THE HEALTHCARE SCIENCE LEADERSHIP JOURNAL

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AHCS
Academy for Healthcare Science

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EDITORIAL

You may have started your career with a clear idea of where you wanted to get to. If so, you are in a minority. Most people discover their preferences and abilities by going from one job to another. All of us change during our career as we learn and develop and in response to what life throws at us. This issue of the *Journal* covers different career elements and ways to equip yourself for the journey.

In everyone's life journey there are times when we are called to take leadership action. **Adam Marzetti** relates how a serious incident motivated him to push for change in his own trust and more widely. His experience underlines the importance of identifying and quantifying risks and mitigations early, even when resources to take action may be difficult to get. **Sheri Scott** is also motivated to act, in her case to make laboratory services more sustainable. She highlights the value of including sustainability in quality improvement programmes and outlines eight steps organisations can take to support this agenda.

For those interested in taking a lead in developing research activities, **Mark Tooley** outlines useful skills to acquire and initial actions to take. Based on long experience in healthcare research, this article is an invaluable resource that will help those looking to combine service provision with research to find direction and support.

Some things you can prepare for. Others you can't. Unexpected events are more common than you might think, particularly when you step into leadership roles. **David Wells** was already in a challenging job when the pandemic threw him into the chaotic heart of the national response. His fascinating account of what he did and what he learned contains lessons for those facing any new situation.

Essential to the research delivery workforce are Clinical Research Practitioners. **Maya Leach** describes their role and shares her learning from leading an initiative to increase awareness of and support for professional registration. She used social media successfully to increase their external visibility and encourage recruitment to the register, culminating in their first national conference in March 2023.

Another possible career development route is to become a non-executive director. **Chris Gibson** explains what this part-time position involves in an NHS trust and underlines the value a scientific perspective can bring to a board's discussions. He makes valuable suggestions for raising the profile of healthcare science activities and encourages other healthcare scientists to consider taking on a similar role in the NHS or other organisations.

In contrast, **Mark Tooley** maps out his long journey from industrial researcher to head of department and director of research. His experience shows how it is possible to interweave different career strands even when operating at Trust board level. Complementary interests can enrich personal experience and enhance capability and performance.

Finally, there is a **review** of two books that provide skills and resources for career and leadership development. You may not be able to control everything that happens in your life but these and other resources can help you make better choices and act in ways that lead to better outcomes.

Keith Ison

NO PATIENT SHOULD DIE FROM A DEPLETED PACEMAKER BATTERY

Adam Marzetti urges all cardiac device services to ensure their follow-up systems keep track of all patients fitted with implantable electronic devices.

Every year around 50,000 people across the UK have a permanent pacemaker or other type of cardiac implantable electronic device (CIED) fitted, for example to treat high grade atrio-ventricular block. Some patients depend totally on their device to sustain their heart rhythm and keep them alive[1]. All these patients will be under the care of a cardiologist for the rest of their lives and will be regularly assessed by cardiac physiologists in clinic or via home monitoring. Battery longevity is always recorded, with forward planning for replacement.

If a patient is lost to follow-up, there is a risk of catastrophic consequences. This article shares a difficult experience when this occurred with two patients.

What we have learned can encourage all services to look carefully at how they contribute to patient safety and consider where they need to identify risks in their own organisation.

What were we doing?

For years my trust has relied on manual data entry to identify 'lost' patients and add them back to the clinic waiting list.

The cardiology department became aware their appointment system was flawed before the Covid 19 pandemic after several patients contacted the department to chase their own follow-up. The department submitted a business case to install an IT system to avoid this happening but once the pandemic hit all funding was lost.

We then had our first serious incident. A patient who had been lost to follow up presented to the Emergency department feeling unwell. Her electrocardiogram showed her pacemaker had failed and she was in a life-threatening condition. The patient underwent a swift procedure to replace the pacemaker. This restored her normal heart rhythm and led to a full recovery. The 'near miss' encouraged us to revisit the need for an adequate IT system but due to imposed financial limitations all we could do was add extra manual checks.

What happened next?

As the lead cardiac scientist for invasive cardiology in my trust I had to explain recently to a patient's family that, due to human error, their relative died because they were missed off the waiting list and were not followed up. The patient's life depended on their pacemaker working properly and when they did not receive the required battery change in time they

Adam Marzetti *is Lead Invasive Cardiac Scientist for East Kent Hospital NHS Foundation Trust and is also on the NHS England Higher Specialist Scientist Training programme.*

passed away. This incident, albeit rare, demonstrated the level of risk patients could face.

How did this feel?

I was very disappointed that the service I lead could not protect a patient from serious harm. Explaining this to the family and relatives was hard when it was clear from the previous incident that more could and should have been done to keep patients safe. Staff felt resentment and frustration because the trust had not accepted that a manual system was inadequate until a tragedy occurred.

What happened next?

Finding an alternative system was now seen to be of the utmost importance. Following a root cause analysis both senior management and the clinical lead for cardiology agreed that no further manual improvements could be made to prevent this occurring again. The only option was to install an IT system that would protect our patients.

These events have driven me to make sure that the trust takes appropriate steps to install a robust IT system that highlights any cardiac device patient not on the waiting list to the team

Figure 1: Comparative flow charts of the pathway both with, and without an IT system
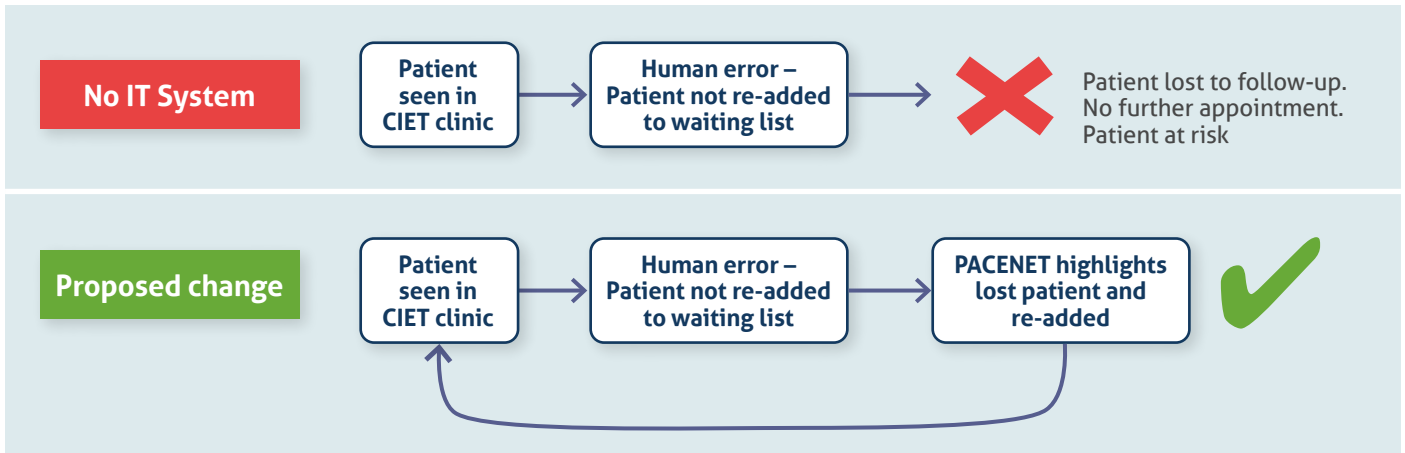
and then re-adds them. This will provide a safety-net to prevent human error leading to serious consequences.

What systems exist to provide a solution?

Various electronic databases are available in the UK that automate cardiac pacing waiting list management. Figure 1 demonstrates the difference between a manual system and one with integrated checks, such as PACENET. Any patient seen in the CIED clinic and not added to the waiting list is flagged as lost to follow-up[2], enabling them to be added back to the waiting list. Such systems also have additional benefits beyond overcoming data errors. For example, if a field safety notice is issued by a cardiac device manufacturer the software can highlight which patients are implanted with an affected device. This helps the service take swift action to keep patients safe.

A closed-loop booking and tracking system provides the safety net my own trust needs. It can also help other trusts and services without an equivalent system keep their patients safe and avoid a serious incident or tragedy. Acquiring such a system will mean identifying potential risks and consequences to the trust and submission of an appropriate business case.

Why should we act now?

Within the NHS we work together to provide care that improves the health and wellbeing of our patients. The NHS constitution[3] provides a shared set of values that puts patients at the heart of what we do. If our existing manual or software systems are not safe enough to protect our patients then we cannot uphold these values. Patient safety is a core principle of the NHS constitution and acting to ensure that

every service has safe systems in place will avoid the kind of tragedy described.

Conclusion

I would firstly implore any cardiac device follow up service that does not have a robust appointment system in place to take all appropriate steps to source and implement effective booking and tracking software.

Secondly, I would encourage all specialisms that have patients enrolled in any follow-up service to review their current systems. Ask yourself, "Is my system robust enough to prevent patients from being lost?" If not, please use my experience to help drive forward IT improvements and protect those in your care.

We are all responsible for the safety of our patients. Working in collaboration with procurement, business managers, finance, and IT teams we can ensure that this remains our first priority.

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LEADING TOWARDS A MORE SUSTAINABLE FUTURE

Green champion Sheri Scott sets out ways in which healthcare scientists can make their practice greener.

Our fundamental objective as healthcare professionals is to help save and improve lives. Yet we are in an escalating climate crisis, where more frequent extreme weather events are leading to detrimental health outcomes[1]. Should we be doing more?

I am a healthcare scientist working in academia. I also have a passion for environmental sustainability that has evolved into conscious action to promote more sustainable clinical laboratory practice.

I am a core member of the Green and Sustainable Laboratory (GSL) taskforce of the European Federation of Clinical Chemistry and Laboratory Medicine (EFLM). I have also launched the Centres for Sustainable Healthcare (CSH) Clinical Labs Susnet network. Through these activities I have helped to produce guidelines that support sustainable pathology practice[2] and have created networking spaces for discussion, collaboration and sharing of best practice[3]. Through webinars, workshops and publications I aim to promote the sustainability agenda and enthuse others to champion it within their own areas of practice.

Why is sustainability so important to laboratory practice?

The NHS and its suppliers need to work towards a net zero supply chain[4]. Recent legislation states that NHS organisations must consider and comply with the UK's Climate Change Act 2008. The NHS must now consider climate change when making key decisions and "adapt to any current or predicted impacts of climate change"[5].

> **" The NHS and its suppliers need to work towards a net zero supply chain "**

Clinical laboratories are both resource and energy intensive. Accurate diagnosis needs a temperature-controlled environment, often for extended periods. Safety can require specialised ventilation and containment. The sourcing, manufacture and disposal of specialised laboratory instruments and consumables create an environmental footprint considerably higher than most work environments.

The use of single-use plastic has grown. Clinical laboratories therefore have a particular responsibility to support NHS efforts towards sustainability, and this topic is becoming a focal point for healthcare science professional development.

Certification and Guidelines

At a systems level, the ISO 14000 group of standards promotes effective environmental management and encourages more sustainable practice in any setting[4]. Recent publications provide more specific guidance and support for professionals who are working towards greener laboratory practices. The ELFM's green and sustainable guidelines[2] target four key areas: energy consumption, water consumption, waste production, and the use of hazardous chemicals.

Laboratory professionals can use the guidelines and associated checklist to advance their greener practice. Available certifications such as the Laboratory Efficiency Assessment Framework (LEAF) and MyGreenLab provide a means to promote and showcase progress towards sustainability. In the past these options have had a more research and academic focus but are achieving traction in the clinical environment as pilots begin to take off.

Education and Quality Improvement

The EFLM-GSL taskforce has embarked on an educational initiative to support the professional development of healthcare scientists in laboratory sustainability, with the aim of fostering and promoting change. Informative presentations have been distributed to member bodies with plans to assess their effectiveness. Embedding sustainability education into professional development should help healthcare scientists learn new practices and ways of thinking and encourage the sharing and adoption of sustainability values and competencies.

In the UK, organisations such as Centres for Sustainable Healthcare (CSH) and GreenerNHS look to support and promote sustainability in healthcare. They provide education on fundamentals such as 'reduce, reuse and recycle', carbon measurement and the circular economy, whilst promoting changes in practice.

The NHS e-Learning for Health website now incorporates sustainability in its education program. This

includes an introduction to the Sustainability in Quality Improvement (SusQI) initiative, developed by the CSH. This programme equips health professionals with skills to foster a more environmentally, socially and financially sustainable health service. The primary aim of the project is to integrate sustainability into quality improvement education. The SusQI principle is:

$$\text{sustainable value} = \frac{\text{Outcome for patients and populations}}{\text{Environmental + Social + Financial Impacts}}$$

Quality Improvement itself is an established method for advancing practice and ensuring a service remains effective. The SusQI method can be applied to any aspect of the patient pathway, including diagnostics. Its principles can help identify inappropriate or unnecessary testing and decrease demand, moving sustainability beyond an internal focus on improved recycling, re-use or repurposing of equipment and consumables in the healthcare science setting[6].

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Summary of actions organisations can take in pursuit of sustainability include:

- Publish action plans, guidelines and policy documents that promote sustainable practices across disciplines and departments.
- Promote a sustainability goals policy and action plan.
- Implement procurement and environmental policies related to sustainability.
- Implement a sustainable procurement system that aligns suppliers and contractors in the healthcare system with the sustainability plan.
- Implement sustainability measures and communicate new insights and outcomes.
- Include sustainability education in induction programs and professional development.
- Support leaders in applying for grant support for sustainable initiatives and research and development.
- Promote innovations that address social, environmental, and economic challenges in diagnostic pathways.

Sheri Scott *joined academia in January 2018 after 21 years working as a healthcare scientist in NHS Clinical Biochemistry laboratories. She uses her experience and passion for the environment to facilitate sustainability education and development.*

As healthcare science professionals, we need to take a closer look at what we do, what we use and why. We need to consider what we can change and where we can make small gains. We need to work together across organisations, member bodies and with suppliers to reduce any negative impact our practice has on this planet.

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LEADERSHIP FOR RESEARCH

What makes a successful leader in research? Mark Tooley describes how he sees the key ingredients.

Research is important to the NHS[1], whether 'blue sky' pure research carried out in a university or applied research undertaken in a hospital[2]. Research-based activities include laboratory studies, investigations of clinical treatments, the development of medical devices and streamlining patient flow.

Research active hospitals demonstrably deliver better, safer care and improved patient outcomes. Staff and departments who engage in research also benefit as it improves job satisfaction, boosts morale and reduces burnout and turnover[3]. It can also help with recruitment by increasing a department's visibility and attractiveness. Research has the potential to create cost savings by developing more efficient and evidence-based techniques, devices and drugs.

Research leadership

A significant number of the healthcare science workforce are involved in research. Some also take a formal leadership role as head of a project or small research section within a bigger department. Others might manage a department's research effort or hold a hospital-wide post in innovation or as a director of research and development. Whatever their position, research leaders need various competences to be successful[4]. Some of the more important ones are explored below.

Providing direction

A research leader holds and develops an overall vision and articulates a clear research aim. The programme they set must fall within their organisation's research priorities. In a healthcare setting, activities and projects should also align with objectives set by the wider health economy. These might include problems in certain clinical areas such as cardiovascular disease, cancer or care of the elderly.

Healthcare science researchers often work closely with academics and other clinical groups. Effective research programmes depend therefore not only on the team's own skills, interests and experience but also on the capabilities within other professional groups and the strength of links that can be established with them.

Understanding who to work with, and how, is a crucial skill that develops as a researcher gains experience and knowledge in their field.

Negotiation

Any leader has to be able to negotiate effectively with colleagues and senior staff. In research such negotiations are often required, both within and outside of a host organisation. This might be to agree a direction in collaboration with other

Mark Tooley *is a Fellow of the Royal Academy of Engineering. He has spent many years undertaking and leading research whilst working in NHS roles, including spending several years as Director of R&D at a research-active NHS trust.*

researchers or to seek information and practical support. A research leader must be able to unblock issues that prevent research from happening, such as limited clinical access, unavailability of materials or equipment, need for ethical approval and intellectual property issues.

Knowing the landscape

Research leaders benefit from being part of the research community within their own organisation, as this provides additional insight into local priorities. At a senior level they must also be able to contribute to their organisation's research and development framework. These links often open up further funding opportunities.

Having a good knowledge of the evolving research landscape across their own area of activity, both locally and nationally, makes a research leader more effective. They can then keep team members up to date and educate their colleagues

in other sections, departments and organisations about advances and new ideas.

Building and supporting the team

Research needs a supportive environment in order to flourish. This is best created by leaders who understand what researchers need and can use an appropriate leadership style to support them[5].

Alongside scientific and technical skills, a good healthcare science research team will have expertise in governance, ethics, research management and finance. A research leader must select and nurture their team (or teams) to ensure they have the right skills balance. Research training keeps staff up to date and helps introduce new staff to the group. This encourages both project development and the recruitment of postgraduate and PhD researchers.

A major task is to keep the research team focused and motivated. Continued team building is essential, as is the celebration of even small advances. Leaving people to do their own tasks unsupervised is almost always less productive than having regular reviews of progress against project goals and it also undermines team cohesion and shared enthusiasm for the project. Regular peer feedback and a positive, coordinated approach generally result in better research outcomes.

Obtaining support

The research leader must understand the total funding landscape if they are to identify where they or their collaborators have the best opportunity to gain support funding. Funding usually comes via grants or other income. Common sources include charities, research capability funding (RCF), research councils (e.g. EPSRC, MRC, BBSRC, NIHR), professional bodies and commercial contracts. A research leader must liaise with their hospital's research and development department to access monies from RCF or internal charities. They must also present a convincing case that addresses stated funding criteria and provides a clear route to achieving an outcome.

> **"Research needs a supportive environment in order to flourish"**

INTERNAL				EXTERNAL
	Build the team		Be authentic	
	Create culture	**RESEARCH LEADER ROLES**	Know the landscape	
	Provide direction		Negotiate	
	Protect time		Obtain support	
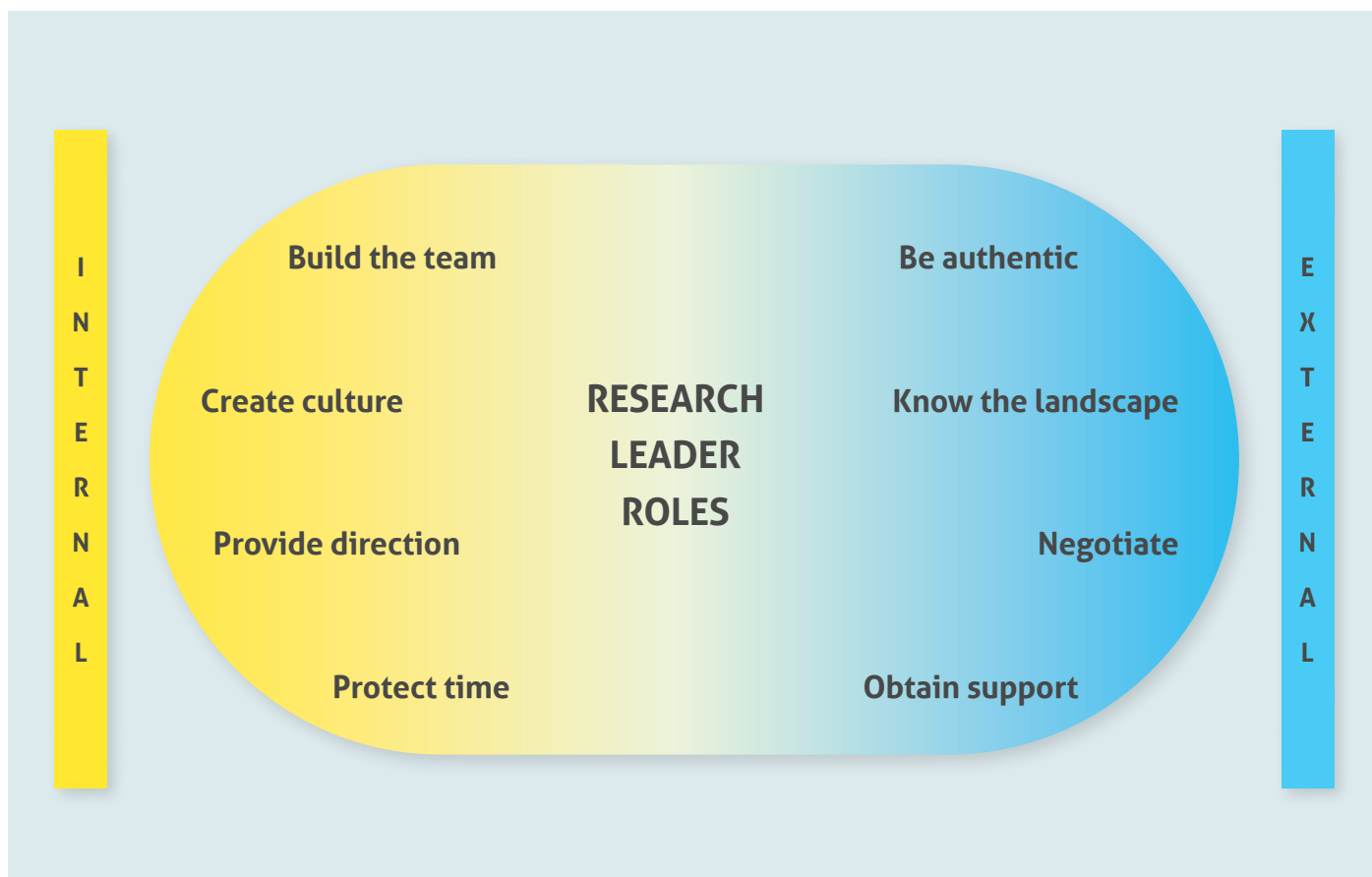
A high positive profile for both research and researcher also increases the likelihood of obtaining financial and practical support. Managing publicity means making sure the organisation's board and potential funding bodies know about the research, with staff presenting and publishing their work widely including at major scientific and clinical meetings.

Protected time

A research leader has to find and protect time for staff to do research, ideally through involvement in job planning. This is easiest where staff members have a full-time research role but care must still be taken to avoid individuals being diverted to service roles in times of need. It is more challenging to find ways to backfill the time of an NHS member of staff undertaking part-time research, and a research leader needs to work closely with clinical colleagues to overcome any difficulties and ensure tasks are allocated efficiently to protect research time.

Authenticity

Ideally the research leader should have their own research portfolio. This helps them keep up to date and understand the pressures faced by their colleagues. It also provides authenticity when it comes to persuading others to adopt challenging standards in areas such as ethics and governance and when encouraging teams to overcome difficult challenges.

Creating a supportive culture

Effective research leaders create a supportive environment. An important factor is making the value of the team's research visible to their host department, organisation and the wider world. Being seen as a research active department increases the likelihood of competing successfully for resources, and this is enhanced if the group is seen to be working towards being the best research department in the organisation or the best of their cohort in the UK.

Becoming a research leader

A research leader must be credible. That involves appropriate training, successful delivery of multiple research projects and a high level of commitment.

> "**A research leader has to find and protect time for staff to do research, ideally through involvement in job planning** ,,

Initial training and experience can be obtained by building on research within an MSc, carrying out own account research projects or undertaking higher specialist scientific training (HSST). Further training can be provided at PhD level, either full time or alongside one's employment. Financial support for training in how to plan and conduct research is provided by bodies such as the NIHR and research charities.

Grant funding is essential to build up a research track record. Healthcare science staff can start by obtaining small grants for their own projects from local charitable or RCF sources, while expanding their research portfolio via collaborations with other healthcare groups and researchers. Medical staff are a good group to work with as they often have excellent systems to support research and a substantial body of experience. A potential research leader needs to publicise their own research if they are to get noticed and network building is vital when expanding a research portfolio.

Finally, don't try and do it all on your own. Work with others, learn from more experienced colleagues and seek advice from a trusted senior colleague or mentor. Research is all about venturing into the unknown, whether exploring possibilities or navigating how best to make it happen.

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LEADERSHIP IN A CRISIS – HOW DO YOU APPROACH SOMETHING YOU'VE NEVER DONE BEFORE?

A phone call one Friday evening propelled David Wells into the very centre of the Covid -19 team as NHS Head of Pathology, facing challenging targets to increase testing capacity. Here he recounts the experience and lessons learnt.

Five days of upheaval

That first telephone call ruined my weekend. My phone rang at 7.30pm on Friday 28th February 2020. It was the Incident Management Team leader from Public Health England (PHE). Earlier that day, their Covid-19 contact tracing capacity had been overwhelmed. Her message was short and simple: "Thought I would let you know that PHE is handing over to the NHS as it is now a health matter. It is now down to the NHS to build up testing capacity. Let me know if you need any help."

I was a year and a half into my post as head of Pathology Consolidation for NHS England. I had brought over 120 separate pathology departments together into the semblance of 29 networks and was steadily building up their capabilities. I had heard of a novel virus in Wuhan via professional networks at the end of December 2019, and very early in 2020 started attending weekly UK meetings organised by PHE to talk about the virus and whether any special plans might be needed. These 'old fashioned' telephone conference calls were about gathering and sharing information and had been quite boring – until that phone call.

I spent the weekend thinking, 'What do I do? Who else is in a position to act as systems lead to get NHS testing up and running?' Having worked for 18 months to create pathology networks across England, I now knew all the people to go to. From my earlier operational experience working in and leading medical laboratory services I also knew how to amass testing capability and had key contacts in the NHS and private sector.

I decided to email key people on Monday morning to start a conversation about what to do, slowly bringing a plan and a collective together. During that week I sent out a letter to all regions and pathology networks asking them to step up their capability for Covid testing, as a priority. At the same time an NHS Level 4 major incident was declared. It became clear we were going to struggle as a country to cope with the pandemic, and as a profession we were going to be central to achieving success – or failure.

On Tuesday I was arriving at my daughter's school when my phone buzzed with an urgent email. I was wanted at a meeting

David Wells *started work as a medical laboratory assistant in the NHS. He has had many roles since then, including being operations director of a large pathology service, before working at national level. He is currently Chief Executive of the Institute of Biomedical Science.*

> " **I was wanted at a meeting in 10 Downing Street the next day to discuss the growing crisis** "

in 10 Downing Street the next day to discuss the growing crisis. This news suddenly made it difficult to concentrate on learning about phonics and how to support reading!

I was formally moved from the Laboratory Consolidation Team to be Head of Pathology for the NHS. Almost immediately I was pressurised to become part of a new Covid team, something I instinctively resisted. I felt I needed to be recognised as the pathology subject matter expert and system lead if I was going to get things moving. I met with the appointed director that I was to work alongside and agreed the first priority was to stand up a dedicated team focused on expanding Covid testing.

What happened next

Pathology colleagues across the system responded magnificently. Within two weeks the calls with PHE went from weekly to daily. Similar calls with laboratory leads went from weekly to three times a week to daily. My diary went mad. I had to attend 4 or 5 set meetings a day, talking to labs, PHE, up to DHSC and back down again. People were standing up their own test capability and being open about their own experiences. Daily calls became a practical and emotional support, a place to share challenges, solutions, and pain. Staff were able to ask for help and find contacts quickly across the NHS, PHE and suppliers.

Politicians would change their approach overnight. We then had to switch direction and ask people to reconfigure their plans. This meant disrupted weekends for many. For the first four months of the pandemic response I worked every day, only dropping to six days a week later in the year. Christmas and Boxing Day were the only two day's holiday I took between February 2020 and May 2021.

> " **If my advice was wrong, it could end up killing people** „

Asking people to do more was easier for me when I felt I was under the same pressure, although I still found it difficult. Feedback from teams was that 'it was a supportive environment' but it didn't seem like that to me. People were in tears on some calls because they couldn't deliver what was being asked of them. It felt challenging, uncertain, and it was not always clear what to do. I felt it was my duty to present calm, consistent, honest leadership, even if I didn't have all the answers.

KEY LEARNING POINTS:

- Every network in the pathology community found regular calls to be very important. Their form slowly evolved but they continued to provide both practical and emotional support. Moving to on line meetings was a game changer.
- Give scientists a problem and they will come up with an evidence-based answer. Scientists really showed the impact of what they could do during the pandemic.
- The pandemic was, paradoxically, a reason to celebrate the network building that had been going on and the system's enhanced capability to respond to new and challenging demands.
- The higher profile and confidence this experience gave me has helped in my current role as Chief Executive of the IBMS, especially when it comes to knowing how best to represent our interests to politicians.

Supply problems

We also had major supply chain difficulties. Nearly all equipment and materials came from abroad and shipments were not necessarily reliable as other national governments clamped down on the export of vital items. Companies limited supplies and, perhaps the hardest of all, not all promises were fulfilled. The Government's policy was to expand testing activity in the private sector at the same time as the NHS was trying to build its own capability to test patients and staff, leading to national competition for resources. Hospitals ordered items and agreed delivery but were sometimes then told that the Government had redirected them elsewhere.

Because of my experience managing large laboratories, I knew who to contact to start tackling supply chain problems. At this point I made a key decision to bring into my team one of the regional pathology consolidation leads who had extensive supply chain experience. This turned out to be a brilliant managerial decision. She played a key role in organising the supply chain, identifying alternative sources and products, and was pivotal to our success in building system resilience and capability.

KEY LEARNING:

- Identify and involve the right people at the right time.
- Seek to build resilience into service delivery, even in an emergency situation.
- Build upon existing capacity and capability. Don't create a competitive environment when you don't need one.

A moving target

I was set increasingly challenging targets to expand testing capability. At the beginning of March 2020 it was zero. By the start of April we were tasked with raising this to 10,000 tests per day, a target that became 25,000 a day by the end of the same month with the eventual target of over 140,000 per day by October 2020.

We built a tracking system to get all 29 networks up to their capacity, with targets agreed and backed up with clear plans. This system tracked all equipment and consumable orders from placement to delivery. Our national supply system supported local teams in doing what they did best – working up their test capacity, validation, training and quality.

Scientists were able to work around shortages and find other ways to solve issues using alternative technologies. Our central system could keep an eye on this and help us share learning nationally. There was also sharing of consumables and test capacity between labs to provide the required level

of service. 'Phenomenal' sharing across the community was based on trusted connections between people. This was vital, especially during peaks of infection as the virus spread around the country.

KEY LEARNING:

- Establish central systems to support people to deliver locally.
- Maintain cohesive networks and good relationships to build shared trust.

Dealing with power

During this time I met and worked with key people including the head of the NHS. I briefed them so that they could brief ministers. I had never been in this environment before. I even had moments when leaders were waiting by my desk for vital information. I found it daunting and a source of considerable personal pressure. I would ask myself, 'Is this the most informative data to present the position? Am I giving the best advice I can? Am I the right person to answer these questions? How will what I say be understood?'

This was more significant than imposter syndrome. It wasn't just about what I felt. If my advice was wrong, it could end up killing people. And if my advice was not taken, had I made the consequences clear enough?

One day I had a direct text exchange with the Prime Minister's health adviser over a report saying that some PCR tests were not sensitive enough. I was asked – "Why are people dying with negative tests?" I had to explain sensitivity and specificity, the impacts of different PCR targets, viral loads, why testing was important, and suggest how we could respond to public concerns. At the time we did not have enough kits to do multiple tests, so the pathology community worked out how to improve their own assays. They shared this information quickly across the UK and within two weeks were able to achieve a significant improvement in sensitivity and PCR performance.

KEY LEARNING:

- Find ways to bear the weight of responsibility. Try not to do it alone.
- Respond to political concerns with integrity and positivity.
- Set scientists a clear problem, provide resources and they will find a way.

Leadership lessons

I don't miss the pressure of the pandemic working environment but it taught me a lot. Here are some of the key lessons:

SIX KEY LEADERSHIP LESSONS:

1 Top-down leadership does not mean top-down direction. Use your influence to support those in the system and give people the freedom to innovate.

2 Trust people to use their expertise, set your aim, give them the freedom to act, and they will do a better job than you could ever expect.

3 Being the only expert in a large meeting is very daunting. You will not always be listened to if people don't like what you are saying. Use more emotive and less technical language to get your points across. Always be factual and honest. Integrity is vital.

4 Try different ways to get people to listen to you. But if you don't speak, you won't be heard.

5 You must give your best advice but you can't be responsible for what people do with it. It is painful when your view is ignored and an alternative route is taken that you are sure is wrong.

6 At the highest level it is elected representatives who carry the can for the choices that are made. They need the best advice that you can give them, presented in an understandable way.

THE RISE OF CLINICAL RESEARCH PRACTITIONERS

Maya Leach explains the vital contribution that CRPs make to healthcare research.

Clinical Research Practitioners are part of the research delivery workforce. Everyday tasks may include identifying participants suitable for research studies, explaining studies to them, taking informed consent, collecting samples and conducting interviews. We deliver research from study set up to close down, train participating staff and make sure that all studies comply with legislation. We also promote engagement with research across different communities and clinical sites. Many CRPs progress to managerial roles where they continue to support the effectiveness of clinical research delivery.

CRPs come from diverse educational backgrounds. We usually hold a relevant degree or a higher qualification. My background is in psychology and research methodology and I started my career working with people suffering from dementia, the mentally ill and the homeless. I then worked as a CRP in the commercial sector, followed by 10 years in the NHS. Figure 1 shows other areas where CRPs work.

Figure 1 *CRPs deliver highly valuable work for our patients and other research participants in a variety of settings*

Registration

Since March 2021 experienced CRPs have been able to join the PSA-accredited register held by the Academy for Healthcare Science. Accredited registration defines us as accountable professionals who work to high standards within our scope of practice. This confirms our expertise and competence in research delivery and offers assurance to research participants, employers, colleagues and study sponsors.

Maya Leach is a registered Clinical Research Practitioner. Until March 2023 she was seconded into a national role as Engagement Manager for CRP Registration at the NIHR Clinical Research Network National Coordinating Centre. She is now an Associate Clinical Trials Manager in the academic sector.

I view CRP Registration as a vehicle for recognition and as a way to embed the CRP role in the healthcare system, established as a new profession with standardised training pathways and a clear career progression framework.

We all have the power to make change happen

Seeing the clear value that registration could have on the CRP workforce and the wider research and healthcare system, I decided to get involved in promoting this initiative. I was seconded into a national role as Engagement Manager for CRP Registration, tasked with developing the CRP community and growing the register. My engagement plan included the following three priorities: promoting the CRP role and registration; building a connected CRP community; and developing leadership within this community.

Over the 18 months I spent in my role, CRPs went from being disconnected individuals and teams in Trusts to a nationally connected professional community. We built relationships with colleagues across all UK nations and created multiple channels for communication, including on social media, both within and outside our profession. This helped increase the profile of both the CRP role and registration.

Like any profession, CRPs need their own visible and nationally distributed leadership to drive change. I therefore set up

a network of CRP Engagement Leads across England. I also supported the growth of our CRP Leadership Forum, made up of representatives from different regions of the UK who are all voluntarily committed to developing the CRP profession.

In July 2022, we ran a social media campaign, *"I support CRP accredited registration"*, to step up support for CRP registration across the wider system. **It was the most engaged campaign run by the National Institute for Health and Care Research (NIHR).** CRPs made this campaign such a success by supporting it and encouraging our amazing colleagues from other professions, including managers and senior leaders, to become visible exponents of our professional development. Since the campaign we have observed significantly increased interest in the CRP role and more CRPs applying to join the register. Employers are opening new CRP roles and strategies for CRP development are being discussed at senior leadership meetings.

We held our first national CRP conference in March this year. It was a wonderful day, celebrating our collective achievements since the CRP register was opened.

What have I learned about leading change?

During my secondment to the national role, I proved to myself and the system around me that we all have the power to make change happen.

I learned that being an authentic leader whom colleagues can relate to is crucial in bringing people on board with you. What makes people want to get involved is a genuine passion that comes from the heart, plus a strong belief in the purpose of our work and shared values[1].

In leading large-scale change, it is essential to develop a network of visible, distributed but connected advocates to drive the spread of change across the system. I was privileged to have met many amazing, courageous agents of change willing to share best practices and experiences and support

> *"In the dominant approach, the power to create change largely comes through positional authority.*
> *In the new world, power comes from connection and the ability to influence through networks"*
> Bevan & Fairman[2]

each other in the journey toward our shared purpose. I believe the relationships we built will be long-lasting.

Although some CRP leaders hold high positions in the formal hierarchical system, the majority of colleagues work in delivery roles. Nevertheless, the last year and a half has proved what a powerful role social influence and network building play in change management.

I believe in the importance of continuous personal and professional development

One important lesson I learned is that whilst it is essential to grow support for change, it is also vital to engage with resistance to it. Reasons for resistance need to be explored and understood so that acceptable solutions can be put in place. If I could, I would have created even more opportunities to build bridges with those reluctant to engage through more discussion and collaboration.

Lastly, I believe in the importance of continuous personal and professional development. I am grateful to be on the Rosalind Franklin Programme run by the NHS Leadership Academy, where I have learned about the importance of reflective practice in leadership development[3] and of asking myself questions such as: "Where am I in this?" "How do I affect the system around me?" "What are my unconscious biases?" "What is it like to be at the receiving end of me?" Practising reflexivity has improved my self-awareness and helped me identify my strengths and areas for improvement. It will remain my daily practice.

We all can make a difference. Start by asking yourself, "What can I do to initiate change around me?" Begin by starting a conversation with someone about the change you would like to see, to find and connect with others who also want to make the same change or who have already started. Change starts with you, and you have the power to lead it. We all do.

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TRUST BOARDS AND THE ROLE OF A NON-EXECUTIVE DIRECTOR

Retired healthcare scientist Chris Gibson shares his experience of being a non-executive of a Trust board and urges others to get involved.

After nearly 40 years working in healthcare science I didn't want to retire fully from the NHS, and searched for other roles. For the last five years I have been privileged to be a Non-Executive Director (NED) of a large Acute NHS Trust, able to contribute to the NHS using skills and experience from previous scientific and leadership posts. Being a NED has given me greater insight into the workings of Trust Boards and the challenges faced by senior NHS colleagues.

Board Structure

Almost all Boards in UK organisations, whether public or private, are unitary with Executive and Non-Executive directors taking decisions jointly. NHS Trust Boards must have a named Chief Executive as well as Medical, Nursing and Finance Directors. Other Executive Director roles are more varied, for example Chief Operating Officer or Director of Strategy & Improvement.

Trust Boards have a Non-Executive Chair whose commitments include chairing Board meetings, working closely with the Chief Executive, and representing the Trust externally. Most adverts for NEDs specify only a few days per month but the role can easily expand! There is usually an equal number of Executive and Non-Executive Directors, all of whom will be voting members of the Board.

The primary role of the Board is *governance*, probably derived from a Greek verb meaning 'to steer'. It is a good analogy, especially if like me you enjoy sailing. As well as immediate considerations (weather conditions, nearby rocks) you need to keep heading towards your planned destination. Of course, the winds of government policy and the tides of demographic change also have to be navigated...

As well as formal Board meetings, Board Development sessions provide opportunities for informal discussions, looking ahead at strategic developments. The Board is supported by
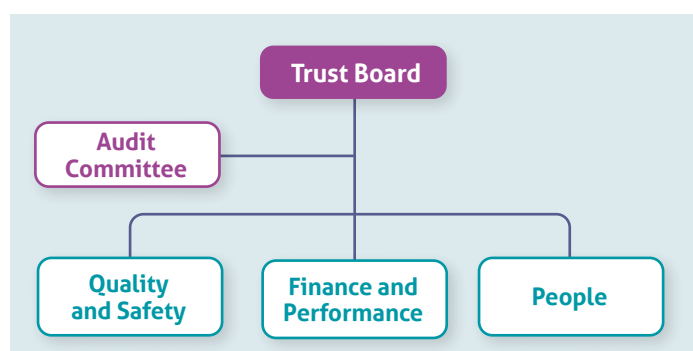
governance sub-committees, typically for Quality, Finance, and People issues, plus a formal Audit committee.

During my time as a NED I have been a member of all of these committees, and have chaired the Quality Committee. That is often a role for a clinical NED, focussing on patient safety, patient experience and, crucially in my view, clinical effectiveness. There is understandable public and political interest in waiting times during Covid recovery but we must not lose sight of outcomes and innovative developments.

Roles of Non-Executive Directors

Good governance requires that NEDs hold Executive Directors to account for their actions and plans, whilst ensuring that Board decisions are collective. It is a mixture of *challenge* and *support*, with the emphasis varying according to the

> " **I believe that my different perspective as a scientist complements the approach of other Board colleagues** „

situation. During Covid the support element became crucial as Executive colleagues dealt with unprecedented pressures.

Traditionally NEDs were recruited from outside the NHS, bringing external perspectives and specific skills in finance, human resources and corporate governance. Most NEDs still have those backgrounds but many now have clinical experience. At a NED induction session run by NHS Providers approximately one third of attendees were clinical. Doctors, nurses, pharmacists and AHPs were there but I believe I was the only healthcare scientist. Part of my purpose in writing this article is to encourage senior healthcare scientist colleagues to consider themselves for this role.

I believe that my different perspective as a scientist complements the approach of other Board colleagues. Healthcare scientists have strong analytical skills, can evaluate evidence and often have experience of many clinical pathways. They are also well practised in risk management, a key part of the work of the Board.

Life as a Board Member

Board meetings are typically held monthly. Part of the meeting must be held in public with those papers and minutes appearing on the Trust website. The level of public interest can vary significantly, depending on the agenda. During my early years as a NED the Board had to take difficult

decisions about urgent and emergency care in one hospital, due to staffing and recruitment difficulties. An active group of local hospital supporters attended Board meetings, together with local media. The primary task of public communication rests with the Chief Executive and Chair but NEDs need to be conscious that what they say in public Board, and how it is expressed, may be widely reported.

I have found a tri-partite model to be helpful when considering both day to day challenges and also longer term prioritisation:
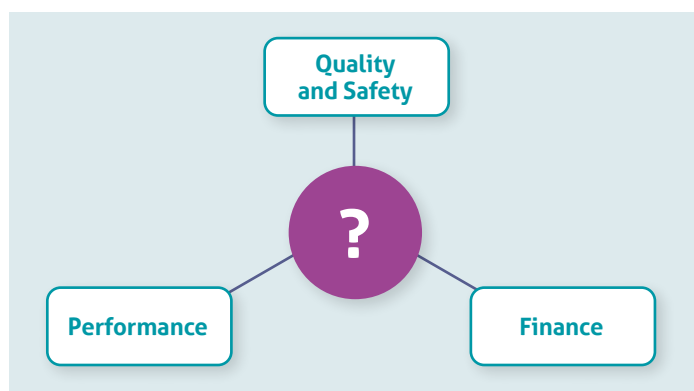
All three aspects are important but they constrain each other, and the ideal operating point is not always clear. In higher risk specialisms like Maternity, Performance is essentially fixed by the number of births and Quality & Safety is crucial. Other specialisms may have a different optimum position. Financial constraints are a challenge for many Trusts.

The wide ranging nature of Board and sub-committee meetings mean that many papers accompany each meeting. I often spend more time preparing for meetings than being in them. Issues are briefly presented by the relevant Executive Director, then NEDs have a key role in leading discussion and constructively challenging analyses and proposed actions. NEDs who have held clinical and/or executive roles themselves must remember that their role is to ensure that the Executive Directors solve problems, and to gain *assurance* that issues have been resolved or mitigated. Advice is of course part of the process but the NED role must remain hands-off.

Healthcare science and the Board

Having seen the depth and range of issues addressed by Boards, I am frankly not surprised that healthcare scientists sometimes feel their work may be overlooked. Individual healthcare science departments often involve less than 1% of Trust expenditure. Their impact, though significant, is spread over many clinical specialisms and pathways. In my experience they are generally well managed with good risk controls and external quality assurance. Given the types and

Chris Gibson *is a Non-Executive Director at United Lincolnshire Hospitals NHS Trust. He is a former Head of the National School of Healthcare Science and a Past President of the Institute of Physics and Engineering in Medicine.*

severity of incidents and problems which are regular features of Board agendas, it is perhaps the very success of healthcare scientists which makes them less visible.

So, here are some suggestions which may help raise your profile:

- Be aware of your Trust's current priorities and strategies. It is easier to secure support if your plans and aspirations align with the national and local picture.
- Engage with Trust-wide committees and groups. Apply your risk management, evidence assessment and innovation skills in wider settings.
- Integrated Care Systems (in England) present opportunities to collaborate with other provider Trusts. Engage with regional colleagues to explore mutual support and development.
- Ensure that your healthcare science community is well integrated and supportive of Lead Scientists. Establish links to the relevant Executive Director in your Trust.
- Be research active and aware. Trust Boards love to hear about successful innovation, so ensure your service is up to date and that innovation and research successes are well communicated.

Finally, to those of you in senior positions who may be considering other career options, do think about being a NED or an Associate NED (a developmental role). Adverts appear regularly on the NHS England website (https://www.england.nhs.uk/non-executive-opportunities/). Induction and mentoring are available to new NEDs and it is a very satisfying way of continuing to use your hard earned skills and experience.

MY JOURNEY FROM BASIC GRADE SCIENTIST TO R&D DIRECTOR

I was sponsored by industry to do my first degree in electrical and electronic engineering. After graduation, the company created a role for me in a new 'speculative research' group where I was allowed to innovate in areas that took my fancy, within reason. I stayed there for one year and although it was very interesting and productive the exclusively male environment did not suit me. My mother was a nurse and my father an engineer and the crossover of these disciplines as a possible career always intrigued me. However, I did not know that such careers existed in the NHS until I saw a job advertisement from Bath hospital.

Mark Tooley's achievements have been recognised at national level through election as a Fellow of the Royal Academy of Engineering and a Chief Scientific Officer's Healthcare Science Lifetime Achievement Award. His commitment to research enables him to continue raising the profile of healthcare science and its contribution to healthcare innovation, improvement and research.

My first NHS job was as a basic grade physicist. I think my industrial research role impressed the appointment panel, and although my role was split equally between service and research & development (R&D) I was told clearly that research was the most important. How things have changed! I investigated brain waves and anaesthesia and incorporated it into an MSc. For promotion to senior medical physicist I moved to St. Bartholomew's Hospital in London, working mostly on R&D projects with different groups of clinical staff. I also did a part-time PhD looking into implantable cardiac devices and advanced diagnostic routines before moving to Bristol as a principal medical physicist. This was promotion into an attractive position where a large part of my role involved carrying out and supporting research with anaesthetists, including developing a medical simulation centre. This was a very exciting project as we were the first facility of this kind in Europe and the project combined leadership with service development and research.

> ❝ **I was told clearly that research was the most important. How things have changed!** ❞

I always wanted a senior role. When the head of medical physics job in Bath was advertised, I applied and was appointed. They were keen to employ an active researcher so I was able to maintain my research interests working with medical staff. As the department was already well respected for its research I decided to negotiate with the hospital's R&D department to represent medical physics on the R&D Committee. Once accepted, I made sure I attended every meeting and read all the papers so that I could be involved fully with every discussion. I got myself noticed by volunteering for tasks and strongly promoted the research work of my department.

When the R&D director retired, I was invited to apply for the role and was successful, even though the role had previously been held by medical staff only. I was invited to join the Trust's management board where I became heavily involved with merging the research effort of the Royal National Hospital for Rheumatic Diseases into the main Bath hospital structure, as well as bringing the University of Bath and the hospitals closer together. I was fortunate to be invited to attend a research leaders' course at Ashridge Business School which was very inspiring as well as educational, learning from R&D directors across the country.

Finally, one of my hospital's ambitions was to be top of the medium size acute research hospitals in the UK, in terms of research patients studied and number of research projects. We managed to achieve this before I retired. Since then, I have continued to undertake research related activity, including working for an Academic Health Sciences Network, developing new medical devices and being an advisor to various medical start-ups.

Five key lessons from my journey:

- Research and development can be a highly enjoyable and a life-giving part of a health service career.
- The healthcare science workforce can contribute hugely to research and development in healthcare.
- It is important to collaborate with other groups within healthcare, including medics, and to understand their worlds.
- Healthcare scientists can be successful, accepted and respected as R&D directors.
- Research in healthcare science is decidedly worthwhile, interesting and rewarding.

SOMETHING OLD AND SOMETHING NEW:
BOOK REVIEW
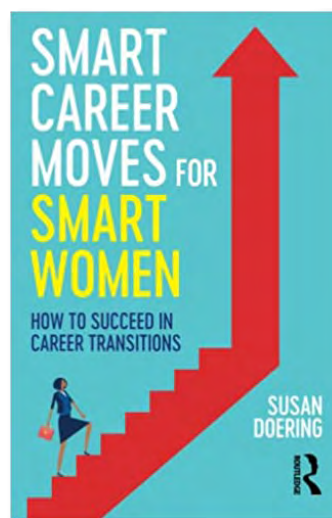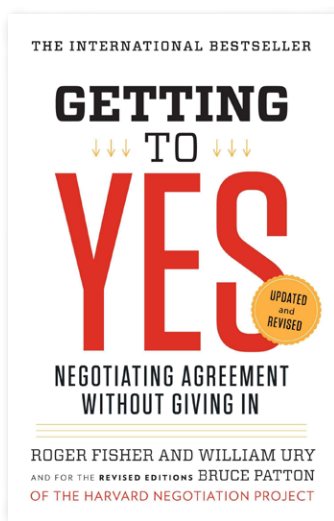
Time invested in improving key life skills is never wasted. Here are two paperback books that can help you develop your abilities and your career.

Getting to Yes: *negotiating agreement without giving in* (3rd Edition)

We all negotiate. It is how we get what we want from others, whether in a work context or in our personal lives. Everyone can benefit from improving their negotiating skills.

Packed with simple but profound ideas and examples, this book sets out a way of reaching agreement that greatly improves on traditional bargaining. Principled negotiation aims to move the focus away from people and their positions to concentrate on the problem to be solved. Its core ideas are simple to understand, easy to start using and open up new ways of dealing with difficult people and situations. It helps to maintain personal relationships by achieving better ('win-win') outcomes for both parties and often leads to creative and respectful outcomes that take account of everyone's interests.

This book has proved its value over four decades by addressing the simple question: "What is the best way for people to deal with their differences amicably and without giving in?" For a short summary of the book's contents, see https://www.beyondintractability.org/bksum/fisher-getting

Smart Career Moves for Smart Women:
how to succeed in career transitions

British culture was one where women were traditionally expected to fit work around the demands of life, while men fitted life around their careers. Job roles are now far more fluid, particularly in healthcare science where technological change is inevitable.

So how do you continue to match what you want to do, to the tasks that need doing? How much can you influence the way you work? Is it time to consider a change of direction?

This recently-published book recognises the particular challenges women face in developing their careers while at the same time addressing the fundamental question: How do I manage the interwoven strands of life and work?

The author's answer to this is: "The best way to start your journey towards fulfilment and satisfaction is to start with the simple question: what are my values in life and are these reflected in my work?"

The book begins with a section on how to identify what you want and how you can start to make it happen. It then looks at preparing to make a change, how to cultivate the necessary skills and the necessity of building self-belief. The content provides practical insights, tools and case studies to support those taking stock of where they are in their job and career and to help them set a clear direction.

The text includes multiple case studies of women facing different career issues and choices. Its content is based on the author's extensive coaching and life experience. It includes practical planning and enquiry tools and exercises to help readers understand their current and desired skill sets and preferred career direction.

This book provides insights that help increase job satisfaction and performance at any career stage. Whilst aimed primarily at women, its content is helpful for anyone particularly those responsible for staff development, succession planning and leadership.

HEALTHCARE SCIENTISTS CELEBRATING SUCCESS IN THE ADVANCING HEALTHCARE AWARDS 2023

Here are the winners of the Academy's awards in the recent Advancing Healthcare Awards ceremony in London on 20 April. Healthcare science awards were also sponsored by IBMS and Synnovis.

The Academy for Healthcare Science Award for Leadership in Healthcare Science

This award was won by Emma Walker, Organisational Lead Healthcare Scientist, Imperial College Healthcare NHS Trust. She believes in the positive impact that healthcare scientists can make given a platform and voice, and has demonstrated the organisational and patient safety benefits of having healthcare scientists at the top level. She acts as a focus for the application of science across the Trust to improve patient care, with cost-effective practice and innovative technology. She leads a community of 1,200 healthcare scientists at Imperial, and is a mentor for Trust leads across London. Emma has been tireless in establishing the leadership role, now a funded post,reporting directly to the CEO and Medical Director, while maintaining her Consultant Clinical Scientist role in NW London Pathology.

The judges commented that Emma had championed the role of lead healthcare scientist, using her facilitation skills to support accreditation, in a model that could be adopted everywhere.

The Academy for Healthcare Science award for inspiring the healthcare science workforce of the future

The winner was Victoria Heath, Deputy Trust Lead Healthcare Scientist, Great Ormond Street Hospital for Children NHS Foundation Trust, who produced a training programme to help healthcare scientists develop transferable skills not currently covered by other education providers. The training, termed 'Mind the gap: transferrable skills training', encourages the sharing of best practice between scientists in different specialisms. Victoria received £3,250 funding to run science comedy training sessions and host healthcare science comedy shows. Communication is arguably the single most important skill in healthcare and being able to entertain an audience is useful in leadership as well as outreach and engagement to support careers work with schools.

The judges commented that Victoria goes beyond the boundaries of the role and seeks out new ways of working,

bringing people together and leading by example.

The Academy for Healthcare Science award for clinical research practitioner leadership

This award was won by Sarah Taylor Research Manager – Complex Pathways, University College London Hospitals NHS Foundation Trust. In 2018, Sarah was appointed as a senior CTP and Team Lead, managing, training and inspiring her team to become the service's highest recruiters. During the pandemic Sarah acted up as a Research Manager providing leadership and reassurance during great uncertainty and in 2022 was appointed as the Research Manager for Complex Pathways.

She has developed patient pathways in

solid tumour cell therapy and PBT, both new areas of research, and is leading on an innovative programme developing automated data transfer from electronic records direct to sponsor's case report forms, working with industry partners. Through working with Sarah, the service has been able to develop the career path, responsibilities, education and support for CRPs.

The judges saw Sarah as a changemaker in a profession where it is hard to be heard: she is creating visibility for an emerging profession and is an embodiment of true leadership.

The Academy's fourth award, **the LSI Accredited Credentialing Register award for NHS - life science industry collaboration in delivering healthcare** gave a special recognition award to Georgia Melia, Research Practitioner, Nottingham University Hospitals NHS Trust who led on a number of urgent public health research studies during the pandemic, winning the Covid-19 Research Hero Award and fundraising nearly £700 for the Covid Research Appeal. She is also an advocate and leader for clinical research practitioner professions working on local and national CRP leadership forums.

The Biomedical Scientist of the Year award, sponsored by the Institute of Biomedical Science

The winner was Ian Davies, Senior Lecturer in Biomedical Science and Healthcare Science Course Leader, Staffordshire University. Ian is a pioneer of biomedical scientist education through the early development, adoption, and leadership of degree apprenticeships at Staffordshire

University. With 40 graduates already registered and working as biomedical scientists, and a further 130 students on the apprenticeship from over 25 NHS Trusts across England, Ian has worked with employers and professional bodies to revolutionise access to educational opportunities, developing sustainable talent pipelines to support the biomedical science workforce..

The judges saw Ian as a great leader, both as a role model and supporter of his students, best demonstrated by his empathetic approach to their differing backgrounds and needs.

Synnovis award for Innovation in Healthcare Science

This was won by Haotian Gu, Clinical Senior Lecturer, and Philip Chowienczyk, Professor of Clinical Cardiovascular Pharmacology, King's College London for their work on a novel AI-enable cardiac imaging biomarker to guide management of heart failure. Echocardiography is the most widely used imaging diagnostic tool for assessment of heart pumping

function. The current gold standard measure of heart function, Ejection Fraction (EF), has, however, important limitations. During his PhD, Haotian developed a novel measure of heart pumping function by Echocardiography (called EF1) to improve diagnosis and management of patients with heart failure. Haotian has refined and validated EF1 in several cardiac conditions including heart valve disease, Covid-19, heart failure and children with chronic kidney disease. The development of EF1 has great potential to improve the diagnosis of heart failure achieve better patient outcomes and reduce costs.

The judges commented that this work shows evident focus, direction and simplicity, along with clear patient benefit and transferability.