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Wessex Medical Research
Funding research to fight disease

The newsletter of WESSEX MEDICAL TRUST

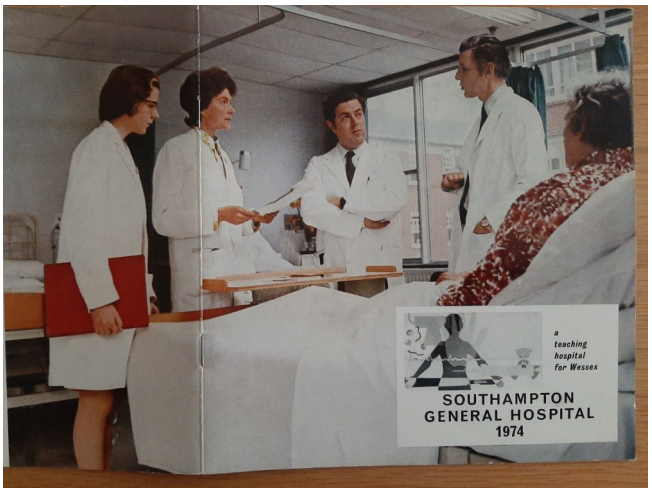
Autumn 2022

Fifty Years of Medicine at Southampton

Below are extracts from a talk given by Professor Sir Charles George to current medical researchers at Southampton in June 2022.

In 1944, the Goodenough Committee recommended that the total annual intake of all UK medical students should increase to 2,600 (from 2,050 in 1942). However, in 1957, the Willinck Report, fearing a 'surplus' of doctors, proposed an overall annual reduction of 10%. Happily, the Todd Commission in 1966 recommended the total number should increase to 4,230 by 1980. This was in part the spur for establishing a Faculty of Medicine at Southampton which received its first students during the academic year 1971-72.

Southampton was chosen since Wessex was at the time the only NHS region without a medical school and the new hospital, then currently under construction, could be adapted to include the new Faculty. In addition, post graduate teaching was already taking place and there was a well-established department of Physiology & Biochemistry which would provide a strong nucleus for a medical school.



Charles George, then a Senior Lecturer (second from right), joins Professor Jack Howell and early medical students in a clinical teaching ward round

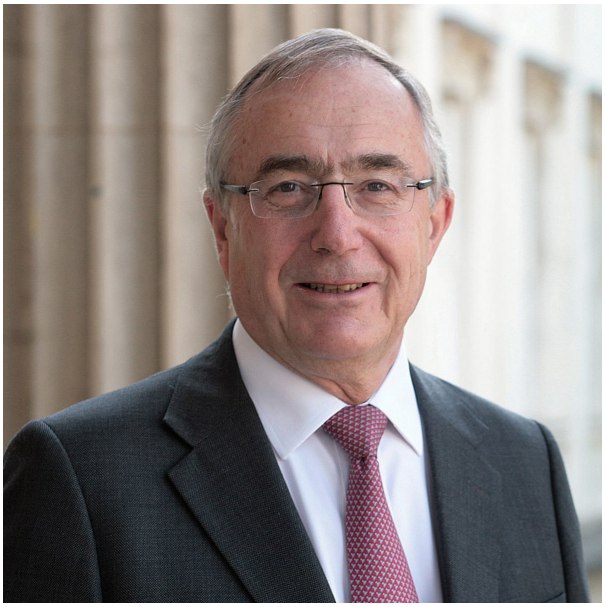
Shortly after the first cohort of medical students graduated, in 1977 the Wessex Medical (School) Trust (now Wessex Medical Trust, WMR) was established. New buildings were completed and existing strengths in Cancer Studies, Microbiology, Epidemiology, Primary Medical Care, Hepatology (liver diseases) and Respiratory Medicine were developed. In parallel, individual talent was encouraged and this included some still-familiar names such as Professor Sir Stephen Holgate (Respiratory), Professor Cyrus Cooper (Rheumatology) and Professor Sir Michael Arthur (Professor of Medicine 1992-2004 and recently retired as Provost & President of University College London). It is also appropriate to mention the late Professor David Barker who was instrumental in establishing studies on Developmental Origins of Health and Disease. All these, and many more, received their significant initial funding from Wessex Medical Research.

Research grants awarded to the Faculty overall grew from £3.5 million in 1991 to £11.45 in 1994 and today they are at an annual rate of some £43 million. Over the 47 years of its existence, Wessex Medical Research has contributed in excess of £21 million towards these totals.

Professor Sir Michael Arthur

Professor Sir Michael Arthur reflects on his illustrious career in both medicine and academia and recognises the contribution made by Wessex Medical Trust.

My contribution to Higher Education at the Universities of Southampton, Leeds and University College London (UCL) was recognised with the award of a knighthood in this years Queen's Birthday Honours list, of which I'm very proud. My investiture takes place in December at Windsor Castle and the proximity in time of that event has led me to reflect on my career and to thank all those that have supported and helped me. As you might imagine it is a very long list.



Back at the beginning of my senior academic career, I was appointed to the Chair of Medicine in 1992 and also held office as Research Coordinator and then Head of the School of Medicine and ultimately Dean of the super faculty of Medicine, Health and Life Sciences (remember that!). These were halcyon days, following in the footsteps of Charles George and Eric Thomas, who were also great mentors and supporters.

Wessex Medical Trust played a very key role through this period, providing substantial pump priming funding initially to my own research, but also to others in the liver group, including John Iredale (now Executive Chair of the Medical Research Council), Nick Sheron, William Rosenberg, and Derek Mann, all of whom have gone on to make a significant contribution to UK liver research. We were best known globally for our paradigm shifting studies of the reversibility of liver fibrosis, which is now a widely accepted phenomenon, best shown in humans after the successful eradication of hepatitis C virus.

At our peak, we managed to win grants totalling the best part of £1M per annum from MRC, Wellcome and other funders. Success at this level was made possible by those early awards from Wessex Medical Trust and so a huge thank you from me to everyone involved in the charity and particularly to the donors.

But the story doesn't finish there. In the '90s and '00s, Wessex Medical Trust provided funding at a strategic level that allowed the Medical School at Southampton to recruit a new generation of Professors and other researchers to flourish and succeed in an ever more competitive research environment. All of that facilitated success at a very high level in both national research and teaching assessment exercises. It literally put Southampton Medical School on the map, acknowledged across the sector as a significant player on the national scene. Well done and thank you again to Wessex Medical Trust.

It also served to act as a springboard for my career, with a subsequent 9 years as Vice-Chancellor at the University of Leeds and 7 years as President and Provost of UCL. There are many aspects of my time at both these universities that will have contributed to the award of my knighthood, but I'm very clear that the building blocks were at the University of Southampton supported by Wessex Medical Trust. Thank you all for giving me such wonderful opportunities.

Chairmen of Trustees

In April 2022, Terry Madden retired as Chairman and a Trustee after an extended period in both roles. During his time as Chairman, Terry oversaw some subtle but important changes in the structure of the Trust as well as being involved in the establishment and operation of our presence at the New Forest Show, which started in 2015. The Trustees are extremely grateful for Terry's outstanding contribution to the affairs of the Trust—which was considerable—and we take this opportunity of publicly thanking him and wishing him well for the future. In his place as Chairman we welcome Professor Sir Charles George, Emeritus Professor of Clinical Pharmacology at Southampton, who was twice Dean of the Faculty of Medicine, from 1986 until 1990 and again between 1993 and 1998. He has also served as Medical Director of the British Heart Foundation (1999-2004), President of the British Medical Association 2004-05 and Chairman of the Stroke Association (2009-13).

PhD Studentships

We are pleased to report that in the Spring of 2022 we were once again able to award three PhD studentships. The students have now been recruited and began their studies in October 2022. Details of the projects are as follows:

"Enhancing anti-GD2 chemo-immunotherapy in pre-clinical neuroblastoma models"

Despite being one of the most common childhood diseases, neuroblastoma treatments still have poor outcomes. Immunotherapy related to the GD2 molecule has shown some promising results and this study will collate the presently disparate evidence with the aim of improving treatment.

Principal supervisor: **Dr Juliet Gray**

Associate Professor and Consultant in Paediatric Oncology

Jointly funded with the Centre for Cancer Immunology

"Deciphering the role of GABAergic signalling in tumour vascularization"

GABA is a chemical in the nervous system with immunosuppressant properties. Many cancers secrete GABA in relatively large quantities and this protects tumours from the white cells which would normally destroy them. This study aims to understand the process and control it by the use of drugs.

Principal supervisor: **Dr Yury Bogdanov**

Lecturer in Transgenic Technologies

Jointly funded with the Centre for Cancer Immunology

"Identifying the causes of muscle stem cell aging and novel therapeutics strategies"

The maintenance of muscle is dependent upon muscle satellite cells. During the aging process, satellite cell function declines, which is due to lower production of NAD+, a molecule needed for energy production. This project will study the effect of impairment in NAD+ production in muscle satellite cells and establish whether this can be improved by the use of Vitamin B3.

Principal supervisor: **Professor Karen Lillycrop**

Professor of Epigenetics

Jointly funded with Rosetrees Trust

Recycle 4 Charity

For some time now, we have been promoting the idea of recycling used printer cartridges for the benefit of WMR. This is an ongoing appeal so please search around and see what you can find.
You can send them direct to recycle4charity
(go to their website at www.recycle4charity.co.uk for freepost instructions) but remember to tell them it's for the benefit of Wessex Medical Research and give our reference number (C16805).

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We are proud to be a member of the Association of Medical Research Charities and our last regular Peer Review Audit took place in 2020.

amrc PEER REVIEW AUDIT 2020

Mailpoint 420
Level B
South Academic Block
Southampton General Hospital
Southampton
SO16 6YD

E-mail:
enquiries@wesmed.org.uk

www.wesmed.org.uk

Innovation Grants

We continue to offer our Innovation Grants (of up to £20,000 each) for early career researchers. Three grants were awarded this year and it is particularly pleasing to note that two of the successful applicants (Dr Shapanis and Dr Forster) were recently funded through their PhD studies by Wessex Medical Research.

Dr Andy Shapanis

Faculty of Environmental and Life Sciences

"Development and optimisation of a serum based early cancer diagnostic system"

Currently, almost half of all cancers diagnosed are identified at stage 3 or later, where their survival rates are drastically lower. A previous study created a blood test which used artificial intelligence to predict the presence of cancer (99% successful) and their location in the body (88%). The aim of this project is to adapt this test and make it faster, cheaper, simpler and more widely accessible.

Dr Jade Forster

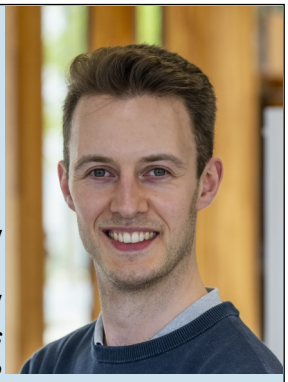
Faculty of Medicine

"Identifying the underlying molecular mechanisms and alterations of the high-risk neuroblastoma tumour microenvironment in TH-MYCN mice treated with anti-GD2 antibody therapy"

Neuroblastoma is a childhood cancer in which half of patients are classified as high-risk and have a poor outcome despite intensive treatment. This project aims to use a new technology to investigate the effects of immunotherapy on the genes in cancer cells.

Dr Niall Hanrahan

Faculty of Engineering and Physical Sciences



"Raman-on-a-chip for label-free and culture-free identification of viable but non-culturable bacteria"

Current methods for diagnosing acute complex bacterial infections and identifying anti-microbial resistance can take 2-4 days and this hinders treatments. The study will address the problem using RAMAN spectroscopy and this has the potential to transform infectious disease diagnostics.

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