

# The continuing battle against infectious disease

It was the perceived wisdom in the 1970s that communicable diseases were under control thanks to the dramatic successes of immunisation and chemotherapy, and that there was no longer a specialist career in this field. How wrong we were. HIV/Aids, MRSA, exotic viruses emerging from the bush, prion diseases, tuberculosis... arguably pose, yet again, the single greatest challenge to science, public health and clinical practice.

The Academy has responded to this with a major, in-depth review of the issues and has produced a disturbing and challenging report, *Academic Medical Bacteriology in the 21st Century*, which is summarized on page 12.



*Professor Brian Spratt, chairman of the Academy working group on academic medical bacteriology, presents the findings of the in-depth study at the report launch in July.*



As the General Election loomed, the last issue set out the challenges facing the medical sciences and healthcare in the UK and the aspirations of the Secretary of State for Health.

Now, post-election, with continuity preserved through Alan Milburn, John Hutton, Philip Hunt and Yvette Cooper, together with familiar colleagues in the devolved administrations, the focus shifts to the role of the Academy in addressing these challenges in research and development, education and training, and in practice - whether laboratory, clinical or public-health. Year on year, we are strengthened by an infusion of fresh blood and, as we warmly welcome our newly elected Fellows, we are encouraged to realise that we are increasingly well placed not only to represent the best of the medical scientific (or is it the scientific medical) community but to make crucial contributions to this task.

Already, after three short years, and on the first anniversary of the newsletter, there is a feeling that a real collegial spirit is permeating our efforts. Do tell us what the newsletter can do differently, or, perhaps, better, to promote this vital process.

**Sir Alexander Macara** FMedSci *Editor*

# Two Academy Responses to the Phillips' BSE Inquiry

Council directed that the Academy should formulate two separate responses to the Phillips' BSE inquiry: one to comment on the current state of the science, post Phillips, the other to focus on key issues of governance and the role of scientific advisory committees.

Intense media interest followed the publication in June of the joint statement from the Academy of Medical Sciences and the Royal Society on the scientific issues related to Transmissible Spongiform Encephalopathies (TSEs). The joint working group, chaired by Sir Brian Heap FRS, found that further basic research is crucial to our understanding of the multi-factorial nature of the occurrence and natural transmission of TSEs and that prestigious 5-10 year fellowships should be established to encourage high-quality, young researchers into this area. The long-term aim must be to eradicate TSEs from all food animals. The ban on recycling animal protein for ruminant food should continue and alternative ways of disposing of carcasses should be found, while highly sensitive and inexpensive tests should be developed for slaughtered animals as well as preclinical tests for use on live animals and humans. The apparent resilience of prions demanded a call for further work on sterilizing surgical instruments and on the safety of blood transfusions. Concern was also raised over the possibility of cross infection in those abattoirs that handle both food-animal slaughter and culling of over 30-month animals.

The joint statement recognized that prospects for the future development of therapies will require

public financial support. *The full text of the report is available free from the Academy's London office (contact Tony Leaney; tel: 020 7969 5226 email [tony.leaney@acmedsci.ac.uk](mailto:tony.leaney@acmedsci.ac.uk)) or from the Royal Society web site at [www.royalsoc.ac.uk](http://www.royalsoc.ac.uk).*

The Academy's second statement on questions related to the process of providing scientific advice raised by the Phillips' Inquiry was produced by the Academy alone. The working group was chaired by the President, Professor Peter Lachmann, with a membership of Dr Sheila Bird, Sir Christopher France, Professor Malcolm Ferguson-Smith and Professor Robert Kendell. They commented on issues of particular importance to the Academy in relation to the formation and constitution of expert committees and how they took evidence, the importance and difficulty of differentiating between judgement and opinion and the need for peer review at all stages in the research process - including planning.

They stressed that data should be published with care so that well intended openness did not lead to unnecessary public concern and explored the evidential basis from which the precautionary principle might be applied. The group also commented on the role of government departments in the coordination of research programmes and on the current effectiveness of surveillance groups created to detect emerging diseases.

*The statement is available from the Academy's web site or from Tony Leaney at the Academy (see above).*

*The Editor thought that Fellows' natural curiosity about the Officers of their Academy should be indulged. Naturally one starts at the top and if Fellows think it is a good idea the net will be spread wider. The Editor is confident that readers will share his delight with an understandably reticent Sylvia Lachmann's response.*

## The President

Peter was born in Berlin, the second child of a warm, close family and from babyhood established himself as lively, charming and determined. The family emigrated to England in 1938 where his lawyer father was first interned, and then retrained in the different English system whilst his mother somehow supported the family.

At grammar school Peter decided on medicine as a career, and in addition enjoyed history, chess, and acting. Camping forays into post-war Britain introduced him to the pleasures of mountain walking.

After training at Trinity College, Cambridge and University College Hospital his interest in mechanisms of disease led him to research. He did his Ph.D. with Robin Coombs in Cambridge and Henry Kunkel in New York. We met and fell in love during this time and married in 1962.



*(From Left) Sylvia and Peter Lachmann with the Executive Director, Mary Manning, Spring 2001*

# 'Taking our place and walking proud'

When David Weatherall proposed the toast to the Academy at our first Fellows' dinner - which he did with his customary wit and eloquence - he repeatedly referred to the Academy as an embryo. This does our development less than full justice. The Academy was officially born in November 1998 when the elected Council and Officers took office.



*President Chirac with Peter Lachmann*

Almost three years on we are, at the least, at the toddler stage, walking with increasing steadiness and talking with increasing coherence. It will be some while yet before we acquire the patina, and the consequent authority, of some of our sister learned bodies but we are involved in joint activities with many of them and it is on these that I would like to report in this Newsletter.

Jointly with the Royal Society, the Academy has produced two reports. The first, on *'The Medical And Recreational Uses Of Cannabis'* was published in May 1998, the Academy's first publication. It is worth re-reading as the questions addressed have recently come back to public attention. The second, published in May 2001, on the scientific issues arising from the Phillips report on BSE, attracted more media

attention than we are at present organised to cope with.

With the British Academy, we have shared two successful meetings. A very enjoyable, interdisciplinary meeting on the 'Speciation of Man' was organised by Tim Crow in March 2000, combining anthropology and linguistics with molecular genetics and psychiatry. In June of this year we shared a meeting on 'Risk, Democratic Citizenship and Public Policy' bringing together the 'risk community' with such medical concerns as BSE and vaccination. We are likely to take this collaboration further to try to make some impact on some very intractable problems. The AMedSci is very grateful to the Nuffield Trust for their financial support for this meeting.

Together with the Royal Academy of Engineering we are putting together plans for a fellowship scheme to support biomedical engineering. It is not so far funded but we are cautiously optimistic that charitable funding bodies may come to look upon the scheme with favour. It is an undertaking to which both Academies attach high importance.

*Continued on page 4*

His career has been largely in Cambridge and his research, pursued with characteristic ingenuity and determination, focuses on molecular aspects of immunology. Peter's knowledge of the biological and historical background allows him to place it in context. He has become much concerned with ethical issues, the effective implementation of scientific discovery, strategic aspects of fostering research, the interplay of academia and industry. Peter is a realist (cf. his characteristic "if we're spared") who wants the right things to happen. To this end he speaks his mind clearly and is exasperated by delay and obfuscation.

He is very much a family man delighting in our children and grand children, fostering their interests, teaching them the laws of thermodynamics almost before they could speak, and introducing them to pleasures such as reading, theatre and walking. He has always supported my career and involves me in the more social aspects of his work. He loves our home and garden, likes entertaining friends there or working in his study, emerging now and then to do odd chores or work with his bees. Holidays are spent whenever possible in the mountains. He is an amusing and attentive husband and life with him is certainly never dull, though sometimes I find it hard to keep pace!

Peter does not compartmentalise; professional and family life have always intertwined. He is staunchly loyal to family, friends, colleagues, ideas; colleagues have become friends we meet all over the world; holidays are often based around conference venues; science interweaves with family life.

*Sylvia Lachmann*

*Continued from page 3*

The Foundation for Science and Technology invited us to join our sister Academies on their Council early in our existence and we have jointly organised two of their well-established evening meetings with them. The first was on "Stem Cells" and was held in the autumn of 2000 when the parliamentary debates on this topic were imminent. In spite of the severe problems he now has with his vision Gordon Dunstan came to this meeting from Exeter and made a memorable contribution. Perhaps this meeting played some small part in achieving the favourable outcome of the vote in both Houses. The second meeting was on "Salt" and its effect on health. Judging by reactions at the meeting dinner the audience had been convinced to reduce their salt intake! Dougal Goodman, Chief Executive of the FST, and his staff are moving into 10 Carlton House Terrace at the end of the year which will make further collaboration even easier.

We enjoy very close relations with the Académie des Sciences and the Académie de Médecine in Paris. A three day joint meeting on TSEs was held in Paris in March 2001. It was excellent scientifically and the UK contingent were greatly impressed by the extent of participation by the French Government. The meeting was addressed on separate days by M. Jospin, the prime minister, M. Schwartzenberg, the minister for research, and M. Kouchner, the minister for health and the latter two also took part in the open question and answer session on the last day. President Chirac gave the organisers an interview of 90 minutes at the Elysée palace to be briefed on the topic. We are most grateful to the British Council in Paris for their generous support to the British participants. Two

further joint meetings are planned. One on Ageing will take place in October and the second on Stem Cell Science next March.

The Academy has become a member of two international bodies: the Fédération des Académies nationales de Médecine et des Institutions similaires de l'Union européenne and the Interacademy Medical Panel. The former is based in Brussels and holds two meetings a year. At the most recent the AMedSci organised a session on food safety. The Fédération aims to influence the European Commission on medical matters and John Martin FMedSci has joined a small committee whose remit is to make this influence more effective. The Interacademy Medical Panel (IAMP) was set up last year at the meeting of the Interacademy Panel (which is the federal body for the World's academies of science). The IAMP has a membership of some forty medical academies world-wide and a steering group of eight (of which we are one) and its secretariat is supplied by the Institute of Medicine in Washington. It will hold its first global meeting in Paris next spring concentrating on global medical problems.

These joint activities with more established bodies help us to get our views heard and our name known outside our immediate peer group. They have also been highly enjoyable. Our Fellows have been uniformly helpful in taking part and contributing at a very high level. In these circles we do more than toddle - we walk proud.

**Peter Lachmann**

## **Congratulations to Fellows whose work has recently been recognised in the Queens Birthday Honours**

**Dame Commander of the Order of the British Empire**  
**Professor Ingrid Allen CBE DL** - *for services to medical research*

**Dame Commander of the Order of the British Empire**  
**Professor Lesley Howard Rees** - *for services to medical education*

### **CBE**

**Professor Julia Goodfellow** - *for services to biophysics*

**Professor Mark Haggard** - *for services to hearing research*

**Professor Peter Selby** - *for services to cancer research and cancer care*

**Professor Peter Smith** - *for services to the Spongiform Encephalopathy Committee and to Tropical Disease research.*

**Professor Frank Woods** - *for services to the Committee on Toxicity of Chemicals in Food, Consumer Products and Environment*

The annual Admission Ceremony of new Academy Fellows is an opportunity to exhibit the range of interests and expertise of the individuals it encompasses. Among the speakers this year was newly elected Fellow Professor Uta Frith. A synopsis of her presentation 'Autism in History' appears below.

## Autism in History

Autism is a neuro-developmental disorder with variable manifestation of behavioural symptoms and varying degrees of severity. It was first identified and labelled by Kanner (1943) and Asperger (1944). The currently accepted criteria for diagnosis are qualitative impairments of social interaction and communication with repetitive and stereotyped behaviours and interests. The nature and aetiology of the disorder are hotly debated. One important if still controversial theory attempts to explain the social and communication impairments of autism as resulting from a deficit in the pervasive human ability to attribute mental states to self and others (referred to as 'mentalizing' or 'Theory of mind'), and some evidence now exists for the neural basis of this ability. The normal fast acquisition of mentalizing is universal and largely independent of general intelligence. In the case of autism the acquisition is slow and highly dependent on intelligence. However, even in these successful cases, the neural network involved in mentalizing shows reduced activation and weaker connectivity than normal. The non-social features of autism are less well understood, but according to one theory, they point to a bottleneck in information processing where perceptual detail is processed intensely at the expense of meaning.

Is autism a new disease and is it increasing? This question is hard to answer since older documented cases are sparse. The case of Hugh Blair of Borgue (ca. 1708 - 1765) came to light recently in the archives of the Edinburgh court of 1748. Detailed records of statements by 29 witnesses throw light on Hugh Blair's mental incapacity. These statements contain enough material to piece together a clinical picture of which strongly suggests the diagnosis of autism, 200 years before it was described. Many examples provide evidence for the typical social and communication impairment of autism implying a lack of 'theory of mind'. Other examples of odd behaviour are reminiscent of intense attention to detail and in the language of his contemporaries, a lack of common sense. The similarities across centuries highlight the essential and enduring features of autism.

**Professor Uta Frith** FMedSci, *UCL Institute of Cognitive Neuroscience*



*Professor Uta Frith discusses her poster with Professor Mark Walport, Registrar of the Academy, on Admission Day.*

We invited Tom Kirkwood, a newly elected Fellow, to tell us about his experiences as this year's Reith Lecturer.



*Professor Tom Kirkwood*

## Delivering the End of Age

When the telephone rang on the first day of my summer holiday and I found myself speaking to Gwyneth Williams, head of current affairs at Radio 4, I had no idea what was coming. Although scientists sometimes deliver the annual series of Reith Lectures, founded in 1948, the topics have tended to concentrate on the humanities. But the aim of the lectures is "to advance public understanding of significant issues of contemporary interest" and there can be no doubt that the science of ageing fits this description perfectly. The dramatic increases in life expectancy, which are affecting populations around the world, are the fruits of science and technology as applied to public health. What is more, the last decade has seen spectacular

advance in scientific understanding of the ageing process. Yet public understanding of this science remains fragmentary at best, and society's attitudes to its growing numbers of older people are gravely in need of review.

Since the days when the Reith Lectures were read in a cramped studio at Broadcasting House, they have evolved into a road show with audiences of hundreds, question-and-answer sessions, and a celebrity presenter. The first lecture is always at the Royal Institution but we decided to go to Cold Spring Harbor Laboratory for lecture two

*Continued on page 6*

*Continued from page 5*

on the role of DNA in the ageing process. The third lecture on sex and death was incorporated into the Edinburgh Festival of Science. We then chose a different kind of venue, the Berryhill Retirement Village near Stoke-on-Trent, for lecture four on making choices, before finally returning home for the last lecture at the International Centre for Life in Newcastle upon Tyne.

The interactive format presents a challenge to the lecturer because the time to develop a theme in depth is compressed. However, on the whole I found it worked well. The questions provided an opportunity to air different views and added challenge to each event. A few questions were seeded by the BBC producers but they took great care that I never knew in advance what might be asked or by whom! On-line debates on the BBC web-site extended the public involvement, but the still-limited access to the internet by some sections of the public, particularly older people, remains a drawback. The many letters I have received, including one from a 104-year old correspondent, have confirmed just how much this agenda, including its science, matters to a wide spectrum of our society.

*The Reith Lectures are published by Profile Books in association with the BBC.*

**Professor Tom Kirkwood** FMedSci, *University of Newcastle*

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## Fellows' Regional Meeting - London



*Professor Barry Kay*

The Fellows' Regional Meeting at the National Heart & Lung Institute, Dovehouse Street, London, was held on Thursday 1st March 2001. A small but enthusiastic group of attendees were privileged to hear three excellent lectures and to participate in a thoughtful and topical debate.

In his talk on "meningococcal septicaemia" Professor Michael Levin FRS FMedSci (Imperial College School of Medicine) pointed out that this remained the commonest infectious cause of death in children throughout the UK. Although the introduction of the group C conjugate vaccine had been extremely effective in reducing the number of cases due to group C, there is no effective vaccine against group B which remains a major problem here and in many developed countries. Advances in understanding of the immunopathogenic mechanisms involved may lead to new forms of treatment including the use of bactericidal permeability increasing protein to block the effects of endotoxin and the use of activated protein C.

Professor Simon Wessely FMedSci (Guy's, King's and St. Thomas' School of Medicine) instructed and

entertained us on the so-called "Gulf War Syndrome". Service in the Gulf in 1991 has indeed been associated with a rise in self-reported symptoms and ill-health in a substantial minority of UK veterans. However, there is no evidence so far of an increase in mortality or of well-defined physical diseases. Instead the rise is in medically unexplained symptoms and syndromes such as chronic fatigue syndrome. Thus there is a Gulf War health effect but no Gulf War syndrome. The causes of ill health are many and varied and similar syndromes have been documented after previous 20th Century wars.

Professor Mark Pepys FRS FMedSci (Royal Free and University College Medical School) gave a scholarly overview on "Pentraxins: from obscure to trendy and beyond". The pentraxins include C-reactive protein and serum amyloid P component. The talk covered their crystal structures, ligand binding, physiological and pathophysiological functions. Evidence was presented that inhibition of their binding in vivo may be a useful therapeutic approach. For example, CRP exacerbates tissue damage in acute myocardial infarction

The debate on "Misconduct in the Medical Sciences - a Role for the Academy?" was introduced by Professor Michael Farthing FMedSci (University of Glasgow) who pointed out that publication and research misconduct continues to be a problem in the UK but its extent remains ill-defined. A consensus

conference in 1999 suggested that there should be a National Panel to monitor research misconduct and which could also provide guidance on the procedures that should be used to investigate allegations of research misconduct. There is a body of opinion, however, that suggests that this panel will not have sufficient authority to make a major impact. The Academy of Medical Sciences might assist in

this process by obtaining representation on the National Panel and by organising educational activities with a view to preventing research and publication misconduct.

All in all it was an excellent afternoon of good science, good discussion and good fellowship.

**Professor Barry Kay** FRSE FMedSci

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## Why Regional Meetings?

What purpose is served by regional meetings of the Academy? On the negative side they involve expensive travel, time away from one's base, the costs associated with the hire of a conference venue and the effort required of head office and the local centre in organising the meeting. At first sight, therefore, they might seem hard to justify, particularly as explicit benefits are sometimes difficult to determine. It could be argued that existing bodies such as the RSM, the Colleges and the Specialist Associations already provide enough opportunity for inter-professional contact. These arguments would hold up if regional meetings were restricted to Fellows of the Academy; however, crucially, policy is to encourage guests. This results in such meetings becoming a three-way process.

First, they make it easier for regional Fellows to meet Officers of the Academy and politically influential senior colleagues on a one to one basis. Second, they enable academically inclined doctors, scientists and other health workers in the region being visited to meet the leaders and some Fellows of an avowedly elitist Academy. Third, regional meetings present an excellent opportunity for Fellows, especially those whose lives revolve around the 'golden triangle', to find out at first hand the nature and quality of the research undertaken elsewhere in the British Isles. Coincidentally such meetings allow those involved in medical research in the location being visited, particularly those who are not medically qualified, to find out more about what is going on in their own region.

The Academy is a relatively new organisation speaking for those involved in medical research; the encouragement and facilitation of such research being among its stated aims. As it grows and becomes more influential the Academy needs to gain the confidence of researchers in the medical sciences by

making clear what it is doing in campaigning for the interests of medical academia. Medical schools currently face crises in recruitment and funding and the public are asked to reach decisions about many aspects of medical and scientific research that may impact on their lives with little impartial, accessible information on which to base their judgments. The Academy is the only body that possesses the potential to represent effectively the totality of medical science in these areas. It will succeed if academics have faith in it. Regional meetings that encourage the participation of the local medical scientific community will play an important part in developing confidence in the Academy's role.

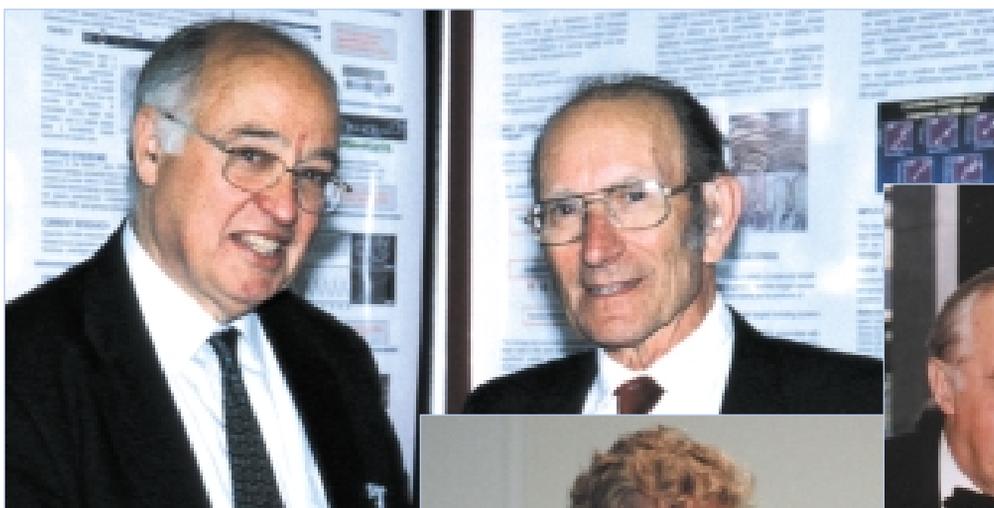
Those of us who attended the Newcastle meeting in May felt that it had been very useful in improving awareness and raising confidence in the Academy. It was held in the right environment, with a good mixture of Fellows and guests and we listened to scientific papers from outstanding medical scientists: Professors Tom Strachan, Malcolm Young and Tom Kirkwood. The outcome on this occasion is that the aims and objectives of the Academy are now better known among the medical academic community in the North East of England while visiting Fellows will have appreciated, some for the first time, the excellent medical research that is thriving in the ancient cities of Newcastle and Durham.



**Sir Miles Irving** FMedSci  
*Professor of Surgery  
and Chairman,  
Newcastle Hospitals NHS Trust*

*Sir Miles and Lady Irving  
at the regional  
meeting in Newcastle.*

# Academy Summer Events



Newly admitted Honorary Fellows of the Academy: Sir Michael Atiyah and Dr César Milstein.

Nigel Crisp, Permanent Secretary and Chief Executive of the NHS Executive responds to a question following his presentation 'The NHS and the future - some key themes' on Admission Day in July.



Sir David Weatherall chats with Dame Bridget Ogilvie at the Jean Shanks Lecture reception in June. Later that evening Sir David delivered a characteristically entertaining speech at the first Fellows' dinner.



The President, Professor Peter Lachmann receives some encouragement from Sir Andrew Huxley prior to delivering his Jean Shanks Lecture 'In defence of reason' in June.



Sir Peter Morris and Sir Richard Bayliss enjoy an evening drink after the Jean Shanks Lecture in June.

# Meetings Programme

The programme below has been developed in response to Fellows' suggestions. If you would like to propose a meeting topic please get in touch. Fellows and interested colleagues are warmly invited to attend the following scientific meetings; the Fellowship will be mailed programmes prior to each event. Please see the website [www.acmedsci.ac.uk](http://www.acmedsci.ac.uk) for up to date details and registration information; additional meetings will be added to the calendar. Alternatively, contact Susan Wicks on [susan.wicks@acmedsci.ac.uk](mailto:susan.wicks@acmedsci.ac.uk)

10 October 2001 at 10 Carlton House Terrace, London

## **RADIATION, HEALTH AND CHERNOBYL**

This half day scientific meeting, organised and chaired by Sir Dillwyn Williams FMedSci and Sir Alec Jeffreys FRS FMedSci, will present some of the findings following the largest nuclear accident to have occurred, and discuss these in the light of recent advances in our understanding of the way in which radiation can interact with the genome. Confirmed speakers include Dr Roger Cox, Professor Yuri Dubrova, Dr Gerry Thomas and Professor Eric Wright.

26 October 2001 at the University of Wales College of Medicine, Cardiff

## **REGIONAL MEETING**

Professor George Elder FMedSci will lead this meeting whose participants include Dr Gillian Bates FMedSci, Professor Steve Dunnett and Professor Graham Collingridge FMedSci. The afternoon will conclude with a debate on peer review involving Professor Sir Leszek Borysiewicz FMedSci and Professor Simon Wessely FMedSci.

5 November 2001 at 6 Carlton House Terrace, London

## **THE NEW BIOLOGY OF STEM CELLS**

Bringing together international leaders in the stem cell field, this meeting will address a number of questions: How are the stem cells produced? How is stem cell fate itself regulated? What is the general relationship between cycling and differentiation? Speakers including Professor Tariq Enver, Dr Jonas Frisen, Professor Martin Raff FRS FMedSci, Dr Austin Smith and Dr Irv Weissman will consider the latest developments in stem cell research and possible therapeutic applications. Organised by Dr Fiona Watt FMedSci, the session chairmen will be Dr Mike Dexter FRS FMedSci and Professor Richard Gardner FRS.

5 December 2001 at venue to be confirmed

## **NEUROPROTECTION AND NEUROPROTECTIVE AGENTS**

Speakers at this one-day meeting organised by Professor John Pickard FMedSci include Professor David Graham, Professor David Menon FMedSci, Professor Nancy Rothwell FMedSci and Professor Graham Teasdale FMedSci. Programme details to be confirmed soon.

date to be confirmed: February 2002 at 10 Carlton House Terrace, London

## **CONFIDENTIALITY AND CONSENT**

Philosophy, medical law, religion, public health, genetics and data protection and the family are all topics to be covered in this policy meeting organised by Professor Peter Lachmann FRS PMedSci with Baroness O'Neill and Sir Cyril Chantler FMedSci. Provisional speakers include Professor Ronald Dworkin, Professor Michel Cuenod, Professor Iain Torrance, Lord Turnberg FMedSci and Professor Nicholas Wright FMedSci.

date to be confirmed: April 2002 at 10 Carlton House Terrace, London

## **NEUROLOGICAL REHABILITATION: CAN WE BRING CLINICAL PRACTICE CLOSER TO BASIC SCIENCE?**

Over the last few decades there has been a revolution in our understanding of the relationship between structure and function in the nervous system. This meeting, organised by Professor Raymond Tallis FMedSci, will examine the neuroscientific basis for optimism about reversing impairments with up-to-date reviews of regeneration and repair and of recovery through reorganisation, especially as revealed in neuro-imaging. The programme also aims to formulate a research agenda that will bring scientific possibility closer to clinical practice. Provisional speakers include Professor Richard Frackowiak FRS FMedSci, Professor Michael Merzenich, Dr Geoffrey Raisman FRS FMedSci and Professor Trevor Robbins FRS FMedSci.

date to be confirmed: April/May 2002 at venue to be confirmed

## **EXPERIMENTAL INFECTIONS OF HUMAN VOLUNTEERS**

Challenge studies of human volunteers with pathogenic microbes are complicated but yield huge potential benefits, especially since for many infections humans are the only valid experimental model. At the very least, this type of research may facilitate the lengthy and expensive process of vaccine development. The crucial balance of benefit and risk will be considered in the context of fundamental research, public perception, ethics and the law in this meeting organised by Professor Richard Moxon FMedSci.

date to be confirmed: October 2002 at venue to be confirmed

## **ENVIRONMENTAL OESTROGENS AND ANTI-ANDROGENS**

There is evidence for increases in certain disorders in the male reproductive tract, and apparent decreases in sperm counts, which may be related to increased exposure to environmental oestrogens. This meeting, organised by Professor Ieuan Hughes FMedSci, will encourage discussion of the scientific issues from a multidisciplinary perspective, covering epidemiology, toxicology, cellular mechanisms as well as clinical effects.

date to be confirmed: December 2002 at venue to be confirmed

## **EVOLUTION AND DISEASE**

The central idea of evolutionary or Darwinian medicine is that there are mismatches between our dietary and behavioural or lifestyle habits and our genetics, the latter having undergone prior selection for adaptability under very different environmental/social circumstances. This meeting, co-organised by Professor Mel Greaves FMedSci with Dr Randolph Nesse and Dr John Lee, will focus on how the evolutionary view might provide a framework within which to understand how gene/environment interactions bring about disease. Participants will include evolutionary biologists, geneticists, anthropologists and pathologists.

# New Fellows 2001

**Dr Timothy Aitman**  
MRC Clinical Scientist,  
Honorary Clinical Reader and  
Consultant Physician  
MRC Clinical Sciences Centre, London

**Professor Hugh Anderson**  
Professor of Epidemiology and Public Health  
St George's Hospital Medical School, London

**Professor Jonathan Ashmore**  
Bernard Katz Professor of Biophysics  
University College London

**Professor Nigel Benjamin**  
Professor of Clinical Pharmacology  
William Harvey Research Institute, London

**Professor Shom S Bhattacharya**  
Sembal Professor of Experimental Ophthalmology  
& Head of Division  
Institute of Ophthalmology, London

**Dr Sheila Bingham**  
MRC Senior Scientist  
MRC Dunn Clinical Nutrition Centre, Cambridge

**Professor Adrian Bird**  
Director, Wellcome Trust Centre for Cell Biology  
University of Edinburgh

**Professor Richard Boyd**  
University Lecturer  
University of Oxford

**Professor Oliver Braddick**  
Professor of Psychology  
University College London

**Professor David Brooks**  
Hartnett Professor of Neurology  
MRC Clinical Sciences Centre, London

**Professor Stephen Brown**  
Director  
MRC Mammalian Genetics Unit, Harwell

**Professor Peter Burney**  
Professor of Public Health Medicine  
Department of Public Health Sciences,  
King's College, London

**Professor Alan Calvert**  
Professor of Medical Oncology  
Cancer Research Unit, University of Newcastle

**Professor R Duncan Campbell**  
Professor of Medical Genetics  
University of Cambridge

**Professor Charles Coombes**  
Professor of Medical Oncology  
Imperial College School of Medicine, London

**Professor Dorothy Crawford**  
Professor of Medical Microbiology  
University of Edinburgh Medical School

**Professor Angus George Dalglish**  
Foundation Chair of Oncology  
St George's Hospital Medical School, London

**Professor Christopher Danpure**  
Professor of Molecular Cell Biology  
University College London

**Professor John Deanfield**  
Professor of Cardiology  
Great Ormond Street Hospital for Sick Children,  
London

**Professor Anna Dominiczak**  
BHF Professor of Cardiovascular Medicine  
Western Hospital, Glasgow

**Professor Dian Donnai**  
Professor of Medical Genetics  
St Mary's Hospital, Manchester

**Professor Paul Durrington**  
Professor of Medicine  
Manchester Royal Infirmary

**Professor George Ebers**  
Action Research Professor of Clinical Neurology  
University of Oxford

**Professor Christopher Fairburn**  
Professor of Psychiatry  
Warneford Hospital, Oxford

**Professor Ten Feizi**  
Director of Glycosciences Laboratory  
Imperial College School of Medicine, London

**Professor Marc Feldmann**  
Professor of Cellular Immunology  
Imperial College School of Medicine, London

**Professor Keith A A Fox**  
Duke of Edinburgh Professor of Cardiology  
Royal Infirmary of Edinburgh

**Professor William Fraser**  
Professor of Learning Disability  
Welsh Centre for Learning Disabilities, Cardiff

**Professor Uta Frith**  
Deputy Director, Institute of Cognitive  
Neuroscience  
University College London

**Professor Hill Gaston**  
Professor of Rheumatology  
Addenbrooke's Hospital, Cambridge

**Professor Julia Goodfellow**  
Professor of Biomolecular Science  
Birkbeck College, London

**Professor Paul Grasby**  
Professor of Psychiatry  
MRC Clinical Sciences Centre, London

**Professor Anthony Green**  
Professor of Haemato-Oncology  
University of Cambridge

**Professor John Harris**  
Sir David Alliance Professor of Bioethics  
University of Manchester

**Professor Dorian Haskard**  
BHF Sir John McMichael Professor of  
Cardiovascular Medicine  
Imperial College School of Medicine, London

**Professor Christopher Hawkey**  
Professor of Gastroenterology  
Queen's Medical Centre, Nottingham

**Professor Adrian Hayday**  
Kay Glendinning Professor and Chair  
Guy's Hospital, London

**Professor Douglas Higgs**  
Director, MRC Molecular Haematology Unit  
John Radcliffe Hospital, Oxford

**Professor Janet Husband**  
Professor of Diagnostic Radiology  
Royal Marsden Hospital, Surrey

**Professor Philip Ingham**  
Professor of Developmental Genetics  
The Krebs Institute, Sheffield

**Professor Stephen Jackson**  
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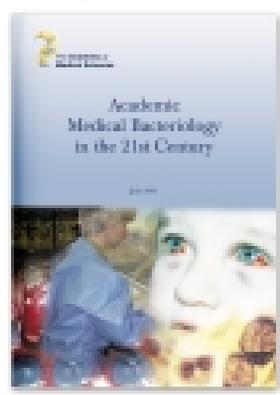
# Committed to the cause of bacterial research

**Professor Brian G Spratt FRS, FMedSci**, chairman of the Academy working group on academic medical bacteriology, describes himself as a basic microbiologist who started work on the mechanism of action of penicillin. Since the early 1990s he has been particularly interested in the population and evolutionary biology of bacterial pathogens. He told *Newsletter* 'What sparked my interest was our finding that genetic recombination in bacterial pathogens was the mechanism by which some become resistant to penicillin. It was thought that sexual mechanisms were not much used by bacteria in nature. But we showed very clearly that recombination is crucially important in the evolution of bacterial pathogens.'

Now based at St Mary's Hospital in London, Brian's team along with colleagues introduced new multi-locus, sequence-based approaches to characterising unambiguously isolates of a number of major bacterial pathogens. He continued 'The beauty of this approach is that the system allows any microbiologist to characterise interesting strains simply by interrogating our web site.'

Even before Peter Lachmann asked Brian to chair an Academy working group to look into UK academic medical bacteriology, he had known that it was academically weak. 'I have always valued my contacts with clinical bacteriologists and it seemed that something had to be done otherwise medical microbiology

as a discipline might disappear. I strongly believe that basic scientists interested in bacterial pathogens and infectious disease should work alongside clinical colleagues with similar interests. The problem at the moment is that it's very difficult to get first rate basic scientists interested in working in medical microbiology departments where there is often a poor intellectual environment.'



The Academy's report *Academic Medical Bacteriology in the 21st century*, published on 10 July, relies on evidence given to the working group by opinion leaders. It makes many recommendations from undergraduate education to the role of the PHLS and the microbiological societies. A key recommendation is to promote a multidisciplinary approach to bacteriology and infection by creating centres of excellence. Brian Spratt concluded 'The time is right for change. Although developing a few centres of excellence may be controversial, bacteriology has become increasingly multidisciplinary, encompassing aspects of cell biology and immunology, through to bioinformatics and population and evolutionary biology. The medical environment is an excellent one to bring together basic scientists and their clinical colleagues in the vibrant areas of bacteriology and infection. The challenges due to bacterial pathogens are still great but new approaches provide great opportunities to tackle the prevention and treatment of the diseases they cause.'

*Copies of the report are available free of charge from Tony Leaney at the Academy.*

*The Academy of Medical Sciences was established in 1998 to act as an authoritative body to promote medical science across traditional boundaries. The Academy campaigns for better structures in support of the medical sciences, promotes excellence in research, provides scientific advice, encourages better communication of medical science and provides quality services to its Fellowship. The Academy draws its authority from its elected Fellowship of 630 top medical scientists in the UK who may use the suffix FMedSci. The Academy Officers are Professor P J Lachmann FRS (President), Lord Turnberg (Vice-President), Professor Graeme Catto (Treasurer) and Professor Mark Walport (Registrar).*

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