, RSC Chemistry Centre, Burlington House, London, UK, 10 December 2018

Chemical Tools in Systems Biology III, RSC Chemistry Centre, Burlington House, London, UK, 17 December 2018

Obituary

Professor Robert 'Bob' Thomas

Member Biotechnology Group,
1987/2010 (Treasurer
1995/2004)

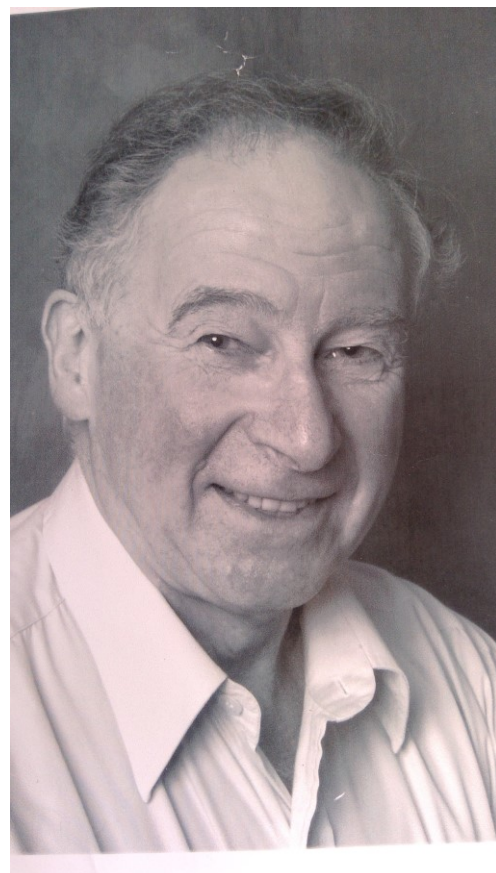
21 February 1927 – 8 May
2018

Bob Thomas founded and became Director of the Biotechnology Unit at the University of Surrey soon after joining as Research Professor of Chemistry. This made it natural for Bob to join the Biotechnology Group, a new RSC Interest Group which started up in 1987. He became a member of the inaugural Committee and subsequently was to serve as its Treasurer for 10 years, 1995/2004. He chaired the organising committee for the first 3-Day conference that the Group had ever run and this was on the theme of natural products at the University of Sussex in 1996. He followed this up with two more on the same theme at St Andrews in 1999 and at Magdalen College, Oxford in 2009.

Bob Thomas was born in Edinburgh on 21 February 1927. He was educated at Emmanuel Boys School, London, and then at the University of London in a Special Two-Year Degree in Chemistry. At age 20 he began his PhD studies in 1947 at the London School of Hygiene and Tropical Medicine (LSHTM) under the supervision of Professor Harold Raistrick working on metabolites of the mould, *Alternaria tenuis*. He isolated alternariol and its methyl ether, two new crystalline compounds and elucidated their structures.

In January 1952 he married Joan Barron and they set sail for Melbourne where Bob took up an appointment in the CSIRO's Protein Chemistry Laboratory to study the degradation of cellulose by fungal enzymes. Soon after arriving, he attended a lecture by Arthur Birch in which he presented his proposal that many natural products are biosynthesised from linear chains of two-carbon units derived from acetate (polyketides). Bob recognised during the lecture that alternariol could be formed from seven acetate units (a heptaketide) and after the lecture he discussed its structure with Birch, who asked for a copy of his thesis. This meeting sparked a lifelong interest in biosynthesis, especially in polyketides.

In early 1956 he returned to the LSHTM to take up an ICI Fellowship and he began an investigation of the biosynthesis of alternariol and other metabolites using ¹⁴C-labelled acetate. His subsequent



appointments were: 1959/63 Squibb Institute for Medical Research, New Jersey; 1963/68 Senior Lecturer, Imperial College; 1969/86 Research Professor of Chemistry, University of Surrey; 1987 Honorary Professorship at the University of Sussex.

Independent Research and Publication - Over the years Bob contributed immensely to biosynthetic theory and his speculative ideas were later proved by experiment. The indole alkaloids are a large class of natural products (which includes strychnine) and speculation on their biosynthetic origin had led to many hypotheses. However, it was Bob's suggestion in 1961 that a cyclopentanoid monoterpene was involved in their biosynthesis that led to the final correct biosynthesis being proved experimentally.

His longstanding interest in polyketides also led him to be the first to suggest that tetracyclic aromatic polyketides may be formed by two possible types of folding, one of which occurs in streptomyces and the other in fungi. These S- and F-foldings can be identified by feeding studies with [1,2-¹³C]-acetate. His recognition of the subtle difference in the two phyla has permitted some reassignments of natural product structures and no example has yet been found that contradicts the 'Thomas Rule'.

He published over 60 research papers, completing his last work in his 91st year in collaboration with a German group. This was published posthumously. He wrote several reviews and co-edited three multi-author books from the three natural product meetings he organised.

Business Interests - In 1983, while Director of the Biotechnology Unit at the University of Surrey, he started up a new company, Biotics. With the aid of a grant from the European Commission, he set up a laboratory facility in the School of Chemistry at the University of Sussex to isolate new compounds from plants from all over the world. Once a standardised protocol for the extraction of plant material had been accomplished, he set up a series of individual companies in developing countries in Africa, Asia and South America to duplicate what was being done at Sussex, with the important aim that each country would directly benefit from any discoveries made. By the mid-1990s extraction facilities had been established in Costa Rica, Ghana and Indonesia and more than 5,000 samples had been screened.

Outside Interests - Bob learned to fly in the University of London Air Squadron in 1947 and joined the RAF Volunteer Reserve. Flying was to be a lifelong interest and he even piloted a light aircraft when he was 89! He was an excellent squash and tennis player, enjoying games with colleagues at the Sussex campus until well into his seventies.

Friends and Family - Bob Thomas had many chemistry friends from all over the world, partly from the overseas jobs he had held as well as his own travels to give lectures at international conferences. His wife, Joan (née Barron) died in 2011 but he is survived by his three children Russell, Julie and Jacki, seven grandchildren and one great grandchild.

Colin T. Bedford

(This is an abbreviated version of an obituary that has been posted on the RSC website:

www.rsc.org/Membership/AboutRscMembership/Obituaries/)

Committee Members

The membership of the present Committee is:

Chairman	Prof Paul A Dalby (<i>University College London</i>)
Hon. Secretary	Dr Colin T Bedford (<i>University College London</i>)
Hon. Treasurer	Dr Paul Race (<i>University of Bristol</i>)

Members of Committee

Prof Tony Cass (*Imperial College London*)
Dr Michael Chen (*University of Edinburgh*)
Dr Irene Francois (*Consultant, Drug Discovery/Pre-Clinical Development*)
Prof Stephen E Harding (*University of Nottingham*)
Dr Mary Phillips-Jones (*University of Nottingham*)
Dr Francis Lister (*Cancer Research, UK*)
Dr Klaus Rumpel (*Boehringer-Ingelheim*)
Dr Ivan Wall (*Aston University*)
Dr Stephen K Wrigley (*Hypha Discovery Ltd, London*)

Contact Information

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