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WARWICK MEDICAL SCHOOL MAGAZINE

SPRING 2019

The NHS Long Term Plan

Implications for
medical education
and research

Diversifying Tomorrow's Doctors

How students from non
science backgrounds
can help enrich
medical courses

Following in the Footsteps of Robert Hooke

Warwick's new MSci
Integrated Science

WARWICK

MEDICAL SCHOOL

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Foreword

Welcome to the third edition of our Warwick Medical School (WMS) magazine.

This issue brings you a look at the Long Term Plan from the NHS and how that will affect medical schools like ours over the next decade as we develop our own strategy to meet the changing needs of healthcare. We also follow in the footsteps of polymath Robert Hooke as Professor Rob Cross talks about our new MSci Integrated Science.

We are delighted to have several MB ChB student contributors in this edition. Alumna Aoife Abbey recently took time out of her busy job as an intensive care doctor to talk to us about her experiences on the course and at work as well as telling us about her new book and her time blogging as the Secret Doctor.

We also hear from second year student Oli Rushworth about the different perspectives, skills and experiences that students with a non-science background can bring to the MB ChB programme.

We also celebrate the success of our Warwick Wilderness Medicine and the Trauma and Emergency Medicine Society as winners at the national wilderness medicine competition – Wild Trials.

Our look at postgraduate education in this edition explores the benefits of 'authentic learning'. In addition our view on research looks at the work of a group of researchers striving to bridge the translation gap of innovative research to clinical practice and routine healthcare.

As spring comes to campus, the work to create our new interdisciplinary biomedical research building is in full swing. Its completion seems a long way off in 2021 but it will be fantastic seeing it take shape over the coming months.

We are looking forward to meeting undergraduate students at WMS for the first time in June this year at our university open days. We have only ever offered postgraduate courses since our inception in 2000. It will be a real treat for us to be able to talk to the next generation about what we feel are two very exciting prospects in the MSci Integrated Science and BSc Health and Medical Sciences.



Professor Suhesh Kumar,
Dean of Medicine,
Warwick Medical School

The NHS Long Term Plan: implications for medical education and research



Our work in the Medical School is inextricably linked to the NHS and therefore significant policy developments affecting the NHS are of great interest and importance for us. We produce doctors for the NHS and while the purpose of our research is to ultimately improve human health and wellbeing everywhere, any impact on the NHS and our region is particularly important. This is why the publication of the NHS Long Term Plan (www.longtermplan.nhs.uk) is significant. What are the implications for Warwick Medical School?

We are currently reshaping our own 10 year plan for WMS (in fact it is a plan to 2030) and the publication of the Long Term Plan

(LTP) is therefore timely. I would like to highlight three major priorities that are key to us at WMS.

The first priority is around the positioning of prevention in the NHS. The vision is to move more health and care into the community through integrated care networks and also through better collaboration between different providers and social care. There is a focus on certain clinical priorities such as child health, mental health, cancer, cardiovascular disease, stroke, diabetes and respiratory disease.

Crucially, even urgent care may see a shift in emphasis to try and deliver this activity outside of the hospital environment and this plays well into some of the

strengths we have at Warwick Medical School. Engaging the public and communities and also working across different government departments effectively will enable the NHS to deliver this workstream, but as we have seen in other parts of the world such as Finland, such changes take time and massive culture change too.

The second priority is around improving access to healthcare. The LTP seeks to tackle one of the problems we have seen in recent years, where we have very large numbers of patients having to travel to go to outpatient clinics in hospitals to follow up for chronic conditions. Some years ago I remember reading that people in the West Midlands

alone were estimated to travel over 13 million miles to hospital appointments, so there is also the carbon footprint to consider, besides the obvious costs to the patient and NHS.

The vision is to reduce outpatient visits by a third (estimated to be about 30 million consultations a year) through a combination of providing access through alternatives in the community such as community based clinics and increasing use of telephone and virtual consultations. Indeed there is a major imperative to improve access through more digitally enabled primary and secondary care. It is early days in the NHS for this and we have a long way to go. However, we have a number of online providers now and recently Babylon (GP at Hand) received approval to extend their services to Birmingham and Solihull. These early days can be frustrating for those keen to try online services. If, like me, you have tried the NHS app, you may have found it is difficult to actually do anything with it, however the vision is that there will be more and more access to NHS services in the palm of your hand, via your smart phone. It will include 111 online and greater use of the NHS.uk platform. In addition a lot of NHS capacity is spent on care for people who can self manage chronic disease, and more support for self management could potentially improve productivity in the NHS.

Over time, work in the first and second priorities and a shift in emphasis on promotion of wellbeing, could curtail the inexorable rise in demand for NHS services. Interestingly, some

low and middle income countries may leapfrog the NHS in doing this. For example, in India they are creating 150,000 Wellness Centres, where the staffing will not include a doctor but will include digital decision support.

The third priority is collaboration. We have seen changes in the way the NHS operates through models where competition between providers has been actively encouraged. Now the zeitgeist is collaboration between healthcare providers as part of integrated care systems. This means there is an onus on healthcare providers to think imaginatively and work across boundaries to bring together acute hospitals, mental health trusts and community care providers, along with local authorities to provide integrated care.

All of this is exciting but clearly this represents a significant change for the NHS and it would be a challenge to deliver, even if all the funds requested were made available. So what would enable these changes? This is where I see the Medical School playing an important part. First, it is clear that technology enabled care needs to be adopted by the NHS at scale and a lot of workforce training and research is needed to enable this. At the moment there are many solutions from industry seeking relevant problems to solve, but there is a need for an evidence base for these and we are well placed at WMS to do this work.

The second is workforce development. We already produce excellent doctors but we need to think more broadly about

creating the types of workforce and many of the jobs needed in the new NHS may not even exist today. Furthermore, there is a lot of training needed for NHS professionals to deliver the NHS Long Term Plan, from generic skills such as leadership to new skills around delivery of public health interventions or indeed even how to deliver digital consultations. The third enabler I think is research and innovation. Clearly there are lots of opportunities for research as the long term plan provides a major impetus to change services and I am sure we will be able to rise to that challenge in evaluating their impact while working closely with our NHS partners. However, we should also not forget that step changes happen when fundamental understanding of a disease process leads to better diagnostics and treatment. Therefore, there is a now a rich portfolio of opportunities as the NHS rises to meet the healthcare challenges of the nation.

The NHS will look very different in 10 years' time, and this will also be reflected in our own journey as a medical school to 2030. WMS will have exciting new research programmes within our newly constructed interdisciplinary biomedical research building where our scientists will be able to produce deep insights that may one day transform the way we diagnose or treat human disease; our new undergraduate programmes being launched in 2020 will produce graduates equipped with knowledge and skills to tackle challenges in completely new ways. We will also rise to the challenge of ongoing training of the NHS workforce through a Lifelong Academy.

Dimitris Grammatopoulos,
Professor of Molecular Medicine,
Warwick Medical School

Bridging the translation gap of innovative research to clinical practice and routine healthcare:

The pathology-led institute of precision diagnostics and translational medicine

Members of the team;
Neil Anderson, Emma Braybrook,
Dimitris Grammatopoulos
and Sarah English



Precision medicine is one of the most exciting new concepts of 21st century medicine. The term describes the effort to tailor diagnosis and treatment to the individual pathological phenotype, rather than base decisions on population averages, an approach that guided the bulk of medical thinking for the past 50 years.

The concept of precision medicine requires development and use of appropriate biomarkers. Use of such specialised diagnostic tests that can include a wide range of molecular and behavioural biomarkers, disease profiling by multianalyte-based algorithms, as well as imaging data, is increasingly becoming evident in medical decisions.

The prospect of identifying and applying transformative concepts of novel biomarkers in routine practice has dramatically been improved by the development of large-scale biological databases and technological advances in powerful exploratory ‘-omics’ methodologies to characterise in detail subtle differences in patient phenotypes.

In parallel there has been an explosion in advanced data science and artificial intelligence-based computational tools to deliver the translational potential of ‘big data’ and machine learning-based applications, as well as innovations that introduce ground-breaking concepts in microfluidic engineering (the lab-on-a-chip concept) and even mobile health technology to obtain data in unprecedented real time mode. Although significant transformative impact on current clinical practice is already evident in cancer screening, detection and management, sustained effort to maintain momentum and creative thinking is needed to deliver significant benefits in complex common diseases, such as obesity and diabetes, cardiovascular disease and mental disorders.

Such research advances offer the promise of accelerating discovery of opportunities for prevention and treatment – building a solid foundation for precision medicine. However, it is widely acknowledged by leading innovators that breakthrough discoveries cannot change the world if they do not leave the lab (Wyss Institute for Biologically Inspired Engineering at Harvard University). Emphasis is placed on research translation. This is particularly relevant for the UK healthcare system, which appears to be particularly slow and offers only limited and sparse adoption of scientific innovations with established transformative potential. In order to keep pace with scientific advances, the NHS needs to develop and integrate state-of-the-art scientific and technological hubs to bridge a knowledge and translation pathway gap that is centred around the patient and service needs.

Pioneering this concept locally, Neil Anderson, the Clinical Director of Clinical Diagnostic services at UHCW together with Warwick Medical School Academics Dimitris Grammatopoulos, David Snead, Charles Hutchinson and Harpal Randeva, have established the Institute of Precision Diagnostics and Translational Medicine. The Institute forges an interdisciplinary ecosystem, by bringing together front-line NHS diagnostic and laboratory medicine services, academia and industry, biomedical and data scientists, clinicians, pathologists and biotech innovators to capture and harness creative tools and approaches to precision diagnostics, test them rigorously, and ultimately use them to build the evidence base needed to guide clinical practice. This concept is fully aligned and supports the new NHS Long Term Plan that emphasises the need for improved prevention and detection of common diseases and seeks to boost innovation in medical technology and the adoption of new technologies in the health service to improve patient outcomes.

The Institute’s clinical research interests focus on areas of major local investment in infrastructure and academic and clinical expertise that have been identified as national priorities: women’s health, endocrinology, diabetes and obesity, cancer and management of long term conditions in primary care. These areas provide the Diagnostics ‘blueprint’ to develop, validate and apply the Precision Biomarker tools of the future by harnessing the potential of some key technological pillars: cutting edge -omic platforms; use of data science and Artificial Intelligence (AI) to capture signals from digital

pathology slides; predictive modelling by using multianalyte-based algorithms; extraction of large amount of quantitative features from medical images using algorithms for pattern recognition and decision support (the concept of radiomics). The Institute already hosts the UHCW-led PathLAKE, which attracted investment of £14 million from the UK Industrial Strategy Challenge Fund, to create a national centre of excellence in AI in pathology.

In addition, the Institute places particular emphasis on the advanced training skills and expertise in diagnostics research and the development of the pathology innovators of the future. Long term commitment and substantive support has already been secured from the diagnostics industry and various academic centres across the West Midlands to enable the Institute to deliver translation of research and innovation, scientific training and laboratory management excellence.

Finally, the Institute aims to develop a rich resource of appropriate biobanks and databanks that will support the scientific community in further research to achieve a deeper understanding of common diseases; discovery of additional diagnostic tools; development of different models of research translation to aid and guide reliable models of clinical trials.

Ultimately, this data sharing will enable the technological inventions of the future to achieve better assessment of disease risk, understanding of pathological mechanisms of disease and prediction of optimal therapy, in order to expand benefits of precision medicine across the spectrum of human health.

Oli Rushworth,
Second year medical student,
Warwick Medical School

Diversifying tomorrow's doctors

How students from non-biological backgrounds can enrich medical courses – Oli Rushworth, second year Warwick Medical School MB ChB student.

“You went from graphic design to medicine? Can you do that?” is one among many incredulous phrases I have encountered throughout my medical journey. That such a career path is so surprising and shocking is something that saddens me. Certainly, when I first started investigating the medical school application process I too was (pleasantly) surprised to learn that medicine could be an alternative career choice to those without a biological science background. But since beginning medical school I have witnessed first hand the diversity of skills required to make a good doctor and the diversity of backgrounds that complement medicine and

medical education. I now believe this ‘alternative’ career path is something that warrants promotion, not least as the UK continues to face a crisis in recruitment of doctors and decreasing medical school application numbers. Despite all this, the opportunities for students from a non-biological science background are once again beginning to decrease, with only a handful of graduate entry medical programmes remaining that are willing to accept non-biological science students onto their courses. It is time to set the record straight: non-biological students can make great doctors and we should be training them.

It has been shown in several studies that a diversity of medical students leads to high quality practitioners, who are needed to deliver the best healthcare for the next generation. Tomorrow’s doctors need good communication skills, expertise in digital interfacing, an understanding of health economics and other important qualities that non-biological science background students can contribute to the medical educational enterprise, enriching and enhancing everyone’s education through their diversity.

Medical courses that accept those from non-biological science backgrounds can boast a more diverse cohort of students. This is not restricted to educational background alone. At least at Warwick Medical School, it is more typical that non-biological science students have come to medicine later in life with more experiences in various working roles when compared to their biological science counterparts. With this comes different approaches to problem solving, an increased familiarity with the working environment and what it means to be part of a team, as well as various skills and abilities that can be of benefit to patients and colleagues.

My own personal experience in graphic design has meant that I have been able to create useful visual aids and worksheets to assist my peers with their learning. My ability to think more abstractly and to explain or approach various concepts from a different perspective as a result of my background has made difficult concepts easier for some to understand. These subtle benefits can also be attributed to other students from arts and humanities backgrounds. The presence of a philosophy student in case-based learning, for example, may promote better discussion around ethical considerations in their case. An English student may address specific language used when taking a history from a patient, and an engineering student may showcase their ability to dissect complex concepts down into understandable chunks. In addition to this, there are non-biological students who bring more clinically related benefits to the cohort, for example nurses, paramedics, radiographers, physiotherapists, speech and language therapists etc. Their clinical knowledge and work experience within the NHS provides a very valuable insight to their peers. This is not to diminish the contribution of those with a science background to medical school life but rather to

state what might not be so obvious or apparent to those not integrated into a medical school with such mix of backgrounds.

Ultimately, this collaboration of students from a wide variety of backgrounds helps to produce more well-rounded students and therefore more well-rounded doctors; doctors who have a more holistic approach with greater consideration for what patients find important and who don’t solely focus on the underlying scientific pathophysiology of the disease that a patient may have.

Medical Career Fact

Did you know, research suggests that students with prior exposure to the humanities are statistically more likely to have higher levels of ‘positive physician traits’?

A study from the US published last year in the Journal for General Internal Medicine claims to have found a causal link between exposure to the humanities and both higher levels of ‘positive qualities’ such as ‘empathy,’ and ‘tolerance for ambiguity’ and lower levels of adverse traits (e.g. markers associated with ‘burnout’).

23.4% of students completed the survey in this cross-institutional study (five US medical schools). Regression analyses revealed that exposure to the humanities was significantly correlated with positive personal qualities, including empathy ($p < 0.001$), tolerance for ambiguity ($p < 0.001$), wisdom ($p < 0.001$), emotional appraisal ($p = 0.01$), self-efficacy ($p = 0.02$), and spatial skills ($p = 0.02$), while it was significantly and inversely correlated with some components of burnout ($p = 0.01$). All hypotheses were reported to be statistically significant, with effect sizes ranging from 0.2 to 0.59.

Implications for practice: there is strength in team-working, and valuing individuality! In MB ChB, Case Based Learning (CBL) is a perfect opportunity for our students to gain expertise from the diverse backgrounds in their groups. For science students, there’s an opportunity to impart their knowledge and approaches to those from a non-science background. Non-science students have a valuable role to play in this group, with ‘tolerance for ambiguity’ being of central importance in a medical career.

Going wild – Medical students take extra-curricular activities to another level

Medicine is undoubtedly a challenging degree, particularly intensive four year courses such as Warwick's. In spite of this, the majority of our medical students find the time to get involved in extra-curricular activities, including societies, sports clubs, volunteering and peer-to-peer teaching. But what benefits can this bring and how can these activities help shape the doctors of tomorrow?

Earlier this year, a group of MB ChB students from two of our student-led societies, Warwick Wilderness Medicine and the Trauma and Emergency Medicine Society, took part in a national wilderness medicine competition – Wild Trials. Run every year, the events sees teams from UK medical schools compete against each other on a number of pre-hospital, emergency and trauma based medical scenarios in the wilderness.

During this year's competition, scenarios ranged from dealing with a patient suffering from severe dehydration to a mass-casualty incident following an explosion, where effective triage was required.

As well as being assessed on their ability to safely and appropriately manage the medical problems encountered in each scenario, participants were scored on their communication skills, logistical planning, problem solving, team working and their ability to manage evolving situations – all crucial skills for their future careers as doctors.

The two Warwick teams were placed first and second overall out of a total of 22 teams. Tom Dixon, President of the Trauma and Emergency Medicine Society, was keen to emphasise the importance of teamwork in achieving their results:

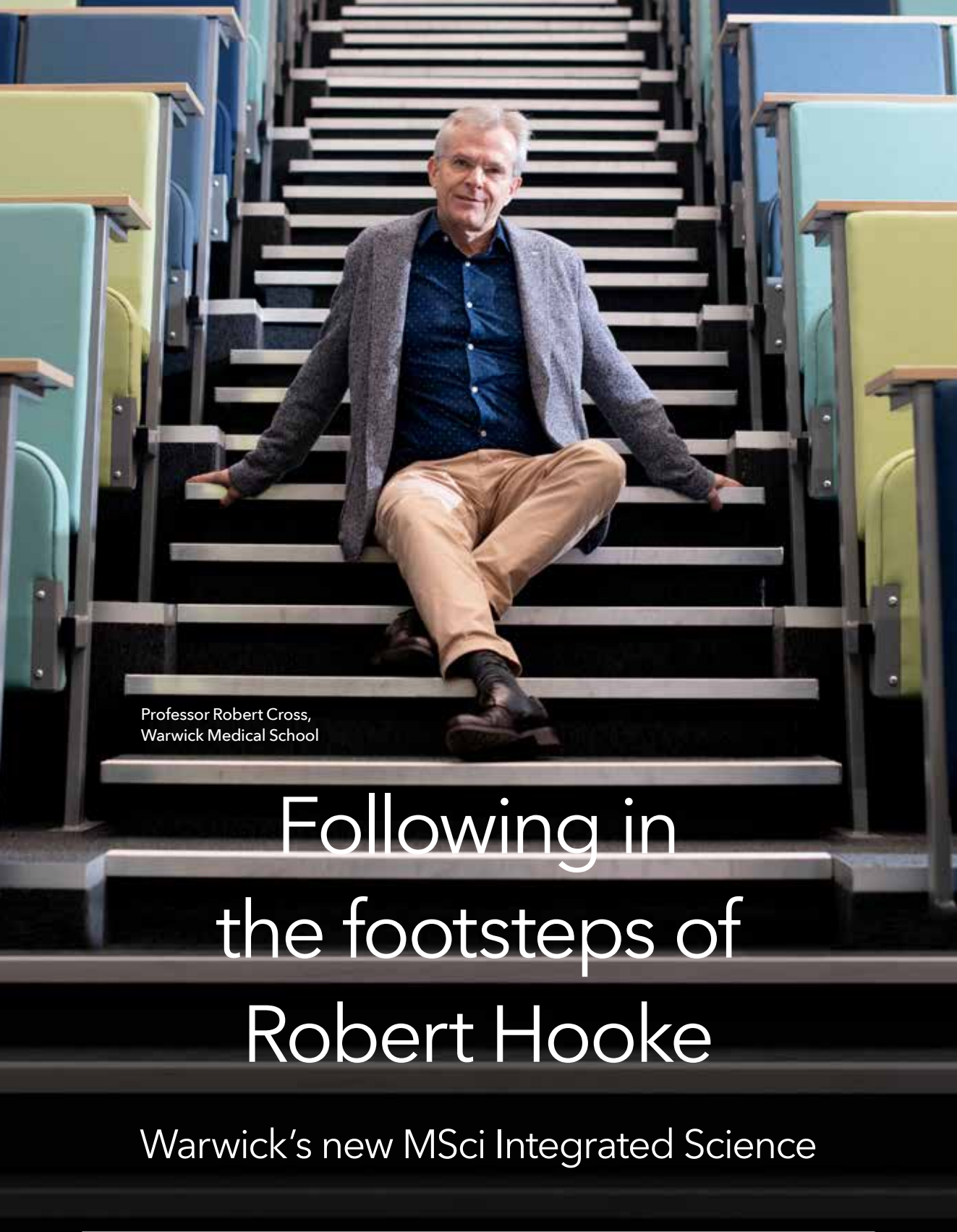
"We are absolutely thrilled to have placed so highly in this national competition. Delivering high-quality training scenarios has been a real focus of both the Wilderness Medicine Society and Trauma and Emergency Medicine Society over the last couple of years, and it's just so gratifying to know that this training has helped to shape some of the best future clinicians in the country. We couldn't be more proud – not just of the teams that competed, but also the huge amounts of behind the scenes efforts from all the dedicated society and committee members leading up to the competition – truly a team effort!"

Warwick Medical School has a long-standing tradition of peer-led training programmes, and results like these highlight the added value that these initiatives deliver on top of the MB ChB curriculum.

But getting involved in extra-curricular activities isn't just about developing skills useful for future careers. As well as societies focused on specific interests within medicine, our students run sports clubs, music groups, art sessions, games nights and more, providing a much-needed opportunity to switch off from medicine and do something completely different – a valuable skill in itself.



Left to right: Tom Long, Matt Thompson, Tom Dixon, Kim Knowles, Isabel Hiskett, Joe Phillips, Dan Murray, Philippa Pollitt.



Professor Robert Cross,
Warwick Medical School

Following in the footsteps of Robert Hooke

Warwick's new MSci Integrated Science

Modern medicine is rooted in the idea that the human body is a living machine. WMS hosts a community of researchers who are working to understand the machinery of living cells at a nuts and bolts level, exploring basic questions about how life works. Our new undergraduate course, known locally as the Hooke science programme, aims to harness the skills, knowledge and enthusiasm of our researchers to train a new generation to explore the machinery of life.

Robert Hooke, one of the world's first professional scientists, was a polymath. Hooke, who came from an unprivileged background, lived his life 400 years ago, in an age where the foundations of experimental science were still being laid. Hooke's energy and curiosity drove him to make fundamental discoveries that changed our understanding of the world, to explain and enthuse about his discoveries to scientific audiences and in coffee shops, and to harness his new insights to make practical contributions to the quality of everyday life, across an astonishingly wide range of subjects. Hooke built microscopes and telescopes and pressure chambers, and used them to interrogate the inner workings of the natural world. Hooke discovered cells and mapped the surface of Mars. He invented the sash window and the universal joint. He rebuilt London, together with his friend Christopher Wren, in the aftermath of the Great Fire in 1666.

Our new undergraduate course, the MSci in Integrated Science, aims to channel Hooke's energy and curiosity about the workings of the natural world – especially the living world – to equip a new generation of scientific explorers with the skills necessary to solve scientific problems. We want to train students to move seamlessly across the traditional boundaries of scientific disciplines, solving problems by whatever means are effective.

To do this, Warwick Medical School has joined forces with the School of Life Sciences (SLS), harnessing the strengths of each School to build the strongest course we can. Courses in integrated science, with precisely similar goals, have been running successfully at Princeton and Harvard Universities in the USA. We have visited these courses, talked to their directors, and acted on their advice, whilst adapting our approach for the UK environment. One difference, for example, is

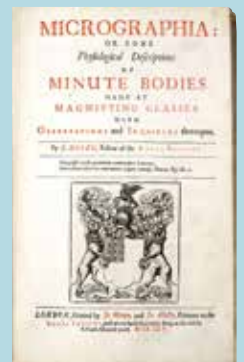
that the US courses are offered as a specialised first year that plugs adaptably onto essentially any other course in those universities. By contrast we are offering a full four year course, aiming to deliver an extended integrated training. Another difference is that students need to apply to our course via UCAS, whereas the US courses are offered to students who have already qualified themselves as undergraduates at their universities. So the Hooke programme, whilst inspired by these existing courses, is distinct.

How do you teach science without boundaries? The obvious danger is to sacrifice depth in the service of breadth, losing quality in order to achieve coverage. To avoid this, the first year of the course consists of two week blocks, with each block constructed to address a specific scientific question. As we go through the year, these questions increase progressively in their scale, beginning with questions about atoms and molecules, and ending the year with questions about organisms and populations. From day one, students will spend half their time in the lab, addressing each question by experiment. In parallel, we will teach the necessary theoretical concepts and computational skills to allow the experimental results to be analysed and understood. In years 2 and 3, students will join a larger cohort of SLS students and gain greater depth, with the integrated theme continuing. In year 4, students will concentrate almost entirely on a research project of their own design.

We look forward to welcoming our first cohort, of 12 students, in October 2020. For both students and instructors this pioneering year will be an extraordinary adventure – an adventure inspired by Robert Hooke, "England's Leonardo".



The Flea. Engraving from
Robert Hooke 'Micrographia'
London 1665.



Dr Debbi Marais,
Associate Professor (Reader),
Warwick Medical School

Using authentic learning to enhance employability

Within higher education and the current economic climate, recognition of the importance and prioritisation of enhancing the employability of students has increased over the past 10 years. We define employability as a set of skills and attributes which enhance success in your career but also benefit the broader environment. The UK Higher Education Academy's subject centres have compiled 53 different student employability profiles identifying skills relevant to a particular discipline.

The profile for health studies specifically identifies discipline-specific skills and competencies as well as transferable skills including IT; communication (written and oral); group work; negotiation; problem solving; independent working; identifying ongoing personal skill development needs; recognising equal opportunities issues and identifying appropriate action and gathering and analysing information. More recently, with globalisation, aspects such as cultural awareness and remote working are trending and will add to the widening gap between the skills employers are seeking in prospective employees and those students acquired during their studies. Currently, the focus

of most higher education programmes is on encouraging students to reflect on the skills they are developing through the core curriculum, so mainly the discipline/subject knowledge and competencies rather than transferable skills. Although exposed to some of the transferable skills, students don't seem to be confident in being able to articulate or apply those skills in the workplace.

Another trend in higher education is the changing student profile for healthcare professionals, where we are seeing more mature students and a tendency to require more flexible study options such as study on a part-time basis. This means that students are juggling various roles, which require them to prioritise their time and value activities that have a 'real world' purpose. Real world activities, or authentic learning, encompasses learning, teaching and assessment activities that enable students to explore and discuss problems and projects that are relevant to them and their working environment. These types of activities are perceived as adding value and influencing students' career progression, adding another dimension to enhancing students employability.



Authentic learning takes the student's background and their experience into consideration and allows them to feel accomplishment, thereby increasing their confidence levels. These sorts of activities also offer students a 'safe space' where they can make mistakes or take risks without being penalised, as is the case in their working environment.

Our postgraduate offering provides a variety of opportunities for authentic learning in terms of teaching and assessment. Most of our authentic assessment opportunities require students to draw from their practice and expertise in the form of portfolios or having to prepare an oral presentation, poster or even submit in the form of a scientific publication or press release. Authentic teaching activities include debates, policy briefing simulation sessions, observed/supervised clinical practice, case studies and simulated teaching sessions. We also have an innovative module offering work-based or service learning opportunities.

The 'Pathways to the Public Health Workplace' module offers students a competitive placement in an organisation with a health and wellbeing role

"The Pathways module was an invaluable experience of working in public health."

working on an organisation-directed project. Apart from receiving academic credit, students enhance their employability and receive valuable feedback on their performance in the workplace. The module offers a 'real world' opportunity with the complexities this sometimes attracts as placements may be on-site or working remotely. Comments from past students seem to indicate the authenticity. For example, "The Pathways module was an invaluable experience of working in public health." and "This is the only module to actively improve employability and try to give new experiences to students." We look forward to offering more students the opportunity to take this option and enable them to experience a small insight into work within the public health sector.

The Graduate Perspective

Aoife Abbey studied medicine at WMS, graduating in 2011. Since then, she has trained and worked in the West Midlands region and currently works at University Hospitals Coventry and Warwickshire (UHCW) as a specialist registrar in intensive care medicine. Having spent two years writing an anonymous blog for the British Medical Association, *The Secret Doctor*, she has just released a book sharing her experiences of working in intensive care. We caught up with her to find out about life since Warwick and her advice for new doctors.



Image: Rebecca Knowles

What are your best memories of your time at medical school?

I would have to say the best thing about medical school was the people I met. Some of my very best friends are people I met at Warwick and although they have now mostly moved away from the West Midlands, they remain very important in my life.

Did Warwick prepare you for life as a doctor?

I think people sometimes worry too much about the extent to which university can prepare you for life as a doctor – ‘life’ as a doctor is supposed to be something that evolves over decades, and so lots of really important learning is by definition supposed to happen on the job. Having said that, Warwick gave me a great start and prepared me well for my foundation programme in particular. I felt the course taught us not only how to develop self-directed learning skills, but also to function effectively with other people in a team.

How would you describe a Warwick doctor?

I think that Warwick’s students are mature and very motivated to learn. I originally chose Warwick’s course because I liked the idea that the entire class would be graduate students. I think that graduate entry medicine really encourages a diversity in back stories and that medicine can only be enriched by that diversity.

Did you always want to work in intensive care?

I had an idea that I wanted to do intensive care quite early on at medical school, and this was very much related to the wonderful consultants I was attached to on both my anaesthetics and intensive care rotations as a second and third year medical student. I kept my options open and trained in medicine as a broad base, until four years ago when I started specialist training in intensive care.

You’ve just released a book about your experiences of working in intensive care – ‘Seven Signs of Life’. How did that come about?

I spent two years writing as ‘The Secret Doctor’ for the British Medical Association. The blog, which was also published in the BMA’s ‘The Doctor’ magazine, grew in popularity over these two years and we gradually expanded our audience into the public sphere using social media. In March 2017 I was lucky to be approached by an editor at Vintage, who had read my work online. I met her for a coffee and the journey started from there. My job can be quite busy, but being ‘The Secret Doctor’ meant I had already spent a couple of years fitting in writing alongside my job, so it wasn’t too much of a change when it came to writing the book. Enjoying it also helped.

The book, called ‘Seven Signs of Life’, uses seven chapters – fear, grief, joy, distraction, anger, disgust and hope – to take the reader on a journey through those things which make us all human.

With those emotions in mind, what advice would you give to new junior doctors?

Firstly, keep hold of a few close friends from medical school – it’s important to share experiences and have people there to talk to who know what you’re going through.

Secondly, at the beginning don’t worry too much about doing loads of extra things outside of the job. These days a lot of pressure is put on new doctors to get involved in different things alongside their new roles. My advice for a FY1 doctor would be to apply yourself, focus on learning the basics about how to be a doctor and really congratulate yourself on that first. The rest will come naturally in time, as your interests develop.

Finally, remember that resilience isn’t a brick wall and you should never allow anyone to make you feel inferior for feeling what it is you feel. Resilience is an important skill, but unfortunately it’s in danger of becoming a weaponised term in medical training. Find people to talk to if you need to.



Harbinder Sandhu is an Associate Professor in Health Psychology based in our Clinical Trials Unit, and is currently leading a trial looking at reducing patients' use of opioids (strong pain relief medication). Here, she tells us more about the study and what she hopes it will achieve.

When did you decide you wanted to pursue a career in health research?

I've always had an interest in the application of psychology to health and fitness. I studied psychology for my undergraduate degree, followed by a master's in health psychology. It was during my master's that I realised that I really liked the research aspect of psychology and decided I wanted to pursue a career that would help people to understand their health and empower them to improve it.

You're currently leading a trial which aims to help people reduce their use of opioids. Can you tell us a bit about your career journey that has led to this role?

I've now been at Warwick Medical School for 15 years, having first come here in 2004 as a researcher in primary care and the research development team. After finishing my doctorate I secured an assistant professorship role at WMS leading the health psychology module on the MB ChB. During this time I also combined my academic role at the university with a clinical role as a health psychologist in chronic pain management in the NHS.

In 2011 I joined the Clinical Trials Unit, which gave me the opportunity to establish my own research portfolio, applying health psychology and behaviour change to the design of complex interventions in the area of musculoskeletal disorders and pain management.

Throughout my time at Warwick I've worked with many different teams within different departments and collaborated on a wide

range of projects. I've always felt supported in whatever I've done – whether that was running studies in primary care, clinical trials or teaching. Although there have been challenges along the way, working through the challenges has helped me progress to the role I have now leading a large complex clinical trial.

Why is reducing opioid use important?

We continue to see an increase in global prescribed opioid use in people with long-term non-cancer pain. In 2014 there were around 23 million opioid prescriptions in the UK, costing £322 million for a treatment that is largely ineffective and where the risks often outweigh the benefits. People who are on strong opioids report numerous side effects such as low mood, nausea and severe constipation, and are at higher risk of dependency on these medications. However GPs are limited on what alternative non-drug treatments they can offer to patients.

The I-WOTCH study (Improving the Wellbeing of People with Opioid Treated Chronic Pain) is the largest and only trial in the UK that is testing the effectiveness of a support package to help people reduce their opioid use and manage their long-term pain using alternative techniques within a cognitive behavioural, self-management framework.

What has the trial involved and what stage is it at now?

Participants affected by chronic pain were randomly allocated to one of two groups. Those in the first group continued to receive usual care from their GP and were sent a manual containing advice about how to manage long-term pain and information about the side effects of taking opioids. They also received a relaxation CD so that they could practise relaxation techniques.

Participants in the second group received the same as those in the first group but were also invited to take part in a short three-day course. During the course, participants were encouraged to think about their own lifestyle,

experiences and behaviours. The course involved education on a range of topics, including understanding pain and relaxation and mindfulness techniques.

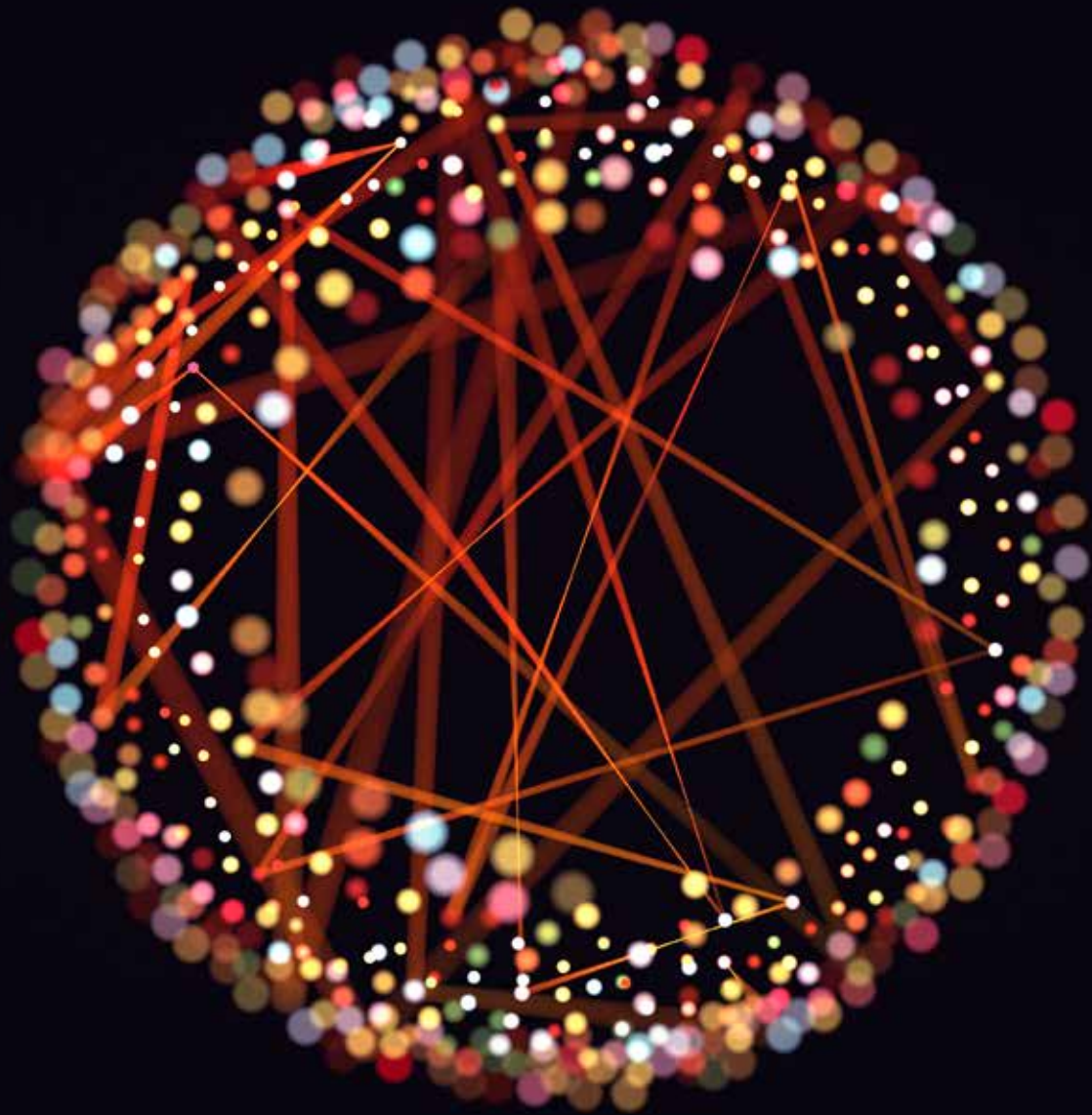
We're really pleased with how the trial had gone so far. Opioid use continues to remain a global health concern and as a result has been topical, resulting in a lot of media coverage for the trial over the past two years. This has helped raise the profile of the study. We have now successfully recruited 608 people to the study, over shooting our original target of 468! We're now in the follow up stage and we expect results to be ready in September 2020.

What do you hope the trial will achieve?

I hope that the trial will help and support people to come off of their opioids in a safe manner and give them some effective alternatives to manage their pain and improve their quality of life. Whereas today GPs are often having to prescribe opioids because of a lack of alternative treatments, in future it would be good to see more discussions with patients about the alternatives available and whether opioids are really the best approach for them. It would be great if our trial could help change policy, too.

What advice would you give to women considering a career in health research? Do you think there are still many challenges for females working in this area?

I think there are still challenges for women but more recognition, support and sharing of experiences is a move in the right direction. I would say one of the major challenges we as women face is questioning our own ability and underselling our achievements. I've found that although taking on new challenges can be daunting, it's a great way to build your self-confidence. As females we should feel proud to embrace challenges, take risks and celebrate all our successes – however small they may be – because they all help build confidence and move us forwards.



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