A vision for the UK life sciences sector

Summary of the 2015 FORUM Annual Lecture and discussion

12 February 2015

Lecture given by Mr George Freeman MP, Parliamentary Under Secretary of State for Life Sciences, with ensuing panel discussion led by the three UK life science champions

The Academy of Medical Sciences

The Academy of Medical Sciences is the independent body in the UK representing the diversity of medical science. Our mission is to promote medical science and its translation into benefits for society. The Academy's elected Fellows are the United Kingdom's leading medical scientists from hospitals, academia, industry and the public service. We work with them to promote excellence, influence policy to improve health and wealth, nurture the next generation of medical researchers, link academia, industry and the NHS, seize international opportunities and encourage dialogue about the medical sciences.

The Academy of Medical Sciences' FORUM

The Academy's FORUM was established in 2003 to recognise the role of industry in medical research, and to catalyse connections across industry and academia. Since then, a range of FORUM activities and events have brought together researchers, research funders and research users from across academia, industry, government, and the charity, healthcare and regulatory sectors. The FORUM is a major component of the Academy's work to deliver the strategic objective of 'linking academia, industry and the NHS' and its success relies on supporter organisations who make an annual donation. We are grateful for the support provided by the members and are keen to encourage more organisations to take part. If you would like information on becoming a member please contact FORUM@acmedsci.ac.uk.

Disclaimer

This document reflects the views of participants expressed at the meeting and does not necessarily represent the views of all participants or of the Academy of Medical Sciences. For further information, please contact Victoria Charlton, Head of Policy at the Academy of Medical Sciences (victoria.charlton@acmedsci.ac.uk, (0)20 3176 2168).

All web references were accessed in May 2015.

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Overview

On 12 February 2015, the Academy of Medical Sciences hosted its 13th FORUM Annual Lecture at its headquarters at 41 Portland Place, London.

The lecture was delivered by **Mr George Freeman MP, Parliamentary Under Secretary of State for Life Sciences**. In his keynote speech, the Minister highlighted the need to transform the UK healthcare landscape to meet the challenges of the 21st century. Increasing innovation in the NHS was a key theme, as was the importance of attracting the best science to the UK. Other topics discussed included: harnessing the power of genomics, data, new technologies and social media; accelerating patient access to new innovative treatments; and maximising the UK's 'test bed' sites for adopting innovation at scale.

The lecture was followed by a Q&A and discussion session, chaired by Professor Sir John Tooke PMedSci. During this session, Mr Freeman was joined by the Government's three independent UK life science champions:

- **Professor Sir John Bell GBE FRS HonFREng FMedSci**, Regius Professor of Medicine, University of Oxford.
- **Mr Chris Brinsmead CBE**, Life Sciences Business Adviser.
- **Mr John Jeans CBE**, Chairman of Imanova, Chair of Cardiff University, Chair of UK Biocentre.

This discussion further explored and developed points made by Mr Freeman in his keynote speech and raised new issues, such as the role of basic research in the life sciences ecosystem.

Key points of discussion from both the lecture and subsequent debate are summarised in this meeting report. Film footage of this event is also available to view on the Academy's website: http://www.acmedsci.ac.uk/FORUM.

This meeting was convened as part of the Academy's FORUM programme, which was established in 2003 to recognise the role of industry in medical research and to catalyse connections across industry and academia. We are grateful for the support provided by the members of this programme and are keen to encourage more organisations to take part. If you would like information on becoming a member, please contact Victoria Charlton, Head of Policy (victoria.charlton@acmedsci.ac.uk).

Summary of the 2015 FORUM Annual Lecture and discussion

The 13th FORUM Annual Lecture, chaired by Professor Sir John Tooke PMedSci, was delivered by Mr George Freeman MP, then Parliamentary Under Secretary of State for Life Sciences. In his keynote Lecture, Mr Freeman focused on the importance of UK life sciences, the changing biomedical landscape and the challenges and opportunities facing both the life sciences sector and the health system as a whole. He concluded by providing further information on the current 'Innovative Medicines and Medical Technology Review', which aims to improve the speed at which medical innovations reach patients and their families.

The importance of UK life sciences

Mr Freeman began his lecture by emphasising the important role that the life sciences sector can play in the UK in helping to drive economic recovery and in securing better treatments for patients. He highlighted his position as the first ever Minister for Life Sciences, both in the UK and globally, and suggested that other developed economies might benefit from following this model. In reflecting on this role, Mr Freeman made reference to his previous experience working as a venture capitalist investing in the life sciences. This gave him first-hand experience of a translational research environment and the issues faced by the sector, while illustrating to him the huge benefits the sector can deliver to society.

Mr Freeman acknowledged that many activities in the life sciences, for example the development of a new drug, occur on longer time frames than parliamentary terms. In order to flourish, the sector therefore requires long-term continuity of policy, transcending political timelines. As such, it is necessary that key life sciences stakeholders maintain a dialogue with political parties. Mr Freeman spoke about the Academy of Medical Sciences' role in this process and in the life sciences ecosystem more generally. He also noted that many healthcare challenges are global in nature and that the Academy can play a crucial role in considering some of these arising issues. Finally, Mr Freeman emphasised the important role of the UK life science champions in promoting the work of the sector and in identifying the challenges that it faces and he expressed his gratitude for all the hard work that they, and others in the room, have done to date.

The changing biomedical landscape

In reflecting on the changing biomedical landscape, Mr Freeman highlighted some of the significant advances in healthcare that science has contributed to over the last decade: survival rates for some cancers, for example, have increased dramatically. However, he noted that the increase in life expectancy brought about by such advances has brought its own challenges. One of these is the increase in the incidence of conditions associated with an ageing population: from chronic and long-term conditions, including dementia and cancer, to an increased need for routine procedures such as joint replacement. Mr Freeman argued that the 21st century healthcare system would need to adapt and respond to these new challenges if it were to continue to be effective and sustainable. He

noted that the UK was not alone in facing these challenges and that other developed economies are also working to develop solutions.

Mr Freeman highlighted that the UK life sciences sector has traditionally been very strong. However, he thought it likely that progress in both basic and translational science would suffer if the policy environment in which they operate fails to evolve. He offered the example of clinical trial regulation, noting that the traditional model of demonstrating drug efficacy through large randomised controlled trials was less applicable in the era of precision medicine. He argued that the traditional 'one size fits all' approach to regulation is no longer applicable, particularly now that improved predictions about how patients may respond to drugs means that more tailored treatments are available than was previously the case.

Opportunities and challenges for the sector

Moving on from these broad comments, Mr Freeman highlighted several key areas of challenge and opportunity, which he considered essential to the UK's ability to maintain and build on its position as a global leader in the life sciences.

Bringing research and innovation into the heart of the NHS

Mr Freeman stressed the benefits of bringing research and innovation into the heart of the NHS and proposed that more be done to achieve this. He argued that the UK should aim to become the 'arrival and departure lounge' for medical innovation and stated that UK cities were particularly well-positioned to become 'test beds' for new developments.[1]

Since the founding of the NHS in 1948, research has been recognised as a core component of the UK healthcare system. However, Mr Freeman argued that the UK's collective research assets – including our clinical research infrastructure, robust ethical frameworks and approval system, wealth of information and data, the Clinical Practice Research Datalink and the National Institute for Health Research – needed to be better unlocked to maximise value. In particular, he claimed that there was a need to encourage the NHS to more fully harness the power of information through the use of big data, new technologies and social media. He pointed out that data is a very powerful tool for the generation of diagnostics and therapeutics and can yield insights into disease aetiology, progression and the relative benefits of different treatment strategies. For example, algorithms predicting drug compound toxicology can have a significant impact on drug discovery by accelerating identification of promising compounds and decreasing the requirement for large toxicology studies.

Bringing innovation to the heart of the NHS is a long term challenge, which will require a cohesive strategy and commitment across several parliamentary terms. However, Mr Freeman stated that it is a challenge worth embracing; making the UK the 'go-to' place for innovation would not only have significant economic benefits, but would also enable

[1] NHS England's *Five Year Forward View* (2014) defined 'test beds' as locations which '*would serve as real world sites for 'combinatorial' innovations that integrate new technologies, bioinformatics, new staffing models and payment-for-outcomes*'. http://www.england.nhs.uk/wp-content/uploads/2014/10/5yfv-web.pdf

NHS patients to benefit from the latest medical developments. Mr Freeman stated that in order to achieve this, the UK needs to improve and accelerate access to new medicines. He pointed out that, in the US, this has been aided by the Food and Drug Administration's (FDA) 'Breakthrough Therapy' designation, an initiative designed to expedite the development and approval of drugs that treat serious unmet, or life threatening, medical need, and a designation that has been frequently taken up.[2] He drew a parallel between this initiative and the UK 'Early Access to Medicines Scheme', introduced by the Medicines and Healthcare products Regulatory Agency (MHRA) in late 2014, which he said took a similar approach, and said that he looked forward to monitoring the impact of this scheme over the coming months and years.[3] He stated that conversations between key stakeholders, including the NHS, the MHRA, and the National Institute of Health and Care Excellence (NICE), need to take place to ensure that attitudes towards innovative therapies are aligned.

Mr Freeman also highlighted the need to better diffuse local best practice and break down cultural barriers to implementing innovation across the NHS, which has historically operated in silos. Participants made a similar point, noting that patients were often passed from one hospital department to the next with little communication or information transfer. It was generally agreed that overcoming this schism will be vital to enhancing patient experience and healthcare.

Mr Freeman stressed the Department of Health's strong commitment to driving innovation and growth through the life sciences and particularly stressed the role of the Office of Life Sciences (OLS) in driving implementation of the Government's life sciences strategy. Participants agreed that the sector benefits from the work of the OLS and other activities to champion British science overseas, but noted that OLS might need the community's support to secure its future post-election. Participants considered the Government's independent life science champions to also play a key role in promoting an interdependent life sciences ecosystem that fully leverages the potential of the NHS.

Increasing collaboration and securing investment

Mr Freeman stated that medical breakthroughs are often the result of collaboration and partnership but noted that UK research often operated in silos, with limited communication or cooperation between sectors and disciplines.[4] He stated that more should be done to break down these barriers and encourage collaboration and he highlighted the government's creation of the Academic Health Science Networks, which he said had been established for this very purpose.[5] Mr Freeman also suggested that this mentality may have been be exacerbated by the current funding system. Although some specialised institutions, such as the MRC Laboratory of Molecular Biology, work very effectively from within their 'silo', Mr Freeman argued that radical new thinking could be applied to break down disciplinary barriers elsewhere in the system. For example, he suggested that primary, secondary and community care budgets could be brought

[2] http://www.fda.gov/ForPatients/Approvals/Fast/default.htm
[3] https://www.gov.uk/apply-for-the-early-access-to-medicines-scheme-eams
[4] The Academy of Medical Sciences is currently examining these issues as part of a policy project on 'Team science'. http://www.acmedsci.ac.uk/policy/policy-projects/team-science/
[5] http://www.england.nhs.uk/ourwork/part-rel/ahsn/

together to help tackle common problems and to develop more creative and integrative solutions to healthcare challenges.

Participants in the discussion noted that each part of the life sciences ecosystem is vital to the overall health of the sector and that collaboration is vital across the board. Fundamental research is at the heart of the UK's strength in life sciences and, as Mr Freeman pointed out, this is supported by a range of funders, including research councils. However, participants felt that there had historically been a lack of funding for translational research and that this had discouraged collaboration between industry and academia. It was also thought that university technology transfer offices could do more to help speed up the process from discovery to adoption. Mr Freeman highlighted the role of the recently formed catapult centres, which support later stage translational activity.[6]

Participants acknowledged that aspects of this situation had improved in recent years and that the last decade in particular had seen a vast improvement in funding for translational projects. It was pointed out that academia and industry are increasingly forging mutually beneficial relationships in the UK and that our current level of innovation is second only to that of the US. UK funding bodies are increasingly recognising the value of cross-disciplinary research and some participants also felt that, compared to some other knowledge economies, different communities within the sector do communicate well with each other. This, combined with our relatively small size, potentially makes it possible for the UK to act as a single coordinated research cluster – a potentially significant advantage in the global marketplace.

Nevertheless, there remains more to be done. Several participants felt that translation of research in the UK remains a costly and time consuming process, the efficiency of which could be improved. Mr Freeman highlighted the need for UK life sciences to increase levels of funding from outside the public sector by creating an environment more attractive to investors. This could be aided by key stakeholders such as the NHS, NICE, MHRA and medical research charities amongst others. Participants agreed that the UK is currently lagging behind in attracting investment capital, particularly for small and medium-sized enterprises and felt that enhanced investment is needed to ensure that innovations and start-ups originating in the UK are not acquired and developed abroad, as was the case with monoclonal antibodies. It was suggested that coordinated funding approaches should be developed to support ideas from basic research right through to the clinic.

Patient engagement and empowerment

Mr Freeman argued that patients are becoming increasingly empowered and involved with their healthcare, moving away from their traditionally more 'passive' role. Patients are also increasingly aware of how lifestyle choices affect their long term health. According to Mr Freeman, engaged patients are more likely to be open to new, innovative treatments and to support the use of data to improve their healthcare. Medical research charities and patient groups therefore have an important role to play in supporting patient engagement. In the future, failure to engage with patients and the public could have

[6] https://www.catapult.org.uk/

significant negative consequences, particularly for innovations grounded in the use of data and genomics. Healthcare would invariably suffer as a result.

Participants recognised the asymmetrical relationship between patient and clinician described by Mr Freeman and considered this to be unhelpful for both parties. There was also agreement that information was the key to rebalancing this relationship, with patients increasingly using the internet to access information about their health, a trend that healthcare providers should acknowledge. It was felt that the NHS needs to improve the way it communicates through the internet and especially social media.

Participants felt that, over the past decade, the research community, the NHS and industry had become much better aligned, leading to great economic and health benefits. However, there was a sense that patients remain the forgotten partner and are not sufficiently engaged in this approach. The sector was therefore felt to be at risk of delivering technologies and therapies that are not taken up by patients or supported by their families. It was felt that the healthcare community needed to become better at placing patients and their views at the centre of discussions about what research and therapies should be invested in. It was seen to be the responsibility of clinicians, medical charities and government to speak up and engage with patients and patient groups, particularly on topics that may be contentious, such as the use of patient data. The furore surrounding the Government's care.data initiative was seen by participants as one example of the consequences of failing to properly and proactively engage with patients and the public.

Improving patient engagement is not a magic bullet, but it does have the potential to deliver significant benefits, for example by increasing patient adherence to treatment regimes.[7] In order to renegotiate and rebalance this relationship, it was suggested that a new 'social contract' between patients and the medical innovation and healthcare system may need to be developed.[8]

Pricing and reimbursement

Participants saw increasing healthcare spend as a key societal challenge and many considered the current UK trend to be unsustainable in the long-term. Links were made between this upward trajectory and the difficulties faced by the current healthcare system in dealing with the types of 21st century challenges described by Mr Freeman.

Some participants felt that the UK healthcare budget would need to be spent more wisely in the future to ensure the continued delivery of a high quality service. Enhancing patient adherence to medicines was identified as a priority if the NHS is to maximise health outcomes from its expenditure. Emerging approaches such as precision medicine could also help to deliver efficiencies but will need to be properly incentivised if they are to

[7] The Academy hosted a joint workshop with the Faculty of Pharmaceutical Medicine to explore the challenges associated with patient adherence to medicines in December 2014. Please see our website for further details: http://www.acmedsci.ac.uk/policy/policy-projects/patient-adherence-to-medicines/

[8] The Academy has recently launched a new workstream aimed at considering the elements of this new 'social contract' and is holding a one-day scoping workshop in June 2015. Please see our website for further details: http://www.acmedsci.ac.uk/more/news/exploring-a-new-social-contract-for-medical-innovation/

succeed. It was pointed out that the therapeutic potential of such technologies had already been demonstrated in the field of hepatitis C, where new lifesaving treatments are rapidly coming through the pipeline. However, it is not yet certain whether society will be willing or able to meet the price of such technologies.

Mr Freeman recognised this challenge and argued that a quiet revolution was occurring in the way that emerging products are reimbursed. For future success, he said that strategies that enable flexible pricing will need to be developed and creative thinking will be required. Increasingly, foreign markets will become important to the UK and it will be necessary to work out how to best sell medical products abroad for our wider benefit.

Participants felt that the current system of reimbursement for novel therapeutics and technologies needs to be examined particularly carefully and the panel suggested that the current model in which market forces dictate the development of therapeutics may need to be revised. For example, the Cancer Drugs Fund model will need to be re-examined since the pricing pressures associated with oncology are likely to spread to other disease areas in the future. Alternative frameworks for adoption and adaptive licensing should be closely considered: these will need to be flexible enough to allow funders to rapidly respond to the evolving challenges of the healthcare system but stable enough to encourage long-term research investment. Alternative funding strategies were discussed for the development of drugs targeted at areas of unmet need which would not be commercially viable under the current reimbursement system. For example, it was argued that the present paucity of research into new antimicrobials, despite a clear societal need, represented market failure.

Participants highlighted the need to develop reimbursement models in which risk is shared more widely between partners. It was stressed that when private companies partner with the NHS to deliver a novel technology or therapy, reassurance needs to be given that there will be positive outcomes for both parties. Tariffs play an important role in incentivising the development of certain types of drugs and devices. It was highlighted that tariff barriers can be a particular obstacle to adoption and can take several years to be removed, despite support from health technology appraisal agencies. It was suggested that current debates around the Pharmaceutical Price Regulation Scheme are also unhelpful. Instead, small and large industries should combine efforts to examine how value can best be demonstrated.

According to participants, one key factor not currently recognised in the pricing of new products is the speed of adoption. Faster adoption increases the number of years that a product can be sold under patent and therefore impacts on pricing strategies. High uptake of the ‘Breakthrough Therapy’ designation in the US is a clear example of how attractive expedited access to the market is in practice. The cost and format of phase III clinical trials was questioned in this context, as they are increasingly considered to be unwieldy and expensive. The US is currently examining changes to accelerate and reduce the costs of phase III trials and some participants felt that the UK should also be more proactive in this area.

The Innovative Medicines and Medical Technology Review

The Minister highlighted that many of the topics raised in his speech would be examined in the 'Innovative Medicines and Medical Technology Review' announced in November 2014 (since renamed the 'Accelerated Access' review).[9,10] He stressed the importance of ensuring that this review receives contributions from stakeholders across the life sciences ecosystem, including NICE, MHRA, NHS England, charities, patient groups and the private sector. The challenge will be for the review to set out clear recommendations that will increase patient confidence and attract higher levels of investment in UK life sciences, whilst ensuring that NHS patients have access to the best treatments available. He noted that the review has cross-party support, which should ensure continued momentum whatever the outcome of the election.

Concluding comments

The session concluded with a discussion of the aspirations of the life sciences champions for the Accelerated Access review: it was generally accepted that this would be an important step in understanding how to improve the UK's current system of discovery and adoption of new innovations. Importantly, the panel felt that it should address operational issues associated with current silos in the research and healthcare systems. The review should also consider the way in which the life sciences sector currently operates on behalf of patients and society and the 'social contract' that currently exists between society and the healthcare system. It was reiterated that patients and their families should be the central drivers for decision-making in healthcare.

Professor Sir John Tooke PMedSci concluded the meeting by thanking Mr Freeman for his Lecture and both the life sciences champions and the audience for their contributions to a stimulating discussion.

[9] https://www.gov.uk/government/news/major-investment-in-life-sciences
[10] Subsequent to the lecture, the terms of reference for the Innovative Medicines and Medical Technology Review have been published: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/410987/150305_ToR_FINAL__2_.pdf

Appendix I – Programme

12 February 2015

Academy of Medical Sciences

14:30 – 15:00	**Registration and refreshments**
15:00 – 15:05	**Welcome and introduction** Professor Sir John Tooke PMedSci, President, Academy of Medical Sciences
15:05 – 15:30	**Keynote speech** Mr George Freeman MP, Parliamentary Under Secretary of State for Life Sciences
15:30 – 16:40	**Panel discussion session and Q&A** Professor Sir John Tooke PMedSci, President, Academy of Medical Sciences ***Panel participants:*** • Mr George Freeman MP, Parliamentary Under Secretary of State for Life Sciences • Professor Sir John Bell GBE FRS HonFREng FMedSci, Regius Professor of Medicine, University of Oxford • Mr Chris Brinsmead CBE, Life Sciences Business Adviser • Mr John Jeans CBE, Chairman of Imanova, Chair of Cardiff University, Chair of UK Biocentre
16:40 – 16:50	**Closing comments from the President** Professor Sir John Tooke PMedSci
16:50 – 18:00	**Drinks reception**
18:00	**Close**

Appendix II – Delegates

Ms Elizabeth Bohm Senior Policy Adviser	The Royal Society
Miss Jennifer Boon Policy Manager	British Heart Foundation
Dr Laura Boothman Policy Manager	Arthritis Research UK
Dr Sarion Bowers Research Policy Advisor	Wellcome Trust Sanger Institute
Dr Keith Bragman President	Faculty of Pharmaceutical Medicine
Sir Alasdair Breckenridge CBE FRSE FMedSci Fellow	Academy of Medical Sciences
Mr Jonathan Brüün Chief Executive	British Pharmacological Society
Mr Ian Busby Leader	SETsquared
Ms Jackie Caine Senior Science Policy Advisor	Society of Biology
Sir Simon Campbell CBE FRS FMedSci Co-Chair of the Science, Industry and Translation Committee	Royal Society
Dr Hollie Chandler Senior Policy Adviser	Cancer Research UK
Ms Victoria Charlton Head of Policy	Academy of Medical Sciences
Dr Andrew Clempson Research Policy Manager	Association of Medical Research Charities
Mr John Colenutt Chief Executive Officer	Genomics Ltd
Sir David Cooksey GBE FMedSci Chairman	The Francis Crick Institute
Dr Claire Cope Policy Officer	Academy of Medical Sciences
Miss Caroline Davies R&D Policy Officer	Association of the British Pharmaceutical Industry
Sir Colin Dollery FMedSci Senior Consultant	GlaxoSmithKline
Professor Peter Donnelly FRS FMedSci Director	Wellcome Trust Centre for Human Genetics, University of Oxford
Dr Mark Edwards R&D Director	Ethical Medicines Industry Group
Mr Peter Ellingworth Chief Executive	Association of British Healthcare Industries
Dr Robin Fears Biosciences Programme Director	European Academies Science Advisory Council
Mr Jonathan Fennelly-Barnwell Collaboration and Development Lead	Health Research Authority
Dr David Fox Industry Associate	Royal Society of Chemistry

Dr Zoe Freeman Public Affairs and Communications Executive	BioIndustry Association
Mr Adrian Gainer Vice President	HOK
Mr Leslie Galloway Chair	Ethical Medicines Industry Group
Professor Simon Gaskell President and Principal	Queen Mary University of London
Professor Peter Grant FMedSci Professor of Medicine	University of Leeds
Dr Jim Hagan Chief Executive Officer	Global Medical Excellence Cluster
Dr Jeremy Haigh European Chief Operating Officer	Amgen
Mr Julian Hitchcock Counsel	Lawford Davies Denoon
Professor Peter Johnson FMedSci Professor of Medical Oncology	University of Southampton
Miss Samantha Johnson R&D Policy and Scientific Affairs Executive	GlaxoSmithKline
Dr Hannah Kerr Head of R&D Policy and Scientific Affairs	GlaxoSmithKline
Dr Jeff Kipling Director R&D Policy	GlaxoSmithKline
Sir Alan Langlands FRSE FMedSci Vice Chancellor	University of Leeds
Mr Andrew Lawrence Managing Director	Monmouth Partners
Dr Charles Lowe President, Telemedicine & eHealth	Royal Society of Medicine
Dr Helen Munn Executive Director	Academy of Medical Sciences
Dr Philip Murphy Head, Experimental Medicine Imaging	GlaxoSmithKline
Professor David Neal CBE FMedSci Professor of Surgical Oncology	University of Cambridge
Dr Menelas Pangalos Executive Vice President Innovative Medicines & Early Development	AstraZeneca
Professor Marisa Papaluca Amati Section Head of Scientific Support and Projects	European Medicines Agency
Dr John Parkinson Consultant	
Mr Timothy Payne Osteopath	

Dr Jonathan Pearce Translational Programme Manager	Medical Research Council
Professor Jeremy Pearson FMedSci Associate Medical Director (Research)	British Heart Foundation
Sir Keith Peters FRS FMedSci FLSW Senior Consultant	GlaxoSmithKline
Mrs Nina Pinwill Associate Director	National Institute for Health and Care Excellence
Dr Rachel Quinn Director of Policy	Academy of Medical Sciences
Dr Tony Raven Chief Executive Officer	Cambridge Enterprise Limited
Dr Frances Rawle Head of Corporate Governance and Policy	Medical Research Council
Sir Michael Rawlins FMedSci Chair	Medicines and Healthcare products Regulatory Authority
Dr Duncan Richards Clinical Director	GlaxoSmithKline
Professor Peter Rigby FRS FMedSci Professor Emeritus of Developmental Biology	The Institute of Cancer Research
Dr Paul Robinson Medical Director	Merck Sharp & Dohme
Ms Sophie Roscoe Private Secretary to the Minister for Life Sciences	Office for Life Sciences
Dr Eva Sharpe Science Information and Policy Manager	The Institute of Cancer Research
Ms Philippa Shelton Policy Advisor	Royal Academy of Engineering
Mr Steve Skyrme Commercial Strategy Lead	Pfizer
Professor Jonathan Slack FMedSci Professor Emeritus	University of Bath
Professor Bill Spence Vice Principal for Research / Professor of Theoretical Physics	Queen Mary University of London
Professor Karen Steel FRS FMedSci Professor of Sensory Function	King's College London
Ms Rebecca Thompson Policy Intern	Academy of Medical Sciences
Professor Bart Vanhaesebroeck FMedSci Professor of Cell Signalling	University College London
Professor Peter Weissberg FMedSci Medical Director	British Heart Foundation
Ms Doris-Ann Williams MBE Chief Executive	British In Vitro Diagnostics Association

Dr Penny Wilson Innovation Platform Leader – Stratified Medicine	Innovate UK
Dr Louise Wood Director of Policy and Public Affairs	Association of Medical Research Charities
Sir Kent Woods FMedSci Fellow	Academy of Medical Sciences
Ms Louise Wren Policy Adviser	Wellcome Trust
Dr Hakim Yadi Chief Executive	Northern Health Science Alliance
Dr Anna Zecharia Head of Education and Training	British Pharmacological Society

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