The Bulletin

of the Royal College of Pathologists

Number 193 January 2021

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EDITORIALS

From the Editor

Dr Shubha Allard

Welcome to the January 2021 *Bulletin*. What an exceptionally stressful year, culminating in a rather non-festive and muted seasonal break with many other uncertainties yet to come.

I am of course delighted with the *Bulletin* theme of 'Celebrating the pathology workforce', which seems a particularly apt title to start this year. You no doubt agree that we need to recognise efforts and contributions across pathology, including both medical and scientific disciplines, at various stages of seniority, from different backgrounds and across the many specialties. I hope the various articles in this edition give a flavour of this intent and going forward we will need your help and continued input to this effect.

We are certainly encouraging young talent into pathology with great efforts at the foundation level (pages 254–256) and it is good to see the activity by members in promoting interest and awareness around careers bearing fruit ('From Summer School to histopathology trainee', pages 288–289). I am greatly impressed by progress of the training program developing consultant clinical scientists (pages 256–259), with this pathway now open to many more biomedical scientists.

Other articles across this edition demonstrate the multitude of efforts supporting the workforce in so many different ways ('Celebration in challenging times', pages 252–253). This ranges from continuing professional development and supporting recruitment (pages 271–274), to the frankly heroic efforts of the Learning department and, indeed, College members as examiners in ensuring that examinations did go ahead during the pandemic (pages 265–267).

Some of the reflections of the outgoing Vice Presidents also give due acknowledgement to the wide breadth of College activities and the individuals involved in delivering these (pages 268–270).

I am pleased that the College is moving forward in considering differences in the make-up of our membership so that all are represented and supported accordingly. This seems a great start to meaningfully turning good intentions into action when talking about diversity and inclusion. I have high expectations of the College's Diversity and Inclusion Advisory Group, and look forward to hearing about further progress (pages 261–262).

COVID continues, not surprisingly, as an additional theme, and we all have had to adapt in some way, be this in relation to smarter ways of working with rapid in-house testing (pages 292–293) or organising national or international virtual conferences (International Pathology Day, pages 286–287, Transfusion symposium, pages 310–311). Similarly, delivering National Pathology Week within the constraints of lockdown with even more verve and creativity than before truly demonstrates our great reserves and resilience (pages 279–280). I also read with considerable interest Simon Priestnall's informative article 'COVID-19 and lessons from the animals: a true One Health approach', which urges closer collaboration between veterinary and medical scientists, clinicians and pathologists to help us predict and better prepare for emerging infections (pages 276–278). This is surely good advice that needs to be heeded?

The pandemic has had a major impact on the essential work being undertaken by charities, with the considerable funding shortfall also affecting Anthony Nolan (pages 299–300). The new Chief Medical and Scientific advisor outlines his vision for steering this charity towards its key goals at the core of the transplant community in the UK and globally serving patients of all backgrounds needing a matched donor.

The year 2020 will go down in history like no other for many of us in our lifetime so far. Our innate optimism must urge us to look forward and, of course, there is much on the horizon to be hopeful about.

Innovation in testing, vaccine development, education and learning and the sheer speed of delivery of high-quality clinical trials have all been breathtaking, with pathologists playing an essential role.

We will aim to cover various key ongoing advances in the *Bulletin* in 2021. Editions this year will focus on further advances in genomics, with some other broad themes emerging – namely, mother and child health, and cancer diagnosis, and then returning to the central theme of people and the workforce in pathology, just as the College turns 60 in 2022.

So, that's the plan and no doubt we all hope that, as 2021 progresses, the year will become a bit calmer and more predictable. I'll happily raise a virtual glass to that thought.

Dr Shubha Allard
***Bulletin* Editor**

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From the President

Dr Mike Osborn

Hello and welcome to the January 2021 *Bulletin*. This is my first Editorial as president and it is a great honour to be able to speak to you directly. The *Bulletin* is a great way to highlight the diversity, professionalism and achievements of you all, our fantastic pathology workforce.

Thanks

When celebrating our workforce, the first thing I would like to do is thank Professor Jo Martin for her excellent tenure as president. Jo's presidency was especially marked by our move to a great new building and then by COVID, the pandemic that has affected us all. I hope that the end of the pandemic is now in sight.

Jo expertly steered the College through these stresses and we are in a good place thanks to her. I would also like to thank the previous Vice Presidents, Rachael Liebmann, Shelley Heard and Tim Littlewood, who have helped Jo achieve this and who have worked exhaustively for the College and us, its members.

I would also like to recognise the contributions of our many members who have been, and continue to be, involved in College activities. Your time and expertise support the College, members and healthcare as a whole. The College and the profession could not function without you.

Condolences

The new year has brought the sad news that our past President, Professor Sir Peter Lachmann, died on Boxing Day.

Professor Lachmann was an eminent immunologist who made numerous significant contributions to healthcare and medicine, and played a major role in the College, including serving a term of office as President. We have sent our deepest condolences to his family, friends and colleagues.

Earlier this month we heard the sad news that Professor Donal O'Donoghue, registrar for the Royal College of Physicians, and an eminent renal physician who worked tirelessly to improve healthcare and renal services, had died. We have extended our sympathies to his family, friends and colleagues.

In our April *Bulletin* we will carry a full appreciation of Professor Lachmann's life, and our registrar, Dr Lance Sandle, will contribute a personal reminiscence and tribute to Professor O'Donoghue.

The future

I am now looking forward to working with my fantastic new Vice Presidents, Angharad Davies, Sarah Coupland and Peter Johnston, together with the many members actively supporting so many essential College activities.

As a profession, we can be forgotten and ignored, eclipsed by what some perceive as more glamorous and news-grabbing specialties. At the College we are working hard to overcome this and to signpost the achievements of our members.

In November, we announced the RCPath Achievement Awards 2020. Open to teams and individuals from all pathology backgrounds and disciplines, the awards highlighted the huge range of fantastic achievements by our members and their colleagues in allied professions.

Some were individual achievements, others were awarded to teams and groups, but all demonstrated a fantastic contribution to pathology in all its forms – be that through teaching, research or service provision.

The winners are truly inspirational and an example to us all, and to those outside pathology, of the huge contribution you make to healthcare in this country and beyond. Well done to everyone who entered the competition and to all the winners.

COVID

The COVID-19 pandemic continues to rule our lives at home and at work, and it would be wrong for me not to mention it. We should congratulate ourselves for all the work we have done in combating this terrible outbreak, which has touched all parts of the world. Every one of you has contributed in some way, whether directly by involvement in testing for COVID-19, through redeployment into other areas needing help or by picking up the extra workload associated with the healthcare backlog – a particular legacy of the lockdowns.

At the forefront

A special mention should, however, go to our virology and immunology colleagues who have really been at the forefront of the outbreak – developing, overseeing and running the testing services, managing treatment of affected patients and, most spectacularly perhaps, helping develop the vaccines that now provide us with some hope that this terrible episode will end.

The College fully supports the vaccination programme and has signed up to the Academy of Medical Royal Colleges' statement. From a College perspective, we have been working hard to champion your views and needs as they relate to COVID-19 and the pandemic. For example, following input from members, the College has issued a statement on Lateral Flow Testing for COVID-19, which has been supported by the Academy of Medical Royal Colleges.

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Furthermore, I have been representing the College every week in discussions with Public Health England, policy-makers and other stakeholders relating to COVID-19, and the associated testing and vaccination programme.

I have given a variety of interviews to the press, for example the *Financial Times*, and was involved in a roundtable discussion event held by the *Health Service Journal*. The College has recently contributed to several pieces of national guidance and advice, for example for NICE, relating to topics such as long COVID and other aspects of the pandemic.

COVID Advisory Group

To ensure the views of the College and our members are heard, we have set up a COVID Advisory Group, made up largely of virologists, but including other specialties such as immunology, haematology, microbiology and histopathology. The group's aim is to help the College provide accurate and timely input into the many COVID-related documents we are asked to contribute to and to highlight issues that matter to you, to policy-makers and those overseeing the response to the pandemic.

We await the outcome of the largest randomised trials, to date, of convalescent plasma (REMAP-CAP and RECOVERY), with exceptional leadership and contribution from our members. Through these remarkable projects we are able to show that large, well-conducted trials are feasible and can address important therapeutic questions during a pandemic.

A special mention to ...

Finally, no celebration of our workforce touching on COVID would be complete without congratulating our member, Professor Jonathan Van-Tam, the Deputy Chief Medical Officer for England, and a well-known face in the news and on our televisions, for all his hard work trying to keep us and the nation safe. Thank you, Jonathan, the College is very proud of you.

A welcoming College

While many people are already involved in the College, others may be somewhat more reticent about becoming involved, believing the College is a clique and not for them, that their involvement will not be welcomed or that their views and opinions will not be listened to. We will be working very hard to overcome any such misconceptions.

It is your College and we want to make it as inclusive as possible so that every member feels their views are listened to, their needs taken seriously and that they can and should contribute by becoming more involved in College activities.

To help with this aim and to try and increase diversity in all areas of the College so that we better represent our members, we have set up the College Diversity and Inclusion Advisory Group. For more on this, see the article on pages 261–263 by the group's Chair, Dr Esther Youd.

Changes to College ordinances

As you are aware, at the AGM in November, we passed a variety of changes to our ordinances. There are two very significant changes that we hope will help you feel more represented by the College whatever your specialty.

The first of these is that the Presidency of the College should rotate between candidates working in different specialties (i.e. precluding a candidate practising in the same specialty as an incumbent President from standing for election). This should ensure regular opportunities for representation in the office of President across the whole membership.

The second is that, under the current ordinances, Diplomates have no voting rights. Certain updates have now been passed to allow Diplomates to participate in the election of Honorary Officers, General Council Members and, to the extent a Diplomate resides within England, the English Regional Representatives on the Council. This proposal will permit the future Fellows of the College to become involved in governance at an earlier stage in their careers, recognising their importance to the future work of the College.

These two changes were passed at the AGM but we need to wait until the Privy Council, who oversee the College ordinances as we have a Royal Charter, to sign off on these changes. This is likely to be in the early spring.

Workforce

Despite the continuing excellent work of our pathology workforce, and our colleagues in allied professions, there are clearly significant staffing issues in many areas of pathology. We are working hard to represent your views and needs in this fundamental area.

Getting the message across

Essentially our message is this: pathology underpins almost every healthcare interaction; without pathology, you cannot have healthcare. It's a simple message that we highlight at every opportunity to policy-makers and other stakeholders so that we in pathology are not forgotten.

As President, I have contributed to a variety of national reviews and documents, alongside attending meetings where I have highlighted the need for adequate staffing and investment in pathology going forward. These have included the January 2021 NICE impact report on diagnostic pathology, and a commentary that considers the NICE report and identifies the challenges and barriers there may be to the implementation of NICE guidance.

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In December, I took part in a *New Statesman* roundtable discussion on the future of genomics, during which I explained the huge potential of the field to provide diagnostic and prognostic information, and to allow personalised targeted care and therapy for patients.

I emphasised that this was dependent on sufficient pathology input, support and funding. I have also raised these issues in press interviews, for example with the *Health Service Journal* and *Health Europe Quarterly*.

Recognising transfusion medicine

I would like to finish this first editorial by highlighting some further great work by one group of our membership. Around two million units of blood and components are transfused in hospitals across the country each year. I, for one, am quietly reassured to know that if I need it, there will be the right blood, in the right place, at the right time for me, and I applaud the UK blood services for their collective efforts towards this achievement.

To maintain and develop their excellent work and vital role in healthcare, the National Blood Transfusion Committee and NHS Blood and Transplant in England have published *Transfusion 2024 – A Five-year Plan for Clinical and Laboratory Transfusion*. The plan outlines key priorities, with an emphasis on a skilled and trained workforce, and better use of data, technology and integration while promoting a safer culture in accordance with the NHS Patient Safety Strategy. This document is just one of the many great examples of members of our College working together to improve healthcare.

End in sight

COVID is still with us, but the end is in sight, we hope, thanks in no small part to our members. As we move forward, the College will continue to champion your needs, lobby for support for pathology and the pathology workforce with governments, and represent your views. I hope you enjoy this edition of the *Bulleti*n. Thank you for supporting the College.

Dr Mike Osborn MRCS FRCPath
President, The Royal College of Pathologists

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CELEBRATING THE PATHOLOGY WORKFORCE

Dr Esther Youd

Celebration in challenging times

One side effect of the pandemic has been a much wider understanding of the importance of pathology. Dr Esther Youd outlines the many ways in which the profession is strengthening and safeguarding its vital workforce for the future.

It is my privilege as Assistant Registrar to oversee College matters relating to the pathology workforce. I am supported by a great workforce team – Fiona Addiscott, Reshma Patel and Kitty Kean – in this important though sometimes unenviable task in the context of widespread workforce shortages across pathology. We gather data and publish reports to highlight current challenges and influence investment in the pathology workforce.

Our tasks also include providing guidance about job descriptions and input into appointment committees to help ensure high standards for recruitment across the pathology workforce.

Celebrating you all

Our pathology workforce is clearly vital to the ability of healthcare services to provide patient care and high-quality pathology services. This issue of the *Bulletin* promotes that workforce and highlights some of our newest members – Foundation Fellows and those undertaking Higher Specialist Scientific Training (HSST).

The pathology workforce and the College membership is made up of a huge range of roles, including medical students, foundation doctors, specialty trainees, clinical scientist trainees, SAS doctors, medical consultants, consultant clinical scientists, veterinary pathologists, biomedical scientists, medical examiners and medical examiners officers. We celebrate you all.

Pipeline for the future

Dr Angharad Davies, Vice President for Learning, introduces us to the work the College has been doing to ensure we have a pipeline of pathologists for the future. It's never too early to get people excited about pathology, to raise awareness of pathology careers, to spark enthusiasm for our varied specialties and to recruit a pathologist in the making.

Angharad talks about the ever popular Foundation taster event (see page 254), which was held online this year because of the pandemic. Consequently, it reached a much larger audience. The event showcases pathology careers with a group of enthusiastic volunteers who clearly made a big impact on the attendees: 'It was clear that everyone participating in the event is passionate about pathology, and that made me feel very excited.'

Foundation Fellows

Angharad also introduces some of our newest College members – Foundation Fellows. These are foundation doctors whose job rotation includes a spell in a pathology discipline and who are therefore eligible to apply for a Foundation Fellowship.

This year was the first year of the scheme and I'm delighted to see it was so popular and 24 people were appointed.

If you have foundation doctors rotating through your pathology department, please do encourage them to apply for future rounds. It is a great way to help support early career doctors into pathology. You can read interesting points of view from two Foundation Fellows on page 255.

Higher Specialist Scientific Training

Lisa Ayers and Professor Berne Ferry from the National School of Healthcare Science (NSHCS) introduce us to some relatively new members – those undertaking HSST.

The HSST programme was introduced several years ago and now the first few consultant clinical scientists are emerging from the completed programme.

Clinical scientists make up a vital part of the workforce in several pathology disciplines, most notably biochemistry, genetics, reproductive science microbiology, haematology and transfusion. Their training includes the achievement of FRCPath by examination and they ultimately work independently at consultant level.

Lisa and Berne also describe how HSST trainees helped with the response to COVID-19, utilising their capacity for innovation and adaptability. Five HSST trainees share their experiences on pages 257–260.

Opening up to biomedical scientists

Lisa and Berne also report the recent change to eligibility to allow biomedical scientists to access HSST training. This will open up the career progression options for biomedical scientists to train as clinical scientists to consultant level, and will broaden the resilience of the workforce through skill mix.

The opening up of HSST training to non-traditional routes such as biomedical scientists is an example of thinking differently about the traditional assumptions we have made about our workforce, and the assumptions we make about people. This brings me on to the importance of diversity and wider inclusion.

One aspect of the future of the pathology workforce is ensuring that it embraces members from many different backgrounds and identities. Both the College and the National School of Healthcare Science have begun work to embed inclusion and diversity as a permanent change in the culture.

Diversity and inclusion

Both the College and the NSHCS started work in 2020 on improving diversity and inclusion. Our workforce is hugely diverse, yet this isn't represented at senior levels in the College.

The NSHCS, which directly recruits into scientist training, is also examining their recruitment and training processes to ensure greater diversity and inclusion. You can read more about the work of the NSHCS in this area on pages 264–265.

The College will strive to make our diversity more visible, to celebrate and recognise the immense value of all members from many different backgrounds and identities. You can see the work the College is embarking upon on pages 261–263. We need your input to ensure this work is not just a topical reaction to events but instead leads to long-lasting change.

Rising to the challenge of the pandemic

Finally, I want to recognise the hard work and dedication by all of you, especially over the last year with the challenges of the pandemic. At least we can be sure that most of the world now knows what a virologist does and the importance of pathology testing and infection control. We will continue to work hard to raise the profile of all our specialties.

Dr Esther Youd
Assistant Registrar

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Dr Angharad Davies

The second RCPath/BDIAP Foundation taster event and the Foundation Fellowship Scheme

In the summer of COVID, the College's second taster event moved online and proved no less a success. Meanwhile, as Dr Angharad Davies reports, 24 new Foundation Fellows were appointed.

In July 2020, the College's second Foundation taster event, 'Pathology through a COVID lens', was held online. Since the usual residential undergraduate summer school could not be held because of the pandemic, the 2020 taster event was also opened up to medical students.

There was a lot of interest, with more than 200 attendees. Upon registering for the event, participants were asked to enter three words describing their perception of pathology – these are represented in the wordcloud below.

For the new online format, consultants and trainees in each major specialty prerecorded videos showcasing their specialty, describing the specialty training pathology and giving examples of its role in tackling COVID-19. In advance of the meeting, these were made available to participants on YouTube so they could select and watch those relevant to their specialties of interest.

Wordcloud representation of attendees' perception of pathology prior to the taster event.

During the live part of the event, I gave an introduction as the College Foundation Lead. The then College President, Professor Jo Martin, followed up with a talk asking the question: 'Why is pathology important?' An interactive Q&A session with the panel of consultants and trainees followed, which was led by Dr Matthew Clarke, Chair of the Trainee Advisory Committee.

Box 1: Feedback comments from participants.

'Completely changed my view of pathology. Such an insight.'

'I felt inspired and was particularly impressed that very senior doctors would take the opportunity to talk to us about pathology training.'

'It was clear that everyone participating in the event is passionate about pathology, and that made me feel very excited. Not only was I able to learn more about pathology as a career, I was also able to learn about some of the research being conducted now, which was very exciting and interesting to hear. Thank you very much for a great event.'

We thank you

A huge 'thank you' is due to the following panellists for representing their specialties in the videos and on the Q&A panel:

- Ruth Ayling and Atul Goyale (chemical pathology)
- Cath Booth and Thomas Erblich (haematology)
- Ali Robb and Ian Blythe (medical microbiology/infectious disease)
- Mike Osborn and Katie Allen (histopathology)
- Shuayb Elkhalifa (immunology).

For joining the expert Q&A panel, thanks must also go to:

- David Roberts (research in pathology)
- Jo Brinklow (RCPath Director of Learning).

Finally, thanks are due to Kristen Pontello and the College Events team for their flawless organisation, and to the British Division of the International Academy of Pathology (BDIAP) for sponsoring the event.

Positive feedback

The feedback was very positive (see Box 1). Before the event started, 36% of those who had signed up

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Foundation Fellowship profiles

Movin Abeywrickema Fellowship in Microbiology

The Pathology Foundation Fellowship in Microbiology is an invaluable opportunity that will support my future career aspirations in the specialties of infectious diseases and microbiology.

So far, I have been drawn to areas covered by these specialties: the diversity of microorganisms, systems and demographics. Infection spans all areas of medicine and surgery – my rotation in microbiology has given me insight into cases across a wide variety of patient backgrounds and ages, while having discussions with specialties ranging from haematology to neurosurgery.

Achieving greater knowledge in microbiology and infectious disease feels inherently humanitarian, as we are accountable not only to our patients, but also to the whole planet.

Twofold motivation

My initial motivations were twofold: to secure an opportunity to delve deeper into current knowledge in the field, and to gain real insight into the reality of a career in infectious disease.

I enjoyed attending the College's Path to Success event, especially the discussions on the interplay of pathology specialties in clinical cases. Through the Fellowship there will be further opportunities to learn more from people who work in infectious disease

Cutting-edge access

The Fellowship gives me access to cutting-edge research at inspirational meetings and conferences, and the opportunity to explore exciting avenues for future research.

I have previously been involved in organising local teaching opportunities for medical students, so I am looking forward to becoming more involved in the College's public engagement and student events.

Opportunities ahead

I would strongly urge any Foundation doctors with an interest in a pathology specialty to apply for the Foundation Fellowship. The College has been very supportive and the Fellowship has opened many doors. As well as learning more about a career in pathology, and getting up to date with the latest research, I have also had the chance to contribute to medical communications at a national level.

The year 2020 has amply demonstrated that pathology is an ever-changing field. I am thankful for the skills and insight the Fellowship has already given me and I'm excited about the learning opportunities that still lie ahead of me.

Phoebe Sharp Fellowship in Histopathology

When my postgraduate team contacted me about the Foundation Fellowship, I just knew I had to apply as it seemed like a great way to get more exposure to pathology, and involved with the College and their events.

I have always had a special interest in histopathology and its central role in the diagnosis of disease. It is at the heart of all medicine but is such an overlooked specialty due to lack of exposure during medical school, and even in foundation years. My rotation in histopathology will provide me with the appropriate base on which to build my knowledge before I embark on my specialty training.

Since being awarded the Fellowship, I have seized on opportunities to attend the Newcastle Path to Success virtual event and the webinar series on The Art and Science of Practical Management.

Encouraging others

In the coming year, I am looking forward to attending College conferences but, most of all, I hope to be able to speak at the College's Pathology Summer School and encourage more people to consider pathology as their future career.

The career for you?

Whether you are passionate about pathology or just curious about what it entails, I'd definitely recommend applying for the Foundation Fellowship. It will give you plenty of chances to explore all the different branches of pathology and what they have to offer, and you may even find that it's the career for you.

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were fairly sure they wanted a career in pathology. Afterwards, 59% said they were either likely or very likely to pursue a career in pathology, with another 38% considering it as a possible option. Most encouragingly, 95% said they would recommend the event to others.

Foundation Fellowship Scheme

In 2020, the College launched its new Foundation Fellowship scheme. The scheme aims to support high-calibre Foundation doctors with an interest in pathology and to engage them with the work of the College.

All Foundation doctors whose rotations include a post in any pathology discipline are eligible to apply for an RCPath Foundation Fellowship through a competitive selection process.

I am grateful to Dr Mike Masding, Co-Chair of the UK Foundation Programme Office and Lead Foundation School Director, Health Education England (HEE), for supporting and promoting these Fellowships through the Foundation Schools Directors Committee.

The appointed Fellows enjoy a number of benefits, including College membership, the opportunity to attend various College events and educational meetings, and opportunities to present at events such as the Foundation taster event and undergraduate summer school.

The scheme was oversubscribed and many excellent applications were received. I am delighted to report that 24 Foundation Fellows were selected (see Box 2). Congratulations to them all. We extend a warm welcome and hope that they enjoy and benefit from this new scheme.

If your department hosts Foundation doctor posts, please do encourage those rotating through next year to apply for a Fellowship. Applications for next year will open in summer 2021.

Box 2: Foundation Fellows appointed.

Hawa Abdulrahman	Kemal Gilanli
Movin Abeywikrema	Veda Kudva
Rishi Agrawal	Kashing Leung
Adam Andreani	Raihan Mohammed
Owain Blackwood	Sam Morfett
Rhona Boyle	Poobalan Nayanatara
Bethan Carter	Soumya Ojha
Ryan Clark	Sojin Park
Amarpreet Devi	Rebecca Prince
Lerryn Edgehill	Sidhant Seth
Enea Fotis	Phoebe Sharp
Leanne Gale	Stefani Widya

Dr Angharad Davies
Joint Lead for Undergraduate and Foundation Education (Foundation)

Higher Specialist Scientific Training in pathology: an overview

Lisa Ayers

Lisa Ayers and Professor Berne Ferry summarise the key aspects of the Higher Specialist Scientific Training programme, which prepares healthcare scientists for consultant posts.

The five-year, work-based Higher Specialist Scientific Training (HSST) programme is the most senior-level training provision for healthcare scientists. It is open to the four countries of the UK, is managed and delivered by the National School of Healthcare Science (NSHCS), and funded by Health Education England (HEE). It is designed to prepare healthcare scientists for the challenging role of consultant scientist in the NHS, and is supported by an underpinning part-time, doctoral-level programme.

HSST and pathology specialties

Training for pathology specialties and life sciences is implemented through partnership with the Royal College of Pathologists (RCPath). Information on the wide range of HSST curricula available can be found at www.rcpath.org/trainees/training/training-by-specialty.html.

In these subjects, HSST trainees are required to gain Fellowship of the RCPath by undertaking their specialist FRCPath examinations. Gaining FRCPath is essential, along with research, leadership and high-level clinical competence, for completing the programme.

An outline of training and support provided

HSST offers a blend of training for essential skills required in senior scientific roles in the NHS, including leadership, innovation, research, and

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Professor Berne Ferry

higher specialist scientific and clinical knowledge. Trainees also benefit from networking with other HSST trainees and have opportunities to learn from and collaborate with experts in their field.

The programme provides trainees with full funding of £3,000 per annum for the academic element, which can consist of a Professional Doctorate (DClinSci) in their chosen field and a PgDIP in Leadership and Management for scientists with or without a previous PhD.

In addition, trainees benefit from a £13,000 annual training budget for five years, to support the other training costs of the programme, including conference fees, professional examinations, travel and accommodation, and research costs.

The HSST programme is made up of 20% study time and time spent attending academic workshops and undergoing professional assessments.

The majority of HSST trainees are in-service candidates and therefore have important NHS service delivery roles in their departments, which complement the aims of the programme, providing practical experience and opportunities to put into practice the skills learnt on the course.

To find out more about HSST from scientists who have completed or are currently undertaking this programme, please see the five trainee profiles beginning in the opposite column and continuing to page 260.

Trainees emerging after HSST completion

The initial HSST cohorts are now beginning to complete the programme and move into consultant scientist roles across the NHS, implementing the skills that they have developed. Understanding and recognition of this programme continues to grow in the healthcare science community and among colleagues in other healthcare professions, including medicine and pharmacy. Gradually, too, Trust managers and HR personnel are beginning to acknowledge and understand its value.

We are now seeing life science HSST candidates take on significant clinical and scientific responsibilities, becoming clinical leads of departments and, where appropriate, running clinics. This increase in scope of practice is easing the burden in pathology areas where significant workforce gaps have been previously identified

COVID-19 pandemic: stepping up to the mark

During the COVID-19 pandemic, HSST trainees have risen to the challenge and taken on additional roles and responsibilities to support the response. Some have been redeployed to critical areas, others have supported stretched clinical services, and all have contributed to additional service provision. The adaptability, resilience and innovative thinking shown are testament to these trainees and their experiences on the programme.

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HSST trainee profiles

Paula Waits Fellowship in Molecular Pathology of Acquired Disease Year 5

The HSST training gave me the opportunity to rotate into all areas of the oncology genomics team to ensure both the breadth and depth of training essential for this ever-evolving multidisciplinary role. This is especially important when sitting RCPath examinations and completing OneFile competencies

It also means I have representation on many senior leadership team meetings within my department, covering areas such as health and safety and quality assurance. I get to engage with clinical teams, have greater involvement in multidisciplinary team meetings, attend key external meetings and disseminate key findings with the wider team.

I particularly enjoyed the PGDip in Leadership and Management from Manchester University. This was unlike any other training that I'd done previously and has given me the tools to become more confident in my leadership role.

Expectation versus reality

Being part of the first cohort of the HSST was certainly not without its challenges, as any of the first cohort will tell you. Navigating around the reality of the training, versus the expectations of the training, was especially challenging and tested negotiation skills to the maximum. However, now that this programme has been widely adopted, this is no longer as much of a challenge for subsequent trainees.

While I thoroughly enjoyed the PGDip in Leadership and Management, going back into an academic environment and writing essays for a non-scientific subject was also somewhat of a challenge, although a good one.

OneFile competencies were also an enormous challenge, so my advice is – do them as you go along, as it will be much easier in the long run.

Tough but worth it

The HSST is a fantastic opportunity to enhance your skills, both as a scientist and as a leader in the molecular pathology field. It will give you the benefit of continued learning in a

HSST trainee profiles *continued*

structured format and should, ultimately, allow you to progress into more senior management roles. Never, though, underestimate how tough this five-year training programme is, but also never forget just how rewarding it can be.

Lewis Darnell
Genetics/ Genomics
Year 5

As a life sciences trainee, I undertook the Leadership and Management A unit modules with the University of Manchester while simultaneously studying to take the Royal College of Pathology exams to obtain a fellowship.

I work as a clinical scientist in the Molecular Genetics department at Nottingham University Hospitals NHS Trust. Much of the HSST training revolved around that role, including service management, quality assurance, service development and training others.

My research projects led to the introduction of a new testing service in the department and, separately, evaluation of an improved method for diagnosing patients with rare recessive genetic conditions.

I achieved the fellowship of the Royal College of Pathologists through a combination of examination and research. Both of the research and development projects I undertook as part of the HSST were successful.

Single workflow, multiple benefits

The first led to the introduction of a single workflow to allow efficient testing of a variety of cancer and non-cancer services. This not only reduced the cost of testing, but also led to faster results, estimated to save over 900 hours of staff time per year. It also allowed for the introduction of a testing service for autosomal dominant polycystic kidney disease without further impact on staffing or resources.

My final research project resulted in a genetic diagnosis for four families with rare genetic disorders, allowing me to complete the doctorate portion of the HSST.

As I was part of the first HSST cohort, the most challenging part was knowing how to plan my workload. With so many organisations involved, and the training being such a big task, the course was often adapted and added to around us. It wasn't always clear what stages were next, what exactly we needed to do and how we were to go about doing it. Now that trainees are starting to complete the training, this will be much less of an issue for future cohorts.

Transferable knowledge

HSST opens doors to many experiences that you may otherwise not have had, from networking with colleagues from other sites to attending higher-level meetings at your own Trust. This gives you a good overview of a wide variety of tasks and the chance to discover what you like, what you're good at and which areas need improvement. Overall, you gain a wide-ranging experience of science in the NHS that's transferable to a variety of future roles.

Josephine McCullagh
Transfusion Medicine
Year 4

As a blood sciences trainee I had the option to study for the full DClinSci or to complete some but not all elements of the training. I chose the former, which meant that I would need to complete: Section A: Postgraduate Diploma in Leadership and Professionalism for Healthcare Sciences; Section B: FRCPath part 1; and Section C: Doctoral Research and FRCPath part 2.

I've enjoyed two main elements: being involved in research and my honorary contract with NHS Blood and Transplant (NHSBT).

Exploring the clinical academic pathway

I've been involved in several interesting research projects, primarily my doctoral research project, which involved collaboration with many different organisations. We've been looking at the feasibility of introducing a whole-blood component in the pre-hospital setting. Working in research at this level made me realise how much I enjoy this aspect of my role. It's helped me to explore becoming a clinical academic, a career pathway that I would very much like to pursue.

I've been working collaboratively with NHSBT, developing valuable skills, knowledge and networks, while remaining in the hospital setting. This opportunity to work across different organisations throughout my training has really added depth and breadth to my knowledge and experience – and likely wouldn't have been available to me outside of HSST.

So far, the postgraduate diploma in Leadership and Professionalism for Healthcare Sciences has been the most challenging aspect. Not because the content of the course is particularly difficult, but because it is very different to any other form of study I have previously completed. It is less scientific or clinically focused and concentrates more on social sciences.

HSST has helped me in so many ways to develop as a leader and apply what I've learned in the workplace. But it's not always easy to find the correct headspace to appreciate fully the training while juggling a full-time job, research, Royal College exams and a personal life. That said, HSST has benefited me greatly, providing me with a firm foundation in leadership skills.

Happy to discuss

I'd urge anyone interested in the HSST training programme to visit the National School of Healthcare Science website, where there is a wealth of information on the programme.

I would also strongly encourage them to get in touch with current trainees. There are now many more HSST trainees on the transfusion medicine specialty pathway than when I started. Current trainees can offer an excellent perspective and useful advice from their own experience. I'm happy to discuss HSST with any aspiring transfusion medicine candidates, especially those from a hospital setting.

Finally, anyone interested in this programme really should discuss it with their department. Support from your department and clinical/training supervisors is important and can make a huge difference in your journey throughout the programme.

Tom Bullock
Transfusion Science
Year 5
Completed training

The HSST transfusion science curriculum is broad and consists of two stages, with the subject matter in each stage of the curriculum examined in the FRCPath Part one or Part two exams. It also includes doctoral research and development.

Stage one covers topics such as haematology, blood group systems, transfusion therapy, donor-recruitment testing and processing of blood components, among others.

Stage two covers modules including clinical bioinformatics, genomics and personalised medicine, science communication, adverse reactions to transfusion and therapeutic apheresis.

Research relevant to the day to day

My doctoral research project focused on red blood cell microvesicles in sickle cell disease and their role in vaso-occlusive crises. It gave me the opportunity to perform research into an area relevant to my specialty using techniques unfamiliar to me, such as confocal microscopy. As a red cell immunohaematology specialist, I often provide

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Change in eligibility criteria increasing access

In September 2020, the National School of Healthcare Science released a joint statement with the RCPath, Academy for Healthcare Science (AHCS), Institute of Biomedical Science and Manchester Academy of Healthcare Science Education regarding a change to eligibility for entry to HSST from 2021, allowing entry for the first time to senior biomedical scientists with appropriate experience and qualifications.

All four nations of the UK support this opening up of eligibility criteria. It is hoped, too, that it will allow for wider participation in the programme and support recruitment in those specialties with the greatest workforce needs, including haematology, transfusion and microbiology.

Clinical scientists and biomedical scientists will have to complete the same academic and professional components, and achieve Fellowship of the RCPath by examination, to complete HSST and join the Higher Specialist Scientist register with the AHCS. Therefore, all healthcare scientists will exit the programme with the same consultant-level skills.

The high-level scientific expertise, research skills and leadership training that HSST trainees are beginning to bring to the NHS will benefit patients and provide the agility and scope needed to develop many different clinical teams across the healthcare spectrum in the UK.

Lisa Ayers
HSST Training Programme Director
National School of Healthcare Science

Professor Berne Ferry
Head of the National School of Healthcare Science

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HSST trainee profiles *continued*

transfusion advice for patients with this disease. So, it was invaluable in my day-to-day role to learn more, as a part of my thesis, about the pathophysiology of the condition and treatments for these patients.

HSST was primarily a work-based programme, involving a combination of experiential learning, case-based discussions, work placements and teaching, undertaken primarily at my workplace or on placement.

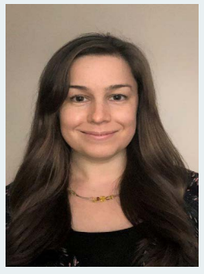
The FRCPath curriculum was both challenging and enjoyable, giving me the opportunity to learn about areas I had not encountered in my previous role. I especially enjoyed attending donor sessions and haematology clinics, meeting both the donors and the patients we provide with the blood components necessary to their treatment and recovery.

Shaping real leaders

Much of the programme was challenging at times, but the PGDip leadership modules at the University of Manchester business school were particularly tough. This part of the programme centres around social sciences and is designed to ensure candidates develop into leaders capable of self-reflection and questioning their actions to improve.

It pushed me outside the comfort zone of my scientific discipline, forcing me to reflect on my weaknesses and strengths as an individual, and helping me to continually develop and adapt my practice as a consultant clinical scientist.

I would recommend HSST to any healthcare scientist looking to develop as experts in their field of practice. The programme provides a career framework that prepares scientists to provide advice at consultant level, working alongside medical colleagues to offer patients the best possible care.



Dr Victoria McCune
Microbiology
Year 5
Completed training 2019

One of the most enjoyable parts of HSST was the opportunity to take on a different challenge and develop my clinical knowledge and skills, working in a new environment within the Infection Service team.

Combining scientific and laboratory skills with knowledge and understanding of clinical pathways and management has given me a different perspective on fostering innovation and improvement in the microbiology service.

Juggling required

The programme also provides a structured opportunity to undertake patient/service-focused research and build wider multidisciplinary and academic links. This was something that I found to be very useful in preparing me for my new consultant role.

At times, it was overwhelming juggling the requirements of the Doctor of Clinical Science (DClinSci) programme, service provision, work-based learning and preparation for the FRCPath examinations.

Work, rest and plan

There is a large amount of learning to cover over the five years and demands on your time can be significant. It is important to plan your workload wherever possible, incorporate revision and wider learning into everyday practice and to understand when rest is needed.

HSST requires a significant commitment to postgraduate learning. I would encourage those considering this training to do their research to fully understand what is really required during the programme and what the role of a consultant clinical scientist involves.

There are many resources available on the internet via the National School of Healthcare Science, the Academy for Healthcare Sciences and NHS Employers. Speak with other HSST trainees and consultants in the discipline to understand their experiences.

It is worth stressing that HSST is a bespoke learning programme, so it is important when embarking on it that you understand your individual learning needs and reflect on your previous training and experience.

Exciting time for the challenge

The consultant clinical scientist role in microbiology is increasingly being recognised and developed to support new ways of working in the laboratory. As pathology networks develop, and medical consultant roles in our discipline become more patient facing, there will be an even greater need for senior scientists with detailed knowledge of laboratory and quality-management systems to help manage and shape the laboratories of the future. This is an exciting time to take on the challenge of HSST.

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Dr Esther Youd

Diversity and inclusion: a College perspective

Diversity and inclusion are essential to ensuring the College serves all its members. Dr Esther Youd outlines plans already in motion to embed a real and continuous change in our culture.

Over the last year there has been increased focus on racism in society, in particular with the killing of George Floyd in the USA and the Black Lives Matter movement. This came at the same time as a recognition that people from some Black, Asian and minority ethnic (BAME) groups were at much higher risk from coronavirus disease (COVID-19) than white groups. These two things have caused a concentration across society as a whole on racism and, in medical arenas in particular, on its impacts on health.

At the College Trustee Board, we have been conscious for some time that the composition of Trustees (all white), although largely elected by College Fellows, does not reflect the broad diversity of College membership.

Diversity in the healthcare setting can refer to a number of characteristics, such as race, ethnicity, gender, sexual orientation, religion, physical abilities and disabilities, to name just a few. Additional features, including socioeconomic background, education, language, culture, age, seniority and geographical location, can introduce further points of difference but the list can of course be wider.

Diversity brings immense value – and diversity of thought is important to facilitate proper scrutiny of decision-making and ensure the College is serving all its members.

Trustees and the senior management team agreed that this is an important area for further action and improvement. We do need to understand why people want to get involved at the College and ask the question – how inclusive are we?

The Diversity and Inclusion Advisory Group

The Trustees have now commissioned a Diversity and Inclusion Advisory Group to discuss these key issues and to advise the Board on what steps need to be taken. I have volunteered to lead this group and am keen to see the College become a fair, inclusive, open, honest and representative organisation that welcomes you and allows you to participate and succeed, no matter what your background or identity.

The response to the call for volunteers to join this new group was extremely positive and I am proud to chair such an enthusiastic group of members, who all want to help shape a better College. We have College members and College staff involved, trainees from foundation, specialty training and Medical Training Initiative, consultants, medics and clinical scientists, members from devolved nations, part-time and full-time workers, and academics, from teaching hospitals, from district general hospitals and from outside the NHS.

The invitation to participate was shared and promoted by colleagues at the British Association of Physicians of Indian Origin (BAPIO), The Association of LGBTQ+ Doctors and Dentists (GLADD) and the Disabled Doctors Network (DDN).

The advisory group membership is formed of people representing a huge range of characteristics, experience and expertise (26 in total at the time of writing), as highlighted in Table 1 on page 262.

The group met first on 22 October 2020 to agree terms of reference and the broad areas on which to report to the Trustees. These include:

- the diversity of College committees, Council and Trustee Board
- how inclusive the College is for members and staff of diverse backgrounds and identities
- what steps can be taken to improve equality, diversity and inclusion at the College
- a remit to cover all functions of the College for members and staff
- providing advice on matters of diversity that impact on pathology practice
- exploring opportunities to establish relationships between the College and networks or organisations that can help the College improve diversity and inclusion.

We had an open discussion about diversity and inclusion, with some important themes emerging that will form the basis of more in-depth discussion at future meetings. These included:

- covering the need to widen participation
- supporting people to better understand how the College works and to get involved
- reviewing how inclusive the College appears on the website
- how to empower people
- mentoring
- increasing the transparency of appointments processes
- use of technology to overcome the London-centric view
- making our diversity visible
- opening doors
- challenging traditional assumptions
- having diverse role models.

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Table 1: Results of the audit.	
Diversity/experience/ expertise	**Number of members (n = 26)**
BAME/ethnicity	16
Gender	9
LGBTQ+	4
Disability	4
Religion	2
Socioeconomic status	2
Devolved nations	4
Less than full time (LFT)	3
Marginalised groups	1
Returning to work	1
Clinical scientist	2
Medical	20
Academia	2
College staff	6

Learning at work

I ran a lunchtime session with Sharonne Baiden, HR Manager, for College staff on diversity and inclusion during the Learning at Work week held in October. This included a training video followed by a frank and interactive discussion that provided extremely valuable ideas and perspectives on diversity and inclusion at the College. The experience of some of the participants present, who had either encountered discrimination themselves or had witnessed examples of this behaviour, clearly underlines the need for further action.

The need for demographic data

Understanding the data about members is vital to ensure that the College can be truly representative of its members. And here we hit a roadblock (temporary, I hope). In light of the General Data Protection Regulations (GDPR) that came from the Data Protection Act 2018, there was, rightly, a detailed look at the personal information held by organisations, and at the need to hold such data.

As a result, an environment has been cultured where we appear to have become scared of asking for or holding information about anyone. At the College we do not actually hold information about aspects of diversity. This means I do not know the proportion of members who are BAME or LGBTQ+, for example, and so I cannot tell you or ensure that our committees, Council and Trustees are representative of those groups of members.

At a Royal Society of Medicine webinar on LGBTQ+ healthcare I attended, a speaker said: 'If you don't count me, I don't count.' If we don't understand our data on diversity, how can we be inclusive, provide equitable services and represent our members?

This is one of the topics that the Diversity and Inclusion Advisory Group considered and felt to be important. As a result, it is likely that the College will be asking for more information about you in the online workforce census when you log in to the College website. Sharing such data is voluntary, but I hope you can see the benefits of doing so, in order that we can better ensure we represent all of you, while providing reassurance of GDPR compliance.

Pathology practice

There are aspects of the practice of pathology where culture, race, gender and other identities may impact how we work. We need to be aware of specific diseases that present in certain groups and may have to adjust treatment regimens or diagnostic ranges according to patient demographics. We also need to be sensitive in the language we use. The Advisory Group will be looking at some of these and specialty guidance may follow.

Moving forwards

So what do we need? I think we need to achieve a change in culture in the College with more open conversations about issues such as race, gender, sexuality, disability, socioeconomic status, opportunity and other aspects that may cause members to feel excluded. We need to work towards more appropriate representation of our diverse community across College activities.

We will share experiences and expertise from other professional organisations to better understand our current position and decide on the best steps towards change.

We need to accept there is a problem so we can work towards solutions and aim for an environment where all members feel included and supported, no matter what their background or identity. Above all we need to embed the change so it becomes continuous and not simply a topical reaction to events.

Unconscious bias

I'll leave you to consider this.

We all have biases that we bring to any situation. Unconscious bias is the product of our upbringing and the society we live in, and it means we automatically respond in certain ways without thinking.

Imagine for a moment: you're late to catch a flight, you rush through the terminal and just make the gate, and as you climb into the plane, the pilot steps out of the cockpit and says, 'Hi'.

When you get to your destination, you go to a local restaurant and have the most wonderful meal. A couple at the next table are celebrating their anniversary.

The next morning you attend the world's biggest technology conference and the CEO of the hottest new tech start-up takes to the stage.

Now, think back – what did you see as you imagined the above scenarios? Was the pilot black? Was the couple in the restaurant two men? Was the tech company CEO a woman? (with credit to Valerie Alexander TEDxPasadena, 'How to outsmart your own unconscious bias', via YouTube).

We need to be aware of our own unconscious bias so that we can stop ourselves having these automatic responses, which may not always be helpful and may cause unintended harm and discrimination.

I would greatly welcome views and further suggestions from members around the proposed activities of the College Diversity and Inclusion Group. Please drop me an email at esther.youd@rcpath.org

Dr Esther Youd
Assistant Registrar

Chanelle Peters

Katie Foster

Making diversity and inclusion matter at the National School of Healthcare Science

Inspired by the national solidarity shown in the face of COVID-19, and 2020's many reminders of the persistence of systemic racism, the National School of Healthcare Science decided to lead by example.

It was amazing to see last year how we came together in solidarity as a country, to help ease the strain on the NHS during the COVID-19 pandemic. We followed government guidelines and were mindful of those around us and their needs.

In the summer of 2020, we witnessed and experienced tragedies that stirred emotions for many of us, reminding us of another pandemic that has been affecting a lot of people for many years – systemic racism.

At the National School of Healthcare Science, we did not want the solidarity inspired by the pandemic to end there. We felt it was time to lead by example, by eliminating any potential for racism in the School, and actively promoting equality, diversion and inclusion.

Developing our Equality, Diversity and Inclusion Committee

Staff at the School were not alone in wanting to tackle the problem of systemic racism being embedded in our processes and thinking. A number of trainees on our programmes got in touch to express their concerns and ideas. This confirmed for us that we needed to take further steps to bring about change.

Our first move was to create, very quickly, an Equality, Diversity and Inclusion (ED&I) Committee, which would meet regularly to identify areas of improvement for the School and the services we provide. In practice, this means being accountable to the School's senior management team, in order to meet standards, promote inclusion and create an environment in which we are constantly educating ourselves and others.

Extraordinary meetings

In practice, this means, individuals in the School make suggestions and come up with ideas that are then addressed in ED&I committee meetings. If a matter is more urgent and cannot wait until the next scheduled meeting, we sometimes conduct extraordinary meetings.

Once matters have been discussed in a meeting, recommendations are made on how we can move forward and come up with a formal process. These are also presented at our senior management meetings (SMM) to be sure all teams are aware of these improvements.

We are also in close collaboration with the BAME Scientist Trainee Network, which reached out to us and maintains close contact to make sure that their voices are heard throughout this process of change.

Improving our recruitment processes

We are working to improve both our internal and national recruitment processes to the healthcare science training programmes we facilitate. Our

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Events in 2020 led the National School of Healthcare Science to create its own equality and diversity training resources for internal use and external stakeholders.

recruitment team is currently in the early stages of working with the external academic research organisation the Work Psychology Group to review these processes.

This work aims to identify and eliminate any bias in the various stages from initial application right through to the placement of trainees on the programme. We intend to be as transparent as possible and will make the relevant data available on a dedicated Equality and Diversity Matters page (currently under construction) on the School website.

Internally, we have since late September 2020 introduced more diverse interview panels, with wider representation from people of different genders, ages and ethnicity, and include interview questions directly on equality, diversity and inclusion.

We hope that, in this way, people we recruit will understand the importance of the values of equality and diversity to the School from the moment of their interview. In turn, we hope they too will demonstrate and implement these values

A holistic approach to training

The School is also actively creating its own equality and diversity training resources for internal use and for our stakeholders, including trainees, apprentices, supervisors, training officers, assessors and recruiters. Through these, we hope to create an environment of continuous learning and self-reflection on how we promote these values, and to identify any areas of improvement.

Our future plans are to view equality, diversity and inclusion in a holistic way, embedding these core principles in all of our training programmes. We do not anticipate change happening overnight, and nor do we expect immediate results. We must remind ourselves that this is a marathon, and not a sprint.

However, now that the School has appointed key individuals to dedicate the time and effort to prioritising this holistic approach, we are confident that we will see progress happen sooner rather than later.

We hope that our initiative encourages other organisations, networks and individuals to invest the time and resources, to listen to their service users, to reduce injustice and bias, and find ways to promote equality, diversity and inclusion in the workplace.

Forming a partnership with STEM

We have also recently formed a partnership with the charity In2Science. Founded in 2010, In2Science aims to provide young people from low-income and disadvantaged backgrounds with opportunities to gain practical insight into the Science, Technology, Engineering and Maths (STEM) sector.

Each year, In2science offers nearly 500 students a chance to take part in life-changing summer placements, working alongside researchers and industry professionals to get hands-on STEM experience.

We are delighted that the School will be able to help more schoolchildren with an interest in science to gain professional experience, especially those who would like to work in healthcare and the NHS. This is an exciting venture and we look forward to helping young scientists of today walk through the doors of NHS departments of the future.

Chanelle Peters
Digital Services Support Officer
Chair for NSHCS Equality, Diversity and Inclusion Committee
National School of Healthcare Science

Katie Foster
Stakeholder Engagement Manager
National School of Healthcare Science

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Delivering high-stakes examinations in a pandemic

Joanne Brinklow

With the spring examinations deferred, the College faced a major technical and organisational challenge: be fully prepared for online sessions by autumn. Joanne Brinklow describes how we rose to the occasion.

Following the deferral of the spring 2020 examination session, the Examinations team dealt with a tidal wave of work to deliver the autumn session. This required major changes to the delivery of most of the College examinations. The delivery of the autumn session was important for candidates on a personal level. For the wider pathology specialties already facing shortfalls, delay could seriously affect future recruitment.

Yet, on Friday 20 November 2020, just 36 weeks after deferral, the College issued approximately 1,170 examination results from the autumn session for candidates sitting their examinations in the UK, the Republic of Ireland and the rest of the world.

This huge achievement would not have been possible without the hard work of the College Examinations team and examiners, the latter having to juggle the competing demands of delivering the examinations with their busy day jobs.

Achieving the remarkable

In May, we conducted a survey to find out candidates' thoughts on options for delivering the examinations. In the July *Bulletin*, we reported on the results, which indicated that candidates were keen to avoid travelling and staying away from home during the pandemic.

The College then decided it should purchase an online platform to deliver FRCPath Part 1 examinations and some FRCPath Part 2 and certificate examinations. The platform would include remote proctoring to allow candidates to attempt their exam from their home or workplace, with an online proctor providing invigilation.

The Examinations team consulted with all Exam Panel Chairs in June to understand their needs, fears and concerns, and consider the full range of requirements for the tender document. A full procurement process was undertaken and four companies were interviewed.

As part of the process, trainees who had recently passed their FRCPath Part 2 examination independently reviewed the tender documentation from the final two companies and expressed their preference. Unanimously, they chose TestReach, as did the College procurement panel.

Following approval from Trustee Board, the College purchased the 'quick start' option, which allowed exam papers to be set up for the autumn session without the need to integrate question banks, since there wasn't time.

We organised a number of viva/oral examinations on Microsoft Teams and Zoom, with appropriate ID and security checks in place, allowing College examiners to examine candidates virtually in their home or workplace.

Finally, some examinations involving glass slides and microscopes (e.g. histopathology and haematology) did take place in person, following social distancing guidelines. .

Exam applications and approving the process

On 15 May, exam applications were opened up for an extended period for the autumn session, and the proceeding candidate withdrawal period was also extended. In the summer, Council approved a derogation, which meant that any examinations taken in the autumn sessions would not count towards candidates' overall number of attempts.

At the beginning of August, on a very hot day, the College Examination team put themselves in the figurative and literal hot seat in a webinar, answering numerous questions gathered from candidates about how we would run examinations in autumn. Dr Matthew Clarke, Chair of the Trainees' Advisory Committee (TAC), put the questions.

On top of all that, once the new methods of examination delivery were agreed, we had to apply to the General Medical Council for approval of the proposed changes. Applications were duly made and approval received on 13 August.

Specialties, challenges and mistakes

September arrived swiftly and with it the first round of examinations. An immense amount of work was needed to prepare for the TestReach system.

It is easy, perhaps, for candidates and even examiners to forget that the College delivers examinations in every specialty that it oversees. The official number of College specialties is 17 but, with subspecialisation, the actual number of

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Spring deferral, autumn delivery

Examinations deferral means trainees continue to occupy training places and recruitment is halted, exacerbating issues already affecting the pathology workforce. The personal impact on trainees is also significant. Dr Matthew Clarke reports on the collective effort to make the autumn sessions a reality.

Dr Matthew Clarke

Examinations are a major facet of the trainee journey. Many put their personal lives on hold to revise and work towards the exams, undergoing very real physical and mental stress.

COVID-19 has created significant additional stresses for pathology trainees, through redeployment to clinical frontlines or loss of training time. Both bring increased anxiety. The postponement of the College's spring exams presented us with a major challenge: how to keep functioning and make progress in our different training trajectories.

New format, new stresses, new solutions

The engagement with the examination survey was impressive (see page 265), with many trainees providing valuable data to support our planning and strategy, allowing exams to be held online.

For most candidates, the exams proceeded without issue but there were technical issues, some more serious than others (see page 267).

In the already pressured circumstances of a new exam format, stresses like these can compound matters, making concentration difficult. However, despite these challenges, all candidates completed their examination.

The College Examinations team are also to be commended for arranging another sitting of the FRCPath Part 1 histopathology exam for several candidates with serious connectivity issues.

It would have been easier to defer until the next sitting, but the team went out of its way to accommodate these candidates, in recognition of the effort each had made to prepare for the exam, and the huge personal impact likely to result from deferral.

Trainee feedback

The Trainees' Advisory Committee (TAC) sourced feedback from candidates, which I then collated and submitted to the Examinations team for review. We later presented the feedback to TestReach with recommendations for subsequent sittings.

For example, a more robust, easy-to-use communication system is now being put in place, which will be conveyed to each candidate should they encounter a problem during the exam. We are also collaborating on a briefing video so that candidates know exactly what to expect on the day of the exam.

On 20 November, more than 1,170 candidates received their results. Some will have been very happy, and others disappointed. However, they should all be congratulated for attempting to tackle what are already very challenging examinations in such unusual circumstances.

It was a harrowing experience, for myself, College staff and TestReach, to read some candidates' negative experiences. Everyone involved is sorry that they faced these difficulties and will try to ensure that these problems do not recur.

That said, it must be noted that these difficult circumstances led to some very unpleasant communications. Errors and mistakes happen to all of us in clinical practice, and to those who work in examination delivery, particularly in highly pressured circumstances. We surely need no reminder that we must show professionalism to others at all times. We need to work together to address these problems, just as we do in the clinical setting.

Many thanks to all involved

I would like to offer a huge 'thank you' to every member of the College team who helped to make these examination sessions happen. They worked tirelessly for past eight months and sacrificed their annual leave to see this through. It is a remarkable achievement and a source of pride for the whole College.

My thanks, also, to all the trainees who volunteered to help in the selection of the online platform and with other aspects of the process. Thanks also to TAC for all its help in gathering the vital feedback from candidates that has helped to refine the process for future sittings.

And finally, all the candidates who undertook these examinations should be commended for their hard work and commitment in such challenging circumstances. Be proud of yourselves for all you have done and continue to do.

Dr Matthew Clarke
Chair, Trainees' Advisory Committee

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different examinations is much higher. Many specialties use different examination formats and there can even be differences between specialties that use the same format.

So, it was perhaps unsurprising that TestReach faced quite a challenge preparing papers for use on their platform and, very often, this left little time for the College team or the examiners to check them as fully as they might have liked.

In some specialties, this led to unintentional mistakes. There were other challenges too. The drawing tool that TestReach had shown us in the procurement stage had to be withdrawn at very short notice, as it routinely caused connectivity issues for candidates using it.

We communicated this immediately to examiners and candidates but, understandably, it caused additional anxiety for the examiners reviewing and adjusting papers, and for candidates used to drawing exam diagrams with pen and paper.

Overcoming connectivity problems

As the examinations rolled out, some candidates experienced connectivity issues. Many were resolved in real time, with candidates having lost time added on at the end.

However, for some, the loss of connectivity was more serious. During the FRCPath Part 1 in histopathology, 27 candidates experienced such significant interruption that they struggled to complete the examination. One candidate couldn't even start.

The cause of the difficulties was high-resolution images not being uploaded properly. If candidates already had low connectivity, they experienced significant issues. Following an incident report from TestReach, all affected candidates were given an opportunity to sit their examination (different paper) in October and all completed it without issue.

Despite these issues, and without diminishing them in any way, the Examinations team received some positive feedback from candidates about the TestReach system. This was always welcome, as was candidates taking time to recognise the extraordinary efforts being made on their behalf.

Positive experience with virtual vivas

The examinations held on Zoom and MS Teams, and in person, all went well. The Examinations team members were in complete control and once they got used to Zoom or MS Teams, the virtual examinations worked very efficiently and were very well received by examiners and candidates. Judging by the feedback I received, the haematology examiners were particularly impressed.

The larger FRCPath Part 2 examinations took place in person from the middle to the end of October. During that time, infection rates were rising around the UK and the tier system had already been introduced in September.

The College put together guidance outlining how we were adapting to the new restrictions and working to keep candidates and examiners safe. Following significant pressure from our College and others, the Academy of Medical Royal Colleges released a statement confirming that examinations should be 'prioritised alongside direct clinical care'.

We were, to an extent, fortunate that these examinations finished before the second lockdown in England was announced, and went ahead without interruption.

And finally ...

As the examinations were completed one by one, the race was on to mark them and prepare results for the Examinations Committee on Thursday 19 November. From discussions in the Committee, it was clear that each panel had mitigated appropriately for any issues candidates experienced during examinations and did a great deal of careful work to ensure that results issued were fair and consistent.

We have learned so much over the past eight months, and while not everything went to plan, much of it did. Both the Trustee Board and the TAC were kept regularly informed of progress, including the various challenges faced along the way.

We have already met with TestReach to identify our priorities for the spring session, and Dr Clarke relayed feedback from candidates that he collected personally with the help of the TAC (see page 266).

I am very proud of the College team's collective effort – the staff, examiners and College officers who made it happen. I also recognise our candidates who made such an exceptional effort in the most extraordinary of circumstances.

Joanne Brinklow
Director of Learning

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A Vice President reflects

Professor Shelley Heard

Prior to handing over to her successor, former Vice President for Learning, Professor Shelley Heard, reflected on her time in the role and the main achievements of the past three years.

Three years ago, I was surprised and delighted when the then President-Elect of the College, Professor Jo Martin, called to offer me one of the three Vice President (VP) roles, following the elections. I had no hesitation in choosing VP for Learning. It was a great decision.

In most areas of life, it's people and relationships that make for success and enjoyment. I have thoroughly enjoyed my time as VP for Learning at the College, largely because I have been working with the most wonderful group of people.

Jo Brinklow, Director of Learning, and her fantastic learning team have made the role easy and a great deal of fun. Their ongoing work during these challenging times has been extraordinary. They have updated curricula to meet the requirements of the GMC's new *Generic professional capabilities framework*, had tremendous success ensuring that examinations could take place in September and October, despite the complexity of doing so during the pandemic, and updated the e-portfolio, Learning Environment for Pathology (LEPT).

Professor Heard with 2018 Furness Prize Winners, Navin Mukundu Nagesh and Bogdan Chiva Giurca.

Dr Nicky Cohen and Dr Sanjiv Manek have been superb in their respective roles as Clinical Director of Training and Assessment and Clinical Director of Examinations. Dr Rachael Liebmann and Dr Tim Littlewood have been outstandingly supportive colleagues in the other vice presidential roles, and Jo Martin has been an inspirational and fantastic College President.

Three main areas

A key feature of the last three years has been the ability to implement innovative programmes to support the education and training of the pathology workforce. There have been three main areas of work of which I am most proud: working with trainees, the RCPath COVID-19 pandemic video-based learning programme, and the Undergraduate and Foundation Training Group.

Working with trainees

My role as VP for Learning has really been all about working with trainees, especially Dr Matthew Clarke, Chair of the Trainee Advisory Committee. Helping to support trainees to learn about pathology has been a privilege and a pleasure.

Increasingly, pathology posts available across all 17 specialties are being filled. This is a great sign that, by sharing their experiences in pathology, our trainees are supporting and influencing undergraduates and young trainees, encouraging them into pathology.

We've seen the Paola Domizio Undergraduate Essay Prize and the Hugh Platt Foundation Essay Prize receive more and more excellent submissions, again demonstrating a growing interest in pathology as a career.

COVID-19 pandemic: video-based learning programme

Developing and seeing through to fruition the College's COVID-19 pandemic video-based learning programme has probably been the most enjoyable experience in my time as VP.

Throughout April, May, June and July 2020, the College ran a weekly series of online seminars on COVID-19 and its implications for, and impact on, pathology. College Fellow, Professor Will Irving, a virologist from Nottingham, introduced the series, and each seminar was led by a subject expert.

The seminar format was a 15–20-minute talk followed by a 15-minute Q&A session. A recording of each session is available on the College website. A proposal has just been accepted to run a second series to update College members as the pandemic progresses. This will, of course, be up to the new VP for Learning to decide. I am delighted to hear that Angharad Davies is stepping into this role.

Undergraduate and Foundation Training Group

Another highlight of my time as VP has been the establishment and development of the Undergraduate and Foundation Training Group. The College approved a strategy for such a group back in November 2018 and appointed three leads, each focusing on a key area: foundation, education and engagement.

The aims of the strategy are to support undergraduate and Foundation trainees in order to ensure that they:

- develop a solid and comprehensive scientific understanding of the underlying pathological processes of disease
- are provided with role models and mentors to better understand the work and contribution of pathologists to patient care and outcomes
- have the opportunity to be inspired by the work of pathologists
- understand the range and choice of careers offered through the pathology specialties and consider these carefully as future career options.

A further aim is to increase the number of doctors applying for and being appointed to pathology training programmes.

The Foundation and Training Group Leads – Dr Angharad Davies (Foundation), Dr Hasan Rivzi (Education) and Dr Richard Byers (Engagement) – have contributed significantly to achieving many of these aims. My sincere thanks to them for their hard work, originality and commitment.

Through their work we have seen, for example, the development of Foundation Fellows, a review and update of the undergraduate curriculum, and increasing links with other organisations interested in raising the profile of pathology among undergraduates and trainees.

I have thoroughly enjoyed my time as VP. I would urge any College Fellow with an interest in furthering pathology as a specialty and supporting trainees to consider standing for this or other College roles in the future. You will have great colleagues, a great deal of support and lots of fun.

Professor Shelley Heard
Former Vice President for Learning

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Leaving the comfort zone for the bigger picture

Dr Rachael Liebmann

Dr Rachael Liebmann looks back on the challenges and achievements during her time as Vice President for Communications and International, raising the profile of our work, embracing digital and more.

When taking on a senior College position, the challenge involves providing leadership on a broader scale, perhaps coming out of the comfort zone of one's own specialty or having to think about issues at a national rather than local or regional level.

Being Registrar previously gave me a helpful basis, but I still had the challenge of bringing in the sharper focus needed for the Vice President (VP) role. The remit of the Registrar stretches widely across the College, providing a great opportunity to get involved in all sorts of interesting College work. By contrast, the VP for Communications and International has very distinct boundaries and expectations.

Both the Communications and International teams had undergone considerable upheaval with the loss of some key staff. So, the first priority was to help support and enthuse the remaining team members and to ensure that the new recruits quickly found their feet. I am pleased to say that not only did the teams rebuild and strengthen, but that this enabled some of the more senior roles to be filled by internal candidates, demonstrating a growth in capability and confidence in the staff members.

Key achievements

International collaborations

It has been great to work with the International team on key initiatives and projects. These have included supporting overseas members by responding to enquiries and providing guidance where needed, overseas pathology summer schools and College examination centre management, trainee sponsorship schemes, Memoranda of Understanding to encapsulate the relationships the College has with the governments of other countries, and other major projects such as Lab Skills Africa and the ARISE projects.

Raising the profile of pathology

I have enjoyed working very closely with the Communications team on activities essential to the College. Public affairs entails reaching out to and informing and lobbying politicians and policy makers on pathology issues. This is a vital part of College activity and I was also able to deputise for the President in reporting to the All-Party Parliamentary Group on Coronavirus.

Our 'brand' is important in spreading the word about our members' work. When producing College guidance, workforce reports for widespread

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dissemination, the *Bulletin* and *Annual Report*, the tone and style must reflect the College as a reputable organisation with a consistent and authoritative contribution. However, publications must also provide interest to attract and keep the readers' attention. This requires a great deal of work and repeated input, review and feedback to various authors.

Promoting careers in pathology

Public engagement activity brings together College members from across the country, enhancing people's understanding of our profession and includes the now hugely popular National Pathology Week.

I was delighted to support various activities, but in particular to ensure a firm emphasis on highlighting the opportunities and rewards a career in pathology can provide, and furthering knowledge to help address the workforce crisis we face. In addition to giving several careers talks in schools, I produced a video guide to help pathology colleagues to give such talks and hopefully spread the word as widely as possible.

Digital pathology

Digital aspects of the College communications activity have become more and more important, from setting up a digital consultation platform for College guidelines and best practice recommendations, to using social media and creating a map showing College activities in your region. Like a garden, a website needs constant maintenance to make sure it is looking its best. To help in this, I encourage members to report any outdated information to the College Communications team .

Dr Liebmann deputising for Professor Jo Martin at a College dinner.

COVID-19 resources

Of course, no article drafted in 2020 would be complete without a mention of COVID-19. In my role as VP, it was clear that COVID-19 testing, autopsies for COVID-19-positive patients and accurate death certification were all vital to the UK's pandemic response.

CE Daniel Ross, former Treasurer Dr David Cassidy and Dr Liebmann inspect the 'new' building at 6 Alie Street before completion.

Thus, it was greatly satisfying to oversee the establishment of a Resources Hub to allow members ready access to guidance relevant to their COVID-19 work. I also welcomed the opportunity to outline quality and governance aspects of Pillar Two testing at a College online seminar as part of this hugely successful series. In my international role, I contributed to the planning of our recent and very successful COVID-19-themed International Pathology Day (see page 286).

Final reflections...

It is important not to let the VP role overwhelm you and to have the confidence to rise to the occasion, even when deputising for the President at the College Dinner.

To deliver the achievements above, I have been blessed to work with Diane Gaston and Jo Brinklow, and fantastic managers and members of staff in both the Communications and International teams. I could not overestimate the contributions of Dr Lorna Williamson and Dr Shubha Allard, as Clinical Directors of Publishing and Engagement, and Dr Maadh Aldouri, as Clinical Director for International Activities, whose support and specialist knowledge have been invaluable.

Dr Rachael Liebmann
RCPath Council Member for London

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Professionalism: the foundation that supports the pathology workforce

Professionalism underpins the College's goal of supporting members, maintaining standards in recruitment, and inspiring pathology professionals to deliver excellence, ensuring the best in patient care and safety.

Fiona Addiscott

Maria Marrero Feo

Shane Johns

The Professionalism department is one of the College's main functional areas to engage directly with pathology and the profession. It comprises three teams: Clinical Effectiveness, Professional Standards and Workforce. Each has its own area of work, but all three share the common goal of providing excellent service and standards to our membership.

Clinical effectiveness

The Clinical Effectiveness team aims to facilitate the maintenance, delivery and development of agreed standards across the pathology profession to meet the national requirements for pathology services that benefit patients and the public.

We support members through four main areas of work: the clinical guidelines programme, quality improvement and patient safety, College involvement in NICE consultations, and key assurance indicators (KAI)/key performance indicators (KPI).

Clinical guidelines

We produce a growing number of NICE-accredited guidelines to inform and assist pathologists, and other healthcare providers, on best clinical practice. We are involved in the development and updating of 95 clinical guidelines, of which 52 are cancer datasets, 17 tissue pathways, 19 autopsy guidelines and seven cross-specialty specific guidelines.

Quality improvement and patient safety

Our continuous quality improvement (CQI) and patient safety initiatives help to support our members in maintaining and improving the quality of services for patients. Going forward, we will also be focusing on ways in which we can support members to improve safety in their workplace.

This is all done through our Audit Certification Scheme, CQI Mentoring Scheme, audit templates and Patient Safety Awareness Week. The last of these was originally launched in 2018 as CQI awareness month, but has since evolved to focus on patient safety. It is delivered every year, offering a range of resources and interactive activities. We are finalising the dates for 2021 in light of the COVID-19 pandemic. Please visit our website to find out more about how to get involved in this year's event.

NICE consultations

The College has a vital role in contributing to NICE consultations, ensuring that pathology is reflected in the preparation of NICE recommendations wherever relevant. We seek advice from our members to inform the development of NICE guidance and all our members are invited to give their opinion and advice. Please do look out for emails regarding these consultations.

Key assurance indicators and key performance indicators

In November 2019, we published our KAI document to assure service quality rather than performance efficiency in pathology. We are currently working on the development of specialty-specific KPIs, which each specialty can use to demonstrate the clinical effectiveness of their services.

Professional standards

The Professional Standards team undertakes a diverse range of work with the ultimate goal of supporting its members in their professional development and to improve patient safety in the workplace.

The largest area of our work is the Continuing Professional Development (CPD) scheme, which provides our 5,000-plus members with a robust, reliable and user-friendly online CPD portfolio to record, store, demonstrate and export their CPD for appraisal and revalidation.

During the COVID-19 pandemic, we further supported our members by extending the CPD returns deadline to the end of September 2020 and publishing regular news posts and advice on collecting CPD.

We responded to many queries and requests for extensions, reassuring many of our members and providing some breathing space. To provide other ways of collecting CPD, we also processed many applications for CPD approval of virtual meetings, webinars and online training events.

External Quality Assurance

We further support best practice and patient safety by managing the College's External Quality Assurance (EQA) review programme. This work is being undertaken to improve system-wide governance and oversight of technical EQA.

A simple and effective way to help keep patients safe, the patient safety bulletins offer valuable insight and a chance to learn from others' experiences and develop professionally. We engage with

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our members to encourage individuals to submit case studies based on past experiences in their workplace and CPD credits are available on submission. Each month, a new bulletin is published online and they cover all specialties and services.

If you would like to submit your own case studies and claim CPD credits, please complete the case study template.

Workforce

Through workforce planning, the Workforce team aims to maintain standards in pathology by reviewing and approving consultant-level job descriptions and monitoring appointments. We enable the College to plan an efficient, high-quality pathology service through direct surveys and by advising relevant professional groups of the results.

The Workforce team offers a consultant job description review service and provides College representation at Advisory Appointment Committees (AACs) to ensure that pathologists appointed to consultant posts in the NHS are qualified to the appropriate standard.

This is an important opportunity for the College to play an independent role in an employer's appointments process. On a three-yearly cycle, we review all consultant model job descriptions. This provides the NHS with a framework that employers can use to attract suitable candidates to posts. It also gives members a clear outline of the expectations of any given role.

Centralised review and monitoring

The Workforce team carries out research and conducts surveys of the current pathology workforce. The College publishes these results in influential reports and papers, helping to ensure decision-makers commission enough pathologists with the right skills, training and expertise to ensure patient safety.

To enable the College to endorse job descriptions and job plans, we have centralised the review process – co-ordinating communications from specialty advisors and employing bodies around the UK. This allows us to monitor the content, including the Direct Clinical Care and Supporting Professional Activities split within job descriptions and job plans. We encourage employing bodies to comply with the terms of the Academy of Medical Royal College's Supporting Professional Activities advice and relevant RCPath recommendations.

Interview panels

We respond to all requests from employing bodies in the NHS to provide a College representative on interview panels for medical and clinical scientist appointments in the UK, excluding Scotland, which has its own process. We have recently prepared College best practice recommendations for virtual AACs.

We have a quality assurance process for job description review and representation on interview panels to ensure that standards are being met and a high-quality service is delivered.

Meeting pathology demand and advocacy

We run direct surveys across all pathology specialties, to obtain accurate workforce data and information on vacancies. From the data gathered, we produce *Meeting pathology demand* briefings that help us to advise government departments, national organisations, medical and academic bodies, etc. on all matters relating to pathology workforce issues. This advice has contributed to funding being provided to the NHS by NHS England, NHS Improvement and Health Education England (HEE).

We encourage all members to complete their workforce data record on the College website with up-to-date information so that we can advocate effectively on behalf of our membership at all times.

We would like to hear your views on how we can improve our support to members, and welcome any suggestions for the development of new initiatives that may help to improve the quality of service and care for patients.

Send your views or suggestions to:
clinicaleffectiveness@rcpath.org

Fiona Addiscott
Workforce Planning Manager

Maria Marrero Feo
Clinical Effectiveness Manager

Shane Johns
Senior Professional Standards Coordinator

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Improving the job description review service

Appealing and professionally produced job descriptions help to attract and secure the right candidates. Here are some useful dos and don'ts from the College's Workforce team.

Dr Esther Youd

Reshma Patel

The College provides a service where we review and endorse medical, consultant clinical scientist level and specialty and associate specialist (SAS) grade job descriptions. We also arrange for College assessors to attend advisory appointment committees (AAC) and provide guidance on recruiting the right candidates.

To NHS Trusts in the UK (excluding Scotland, which has a separate system), this process contributes to the statutory framework governing the appointment of consultants, and we extend this service to other employing bodies. Foundation Trusts are not bound by statutory regulations and, by extension, not bound to accept College advice, although they frequently accept that it is good practice to do so.

The College is not involved in the terms and conditions of service. The BMA provides guidance on this. However, making consultant roles more appealing is important for attracting the right candidates and helping to retain the existing workforce. The College's job description review service shows that practice varies in all of these areas. We therefore produced this guidance for employing bodies, with the intention of helping to create job descriptions that will attract the ideal candidates to these posts.

College experience

To provide employing bodies with some tips, College staff have drawn from past experience of reviewing job descriptions. These will help employing bodies to produce job descriptions that inform prospective candidates about the role they are applying for, and about the facilities and benefits.

The important areas where we encourage good practice in job descriptions are:

- creating a balanced role
- demonstrating the employer has a flexible attitude to work/life and less than full-time working
- adequate time for supporting professional activities (SPAs)
- a reasonable or flexible number of programmed activities (PAs)
- promoting the advantages of the local area.

While unlikely to address the workforce deficit, these areas do support the College's national focus on the wellbeing of the workforce to improve retention. Additionally, the College recognises that there is something that employers can do to make unfilled posts more attractive or to present jobs that actively encourage pathologists away from locuming and into substantive posts.

College suggestions

These suggestions have been drafted to help employing bodies produce job descriptions that will attract the ideal candidate to their post.

The dos

- Choose clear (web-safe) fonts, as they will display better on all browsers and devices.
- Space the headers for each area for ease of reading.
- Ensure margins are not too big on one side, and use the space on the page wisely.
- Keep the job description simple, concise and to the point.
- Include a suitable title, with grade, specialty and employing body all clear at a glance.
- Keep the content professional, yet try also to have a personal touch.
- Use the employing body's generic templates; however, adapt to suit the specialty.
- Keep the subject matter relevant, e.g. if candidates want to know more about the area, then provide links for them to do their own research.
- Ensure references are up to date and that links work (hyperlinks are preferable to weblinks).
- Keep all information such as staff lists, workload statistics and header and footers up to date.
- Include all the items required to meet a basic standard, e.g. duties of the post, facilities for the appointee, model job plan, person specification, contacts for visiting in advance, etc.
- Create a balanced role that demonstrates the employing body has a flexible attitude to work/life balance and to less than full-time working.
- Make sure that the programmed activities add up.
- Ensure there are enough SPAs for continuing professional development (CPD), audit and quality assurance, appraisal, revalidation, teaching/training and research.

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- Use suitable images to promote the area and encourage potential candidates.
- Have clear standards on both the essential and desirable columns of the person specification.
- Specify 'experience in', 'evidence of' or 'qualification in', not 'an interest in' or 'enthusiasm for'.

The don'ts

- Do not use more than two fonts, as this does not read well and can look messy.
- Do not use a cursive font (e.g. Script, Mistral, Pistrina), as they do not display clearly or correctly on devices.
- Do not use double spaces between sentences, as this makes the document too long.
- When using tables, do not justify the text, and avoid the use of bullet points, if possible.
- Do not use gender-specific language, only gender-neutral words, i.e. replace he/she with they.
- Do not use language that may be seen as racially discriminating, e.g. 'foreign' or 'Eastern European'. Instead, use terms like 'international', 'overseas' or 'European'.
- Do not waste space on unnecessary content; stick to the relevant details.
- Do not make extravagant claims about the employing body and/or department.
- Do not put paragraphs into boxes as this makes it more difficult to review the document, especially if changes need to be made.
- Do not forget to ensure information is as up to date as possible.
- Do not make the images too large, as the document will be impossible to email.

Conclusion

With these suggestions, we aim to support College members to maintain high standards in education, training and research to deliver the best patient care. These tips supplement the College's model job descriptions, which are reviewed on a three-yearly basis.

Dr Esther Youd
Assistant Registrar

Miss Reshma Patel
Workforce Co-ordinator

Soulsby Fellowships

The Soulsby Foundation was established in 2016 to honour the pioneering role of Lord Soulsby of Swaffham in championing the concept of 'One Health' internationally. He was rather unique in having been President of both the Royal Society of Medicine (RSM) and the Royal College of Veterinary Surgeons (RCVS), bringing together these aspects of health. The Foundation, working closely with the RSM, the RCVS and the Royal Society of Tropical Medicine and Hygiene, awards up to five Traveling Research Fellowships (up to £12,000) known as 'Soulsby Fellowships' to individuals proposing a project within the international field of One Health. These are open to applicants with a degree in either human or veterinary medicine.

The closing date for 2021 Fellowships is 31 January 2021.
For more information, go to https://rstmh.org/news-blog/news/soulsby-foundation-calls-for-applications-for-2021-one-health-fellowships

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Dr Hasan Rizvi

Pathology Portal: the journey so far

The Digital Now platform, Professor Jo Martin's brainchild, funded and co-developed with HEE, is now Pathology Portal. Dr Hasan Rizvi provides an update on the project's progress on delivering enhanced training for pathologists.

Pathology Portal: objectives and outcomes

The key aims are:

- to provide a single national platform for hosting whole-slide scans (along with videos, Powerpoint presentations and other common file formats) for healthcare training, quality assurance schemes and any learning activity
- to develop learning sets mapped to the College's specialty curricula that will provide a graded reporting framework for learning and assessment
- to develop an adaptive learning approach that allows trainees to demonstrate proficiency in specialist areas of reporting and provide an alternative to time-bound training.

The overall objective is to allow flexibility in training and address gaps in learning needs at local, regional and national level. Once fully developed, this will allow schools of pathology and local provider (NHS trusts) to train existing and future healthcare workers with material that can be customised to individual needs.

The platform is expected to serve a variety of purposes, including provision of subspecialist training material that is not widely available (e.g. diagnostic cytology, paediatric and neuropathology), flexible training, return-to-work training, quality assurance and competence testing. This will eventually lead to more widespread adoption of online assessments – both formative and summative. Ultimately, it is hoped that this will help ease the burden from already overworked trainers, especially in areas of workforce shortages

Work streams

The work for the project is divided into four phases: discovery, alpha, beta and live.

Discovery

This includes interviews and workshops with users and stakeholders to outline the functional requirements of the platform.

Alpha

Working with users and stakeholders, this phase involves designing the platform. The end results are design and technical prototypes along with a detailed document of the technological architecture required for each of the functional requirements from the discovery phase

Beta

This is the building phase and will result in a minimum viable product (MVP) with basic functionality as outlined and designed in the first two phases.

Through multiple testing cycles, users will evaluate functionality and feedback to the technical developers who will redesign and rebuild, as required.

Live

During this phase, the functional product will be rolled out widely with ongoing support and minor tweaks as required.

Our progress so far

The College, working with the Technology Enhanced Learning (TEL) team at Health Education England (HEE), appointed an external partner – BJSS, a business technology consultancy – for the discovery and alpha phase, which concluded in July 2020.

Over the summer, I worked closely with colleagues in the TEL team to develop an internal business case to provide ongoing support for the project within HEE.

I also worked with colleagues in the College and the TEL team to draft the procurement framework, which was used for the tendering process and to find a technical partner for helping the Learning Hub team within TEL in the development of the platform.

Softwire was shortlisted as the technical partner for the 'Beta' phase in early December and it is hoped that development work will start in the new year. The development, being undertaken by the Learning Hub team with the external partner, is expected to take six to nine months. The project will require development of content with input from and editorial oversight by College fellows and members

It has been a rewarding and exciting journey so far but, unfortunately, for personal reasons, I am stepping down from the role of Clinical Director at the end of my first year. From January 2021, Professor Martin will continue to lead on and oversee this important project.

Dr Hasan Rizvi
Clinical Director, Pathology Portal Programme
Royal College of Pathologists

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ON THE AGENDA

Professor Simon Priestnall

COVID-19 and lessons from the animals: a One Health approach

With hindsight, suggests Professor Simon Priestnall, the COVID-19 pandemic should have been easy to predict, given what we already knew about animal coronaviruses. But, he asks, are we ready for the next one?

For years, the medical community considered coronaviruses to be of relatively minor importance to human health. Two human coronaviruses (HCoVs), HCoV-229E and HCoV-OC43, were known causes of the seasonally linked common cold. The former, an alphacoronavirus, originated in bats and transmitted to humans through alpacas, and the latter, a betacoronavirus, passed from rodents to humans through cattle.[1] Neither was a major target of either biomedical research or vaccine development.

A predictable scenario

Things changed abruptly in late 2002 when severe acute respiratory syndrome (SARS; now known to be caused by SARS-CoV-1) first emerged in Guangdong province in southern China and spread to Hong Kong.[2] This largely, but not exclusively, respiratory infection was both highly infectious and had considerably greater levels of morbidity and, indeed, mortality than the other human coronaviruses known up to that point.

SARS came and went and for a time there was a flurry of research interest in potential pandemic CoVs. This interest gradually ebbed and as time passed, it seems fair to say, the medical community became complacent.

The emergence of Middle East respiratory syndrome (MERS) in Saudi Arabia in 2012[3] again highlighted the significant potential threat these viruses, of essentially animal origin, pose to humans. Again, perhaps because of its geographically restricted occurrence, this virus was not taken as seriously globally as perhaps it should have been.

Now, here we are in winter 2020–2021 and it's easy to say, with the huge benefit of hindsight of course, that this current scenario was all too easy to predict. It could be argued, in fact, that it very much was predicted, as outlined below.

Needless to say, a staggering amount of research has already been done and will continue globally to meet the many challenges being posed by COVID-19. I am confident (and fully agree with Professor Chris Whitty, England's Chief Medical Officer on this) that we will overcome this virus, as we have many others throughout history.

Naturally occurring betacoronavirus in dogs

In late 2003, as I was finishing my veterinary studies at the University of Bristol, I was contacted by Professor Joe Brownlie, who was, at the time, leading a small research group at the Royal Veterinary College, London, investigating the causes of infectious respiratory disease in a large rehoming shelter for dogs in central London. The shelter had repeated outbreaks of disease despite the use of vaccination, and the group was undertaking a more in-depth investigation into the possible infectious causes.

A year earlier in 2002, Dr Kerstin Erles (a veterinary virologist and now a Fellow of the RCPath, working in that group) had discovered a novel betacoronavirus (canine respiratory coronavirus, CRCoV) in dogs from the shelter.[4–6] Virtually nothing was known about this virus, except that it did seem to be associated with clinical signs of respiratory disease in dogs.[4]

Too good an opportunity to miss

Prof Brownlie knew I was keen to undertake a PhD and the prospect of being able to work on a novel virus was too good an opportunity to turn down. Over the next three years I discovered: the virus was present globally;[7,8] it was associated with mainly mild upper respiratory tract disease (akin to the human common cold);[9,10] it caused damage to ciliated cells in the trachea and upper airways (predisposing to secondary infections); and it had a curious effect on the innate immune response, initially dampening down the proinflammatory cytokine response of the host.[9]

One thing that struck me very early on in working with this virus was just how infectious it was: transmission is via aerosols/secretions and fomites, and almost 100% of dogs had seroconverted with detectable antibodies to the virus within three weeks of entry to the shelter.[4]

It was possible to control the virus by reducing the stocking density of the shelter, increasing distance between housed dogs, strict and thorough disinfection and sanitisation of kennels, and quarantining new dogs entering the shelter – measures that will currently sound very familiar to us all.

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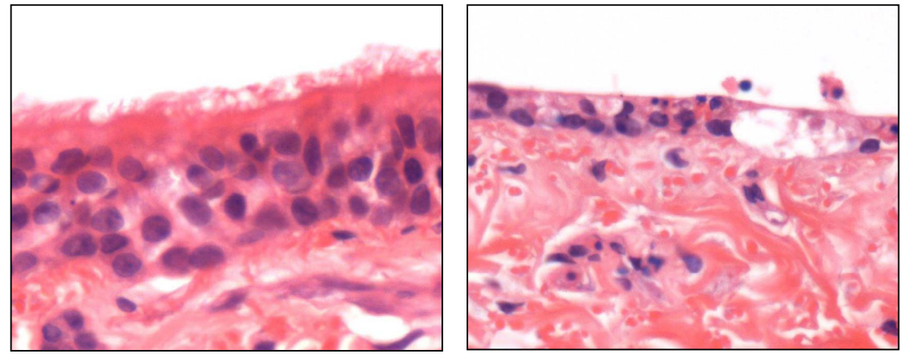

Figure 1: (A) Normal canine tracheal epithelium. (B) Canine tracheal epithelium 48 hours after infection (*ex-vivo* air-interface culture) with CRCoV. Note diffuse loss of cilia and goblet cells with multifocal epithelial cell necrosis.

Pathology of veterinary coronaviruses

Coronaviruses have long been the subject of research among the veterinary community, with the focus on viruses specific to domestic and farmed species. Some, like CRCoV, generally cause mild disease, but others such as feline coronavirus (FCoV) have a seemingly unique ability to mutate, within the host, and cause invariably fatal disease in cats.

FCoV is responsible for the intriguing disease, feline infectious peritonitis. Current understanding is that the spike (S) protein of the virus mutates spontaneously within the host, and it is the immune response, mounted towards the mutated form of the S-protein, that causes significant clinical disease.[11,12]

Antigen–antibody complexes can block the microvasculature, causing effusions and triggering a vasculitis or perivasculitis. At necropsy, classic white to cream pyogranulomas are present in various organs but, most notably, in the kidneys and throughout the intestinal serosa (hence the name, feline infectious peritonitis).

The ability of FCoV to mutate within the host (indeed, in some instances, even between different lesions in the same animal) poses a rather worrisome attribute of some coronaviruses, However, the immunopathology observed with mutated FCoV (an alphacoronavirus) is worthy of investigation as a possible model of the more severe forms of COVID-19 observed in humans

Lessons for vaccination

Infectious bronchitis virus (IBV) is a gammacoronavirus that affects chickens and causes significant mortality in unvaccinated flocks.[13] IBV, which is spread through aerosols, causes conjunctivitis, tracheitis and occasionally nephritis. When introduced to naive flocks, it can cause up to 100% morbidity and, in some cases, significant mortality when complicated by secondary bacterial infections of either the lungs or urinary tract.

Vaccination and strict biosecurity protocols have for a number of years been the main means of control. However, control requires constant effort. Genetic shift through recombination events, and genetic drift through the accumulation of genetic mutations due to the natural mechanism of virus replication that employs a low-fidelity, RNA-dependent RNA polymerase, are responsible for the many different serotypes of the virus.[14]

Emergence of new IBV serotypes is through selection acting on these molecular changes, with vaccination of commercial poultry being one of the fundamental selection pressures. Hence, the scientific game of 'cat and mouse' to keep up with the ever-evolving threat to commercial production.

It is perhaps too early to say how SARS-CoV-2 will evolve, in terms of antigenicity and pathogenicity. What is clear, however, is that human influences such as high-speed international travel, 'bottle-necking' events such as the isolation of whole populations, and vaccines themselves will all contribute variously to viral evolution in a way not previously seen with the other human betacoronaviruses.

Preparing for the next coronavirus

What is eminently clear (I sincerely hope) from the current pandemic is that emerging viruses of animal origin can no longer be ignored or considered someone else's problem. In our globalised society, a problem in one country or region can, virtually overnight, become a problem for the whole world.

We were relatively lucky with SARS-CoV-1, but SARS-CoV-2 has taken full advantage of weak surveillance mechanisms, high-speed international travel, and poor international cooperation and coordination. Of all the animal species from which potential human pathogenic viruses could emerge, bats stand head and shoulders above the rest. In particular, the Rhinolophus (horseshoe) bats, of which around 106 species widely distributed around the globe have so far been described, are host to a growing number of SARS-related CoVs (SARS-rCoVs).

The first bat CoV was described in 2005 but, since then, over 35% of the bat virome has been reported to be composed of coronaviruses. Cui *et al* noted in 2007 that 'understanding their [bats] diversity, behaviour, and mechanisms of virus

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Figure 2: Opened abdomen of cat with feline infectious peritonitis (FIP). Note abundant straw-yellow (fibrin-rich) effusion and multiple cream-white foci (pyogranulomas) on the omentum.

transmission may play a key role in preventing future outbreaks of both known and unknown zoonotic diseases of bat origin'.[15]

This very same group, from the Wuhan Institute of Virology, Hubei (China), no less, stated in a March 2019 review: '... given the prevalence and great genetic diversity of bat SARS-rCoVs, their close coexistence and the frequent recombination of CoVs, it is expected that novel variants will emerge in the future'.[16] This statement was not surprising to coronavirologists, nor to those veterinary scientists that deal on a daily basis with the plethora of viruses existing at the human–animal health interface. Although scientists were well aware of this hazard, no substantial actions were taken.

Various human activities are accelerating the chances not only of direct zoonotic transmission events occurring, but also of transmission between animal species. Intermediate host species, such as the palm civet in the case of SARS-CoV-1, increase the likelihood of a successful zoonotic transmission event occurring. Indeed, it is not a case of if, but when, the next animal-origin coronavirus ('SARS-CoV-3') will emerge. Closer collaboration between veterinary and medical scientists, clinicians and pathologists will be our best way to predict and prepare for that day.

References available on our website.

Professor Simon L Priestnall
Professor of Veterinary Anatomic Pathology, Head of Pathology
The Royal Veterinary College, Hatfield

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Pathology: at the heart of healthcare – a round-up of National Pathology Week 2020

People around the UK and beyond took part in our first online National Pathology Week, enjoying online origami, sixth-form careers talks, a book panel discussion, meeting pathologists, heart health activities and, of course, pub quizzes.

Penny Fletcher

Thadcha Retneswaran

The College has coordinated National Pathology Week (NPW) every November since 2008. The challenges posed by COVID-19 and social distancing became opportunities both to innovate and reach more audiences for NPW 2020.

As well as College-led online events, there were online and socially distanced activities in hospitals and schools all over the UK. These included a virtual careers talk for sixth formers in Exeter and an online exhibition about digital pathology developed by College Fellow Dr Samar Betmouni in collaboration with the National Science and Media Museum in Bradford (see page 280).

The NPW 2020 programme kicked off on Monday 2 November with live-streamed heart origami activities for school students with science-based artist Dr Lizzie Burns, who has previously delivered a wide range of activities and events for the College. Her new range of heart-health activity resources for this year's NPW have been extremely popular.

Below: origami beating heart.

The official 'launch' event for NPW 2020 took place on the evening of 2 November. 'Meet the Presidents' was a conversation-style event with the then College President Professor Jo Martin and Dr Mike Osborn, who was President-Elect at the time. Hosted by medical microbiologist Dr Nicola Hardman, the webinar offered the chance to hear about Jo and Mike's careers, and to ask them questions.

Around 85 people attended and the feedback, collected via an anonymous survey after the event, was extremely positive. One non-member who attended commented: 'It was a great way for the public to meet senior people within the organisation. My 15-year-old daughter got her first insight into being a pathologist and this has encouraged her even more!'

Welcome to Book Club

The first ever 'RCPath Book Club' took place on Tuesday 3 November and featured Mark Honigsbaum's *The Pandemic Century*. The event was hosted by healthcare scientist and science communicator Kip Heath and featured a panel made up of virologist Professor Will Irving, immunologist Dr Shuayb Elkhalifa and *Financial Times* journalist Anjana Ahuja.

Following a reading by the author, the panel discussed the book, what we can learn from previous pandemics and the importance of pathology during pandemics. Around 70 people attended and there were lots of great questions for Mark and the panel. We hope to run more RCPath Book Club events in the future.

A busy week

On Wednesday 4 November, school students from around the UK and beyond tuned in to see three College members speaking about their careers and work in the first of our series of virtual 'Meet the Pathologists' events.

Consultant haematologist Dr Guy Hannah, consultant histopathologist Dr Seth Horsu and histopathology registrar Dr John Jackson each presented a five-minute interactive presentation that gave students an insight into their 'typical day' and the path they took to get to their current positions. The students, all aged 13–18, had many questions for the three presenters, and were provided with College careers materials and links to careers videos after the event.

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Above: On Saturday 7 November, science-based artist, Dr Lizzie Burns, led the online art-science workshop for families, with its theme of heart health.

Below: the theme of National Pathology Week 2020 was 'Pathology: at the heart of healthcare'. Many of our members used the design we developed for this theme to promote their events and to show their support on social media.

Virtual quizzes

To engage undergraduate students on relevant courses, we ran two 'Virtual Pathology Pub Quizzes' on Thursday 5 and Friday 6 November. Quiz questions were provided by College Specialty Advisory Committees and by the College members who were recruited as hosts.

The Thursday quiz involved around 50 medical and biomedical science students, and was hosted by two chemical pathology trainees, Dr Eamon McCarron and Dr Emma Murray, and RCPath Pathology Foundation Fellow Dr Rishi Agrawal.

On Friday, around 40 veterinary science and veterinary medicine students enjoyed a veterinary pathology quiz. Hosts Professor Roberto La Ragione, Dr Simon Spiro and Dr Kate English represented the three main areas in veterinary pathology and provided a range of thought-provoking and entertaining questions.

Heart health

On Saturday 7 November, Dr Lizzie Burns was joined by the College's Assistant Registrar, histopathologist Dr Esther Youd, for a special heart-themed online event for families. Attendees were sent some of the heart-health resources in advance and were able to ask Dr Youd about the heart and how it works, while they carried out the activities introduced by Lizzie. Many whole families joined the Zoom-based event and made their own origami 'beating heart'.

Thank you

After a busy week, it was fantastic to share the many photos and comments posted on social media from members and supporters who had run their own NPW events. Thanks to all who contributed to NPW 2020.

The winner of our #HeartOfHealthcare Twitter photo competition was Sarah Gibson for her visually striking image, which can be seen at www.rcpath.org/pathologyweek.

Overall, the range of images created and the creativity on display was fantastic. Thank you to everyone who took part.

National Pathology Week 2021 will run from 1 to 7 November. Please save the date.

Penny Fletcher
Public Engagement Manager

Thadcha Retneswaran
Communications Officer

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Journey of a biopsy in pictures

Dr Samar Betmouni

Dr Samar Betmouni reports on a display depicting the journey of a biopsy, which she developed for National Pathology Week in collaboration with the National Science and Media Museum, the University of Bradford and NHS colleagues.

In celebration of National Pathology Week (NPW) 2020, I developed a foyer display at the National Science and Media Museum in Bradford with Dr Sarah Rawlins, Interpretation Developer at the museum, which captured the journey of a biopsy in a series of photographs. We also developed an accompanying online version to accommodate pandemic restrictions, which incorporates a video animation created by Media and Design Technology students at the University of Bradford.

The display captures a biopsy's journey through a histopathology department. Completion of the project was only possible through the generosity of laboratory medicine colleagues at Sheffield Teaching Hospitals NHS Foundation Trust who allowed me to take photographs of them at work. The College also allowed me access to their picture library, providing additional quality images for the display.

This fantastic public engagement tool explains digital pathology and its potential impact in clinical practice. This is further highlighted with a caption on the role of artificial intelligence (AI) as a diagnostic tool. I am grateful to Dr Pahini Pandya from Panakeia Ltd for providing illustrative AI images.

Online during lockdown

The project highlighted the teamwork at the heart of delivering diagnostic services. It also emphasised the importance of working across boundaries to communicate our excitement about pathology.

Although lockdown restrictions meant that it has not been possible for visitors to view the display, we did, nevertheless, mark NPW with the online resource. The physical display will remain in place for two to three months, so hopefully visitors will be able to see it for themselves at the museum in the near future. For those unable to visit the museum, I made a short video of the display in situ.

I am grateful to Dr Rawlins and the National Science and Media Museum in Bradford for their support and enthusiasm.

Dr Samar Betmouni
Consultant Neuropathologist, Sheffield Teaching Hospitals NHS Foundation Trust
Director, Digital Health Enterprise Zone, University of Bradford (until November 2020)

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The social mobility path to a career in medicine

In September 2020, the College and the Social Mobility Foundation teamed up to host a medical ethics webinar for disadvantaged students aged 16–18 interested in studying medicine. Penny Fletcher reports on a successful collaboration.

Penny Fletcher

Under normal circumstances, the College runs 'Your Body, Your Consent', a workshop on medical ethics, a few times a year for students aged 16–18, at schools and public venues around the UK. Its aims are to stimulate discussion and reflection on consent for different uses of human tissue, such as research and transplantation.

With COVID-19 still restricting large public events, the College approached the Social Mobility Foundation (SMF) about running an online version of the workshop with school students involved in their programmes. A key area of the SMF's work is supporting young people who want to study medicine, but may be prevented from doing so by their socioeconomic circumstances.

The SMF agreed and, in September 2020, the College's Public Engagement team worked with two College Fellows and a team of medical undergraduates to deliver an interactive, 90-minute 'Your Body, Your Consent' webinar. More than 160 SMF secondary school students took part. If they do progress to studying medicine, the SMF will support them throughout their degree.

Ethical principles: Professor Mark Wilkinson opened the session by introducing the ethical principles that underpin the medical profession.

Owing to safeguarding requirements, school students were not visible or able to speak directly to the presenters during the workshop. However, they could interact with the speakers via online polls and Zoom's Q&A function.

Professor Mark Wilkinson, now a retired histopathology Fellow and the creator of 'Your Body, Your Consent', led the online workshop. He introduced the students to the history of medical ethics before presenting a fictionalised example of an ethical case involving someone with Huntington's Disease.

There was an online vote on the ethical dilemmas presented and a discussion about the Huntington's scenario, led by fifth-year medical student Hannah Reilly, who has completed her intercalated MRes degree in pathology.

Organ donation

Dr Lorna Williamson, College Fellow and Human Tissue Authority board member, introduced a discussion about organ donation and spoke about recent changes to the laws around deemed consent ('opting out'). This was timely, since the event was held the week before the annual NHS Blood and Transplant (NHSBT) initiative 'Organ Donation Week'. The polls included questions about altruistic organ donation – nearly half the students said they would donate a kidney to save someone's life, whether they knew them or not.

Debating monetary reward

The last part of the webinar focused on debates around monetary rewards for those who donate tissue for research. After another poll, and some discussion between the medical students on this topic, the speakers had time to answer just some of the school students' questions. Because there were so many questions, the College panel answered the rest in writing.

Future collaborations on the cards

Adapting 'Your Body, Your Consent' to an online format worked well, and the SMF is keen to work with the College again. One of the programme's coordinators, Shauna Dillane, said: 'It was a fantastic webinar. Thank you so much for all of the work that you put into organising it. It was so interesting that we wanted to make sure you were able to cover all of the content, which is why we decided to let things run and cut the Q&A slightly short.'

The pathologists and medical students involved also enjoyed the experience. One student said: 'It was really interesting to think about organ donation and who I would be willing to donate an organ to. I also learnt lots about pathology, an area of medicine I didn't know much about.'

Following the success of this event, Professor Wilkinson was invited to lead a session on study skills with new medical students. He used pathology example questions to teach about integration (a teaching method that places basic science learning in the context of clinical and professional practice), and the problem-based learning method used at medical school.

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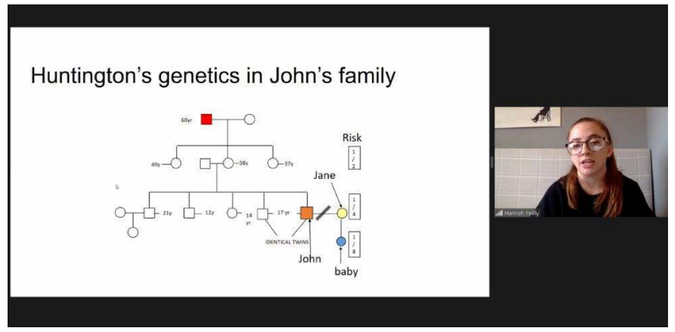

Huntington's: Medical student Hannah Reilly presented a fictionalised case study about Huntington's disease.

Since the webinar, the College has continued to promote relevant College events and activities to SMF students and is in talks with the SMF team about future collaborative events. College members can get involved in the work of the Social Mobility Foundation via their e-mentoring volunteer programme. It offers an opportunity to support young people from diverse backgrounds to succeed in medicine, and is a chance to highlight pathology as a career.

Penny Fletcher
Public Engagement Manager

Showcasing pathology careers during the pandemic

Throughout the pandemic, the College has found new ways to let students and Foundation doctors know about the diverse and fascinating careers on offer in pathology – from members' 'selfie videos' to online careers talks for schools.

Penny Fletcher

Thadcha Retneswaran

Public interest in pathology has, unsurprisingly, heightened during the 2020 pandemic. We have recorded a huge increase in visits to the College's careers pages. Our virologist page alone received over 22,000 views between March and July 2020, compared with 1,590 views in the same period in 2019.

In May 2020, in response to increased interest in the work of pathologists and clinical scientists, we launched a social media campaign, '#CareerPath', to engage school students, undergraduates and Foundation doctors.

Using our existing and extensive range of careers profiles, videos and images, we posted content about all 17 of the pathology specialties on the RCPath Twitter and Facebook accounts about three times a week. Since the start of October 2020, we have focused on sharing careers-related posts and stories on Instagram, as around 70% of Instagram users are aged 13–34.

As well as repurposing existing careers content for Instagram, we have also worked with RCPath members to produce 'selfie videos' about their work and career path. In total, our careers pages received 91,519 unique visits from May to October 2020. This includes visitors using a search engine and those who landed on a careers page directly through our website.

Young Gifted and STEM

To support our social media efforts to reach secondary school students, we also coordinated and contributed to online events aimed at this age group. In October 2020, we contributed to the online launch event of an initiative called Young Gifted and STEM. The free event was aimed at young black and ethnic minority men and women, aged 11–18, and involved learning activities, careers talks and workshops.

In one session, RCPath haematology trainee Funmi Oyesanya's interactive workshop explored how blood disorders such as sickle cell, acute leukaemia and malaria are diagnosed. Funmi showcased her passion for haematology and pointed out the many careers options available within pathology. The feedback from attendees was extremely positive, with a number of them describing Funmi's presentation as a highlight.

Online careers talks

In November and December 2020, we ran a series of five online virtual careers talks for schools. Each

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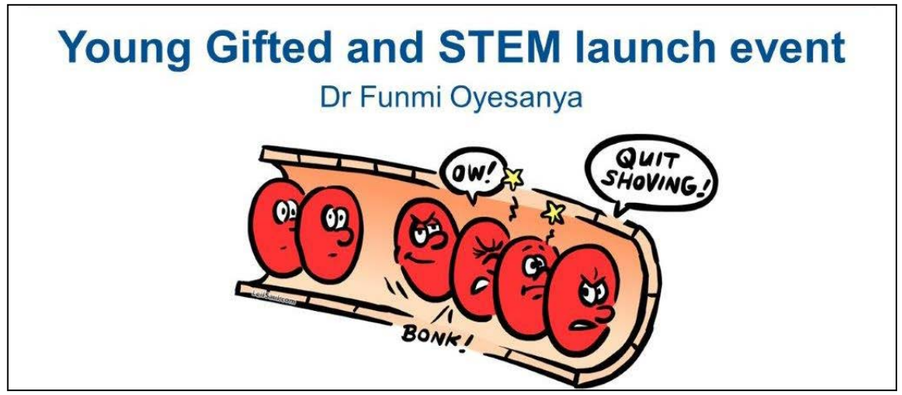
Kristen Pontello

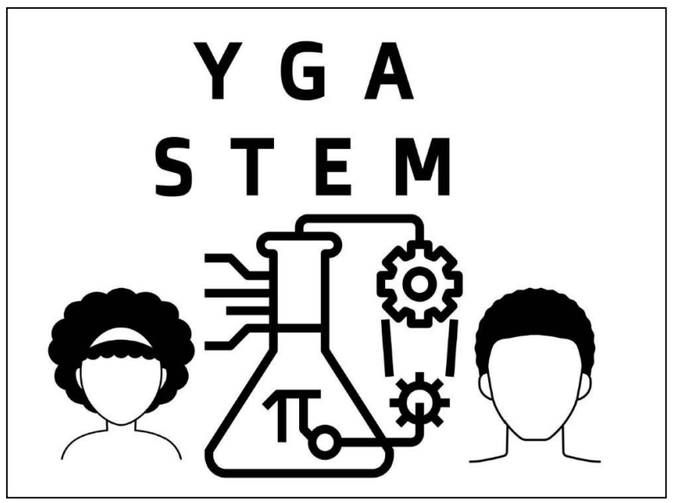


Above: Dr Funmi Oyesanya explored blood disorders and discussed pathology careers during her interactive workshop.

Below: Young Gifted and STEM is an initiative to improve the experiences and engagement of black and ethnic minority young people with STEM subjects.

session involved three RCPath members individually giving a five-minute talk about their career path and work. The members involved had all attended online public engagement training with a team from the Science Museum in October 2020.

The training helped participants think about how to appeal to a teenage audience and use online tools to add interactivity to a virtual event where the audience could not be seen. Students and teachers from around the UK and beyond tuned into the sessions. The feedback was extremely positive, with one attendee remarking: 'It was a really good event. I learnt how interesting a career in pathology is, and the paths taken to achieve the career.'



Foundation taster event

As well as reaching students through our online careers engagement, the College events team also ran the now-annual Foundation taster event. This year, it was online, with the theme 'Pathology through a COVID lens'.

Around 180 attendees, including Foundation doctors and medical students, joined the event, which consisted of Q&A panel discussions with RCPath members working across a range of specialty areas. Attendees were sent videos of presentations by each of the panellists in advance so they could ask each speaker questions at the event (see also pages 254–256).

This year, we will continue to build on engaging relevant audiences with messages about the career opportunities on offer in pathology – and we're keen to involve as many members as we can. If you'd like to create your own 'careers selfie video' for us to use on social media, please get in touch at publicengagement@rcpath.org.

Penny Fletcher
Public Engagement Manager

Thadcha Retneswaran
Communications Officer

Tamara Obeng-Korang
Senior Digital Officerr

Kristen Pontello
Senior Events Officer

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Thadcha Retneswaran

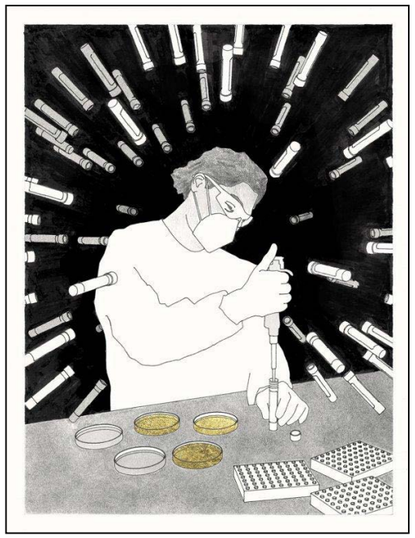
Art of Pathology Competition 2020

Against the backdrop of COVID-19, we invited adults and children to enter this year's Art of Pathology competition and offer interpretations of the theme 'Pathology: at the heart of healthcare'. Here, we celebrate the winners.

This year's Art of Pathology judges had an incredibly difficult task on their hands. For the first time since its launch, the competition was opened to the international community. Of the 74 fantastic entries we received, 23 were from entrants outside the UK, including the USA, India, Pakistan, Bangladesh, Sri Lanka, Saudi Arabia and Zimbabwe. The entries we received reflected how vital pathology has been in global efforts to combat COVID-19.

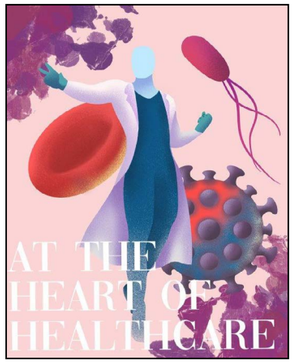
Thank you to everyone who took the time to submit their artwork. We are also extremely grateful to the judges, then Vice President for Communications and International, Dr Rachael Liebmann, Clinical Director of Publishing and Engagement. Dr Shubha Allard, and science-based artist Dr Lizzie Burns.

The competition will open again in Spring 2021. In the meantime, why not try out our new heart of healthcare art activities and virus origami resources?



Over 18 category winner: *The Heart of the Matter* by Max Butler (UK)

Through diagnostic testing and the development of potential treatments and vaccines, pathologists have been central in the fight against COVID-19. A pathologist's insights can have far-reaching consequences – from shaping national guidelines, to transforming patient care. In this challenging time, it has been particularly clear: pathology is at the heart of healthcare.



11–17 category winner: *Heroes* by Johnny Ma Kwok (UK)

Pathologists play a critical role in the world of healthcare. From diagnosing patients and administering treatment to developing medicines for disease prevention, they play a pivotal role in the heart of healthcare. Dive down into the microscopic realm, explore the undiscovered and who knows what you'll find. More importantly, who is this pathologist? Could it be you? As a side note, the pathologist in the digital art has no face because the identity remains unknown –it can be anyone.

Under 11 category winner: *Pathology to the rescue in a sea of uncertainty* by Ava Pundole (Pune, India)

The ship called *Pathology* helps doctors, surgeons and other healthcare professionals to navigate the rough and predatory seas of healthcare. The sharks represent sickness and disease. The boat also has a microscope to represents the ship's wheel, which is used to navigate the seas safely.

Thadcha Retneswaran
Communications Officer

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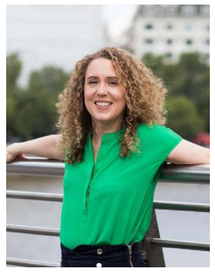
INTERNATIONAL



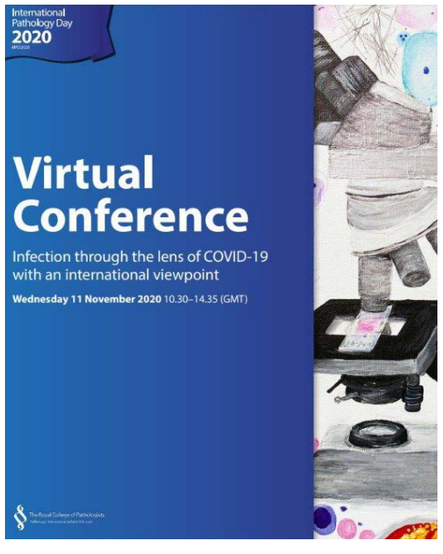
Kelley Price

Infection through the lens of COVID-19: an international viewpoint

This year, International Pathology Day went online. Kelley Price reports on four fascinating COVID-related presentations, a thought-provoking roundtable discussion on international knowledge sharing and the digital poster competition.

On 11 November 2020, we held our annual International Pathology Day (IPD) and for the first time in its history IPD went virtual. Fittingly, the theme for 2020's event was 'Infection through the lens of COVID-19 with an international viewpoint'. The Pathologist and sponsor Sonic Healthcare UK collaborated with us for another year. We were also pleased to have a newcomer to our alliances, The British Society for Haematology (BSH).

Professor Jo Martin, Immediate Past President, welcomed an audience that spanned nearly every continent, College members, and our event collaborators and sponsor. Professor Martin acknowledged how, globally, it had been a tough year, stating that she could not have been prouder of the way College members around the world have risen to the challenges of COVID-19.



The brochure for the 2020 virtual International Pathology Day conference.

Future vision

Speaking for the first time at IPD in his role as President-Elect, Dr Mike Osborn spoke of the College's strong history of collaboration with other countries and institutions worldwide, and went on to outline his vision for the College.

'My aim as President will be to develop these international links and collaborations even further,' Dr Osborn said. 'We can develop the techniques we have learned through the COVID-19 pandemic and make that vital knowledge available online to our members around the world.'

'In this way, we all benefit from the expertise and inspirational teachings of our members and colleagues, no matter where they are in the world. The technology is already available, and we already share the spirit of cooperation, as today and other events demonstrate.'

Distinguished speakers

The virtual floor was then passed, in turn, to highly distinguished speakers from Germany, Saudi Arabia, South Africa, Denmark and the UK, who delivered a highly varied range of presentations.

Saving the Bundesliga

Evangelos Kotsopoulos, CEO for Sonic Healthcare Germany and Continental Europe, opened the presentations and shared some insights about how early COVID-19 testing contributed to a robust pandemic response in Germany.

Along the way, this saved the professional association football league, the Bundesliga, which on 16 May 2020 became the first professional sports league in the western world to resume play.

Over a six-week period, a task force established an extremely meticulous hygiene and testing concept. This covered detailed testing and escalation protocols, as well as personal behaviour guidelines for 1,400 people – players, coaches and support staff – including rules on contact while travelling.

Serology testing

Professor Ali Hajeer, Laboratory Director, King Abdulaziz Medical City, Saudi Arabia, took us on a fascinating journey into serology testing for MERS-CoV and SARS-CoV-2 infections.

Coronaviruses are enveloped, single-stranded RNA viruses, and Professor Hajeer described how antibodies to MERS and SARS-CoV-2 decline over time. He went on to explain the rapid decay

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This year's roundtable discussion explored the importance of international information exchange. Clockwise: Professor Tahir Pillay, Evangelos Kotsopoulos, Dr Pikka Jokelainen, Dr Josh Wright, Professor Jo Martin and Professor Ali Hajeer.

of SARS-CoV-2 antibodies and the effect this phenomenon has on herd immunity and the implications for proposed immunity passport systems. He also explored the use of serology in coronavirus infections.

A South African perspective

The first two talks dovetailed nicely into 'The South African perspective on COVID-19: developing new diagnostic approaches', by Professor Tahir Pillay, Professor and Chair, Department of Chemical Pathology and Head of Pathology, the University of Pretoria.

Professor Pillay outlined measures taken by the South African government, the challenges for pathology and laboratory medicine, and three prongs of COVID testing. He also touched on the potential role for rapid antigen testing and the role of nanobodies. As the professor described it, 'the evolving South African response to the pandemic has been like trying to build a ship while sailing in it.'

Endemic pathogens and international research

The final talk, from Dr Martha Betson, the University of Surrey School of Veterinary Medicine, UK, and Dr Pikka Jokelainen, Statens Serum Institut, Denmark, delivered something a bit different – 'Endemic pathogens and international research projects during a pandemic: *Toxoplasma gondii* and international research project TOXOSOURCES as an example'.

Toxoplasma gondii was described as a beautiful and fascinating parasite that deserves respect as a successful pathogen. The presentation covered the parasite's life cycle, the impact of COVID-19 on its transmission, and its effects on humans and animals.

The speakers then shared details of 'TOXOSOURCES – *Toxoplasma gondii* sources quantified', a joint research project of the One Health European Joint Programme involving 37 organisations and 19 countries.

Competition winners

Excitement stirred after lunch as Dr Rachael Liebmann OBE revealed the winners of the IPD digital poster competition, judged by Dr Mike Osborn, Professor Jo Martin and Dr Shubha Allard. Congratulations to the following winners:

- first prize – awarded to Professor Dimitris Grammatopoulos
- second prize – Nithin Krishnan
- joint third prize – Cangul Seran, Vuyelwa Nkomo, Mohammed Islam, Lisa Choo and Anisa Hussain.

The competition was sponsored by Sonic Healthcare UK.

Roundtable discussion

The time then came for mediator, Professor Tahir Pillay, and panellists Professor Jo Martin, Evangelos Kotsopoulos, Professor Ali Hajeer, Dr Pikka Jokelainen and Dr Josh Wright, Consultant Haematologist at Sheffield Teaching Hospitals and Vice President for BSH, to take to the roundtable.

The roundtable was a multifaceted discussion on the importance of international information exchange – especially in a pandemic – and how screening, diagnosis, treatment selection and health monitoring differ between countries. Against the backdrop of COVID-19, it was agreed that it has become more important than ever not to place boundaries on our ability to learn from one another.

A special musical tribute to pathology staff and healthcare workers worldwide ended a fantastic day on a lovely note, as singer-songwriter Rod Gozzett performed a cover of the Stereophonics' 'Maybe Tomorrow'.

Catch up with what you missed or view again

All four IPD 2020 talks and the roundtable discussion are available to watch on demand. You can also enjoy the splendid IPD digital poster competition entries on the College website.

Huge appreciation goes out to everyone who supported IPD 2020. We look forward to celebrating the day with you again in November 2021.

Kelley Price
International Projects Officer

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TRAINING

Dr Annie Kret

From Summer School to histopathology trainee

Dr Annie Kret attended the first Pathology Summer School in 2014. Now a histopathology trainee in Sheffield, she tells Dr Suzy Lishman how that decision influenced her career choice and what she has been doing since.

How did attending the Pathology Summer School influence your choice of specialty?

Being an avid lover of crime novels, I was certainly interested in forensic pathology. However, attending the breakout sessions at the Pathology Summer School helped me realise that my heart lies with histopathology.

I enjoyed the opportunity to have a light-hearted chat during the breaks. I remember how Dr Nicki Cohen would tell us jokes and I thought, 'Wow, they are just like normal people!'

The talks were very useful and demonstrated the innovative side of pathology. It was helpful for speakers to share experiences around their training pathways and how they were able to adapt their jobs. Particular examples included options to have patient contact by running fine needle aspiration clinics or not performing autopsies in the long term, if they preferred not to do so.

Dr Kret sees a clear need for pathologists to better 'market' their specialty to trainees.

How did you maintain your interest in histopathology during training?

There are so many opportunities during medical school to try something new and my advice is to say 'yes' to these opportunities. The skills you learn are transferrable and add to your CV.

I was keen to get involved in histopathology and one of the lecturers helped me find a project at the local histopathology department that introduced me to research. This also put me in contact with other histopathologists who were happy to take on a mentorship role.

Professor Peter Johnston was incredibly supportive, helping me with an audit and then an application to present our poster at the Pathological Society winter meeting. I did my elective in histopathology and was fortunate to receive the Pathological Society Undergraduate Elective bursary, which helped offset the cost of fees.

Did you share your interest in pathology with fellow students and trainees?

Attending the Pathology Summer School inspired me to form an undergraduate pathology and radiology society called DiagnostiX with a fellow student at my medical school, as we felt these specialties were under-represented in the curriculum.

DiagnostiX focused on organising educational events and talks for students. The local histopathology department held an annual virtual autopsy event for the students, inspired by Dr Suzy Lishman's demonstration during the Summer School. We used these events to encourage students to attend a real autopsy – something that many students wanted to do but did not know how to go about organising.

DiagnostiX also helped to bring pathologists closer to students. We organised careers events to demonstrate that pathology is not just something you learn for your finals, but is an attractive career option. We were keen to get involved in National Pathology Week (NPW), so I reached out to Scotland's public engagement representative, Dr Kevin Deans, who was very supportive. Our yearly NPW public engagement events at the local science centre were a great success.

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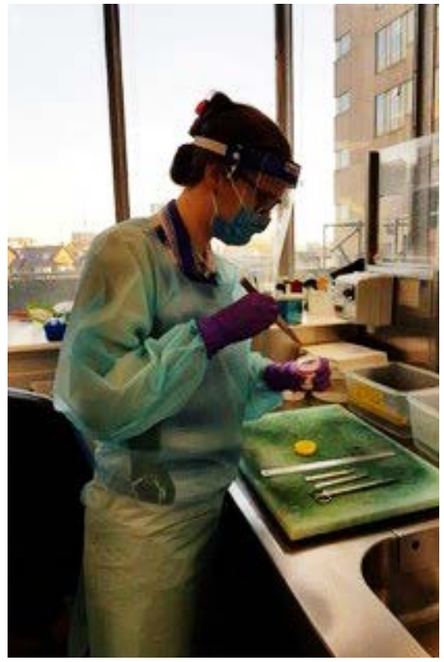

The excitement of training comes in new 'firsts' – the first correct specimen dissection, diagnosis, autopsy and more.

What interactions did you have with histopathology during your training?

I enjoyed going to multidisciplinary team meetings and seeing how valuable the contributions of pathologists and radiologists are to patient management.

As a Foundation Doctor, I took the opportunity to spend my taster week in the local histopathology department. Following previous placements as a medical student, this experience reinforced my interest in this specialty as a career pathway. It also gave me a great opportunity to gather the views of trainees and some helpful tips for the specialty (histopathology) recruitment and selection interview.

How are you enjoying histopathology training so far?

Coming from the Foundation Programme into histopathology was a big change. There are fewer trainees and the interactions feel more personal. I greatly value the one-to-one teaching with consultants.

The learning curve is steep and can, at times, feel overwhelming, but the ST1 curriculum helps to keep things in perspective. I enjoy experiencing the excitement of new 'firsts' – the first correct specimen dissection, the first autopsy, the first correct diagnosis, and so on.

How have your colleagues, family and friends reacted to your decision to become a pathologist?

A few colleagues have told me that they would not have considered histopathology as a career option. I find this disappointing but I think there is a need for pathologists to better 'market' their speciality to trainees, who seem largely to look to medicine, surgery and general practice as careers.

There is clearly a lack of understanding around the roles and value of pathology, since on a number of occasions senior colleagues have told me that my talent will be wasted looking at slides.

When I told my parents I want to be a histopathologist, my mum cracked an obligatory 'over my dead body' joke. My biggest supporter is my partner, who has never seen me happier coming home from work than during my taster week.

How has COVID-19 affected your training this year?

I came into histopathology straight from Foundation Year 2. The pandemic reduced the number of workplace assessments required for the Annual Review of Competency Progression, which allowed me to focus on treating patients rather than stressing about completing the forms.

During my last rotation, because of the impact of COVID-19, we saw the transition from paper to electronic records and the introduction of self-rostering, which were big improvements for the local junior doctors.

From an ST1 perspective, unfortunately, COVID-19 has had a big impact on learning and training. This year, because the Bristol teaching week was virtual, we missed out on the opportunity to meet other ST1s. Also, with the need for social distancing and more staff working from home, consultants are less likely to drop by with an impromptu interesting case.

On a positive note, since the introduction of Microsoft Teams, the quality of online teaching has greatly improved.

How do you relax?

Work–life balance is very important for me. Putting on my running shoes and an upbeat playlist really helps me to switch off from work. Since I started my histopathology training, I am conscious of how much time I spend sitting at my desk, so I now aim to do yoga or stretching exercises every day.

Interview by Dr Suzy Lishman with
Dr Annie Kret
Histopathology Trainee
Sheffield Teaching Hospitals
NHS Foundation Trust

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Dr India Spiers-Laborde

A matter of life and death: redeploying to the mortuary during COVID-19

Dr India Spiers-Laborde, a trainee in maxillofacial surgery, provides a personal and emotional account of her time redeployed to a mortuary during the first wave of the pandemic.

I qualified as a dentist in 2018 and, after a year in practice, I realised I was interested in more hospital-based dentistry. So, I went into maxillofacial surgery as a trainee and was greatly enjoying it – I was learning so much and thriving on the high intensity of the role.

Then, in May 2020, it all came to a sudden halt. Plans for redeployment in our department during our now non-existent elective rotation went largely unrealised, so I arranged a placement in the hospital mortuary. I hoped, given my forensic training with an MSC in Forensic Anthropology, that I might be of help.

A steep learning curve

The mortuary management and staff were very accommodating and one of the pathologists took me under his wing, with many afternoons spent helping with cut-ups and specimen selection for histology. He also started letting me actively participate in dissections during his post-mortem sessions.

It was certainly a steep learning curve. My knowledge of general anatomy has sky-rocketed. Everything from the neck down is no longer as much of a mystery. I can now recognise myocardial infarction and coronary artery disease, and find the pancreas on demand.

In return for the excellent training opportunity, I spent the mornings working for the mortuary. I had a range of duties. First, I helped the technicians clean down the post-mortem room after a session. I also assisted in tending to the patients – moving them, cleaning them, receiving them from the community and releasing them to funeral directors.

Then, I had to disinfect areas of high traffic, travel to the various wards throughout the hospital to chase up death certificates and cremation forms, and attend to administrative tasks.

Death certificates delayed

One of my duties involved obtaining the required paperwork from doctors. The mortuary manager told me that their death certificate turnover rate had increased by approximately 40% following my efforts. This led me to the uncomfortable realisation that in busy clinical wards there were often delays in prioritising completion of death certificates and I was more likely to be able to obtain the paperwork than my mortuary colleagues.

Dr Spiers-Laborde's parting glimpse of Hull Royal Infirmary, as she finishes her last shift.

I feel that there is a need to recognise more widely that this poses challenges for mortuary staff who, in turn, are undertaking physically and emotionally demanding jobs and, like many other healthcare staff, placing themselves at risk not only during the pandemic, but also in their day-to-day work.

For example, contracting tuberculosis is a risk for mortuary staff. They are of course also attempting to support grieving family members where delays in producing the necessary paperwork adds to further distress.

Impact of COVID-19

During the COVID-19 pandemic, it became increasingly difficult to keep up with the changes, often daily, to regulations, guidelines and policy. This information dissonance can understandably result in confusion and uncertainty as to what can and can't be done.

Previously, only a doctor who was directly responsible for the clinical care of the patient was able to complete a death certificate. The COVID-19 regulations stated that essentially anyone at all with a GMC number could complete this, regardless of whether or not they had seen or treated the patient.

The caveat is that we need access to detailed information about the patient in order to confidently state a cause of death. While it's usually easy to obtain one, it can feel incredibly intimidating to fill in the death certificate of a patient you didn't even see. It is therefore understandable that, despite the changes in regulations, many doctors, junior doctors in particular, are reluctant to undertake this duty.

Just as with everything else in life, communication, empathy and consideration are vital to forming a cohesive working relationship between those who tend to the living and those who tend to the dead. I hope that, in some way, I have managed to bridge the gap and allow for a little more understanding between the two.

Humility and humanity

I am in a rather introspective mood following my time in the mortuary, and it is no exaggeration when I say that this redeployment has changed my life. I once again seriously considered studying medicine, not for maxfax but for pathology. I think reason won out in the end, although I was deeply torn. Pursuing the rather convenient compromise of oral pathology is eminently more sensible, and I have been lucky enough to secure a DCT2 training post in oral pathology for the coming year (entirely changing direction from my previously considered route of paediatric dentistry).

I honestly believe that every junior doctor should spend at least a week in the hospital mortuary, and not merely shadowing or watching the post mortems, but taking care of the patients so as to understand the physical and emotional strain that comes with caring for them.

If there is one fundamental message I wish to impart, it is that our duty of care doesn't end when the patients die; it is the care and respect with which we treat our dead that gives us our humanity.

This month has humbled me. It has given me nightmares and life-long connections to people I would never otherwise have met. Above all, I have learned resilience, humanity and a deep respect for those who devotedly and unflinchingly tend to our dead.

The author dedicates this article to the incredible staff at the Hull Royal Infirmary mortuary and pathology department, and to NHS colleagues across the country tirelessly fighting COVID-19.

Dr India Speirs-Laborde
DCT2 Oral Pathology and Oral Medicine
Sheffield Teaching Hospital

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WORKING SMARTER

Dr Prema Seetul-Singh

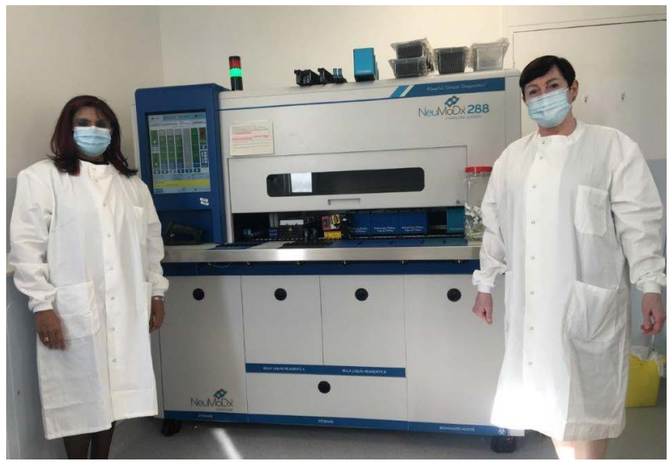
A district general hospital's robust response to the COVID-19 pandemic

Professor Jo Martin visited West Hertfordshire Hospitals Microbiology Laboratory Service on 14 October 2020 and spoke to RCPath Excellence Award winner Dr Prema Seetul-Singh about rising to the challenges of COVID-19.

The Microbiology Laboratory providing a service to the West Hertfordshire Hospitals reacted promptly to the need for increased rapid in-house testing for SARS-CoV-2. Processing around 250 samples a day (at the time of writing, in November 2020), it achieved a less than 24-hour turnaround, becoming one of the few UK district general hospitals able to ramp up testing capacity at this point of the pandemic.

How did you set up your COVID-19 response group?

At the start of the pandemic, a Commanding team framework was set up. It consisted of: a Tactical Commander who was the Head of Emergency Planning, Preparedness and Resilience, a Medical Commander; myself as Infection Control Doctor; and a Strategic Commander shared by the Chief Nurse and Director of Infection Prevention and Control, and the Chief Operating Officer.



Professor Jo Martin, former RCPath president, and Dr Prema Seetul-Singh, Clinical Lead, in front of the high-throughput PCR analyser.

This response group planned and coordinated the Trust's response to COVID-19 and shared the latest intelligence from regional, national and international perspectives through local daily Incident Management Group meetings.

The Commanding officers also liaised with national organisations such as NHS England/Improvement, Public Health England (PHE), Specialist Commissioning groups, NHS Emergency, Preparedness Resilience and Response leads, and High Consequence Infectious Diseases (HCID) unit leads, dialling in to teleconferences and webinars.

The primary focus from the start was on implementing a SARS-CoV-2 PCR service for our Trust to provide a turnaround time in under 24 hours.

SARS-CoV-2 testing

At the start of the COVID-19 pandemic, we did not have in-house technology to provide routine testing for SARS-CoV-2. As per the National Testing Strategy at the beginning of the pandemic, we relied solely on forwarding our samples to our regional PHE laboratories in London and Cambridge.

However, as the pandemic escalated, it became clear that we needed to offer provision for routine in-house testing with faster turnaround times to expedite clinical care of high-priority patients, and to ensure good infection-control management. We reviewed what we could deliver in terms of in-house testing capacity, identified the high-priority groups after discussion with our clinical colleagues, and designed a new microbiology request form to facilitate this process.

Initially, we did not have the space or facilities within the laboratory for molecular testing. However, we were able to identify rapidly two possible options: one room that had been initially identified to accommodate a Viper analyser for qualitative detection of chlamydia and GC targets (CT/GC NAAT); and two adjacent rooms functioning as offices, refurbished and made fit for purpose for PCR testing. We are grateful to our pathology colleagues for agreeing to grant us use of these facilities.

We rose to the challenge of rapidly implementing local PCR tests for SARS-CoV-2, and introduced an extended hours service, followed by a 24/7 service after recruiting the required number of scientists.

How do you test for SARS-CoV-2, what techniques and equipment are used, and how long does this take?

We now have two molecular laboratories within our laboratory service able to perform molecular testing for SARS-CoV-2. Samples are taken from patients with symptoms suggestive of COVID-19, as well as from asymptomatic patients as per the National Testing Strategy and guidance. Samples commonly taken are nose and throat or nasopharyngeal swabs. We have designed a demonstration video on sampling to optimise sampling techniques.

Professor Jo Martin, Dr Prema Seetul-Singh, Arezou Fanaie, Laboratory Manager, and Hala Kandil, Consultant Microbiologist.

The swabs are booked on our system via the clinical order entry and then followed through the testing process. They are initially processed under a containment level 2 safety cabinet before being loaded into the individual analysers. These analysers automate and integrate sample preparation, nucleic acid extraction, and amplification and detection of the target sequences using real-time Reverse Transcriptase PCR (RT-PCR) assays in disposable cartridges that hold the RT-PCR reagents and host the RT-PCR process.

We had to implement new technology using new equipment, setting up the right IT interface, recruiting the staff needed, organising the required training sessions and embedding the process within a Quality Management System.

We have been able to achieve a turnaround time of less than 24 hours from the time the swab is collected and received in the laboratory.

How do you work with other clinical colleagues and teams to manage the pandemic?

As the Clinical Lead, I am part of various COVID groups and panels, including a Clinical Advisory Group and Decision Panel chaired by the Medical Director, the daily (and then weekly) Incident Management Team meetings, and other COVID-related task and finish groups.

These ensure proper engagement with Clinical, Infection Control, Management and Emergency Planning and Resilience Teams to ensure that appropriate measures are implemented to prevent further spread of infection.

We also liaise with PHE and the local Health Protection Team to seek their input on complex cases, for the rapid genome-sequencing service and on updating our local policies to reflect this guidance in a continuously evolving situation.

We are in continuous contact with the national and regional coordinating testing teams for support in guiding us to laboratories that can accommodate our non-urgent testing, such as for elective procedures and most of the staff testing.

We have regular virtual catch-up meetings, in compliance with social distancing requirements, to update one another and provide feedback from the various meetings that we all attend during the week.

What are the biggest challenges you have faced as a service during the pandemic?

As with every department in the country, the biggest challenge has been the need to respond rapidly to a continuously evolving environment. The scientific evidence that underpins all our initiatives was also lacking at times, as this was a new virus.

The shortage of reagents for testing made it very challenging, but we worked with our national and regional coordinating testing teams to try and ensure a stable allocation. When demand exceeded capacity, other laboratories such as PHE laboratories and hub laboratories within and outside the region or network supported us.

Is there anything that you think is particularly unique to your microbiology service/laboratory?

We have a highly motivated team that has a 'can do' attitude, is very adaptable and rises to challenges. Our quality processes, which are well embedded in practice and have been praised by UKAS assessors during their visits, ensure a good quality management culture.

Our team is keen to progress, and we share common goals and objectives. We are very accommodating to demands put upon us, and go the extra mile to react to those pressures and put patient care at the centre of everything that we do.

At the end of the visit and laboratory tour, Professor Jo Martin said: 'It was a delight to meet the team and to see what stunning work they are doing. You seem such a happy team with great leadership.' We feel we are ready to cope with the next phase of the pandemic.

Acknowledgments

We are grateful to our Executive team, the Division of Clinical Support, Pathology Colleagues and the Emergency Planning and Resilience Department for their support.

Interview by Professor Jo Martin with Dr Prema Seetul-Singh, Consultant Microbiologist, Clinical Lead, Infection Control Doctor, Watford General Hospital

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CLINICAL EFFECTIVENESS

Re-auditing the use of the CURB-65 score

Background

Legionnaires' disease is a severe pneumonia caused by several species of *Legionella* bacterium, most commonly *Legionella pneumophila*, and is reported to have a mortality rate of about 7% in England in 2016.[1]

The British Thoracic Society (BTS) and NICE produced guidelines for the management of community-acquired pneumonia (CAP) in 2009 and 2014, respectively.[2,3] The BTS provides specific advice for the management of Legionnaires' disease. The recommendations relating to antimicrobial management are included in the Trust pneumonia antibiotic guidelines.

In 2018, an audit of use of the CURB-65 score in patients diagnosed with *Legionella* infection at Cambridge University Hospitals (CUH) showed poor compliance with documentation of the CURB-65 score for assessment of pneumonia severity. All patients received an antibiotic within four hours of presentation, although 67% of patients with a score of ≥2 received a macrolide within four hours of admission.

The 2018 audit was presented to relevant clinical teams to highlight use of the CURB-65 score in the management of CAP to ensure that patients with moderate to severe infection received an antibiotic against *Legionella*.

Epic, the hospital information system, automatically reminds staff to calculate the score when the CAP order-set is used, but this order-set was not always used by admitting clinical staff. We also explored using Epic to generate the CURB-65 score for users, but this was not possible.

The importance of the use of molecular diagnostics for non-Serotype 1 organisms, a gap in the diagnosis with *Legionella* urine antigen, was also highlighted in the previous audit. PCR testing is now available for patients admitted with severe pneumonia to our critical care units.

Re-audit: aims and objectives

The 2019–2020 re-audit was undertaken to determine whether there was any improvement in documentation of CURB-65 score for management of pneumonia among patients subsequently diagnosed with Legionnaires' disease. Bullet point style

- 100% of patients had a documented CURB-65 assessment when a diagnosis of CAP was made at presentation to hospital
- 100% of patients with CAP received any antibiotic within four hours of admission to hospital
- 100% of patients with CAP received an antibiotic active against *Legionella* (macrolide or a quinolone) within four hours of admission to hospital if the CURB-65 score was ≥2.

Standards and criteria

The following criteria and standards were set:

Method

The Laboratory Information System was interrogated using Qlikview analytics software to identify all positive *Legionella* urine antigen test or sputum cultures. There were seven patients with a laboratory-confirmed diagnosis of Legionnaires' disease. The clinical and laboratory notes were reviewed to collect the following data:

- a diagnosis of CAP confirmed by the admission chest X-ray
- data to calculate the CURB-65 score on admission
- one point for each feature present:
  - **C**onfusion
  - **U**rea >7 mmol/l
  - **R**espiratory rate ≥30/min
  - **B**lood pressure (systolic blood pressure <90 or diastolic blood pressure ≤60 mmHg)
  - age ≥65
- evidence from case note reviews that the CURB-65 score was calculated within four hours of admission
- time from admission to receipt of the first antibiotic active against *Legionella* infection.

Results

The results of this audit are shown in Table 1 (see page 295).

Commentary

Compliance in two of three standards was 100%. Table 1 shows the improvement in compliance with audit standards relating to use of the CURB-65 score and receiving an antibiotic against *Legionella* within four hours of admission. The numbers, however, are small.

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Table 1: Results of the audit.

No	Standard	Audit cycle results (cycle 1: 2018)	Audit cycle results (cycle 2: 2019–2020)	Improvement
1.	100% of patients had a documented CURB-65 assessment when a diagnosis of CAP was made at presentation to hospital	0/9 (0%)	2/7 (29%)	Up
2	100% of patients with CAP received any antibiotic within four hours of admission to hospital	9/9 (100%)	7/7(100%)	Same
3	100% of patients with CAP received an antibiotic active against *Legionella* (macrolide or a quinolone) within four hours of admission to hospital if CURB-65 score was ≥2	4/6 (67%)	3/3 100%	Up

Further observations

Patient population

Seven patients had a confirmed diagnosis of *Legionella* infection. One patient had a false-positive *Legionella* urinary antigen result and was excluded from the analysis. The average age was 66 years (65 years in 2018). Infection was acquired in the UK in four (57%) of seven patients.

Of 1,269 samples received between 1 January 2019 and 17 July 2020, 14 (1.1%) samples from six patients tested positive by *Legionella* urine antigen. Diagnosis was made by respiratory PCR of bronchoalveolar lavage (BAL) fluid in one patient (*L. longbeachae*). All results were confirmed in the reference laboratory.

CURB-65 assessment

Two patients had documented CURB-65 assessments on the day of admission compared with no patients in the previous audit. Four (57%) of seven patients had mild to moderate CAP with scores <2.

Antimicrobial treatment

All patients received an antibiotic active against Legionnaires' disease within four hours of admission, which was an improvement on the previous audit (clarithromycin [five patients], ciprofloxacin [one patient], doxycycline [one patient]). Four patients, six patients and all patients received this within two hours, three hours and four hours, respectively. Doxycycline is not the preferred antibiotic of choice, particularly in severe disease.

Mortality

Three of seven patients died. They were either immunocompromised or had scores of ≥2. All received appropriate therapy within four hours of admission. Further information about the patients is given below.

- An 80-year-old who travelled to France had a CURB-65 score of 2 and received vancomycin and ciprofloxacin owing to penicillin allergy within two hours of admission.
- A kidney and pancreas transplant recipient returned from Germany and had a CURB-65 score of 1. They received tazocin/doxycycline within two hours of admission. Ciprofloxacin was started the day following admission, after the result of urine *Legionella* antigen.
- An asthmatic patient, who visited the south of England for the weekend, had a CURB-65 score of 4, and received tazocin/clarithromycin within three hours. They were initially thought to have COVID-19 infection.

Conclusion

Legionnaires' disease is of low incidence with a high mortality in our patients. Seven patients were diagnosed with Legionnaires' disease in 18 months and three (43%) of seven patients died during the admission.

Overall, there was an improvement in audit findings. The poor documentation of CURB-65 scores did not impact on the time to initiate

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treatment with an agent against Legionnaires' disease:

- 29% documentation in CURB-65 score compared with 0% in 2018
- 100% of patients received an antibiotic active against Legionnaires' disease within four hours compared with 66% of eligible patients in 2018
- one patient received doxycycline to cover atypical infection on admission and was changed to ciprofloxacin the following day when the diagnosis of Legionnaires' disease was made.

Clinical judgement is important when making the diagnosis of pneumonia and ordering *Legionella* tests. Four patients had CURB-65 scores <2, where mortality risk is determined to be low. This included a patient with a renal and pancreas transplant who died during the admission.

One patient had *L. longbeachae* diagnosed by PCR on BAL similar to the audit in 2018. This continues to highlight the importance of availability of PCR for diagnosis of *Legionella* non-serotype 1 infections that are not detected by *Legionella* urine antigen.

The validity of CURB-65 scores in patients with multiple comorbidities and immunosuppression is not clear, and there is controversy among clinicians at CUH about its use in patients with underlying morbidity, as seen at our hospital. This may account for the poor uptake in use of the score. Poor compliance with use of the score did not impact on the management of pneumonia during the current audit.

Recommendations for improvement

- Heightened awareness of *Legionella* infection in patients who present with CAP, including patients with mild infection, is important because of high mortality and public health consequences.
- Further management of CAP will be undertaken by the antimicrobial stewardship group, including monitoring of the use of CURB-65.
- No further audit of the use of CURB-65 among patients with Legionnaires' disease is recommended.

Action plan for 2019–2020 audit

1. It was agreed that Dr Jumoke Sule (JS) would disseminate the report to microbiologists and present at the audit group meeting, and Dr Clare Sander (CS) would disseminate the report to respiratory clinicians, by 30 September 2020. This was a medium priority recommendation and was achieved by the set date.
2. It was agreed that JS and Dr Theo Gouliouris (TG) would present results to the antimicrobial stewardship group, to consider the findings while preparing an activity on CAP antimicrobial stewardship for the current year, by 30 September 2020. This was a medium priority recommendation and was achieved by the set date.
3. It was recommended that no re-audit be undertaken and that TG would review the CURB-65 score as part of the CAP antimicrobial stewardship by 23 July 2020. This was a medium priority recommendation and was achieved by the set date.

Re-audit date

As per the 2019–2020 action plan, no re-audit date has been set.

References available on our website.

Dr Jumoke Sule
Consultant Microbiologist
Clinical Microbiology and Public Health Laboratory, Public Health England

Dr Clare Sander
Consultant Acute Medicine and Respiratory Medicine, Cambridge University Hospitals NHS Foundation Trust

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Appreciation: Dr Edward Bernard Ilgren

Dr Edward Bernard Ilgren, an American toxicologist and neuropathologist known internationally for his work on the human impacts of asbestos, died Monday 18 May in a cycling accident in Arica, Chile, where he was living.

Ed was the author of two books and dozens of technical articles in scientific journals. He held academic positions at Oxford University and several other universities in the USA and abroad, and was an expert witness in many high-profile litigation cases. He was a Fellow of the Royal College of Pathology and Diplomate of the American Board of Pathology. Ed was recognised by scientific bodies for major original contributions to oncology, neurology, embryology and comparative pathology.

He was an avid cyclist who rode wherever he travelled in the world. Even growing up, Ed insisted upon taking his bike on numerous family holidays. While attending Penn State, there were several occasions when Ed would ride his bike home in Wynnewood to surprise his family for a home-cooked meal.

Ed was born in Philadelphia, the son of Dr Herbert and Maxine Ilgren. He attended Lower Merion High School and Penn State University and received his MD from Hahnemann Medical College in 1974. Afterwards, he served as a forensic pathologist in the New York City Medical Examiner's Office, before moving to Oxford to do cancer research, receiving a D.Phil. in 1980.

Ed served as a pathologist to Her Majesty's Coroner for Oxfordshire, and was a member of the biochemistry faculty at Oxford University. For the last 20 years, he also worked as an independent consultant and expert on matters related to complex environmental and toxic tort litigation. He lectured worldwide and taught cellular pathology at the Sir William Dunn School of Pathology at Oxford and the University of Chile.

Ed and Dr Kevin Browne were the first to publish on mesothelioma threshold and continued to make contributions to the study of mesothelioma, conducting investigations on five continents. In a 2002 congressional investigation at the request of Congressman Jerrold Nadler, Ed established the health risks from exposure to asbestos, inorganic metals and various chemicals resulting from the collapse of the World Trade Center, and was cited by proclamation for his help by the City of New York. He provided commentary on asbestos medical criteria in a report for the Fairness in Asbestos Injury Resolution Act at the request of Senator Jon Kyl in 2003.

Beyond his specific professional interests, Ed applied his humanitarian nature to many medical and environmental problems, including aflatoxins in food, smoking, prenatal risks from lithium in Bolivia, asbestos in firefighting, and agricultural development in northern Chile. Most recently, he was working on COVID-19 risks and immunisations.

Ed was a true Renaissance spirit from an older and gentler era. He had an incredible and detailed approach to medicine and life in general, and a talent for developing friendships that encircled the globe. All who knew him delighted in his rare combination of intellectual purposefulness and impulse to celebrate. He made residences variously in Chile, England, Italy and Hawaii, but his home was always here in the Philadelphia area.

Ed is survived by his sisters, Barbara Ilgren Russell (Cal) of Bonners Ferry, Idaho, and Nancy Ilgren Schluter (William) of Wilmington, DE, and many nieces, nephews and cousins. In addition to his parents, Ed is predeceased by his sister, Patty Kapp.

Owing to the COVID-19 pandemic, a memorial to remember Ed will be set at a later date.

Mrs Nancy Ilgren Schluter

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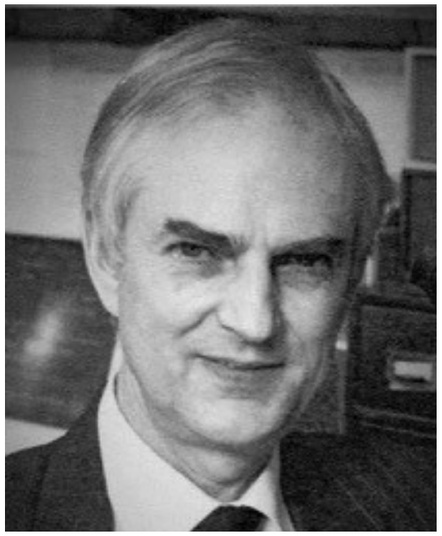
Appreciation: Professor Ian Charles Talbot



Professor Ian Talbot, who was born in Blackpool in December 1939, died on 15 December 2019. The eldest of three siblings, Ian began his medical studies at Kings College, London, in 1959 and qualified as a doctor in 1964. He decided on pathology as his specialty early in his career and became Demonstrator in Pathology in the Medical School of King's College Hospital from 1966 to 1968 and subsequently obtained a post as Registrar in the Department of Morbid Pathology at the Hammersmith Hospital from 1968 to 1970.

He returned to King's College Hospital in 1970 as Senior Registrar and Lecturer in the Department of Morbid Anatomy. He became a Member of the Royal College of Pathologists (MRCPath) in 1971. In 1974, Ian Talbot became a Research Fellow under Dr Basil Morson at St Mark's Hospital, obtaining the degree of Doctor of Medicine in 1979.

Ian greatly added to knowledge around the significance of the spread of cancer to the venous system through the study of surgical resection specimens to demonstrate the prognostic importance of venous invasion in rectal cancer. Extramural venous invasion was associated with reduced cancer-specific survival and to the presence of liver metastases. The recording of the presence or absence of 'venous invasion' entered routine histopathological cancer reporting.

In 1975, Ian left St Mark's to take up a Senior Lectureship in Pathology at the University of Leicester and become an honorary consultant pathologist to the Leicestershire Health Authority, where he remained until 1988. In 1987, he was promoted to Reader and was awarded the Fellowship of the Royal College of Pathologists (FRCPath) in 1983. His work in Leicester included a large contribution to setting up the curriculum in pathology for the new medical school.

In 1988, he returned as a consultant histopathologist to St Mark's Hospital, where he remained until his retirement from the NHS in 2004. He was part of the recently established extramural Imperial Cancer Research Fund Cancer Unit at St Mark's, where he continued his research in collaboration with his clinical colleagues into large bowel cancer, polyps and polyposis syndromes, inflammatory bowel disease and other aspects of colorectal disease.

Ian was author or co-author of over 230 peer-reviewed publications during his career. He was co-editor of the 7th edition of the highly regarded text book, Walter and Israel's *General Pathology*, published in 1996. With several other famous names in his specialist field, he co-authored the 4th edition of Morson and Dawson's *Gastrointestinal Pathology*, published in 2003. The book *Biopsy Pathology in Colorectal Disease*, published in 1998 in co-authorship with Professor Ashley Price and Dr Manuel Salto-Tellez, was greatly influential.

Ian served as adviser to various national bodies, including the Medical Research Council, British Medical Association, the Department of Health, the Scottish Home and Health Department and the University of Bristol. He was appointed to a personal chair in pathology at Imperial College London in 1997. Greatly respected by gastrointestinal pathologists throughout the country, he was often asked for his expert opinion and had a reputation for being right.

Some years after he retired he developed a progressive form of Parkinson's disease, which gradually rendered him unable to perform the simplest physical functions while his cognitive ability remained normal. He showed the greatest bravery throughout this terrible ordeal. Ian had many interests outside medicine, including art, music and classic cars. His kindness, combined with a delicate sense of humour and an ability to collaborate with others, made him a tremendous colleague. He is survived by his wife Sue and their son Andrew and his family.

R John Nicholls
Emeritus Consultant Surgeon,
St Mark's Hospital, Harrow
Professor of Colorectal Surgery, Imperial College

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Anthony Nolan's tireless mission

Professor Antonio Pagliuca

Professor Antonio Pagliuca had long been an advocate of the work of the charity Anthony Nolan. When the role of Chief Medical and Scientific Advisor became vacant, he saw an opportunity to pursue a shared vision.

In 1971, when Anthony Nolan was born with a rare blood disorder, Wiskott-Aldrich syndrome, his mother Shirley was told his only chance of survival was through a stem cell transplant from a matching unrelated donor. At the time, there was no system for recording potential donors and no worldwide registers to search. Nor had there yet been a successful stem cell transplant anywhere in the world.

That changed in 1973, when a young boy in the UK named Simon Bostic received the world's first successful stem cell transplant from an unrelated donor. This fired Shirley's drive to try to save her son. In 1974, she set up the world's first register to match stem cell donors with patients in desperate need, and the name Anthony Nolan came to prominence.

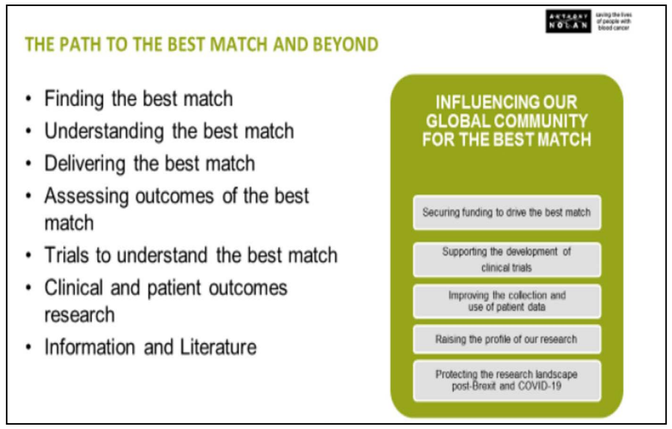

Figure 1: Anthony Nolan's strategy for increasing transplant success includes research, funding trials and informing clinicians.

The Anthony Nolan Bone Marrow Register was established in Westminster Children's Hospital, where Anthony was a patient. His story captured the imagination, inspiring many thousands to join the register. Sadly, Anthony died in 1979, aged just seven, while waiting for a donor to match. Today, the Anthony Nolan charity carries on, working tirelessly to fulfil Shirley's mission: to make sure that everyone who needs a stem cell transplant can find their best possible match.

From trust to charity

I started my new role with Anthony Nolan, as Chief Medical and Scientific Advisor, in October 2020, after 26 years as a consultant haematologist and Professor of Stem Cell Transplantation at King's College Hospital NHS Foundation Trust, London. I follow in the footsteps of my esteemed colleague, Professor Alejandro Madrigal, who had occupied the position for more than 25 years. With my time split between Anthony Nolan and King's, I'm rapidly learning new skills.

Since the start of my career in transplantation in the 1980s, Anthony Nolan has been centre stage in helping to find transplant matches (see Figure 1). It has also been a leading light in stem cell transplantation research through the Anthony Nolan Research Institute (ANRI). I have worked with the charity on many levels and have been a regular proponent of its tireless work in the field. In 2018, I became an Anthony Nolan trustee.

So, when the role of Chief Medical and Scientific Advisor at the charity opened up, I was inspired to apply and pursue our shared vision of improving outcomes for all patients needing a stem cell transplant.

Navigating the differences

The immediate difference is one of size. King's is a very large trust with more than 12,500 staff and a turnover of over a billion pounds. Anthony Nolan is clearly much smaller, but it has all the same functions and processes that I have managed as both a Clinical and Medical Director. It also has a strong research arm to support its service delivery arm.

Anthony Nolan provides stem cell products globally and, over a decade ago, created a cord blood bank that is now starting to develop in the field of cell and gene therapy. The Anthony Nolan Cell and Gene Therapy Service aims to facilitate ethical research and development in the cell and gene therapies sector to improve the quality of patients' lives.

A greater IMPACT

IMPACT is the major trials network advocating for stem cell transplant patients and teams working here in the UK and abroad (see Figure 2). By providing the vital infrastructure that transplant centres need to work together, IMPACT will make it easier and quicker to deliver clinical trials that focus on improving stem cell transplant outcomes.

As a result of this UK-wide partnership, these trials will reach a much larger patient population than would be possible at an individual transplant centre. There are dedicated IMPACT research nurses in nine centres, plus a further 13 affiliated centres that also participate in clinical trials.

Anthony Nolan funds a proportion of IMPACT's work to deliver several clinical trials in the stem cell transplant field (www.impactpartnership.org.uk).

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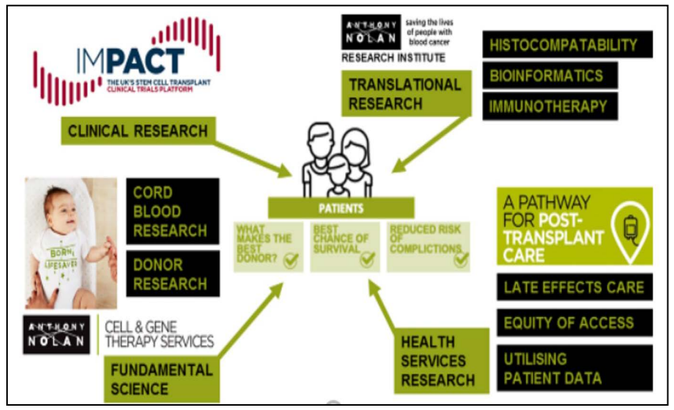

Figure 2: Anthony Nolan Research Institute's three aims include researching what makes the best match, increasing survival rates and reducing complications.

The aligned stem cell registry

Anthony Nolan forms part of the UK's aligned stem cell registry, with around 2 million donors providing stem cells for more than 1,500 patients per annum. In the UK, 1,726 allogeneic procedures were undertaken in 2019 and 18,500 across Europe. Globally, more than a million patients have received this life-saving treatment, and Anthony Nolan has been key to this provision. Human leukocyte antigen (HLA) and histocompatibility are a core service and research component.

There has been a 4–7% increase in activity annually, with stem cell transplantation now being used in several non-malignant disorders, such as sickle cell disease.[1]

Our vision is for all stem cell transplant recipients not just to survive, but also to be free of transplant-related complications. Currently, only half of our patients[2] will still be alive five years after their transplant.[3] Those who are often need to make dramatic lifestyle changes and adapt to a 'new normal' for many years into their recovery.

With the help of our supporters, we are creating new treatments and have a better understanding of how to prevent these complications from happening. This drives our ability to make sure everyone receives a successful stem cell transplant.

The first year's greatest challenge

In my first year in this role, the greatest challenge, unsurprisingly, at both King's and Anthony Nolan has been COVID-19, which has had a major impact on Anthony Nolan. The incredible complexity now involved when shipping products internationally, and the resulting reduction in provisions, has completely changed our bone marrow transplant and cellular therapy practice. Transplant activity was dramatically reduced in the first half of 2020 .

The biggest impact, though, for the charity has been on fundraising for our core services. All the teams have put in a truly been truly heroic effort and we hope that funding will, in time, return to fill the financial gap.

Once we are better able to manage COVID-19, I will focus on developing the clinical and research strategy that will ensure we continue to find the best match for patients in need.

We know that we need to do more to find a suitable donor for everyone, especially patients from minority ethnic backgrounds. We are currently looking at HLA diversity on the Anthony Nolan Register to influence donor recruitment and enrichment strategies. One example of how we could do this is by locating our cord blood collection sites at hospitals serving the most diverse communities.

Another key priority is our Cell and Gene Therapy Service. It will help to generate new treatment options for patients, along with income for the organisation in the difficult post-COVID-19 era.

My aim is to ensure that Anthony Nolan, on its 50th birthday, remains at the core of the stem cell transplant community in the UK and globally, still serving today, as Shirley Nolan intended in 1974, all patients in desperate need of a match.

References available on our website.

Professor Antonio Pagliuca
Chief Medical and Scientific Advisor, Anthony Nolan
Professor of Stem Cell Transplantation, King's College Hospital NHS Foundation Trust

Deaths reported to Council

The deaths of the following Fellows were announced at the November 2020 Council meeting. We extend our condolences to those who grieve for them.

John Mackenzie Anderson, Dundee, UK

Anand Edmund Prabhaka, Uxbridge, UK

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Consultants: new appointment offers

The following appointments have been offered and are subject to acceptance by the applicants. The lists are prepared by the College's Workforce department, on the basis of returns completed by College assessors on consultant advisory appointment committees submitted by 23 October 2020.

Please note, we receive no return following 20% of AACs. Any forms received after 23 October 2020 will be published in the next issue. If you do not take up your post, or have additional information, please inform the Workforce department. Whenever you move home or job, please inform the Membership department.

Haematology appointments

Region	Employing body	Base hospital	Appointee
North West	Clatterbridge	Clatterbridge	Dr Muhammad A Saif
North West London	London North West	Across sites	Dr Arunodaya Mohan
South London	Guy's and St Thomas'	Guy's	Dr Sajitha Sachchithanantham
South West	University Hospitals Plymouth	Derriford	Dr Claire Lentaigne
Yorkshire and The Humberside	Leeds	St James's	Dr Chun H Teh

Histopathology and cytology appointments

Region	Employing body	Base hospital	Appointee
North Central and East London	Royal Free	Royal Free	Dr Anuja P Pradhan
	University College London	University College London	Dr Tanya S Alan
North West London	Imperial	Imperial	Dr Rana K H Asakra
	Imperial	Imperial	Dr Mufaddal T Moonim
	Imperial	Imperial	Dr Anna M Silvanto
Northern Ireland	Belfast	Royal Hospitals	Dr Jennifer L Taylor
South West	North Bristol	Southmead	Dr Cornelia M Szecsei
	Northern Devon	North Devon	Dr Adetope O Adegbayibi
West Midlands	Worcestershire	Across sites	Dr Sherin Jos-Payyappilly

Medical microbiology, communicable disease control, virology and epidemiology appointments

Region	Employing body	Base hospital	Appointee
East Midlands	Nottingham	Across sites	Dr Katherine G Prescott
North, Central and East London	University College London	University College London	Dr Sophia De Saram
	University College London	University College London	Dr Trupti Patel
	University College London	University College London	Dr Giovanni Satta
	University College London	University College London	Dr Neil R H Stone
North West	Liverpool	Royal Liverpool	Dr Anna A Smielewska
Wales	Cwm Taf Morgannwg	Across sites	Dr Soma Gaur
	Public Health, Swansea Bay	Swansea Bay	Dr Ian A D Blyth
Yorkshire and the Humberside	Sheffield Teaching and Sheffield Children's	Across trusts	Dr Emma Boldock

Consultant clinical scientist appointments – clinical biochemistry

Region	Employing body	Base hospital	Appointee
North West	Manchester	Manchester	Mrs Beverly Hird
South London	St George's	St George's	Miss Felicity J Stokes
West Midlands	University of the North Midlands	University of the North Midlands	Dr Christopher J Duff

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Examination results

Successful candidates for the Part 1 Examination

The following candidates have passed all components of the relevant Part 1 examination:

Clinical Biochemistry

Alana Burns
Rabia Chaudhry
Hoi Ning Cheung
Rachel Claire Dale
Samir Elgerray
Danni Fan
Roxanne Farnon
Hannah Fearon
Lakmini Ginige
Moises Hernandez Hernandez
Michelle Hookham
Lauren Hughes
Daniel Isemede
Anthony Jackson-Crawford
Lucille Kavanagh-Wright
Kia Langford-Smith
Chun Yiu LAW
Nicholas McArdle
Laura McNeil
Gavin Mercer-Smith
Ewen Millar
Thomas Glyn Morris
Sabrina Mosaheb
Lucy Murfitt
Jennifer Nobes
Zain Odho
Louise O'Donnell
Oliver Rayner
Eleanor Ringland
Leanne Sheppard
Helen Valentine
Agatha van der Klaauw
Dinesha Maduri
Vidanapathirana
Katharine Whitehurst
Ralph Wigley

Genetics

Rachel Challis
James Eden
Nicole Gossan
Lorraine Hartles-Spencer
Catherine Emma Husher
Claire Kyle
Kathleen Murphy
Savita Nutan
Evgenia Petrides
Gavin Ryan
Angharad Williams

Haematology

Ahmed Abdulgawad
Manoja Dhammini
Abhayawickrama
Maria Zahid Ahmed
Ahmed Al-Hassani
Rebecca Allam
Ahmed Youssef Mohamed Badawi Amer
Daniel Angelov
Aisling Barrett
Martin Best
Sarah Bird
Jessica Boot
Richard Buka
Wei Yee Chan
Jillian Coll
Emma Conway O'Brien
Catherine Cox
Brian Craven
Christina Crossette-Thambiah
Naveenvairamoorthy
Dakshinamoorthy
Dassanayake Mudiyanselag Hansini Menaka Dassanayake
David Davies
Nicholas Denny
Jaymathi Dhanapal
Dissanayake M U P Dissanayake
Karunathilake
Dearbhla Doherty
Ayesha Ejaz
Anietie Ekong
Huda Elfakharany
Sara Elhag
Michelle Escobedo-Cousin
Astrid Etherington
Daniel Farrugia
Graeme Ferguson
Amelia Fisher
Helen Fogarty
David Foldes
Katrina Fordwor
Tanya Freeman
Ee Leng Gan
Elena Ganendra
Louise Garth
Thamudika Pushpakumari
Gonagala Vithanage
Harshita Goradia
Nicola Gray
Amy Gudger
Benjamin John Gray
Shweta Gupta
Steven Hanson
Sophie Hazell
Dinusha Chathurani Herath Mudiyanselage
Richard Hinton
Kameta Imaeva
Md Tawheedul Islam
Megan Kell
Naveeda Khaliq
Chloe Knott
Ho Pui Jeff Lam
Tze Shin Leong
Christopher Chin Keong Liam
Oliver Lomas
Arunthethy Mahendrayogam
Wai Man Vivien Mak
Nasir Mir
Jayna Mistry
Smeera Nair
Andrew Nicholds
Faiza Noor
Stella Jumoke Okikiolu
Omer Pervaiz
Keir Pickard
Paul Player
Sahar Rabbani
Zunaira Rafiq
Monica Ragheb
Syed Ashar Rais
Maya Raj
Nitha Ramachandran
Kavita Ramlochan
Alexandros Rampotas
Hanna Renshaw
Caitlin Rice
Srdan Rogosic
Eileen Ryan
Malik Shahzad Saeed
Jeremy Schofield
T Seddon
Srividhya Senthil
Kartthik Shanmugam
Sobia Sharif
Amir Shenouda
Caroline Shrubsole
Dean Smyth
Nelson Soong
Amrutha Sridhar
Asma Tameez Ud Din
Yishi Tan
Thomas Taylor

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Margarita Constantina Triantafillou
Marios Tsoutsoukis
Micky Tsui
Sobia Umar
Sona Vora
Mairi Walker
Edmund Watson
Philip Weir
Charlotte Wilding
Manujasri Wimalachandra
Julia Wolf
Yee Yee Yap
Vivian Ka Pik Yeung

Haematology Clinical Science

Nathan Kerr
Lauren Jamieson

Histocompatibility and Immunogenetics

Amy Sarah De'Ath
Daniel Eggleston
Emily Halford
Kim McShane
Emma Rowe

Histopathology

Anubhav .
Zainab Abbas
Marwa Abdelhakim
Nazneen Abdul Kader
Rafat Abu Shakra
Charles Adetayo Adewole
Noha Samy Ahmad Said
Azad Ahmed
Imran Ahmed
Shakeel Akhtar
Intisar Al Malki
Iman Al yabary
Sally Alabdulmohsen
Fatima Al-Amri
Violet Albert
Ayman Abdulmajeed Aldeheshi
Umnia Nafea Aldulaimy
Rawa Muhsin Ali
Duaa Aljarrah
Aysha Anwar Abdulla Aljawder
Luha Allawi
Daniel Alan Allsop
Zainab Almukhtar
Dr.Sulaiman Al-Rushaidan
Fatimah Alturkistani
Sameer Abdul Hameed Ansari
Sidra Arshad
Boma Precious Athanasius
Aribah Atiq
Zeena Ayad
Ebru Sebnem Ayva
Faiza Azam
Kanwal Babar
Raluca Daniela Badea
Saeed Bahabri
Gavin Baker
Niyatha Balakrishnan
Shailaja Balakumar
Madhurjya Barman
Michelle Basquill
Archana Bommana
Aaron Borbora
Lucas Adam Brammar
Maria Brereton
Tiffany Buhagiar
Alexandra Cavanagh
Rashmi Chandrashekara Reddy
Debajyoti Chatterjee
Dimple Chaudhary
Venkata Lakshmi Chavali
Daphne Shao Yi Chen-Maxwell
Kevin Ka-Chun Cheung
Stephen Chew
Noel Yida Chia
Natasha Cutmore
Claire Deakin
Daniele Mario Di Capua
Vanessa Djabatey
Adam Palmer Douglas
Lauren D'Sa
Laura Dunbar
Rimlee Dutta
Thomas Benjamin Dytor
Godwins Echejoh
Weam Eltoum
Felicity Sarah Elwin
Ola El-Zammar
Uchenna Ezenkwa
Benjamin Livingston Farah
Farah farah
Sana Firdous
Louis Flood
Tsun Fong
Al-walid Freih Fraih
Natasha Frewer
Mogolodi Gabolwelwe
Gréta Galambosi
Katherine Gardner
Jennifer Garry
Stella Garvie
Jyotsana Harit Gaur
Divya George
Sophia Merilyn George
Samirah Essam I. Ghandurah
Sana Ghulam Nabi
Apoorv Giri
Imran Gorur (G M ,Gorur Mohammed)
Patricia Gou
Thomas Green
Raluca Grigorescu
Garima Gupta
Niteeka Gurung
Sakar Hayder
Naoimh Herlihy
Cassandra Hill
Siu Lun Ho
Edward Samuel Hookway
Katie Hoyles
Ahmed Abdelalim Abdelrahman Hussein
Afaf Ibrahiem
Adeyemi Idowu
Shreeya Indulkar
Javed Iqbal
Jhansi J
John Jackson
Pragya Jain
Supriya Jain
Unaiza Jamil
Adil Jaulim
Nimmy John
Nita Mary John
Lisa Johnston
Emily Joslin
Lakshmi K
BIJI K A
Kalaranjini K.V
Nourdin Kadi
Karasinghe Kankanamage Malinda Amesh Karasinghe
Ansam kareem
Yash Karia
Jyothi Karikkanthra
Zahra Kasaei koopaei
Roshen Preet Kaur
Manpreet Kaur
Gurwinder Kaur
Anna Keogh
Graeme Kerr
Majd Bassam Khader
rizwan ullah khan
Yusra Nayab Khan
Nausheen Khan
Manika Khare
Kgalalelo Koronale
Eman Kreishan
Brijesh Kumar
Shui Wun Lai
Hiu Yeung Lau
Ross Leaver
Hoi Ki Leung
Yasmin Levene
Adam Paul Levine
Cheuk Nam Ling
Appuhamy Mudiyanselage Shakthi Ama Liyadipita
Anandi Lobo
Jonathan Lye
Logaswari M
Kaushik Majumdar
Wardah Malik

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Poonkodi Manohar
Joyce Mary Mathew
James Matossian
Mark McCabe
Shashank Mishra
Samiah Moalwi
Hasrath Mohamadi
Mujeeb Siddiqui Mohammed Abdul
Bhavya P Mohan
Limi Mohandas
Aml Mousa
Tanushri Mukherjee
Sadaf Muzaffar
Kaniyappan Nambiyaw
Sarah Maire Ni Mhaolcatha
Mary Niven
Isma Noaman
Ayesha Nusrat
Segun Samson Odetola
Mosebolatan Olatokunboh Odubanjo
Daniel Ong
Zun Pwint Oo
Manogna Das Oravakandy
Nahla Osman
Sarah Page
Christos Panayi
Devasis Panda
Vinita Pandey
Mayur Parkhi
Julia Patterson
Jocelyn Sara Paul
Nikhila Paulose
Asha Peedikayil Punnoose
Nataliya Piletska
Parvathi Pillai
Dane Pointing
GAURI PRABHUSALGAONKAR
Priyanka Prakash
Ananda Julian Pulle
Ali Qibi
Niranjani R
Preethi Rai
Prajna Brijesh Rai
Suman Rai
Prabha Raj
Athulya Raj
Archana Rajan
Madhu Rajeshwari S
Alka Rana
B. Vishal Rao
Claire Roberts
Tamara Said
Nancy Mohey Sadek Salama Abdulhadi Samman
Premila Samuel
Azmat Kaur Sandhu
Sarah Sarah
Mohamed Sulaiman Seyed Omer
Mariyam Shafi
Bhoomiben Abhishek Shah
Kashmi Sharma
Ritika Sharma
Abigail Sharp
Stuart Sherlock
Vrunda Sheth
Morvarid Shirmohammadi
Kieran Shotton
Rania Showeil
Sabeehuddin Siddique
Ritika Singh
Kritika Singh Yadav
Seema Singhal
Ankita Singhania
Mukinkumar Sonai
Supriya Srivastava
Parveen Tabassum
Balsam Tameemi
Denise Tao
Muhammad Usman Tariq
Dilek Taze
Ramesh Babu Telugu
Ben Templer
Ayeesha Sithika Thajudeen
Kate Tilley
Shun Hin Ting
Zoe Tomaszewski
Sarah Toomey
Chui San Zara Tsang
Daniel Turek
Madhumitha Udayakumar
Viren Laljibhai Vaghasiya
Sumedha Vats
Sereen Wahballa
Craig Wakefield
Tamsin Walford
Elizabeth Walsh
Elizabeth Walsh
Rachael Winstanley

Immunology
William Bermingham
Samuel Chee
Elizabeth Frances Cleave
Fionnuala Cox
Sarah Denness
Anthony David Peter Dorr
Hari Chandana Ghanta
Jesmeen Maimaris
Hadeil Morsi
Karen Smith
Kavitha Sooriyakumar
Sarah Spencer
Thomas Wilding

Infection
Esson Adobah
Sokolayam Atanze
Robert James Ball
Oliver Bannister
Li-An Brown
Prasun Chakravorty
Alan Cordey
Kate David
Rhys John Davies
Kate El Bouzidi
Terry John Evans
Hamzah Farooq
Malick Gibani
Jennifer Goldblatt
Stephanie Harris
George Hills
Sarah Jawad
Catherine Jane Eleri Jones
Gwennan Jones
Sarah Kennedy
Nuzhath Khan
Francesca Knapper
Anastasia Kolyva
Alexander May
Jamie McAllister
Rebecca McHugh
Mark David McNicol
Charlotte Milne
Thomas Morris
Edward Moseley
Callum Peter Mutch
Nicholas Norton
Leah Schofield Owen
Vinesh Patel
Lara Payne
Matthew Powell
Vivien Price
Fauzia Rizwan
Matthew Routledge
Penelope Sellers
Avneet Shahi
Luke Snell
Shuchita Soni
Igor Starinskij
Simon Stoneham
Sathyavani Subbarao
Clare Thakker
Benjamin Tomlinson
Oliver Toovey
Helen Umpleby
Rachel Wake
Joanna Walker

Medical Microbiology & Virology
Aaisha AlBalushi
Patricia Alice Alcock
Mashahed Alkreebani
Rachel Barry
Nicola Boran
Phillipa Burns
Priyanka Chaskar
James Donnelly

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Lynne Ferguson
Julie-Anne Houlihan
Stephen Peter Kidd
Chung Ho Lee
Ramya Madhavan
Clare Moore
Niamh Mullane
Subha Narasimhan
Chukwuemeka Obiagwu
Chidi Onwukwe Onwukwe
Sajeevan Rasanantham
Felicity Ryan
Yan Ling Shireen Tan

Molecular Pathology
Baljinder Matharu
Claire McKeeve
Paula Scott
Iryna Stasevich
Moushumi Suryavanshi

Oral Pathology
Oluyori Kutulola Adegun
Stephen James Brown

Reproductive Science
Dima Abdo
Sophie Bird
Zoe Brame
Millie Kanani
Anne Quinn
Lydia Ruddick
Emma Tomes nee Whitney
Lucy Wood

Veterinary Pathology
Jelena Mraovic
Roy Brett Wakefield

Veterinary Clinical Pathology
Anne Aworinde
Guy Davies

Successful candidates for the Part 2 Examination

The following candidates have passed all components of the relevant Part 2 examination:

Clinical Biochemistry
Alaa Abdelrazik
Ashley Eve Garner
Laura Elaine Bernstone
Stephen Michael Gibbons
Brian Tennant

Genetics
Kirsten McKay Bounford

Haematology
Sembukutti A S P Abeyrathna
Samah Babiker
Aadil Jalal Bachh
Muhammad Mansoor Baig
Neil Barrett
Edward Blacker
Adam Bond
Karen Boyd
Duncan L Brian
Stephanie Anne Bruce
Simon John Bulley
Sarah Elizabeth Clarke
James Croft
Thomas Cummin
Kanchana De Abrew
Josh Dmochowski
Lauren Ellis
Alison Gibson
Graeme Greenfield
Sudarshan Gurung
Mohamed Habib
Michelle Harrison
Samuel Harrison
Claire Patricia Horgan
Jahanzaib Khwaja
Thinzar Ko Ko
Nicholas Lafferty
Prabal Mittal
Hana Mohamed
Kathryn Moss
Chin Loon Neoh
Phillip Lindsay Ross Nicolson
Musab Eltayeb Osman Omer
Kate Orf
Matthew Paul Player
Paolo Polzella
Edward Poynton
Sinthiya Punnialingam
Moosa Rashid Qureshi
Iman Qureshi
Prabina Rai
Amita Ranger
Haifaa Saadi
Iram Saeed
Vallari Shah
Suthesh Sivapalaratnam
Ahalyaa Sivashangar
Elizabeth Smyth
Amit Sud
Rachel Trickey
Stella Williams

Histocompatibility and Immunogenetics
Sandra Helen Lloyd
Katherine Lillian Mounsey

Histopathology
Engy Abdellatif
Shraddha Arun Adamane
Gbadebo Aderinola Adeleke
Zahabia Ali
Iteeka Arora
Nathan Alex Asher
Mohammed Basem Awadh
Sheena Bajaj
Ali Ben-Mussa
Daniel Anthony Brett
Rebecca Mary Brown
Elizabeth Beatrice Brown
Maria Lorena Stefania Buttice
Catherine Connolly
Kevin Culligan
Adam Dallmann
Olusola Jumoke Daramola
Matthew Robert Di Capite
Victoria Jane Doyle
Neelaveni V V K N Duhli
Mary Ferrier
Kezia Lyndall Gaitskell
Jonathan Gareze
Nichola Gaunt
Richard David Griffiths
Robert Ivor William Harkness
Fionnuala Mary Hinds
Daniel Hopkins
Aneeta Jassar
Hadeel Jawad
Dilbar Singh Johal
Sana Khalid
Rubia Farheen Khan
Eimear Lee

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Mariam Masood
Lisa Mellerick
Peter Molony
David John Mooney
Ceri Morgan
Veronica Patricia Moyo
Arunima Mukhopadhyay
Rebecca Elizabeth Mulholland
Dorinda Mullen
Sarah Elizabeth Joan Mullins
Steven Nottley
Roisin O'Connor
Andrew O'Keeffe
John Patrick O'Neill
Sweta Patil
Richard Thomas Pilkington
Juliet Isobel Raine
Simon Rajendran
Prashant Ramteke
Nadeeka Gerly Ranawaka
Alice Elizabeth Richards
Neil Alfred Robinson
Edward George Rogers
Joanna Keziah Round
Caroline Imogen Russell
Amany Said
Niall Scully
Rashmi Shetty
Emma Louise Short
Emma Spoor
John Alphonse Tadross
Steven Tan
Priya Thomas
Silke Toy
Sumiti Vanjani
Janine Warnick
Holly Rose White

Immunology
Sameer Bahal
Evon Boules
John Guly

Medical Microbiology
Zoie Alexandra Aiken
Noora Al Balushi
Omaima Mohamed Hamdan Al Ismaili
Maya Al-Salti
Anjaneya Bapat
Melissa Baxter
Ranajoy Sankar Bhattacharya
Mark Campbell
Kal Cave
Margaret Creedon
Abhishek Das
Ankush Dhariwal
Aaron Doherty
Louise Downs
Jenna Victoria Gillies
Ashley Horsley
Gareth Hughes
Anna Amrit Jarchow-MacDonald
Alex Kew
Nicholas Laundy
Laura Veronica Lloyd
Judi Lynch
Samira Mohd Afzal
Peter Thomas Nelson
Anand Odedra
Hamed Mohamed Ashraf Hamed
Ahmed Sharaf
Tadhg Michael Sullivan
Jon Jurriaan van Aartsen
James Veater
Jennifer Walsh
Karmel Webb
Natasha Weston

Neuropathology
Miren Aizpurua Gomez
Kevin Kinch
Annelies Quaegebeur

Paediatric Pathology
Delyth Angharad Badder
Barbara Ciolka
Heather Louise Keir
William Simmons

Reproductive Science
Helen Priddle
Andrew Gordon Thomson

Toxicology
Adelaide Fimpong

Virology
Richard James Capstick
Jennifer Hart
Louise McCorry
Anne Margaret Melhuish
Thomas Rampling
Anna Alexandra Smielewska

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Successful candidates for the Certificate Examinations

The following candidates have passed the Certificate in Higher Autopsy Training:

Colin Samuel Alderson
Shane Daniel Brennan
Guy Alexander Conlon
Catherine Connolly
Aoife Margaret Doyle
Neil Fennelly
Suzanne Foster
Kathryn Griffin
Hannah Hawrot
Harry Haynes
Katherine Humphris
Darrell Martin
Megan Ramsey
James Stevenson
Lisa Thompson
Deirdre Timlin
Rhona Thuillier

The following candidates have passed the Combined Infection Certificate Examination:

Aleem Ahmed
Ed Birkhamshaw
Farnaz Dave
Sarah Denny
Nathan Jacobs
Drosos Karageorgopoulos
Oliver Lloyd
Christopher Mansbridge
Jame McCrae
William Nevin
William Osborne
Hannah Rickman
Charlotte Richardson
Sakib Rokadiya
Marcello Scopazzini
Anika Singanayagam
Keira Skolimowska
Vino Srirathan
Thomas Alexander Yates

The following candidates have passed the Certificate in Medical Genetics:

Claire Forde
Elizabeth Harris
Eleanor Hay
Farah Kanani
Karen Mackenzie
Lara Menzies
Oliver Murch
Sarah Wedderburn

Successful candidates for the Diploma Examinations

The following candidates have passed the Diploma in Dermatopathology:

Eglantine Lebas

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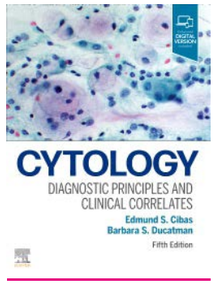
REVIEWS



BOOK REVIEW Cytology: Diagnostic Principles and Clinical Correlates

By Edmund Cibas and Barabara Ducatman
Elsevier, 2020

£149.99, 688 pp, hardback
ISBN: 978-0323-63636-0

This is the fifth of edition of the already popular cytology textbook by Edmund Cibas and Barbara Ducatman. Cytology is an integral part of the histopathology training curriculum and a topic that many trainees, like myself, struggle with.

To assist with understanding the complexities of cytopathology, this book offers a logical and comprehensive approach to the topic, dividing the text into chapters for each specimen site. It includes all the routine cytology specimens, such as thyroid, cervical and respiratory tract fluids, and also covers some of the less commonly encountered specimens that you might not see in everyday practice, such as aspirates from bone and soft tissue.

In each chapter, the common inflammatory, benign and malignant conditions are addressed in a systematic and structured manner. Many chapters include an overview of the different sample types you might receive, give details of current molecular techniques and provide a thorough description of what samples from normal tissue should look like. An additional chapter detailing the practicalities of fine needle aspiration technique and specimen handling has also been added since the last edition.

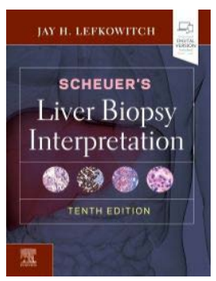
In my opinion, the best feature of this textbook is the number, size and quality of the images used, allowing an excellent representation of nuclear and cytoplasmic detail. The majority of the cytological images are of Papanicolaou- and Romanowsky-stained slides, both of which are often featured side by side for a useful comparison.

Another good feature of this book is the use of easy-to-read and bullet-point boxes throughout, which break up the text and allow a quick look-up of the cytomorphology and differential diagnoses for each condition.

Perhaps the only potential pitfall for UK-based pathologists using this text is that this book is written by authors practising in the USA, so the reporting terminology used may not always line up with the reporting terminology recommended by the Royal College of Pathologists.

Regardless of this caveat, I would highly recommend this book to all pathologists, especially those working towards the Part 2 exam. I believe it could be of educational value, whether you choose to read the text cover to cover, or use it to flick through and look at some of the beautifully presented images.

Dr Hannah Hawrot
Histopathology Registrar
St James's University Hospital, Leeds



BOOK REVIEW Scheuer's Liver Biopsy Interpretation

By Jay H Lefkowitch
Elsevier, 2020

£134.99, 464 pp, hardback
ISBN: 978-0702-07584-1

It is no secret that liver pathology is one area that trainee histopathologists often find challenging. Limited exposure to this tertiary specialism means that it can often seem overwhelming or at least unfamiliar, so can the right choice of textbook help?

Well yes it can, at least in part ... and based on its stated purpose, *Scheuer's Liver Biopsy Interpretation* (now in its tenth edition) should be that choice. Aiming 'to help those who need to interpret liver biopsies', for the last 50 years this reference has set out to provide 'technical tips, diagnostic clues and pearls' on all aspects of liver biopsy pathology. So, how does it perform?

The book itself is well organised and easy to navigate with chapters, as expected, comprising all the major areas of liver pathology, including transplant-related changes and those diseases seen in children and in pregnancy.

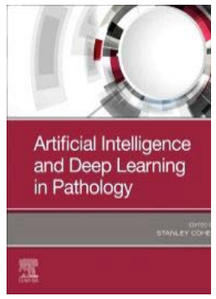
The introductory chapters, covering principles of biopsy assessment, the normal liver and patterns of liver injury, are particularly well written and throughout the book there are numerous, large, high-quality photomicrographs that illustrate key points. The 'differential diagnosis of individual findings' section will prove particularly useful for those at the early stages of training, enabling trainees to assess the findings they have identified and begin to triage potential aetiologies.

This latest edition has been updated to reflect the increasing importance of molecular medicine in liver pathology. The discussion of the genetic changes associated with liver tumours (chapter 11) is comprehensive without being overly complicated. Indeed, where this book succeeds is in the presentation of information in easy-to-use tables and algorithms, which will be appreciated by those revising for exams. However, those looking only for bullet points and lists will be disappointed; this book is more similar to the lectures of a knowledgeable, yet kindly, scholar whose narrative style will appeal to some, and likely frustrate others.

In the preface to this book, the author pays homage to Professor Peter Scheuer, Professor of Pathology at the Royal Free Hospital and author of the first edition of *Liver Biopsy Interpretation*, and describes how much of his original text remains today. It strikes me that this philosophy, of keeping what works and updating that which has changed, is key to this book's success.

It will indeed be useful to all those who 'interpret liver biopsies', whether trainees or specialists. Uniquely for a histopathology textbook, those clinicians who care for patients with liver disease will also find it to be an accessible and user-friendly resource to be consulted as required. I will certainly be recommending this book as a 'must-buy' for our trainee library.

Dr Kathryn Griffin
Specialty Registrar/NIHR Clinical Lecturer
Leeds Teaching Hospitals Trust



BOOK REVIEW Artificial Intelligence and Deep Learning in Pathology

By Stanley Cohen
Elsevier, 2020

£74.99, 288 pp, paperback
ISBN: ISBN: 978-0323-67538-3

Artificial intelligence (AI) is being used in radiology in many ways. Now, with increasing use of digital pathology, histopathology is ripe for further innovation. There are workforce shortages within pathology, so AI-led pathology services could potentially have tangible benefits to the patient.

In this book, Professor Cohen has collected contributions from some of the foremost individuals working with AI and pathology in the USA. They have identified an existing gap in the literature between overly basic explanations of AI for the layperson, and highly technical manuals. This book fills that gap and introduces AI to pathologists.

I began with minimal knowledge of software and fading recollections of school mathematics. I therefore appreciated that the contributors assumed no such knowledge and kept tricky equations to a minimum.

The book is easy on the eye. The chapters are broken into digestible chunks with plenty of images and graphics. The opening few chapters provide a background of AI and deep learning in general. This would be of interest to non-pathologists as well. Interesting nuggets of information are scattered throughout. For example, I was intrigued to learn how 'hidden layers' meant that neither the human operator nor the machine could really tell how a deep learning program had arrived at a decision.

The later chapters relate these techniques to histopathology and go through some of the issues specific to this. Problems with staining and artefact, which the human mind has learnt to ignore, would need complicated and ingenious techniques to overcome. I found the chapter on whole slide imaging and deep learning particularly useful, given the current transition to digital pathology.

The ideas explored in the book are necessarily complex and unfamiliar to many pathologists. The contributors have made these accessible and reduced them to more understandable concepts, for example using the biological neuronal pathways as analogies.

AI will influence and change innumerable professions and aspects of society, from self-driving cars to construction. Prof Cohen asserts that AI will be an assistant and will not replace pathologists – and I leave you to consider your own views on this.

We do, however, need to understand AI and adapt to it. This book is a great introduction, as well as a stimulating read. It is recommended for those interested in AI, software or the future of pathology.

Dr Niall O'Neill
ST2 Histopathology Trainee
Royal Victoria Hospital, Belfast

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Advances in Transfusion Medicine: a virtual conference

The College's 2020 Advances in Transfusion Medicine conference highlighted the depth and range of support transfusion services provide to the wider NHS. Cath Booth and Jo McCullagh give an overview of this fascinating one-day virtual event.

Dr Cath Booth

Jo McCullagh

Adapting to a virtual conference

The Royal College of Pathologists' biannual 'Advances in Transfusion Medicine' conference scheduled for November 2020 had been two years in the planning since 2018's event. Organisers and delegates alike had been eagerly anticipating two days of listening in a packed lecture hall to the latest transfusion research and topical debates from leaders in the field, while enjoying opportunities for networking, perusing posters and partaking of the College's first-rate refreshments.

In the event, the lecture theatre sat empty and the only coffee came from our own kitchens, but the 250 registered delegates were not to be disappointed. The wonder of Zoom brought those same high-calibre speakers directly to us, in a rich one-day virtual programme. Even the posters showcasing the work of promising young investigators could be viewed electronically on the College website.

Molecular advances

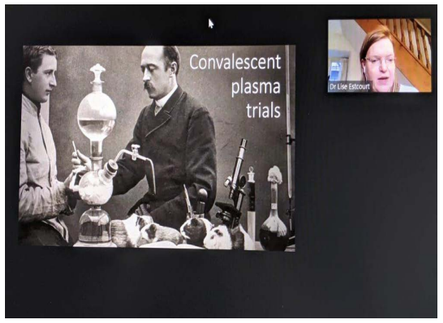
The day began with talks on the use of molecular genetics in the field of transfusion medicine, highlighting that molecular genetics is not the science of tomorrow: it is here today.

Professor Martin Olsson, introduced by the College President Mike Osborn, delivered the Foundation lecture, taking us on a tour of the past, present and future of blood grouping. The genetic revolution and international collaborations have led to great advances in the discovery of new blood groups.

Professor Willem Ouwehand continued with the theme of genomics in his talk on the 100,000 genomes project and also touched upon the future potential of introducing molecular techniques into routine hospital transfusion testing in the UK

Evidence-based clinical practice: the future beckons

The management of major haemorrhage in trauma and obstetrics was explored in two talks. Dr Laura Green gave an overview of the UK's progress in introducing a whole blood component for the management of traumatic major haemorrhage and explored the practical implications. Professor Peter Collins talked about the management of obstetric major haemorrhage and work to identify the most appropriate components to support the management of bleeding in this setting. Both sessions brought home the level of inter-organisational collaboration and multidisciplinary teamwork required to support national research programmes to improve outcomes for these patients.



Dr Lise Escourt discusses convalescent plasma and the trials in progress.

Further talks showcased the developments in treatment and management of haematological conditions. Dr Banu Kaya discussed some of the trials and developments in the treatment of sickle cell disease – an area that has recently received a much-needed surge in research interest.

In his fascinating *Star Wars*-themed talk – 'Tumour Wars, the lymphocyte awakens' – Dr James Griffin discussed the research and success stories of CAR T-cell therapy. Dr Quentin Hill summarised new directions in the management of autoimmune haemolytic anaemia, a challenging condition for which, thankfully, many agents are now under trial.

COVID-19: convalescent plasma trials

In 2020, it was essential to discuss COVID-19. Dr Lise Escourt delivered a session on convalescent plasma and highlighted how well hospitals and the transfusion services in the UK are set up to support national trials and research. As a result of this we heard that the RECOVERY and REMAP-CAP trials are two of the biggest in the world looking at the efficacy of convalescent plasma. We wait with baited breath for the results.

Hearing from the coalface: the transfusion practitioner perspective

One of the most affecting talks of the afternoon came from experienced transfusion practitioner (TP) Wendy McSporran, who described the practical challenges of implementing patient blood management (PBM) recommendations. She spoke of being overwhelmed as recommendations come thick and fast, with no advice on how to prioritise. She also explained the significant burden national comparative audits placed on TPs – an estimated 9,700 hours (five years) of person-hours to collect data for the six studies in the last two years.

Attendees taking part in one of the many discussions during the conference.

Her words should make all of us involved in creating guidelines or designing surveys pause to reflect and put ourselves, for a moment, in the shoes of the end user.

Recommendations should be realistic, with clear outcome measures. Surveys should focus on areas where we can change practice, with reports that give something back to our frontline teams. Transfusion 2024, a five-year plan for clinical and laboratory transfusion practice, includes a call for a national TP competency framework as well as benchmarking of TP staffing numbers, which is welcomed across the transfusion community.

Patient blood management: one size doesn't fit all

Dr Simon Stanworth spoke about evidence-based PBM, especially highlighting areas of uncertainty where further research is needed. Transfusion research has blossomed in the last 20 years, with increasing numbers of good-quality randomised trials.

One thing these trials clearly illustrate is that one size does not fit all, so the more groups we study, the more evidence we will have to tailor transfusion to the individual. For example, do our widely cited restrictive thresholds apply to all patient cohorts? Should we have different major haemorrhage protocols depending on the cause of bleeding?

This emphasises that guidelines are not rules, and every transfusion decision needs to consider that particular patient's circumstances and symptoms. We were also reminded of the important role of trust transfusion teams in disseminating findings from major clinical trials, and particularly the psychology involved in encouraging other clinical teams to make changes.

Young investigators

We heard presentations from two young investigators. Dr Strachan Mackenzie shared his insights into the increase in 'wrong blood in tube' samples during the COVID-19 pandemic, which, judging by comments in the 'chat' box, was something many in the audience had also experienced.

Tom Scorer described his laboratory work on the functional properties of cold-stored platelets transfused to patients undergoing cardiac surgery. Trials are under way in clinical practice, with potential implications for hospital blood banks.

Celebrating the UK Serious Hazards of Transfusion Haemovigilance Scheme

Dr Shruthi Narayan summarised the achievements of the Serious Hazards of Transfusion (SHOT) haemovigilance scheme over the last 24 years. We take SHOT for granted but should remember that this is a pioneering scheme that has been the model for many others across the world. It has yielded significant improvements in patient safety and we can all continue to contribute by submitting reports and taking on board the learning messages

Percy Oliver award: another worthy recipient

This award was set up in the memory of Percy Lane Oliver, who developed the world's first voluntary blood donor service, to recognise medical, scientific and lay achievements in transfusion medicine. This year's recipient was Dr Heidi Doughty for her outstanding contribution to the fields of military and indeed civilian transfusion

An enjoyable and informative day

This was an interesting and varied day with some great discussions among the speakers and audience. Talks ranged from cutting-edge research with the potential to lead to wide changes in patient care to those that concentrated on the day-to-day issues experienced by many in the hospital transfusion community.

Finally, the poster session and talks delivered by the young investigators showcased the up and coming talent in transfusion medicine. We had a tantalising view of how transfusion might look in the future, and we look forward to meeting again in 2022 (perhaps face to face) to see what further strides have been taken.

Dr Cath Booth
Consultant Haematologist
NHS Blood and Transplant and Barts Health NHS Trust, London, UK

Jo McCullagh
Principal Clinical Scientist – Blood Transfusion Clinical Lead
Bolton NHS Foundation Trust, Greater Manchester UK

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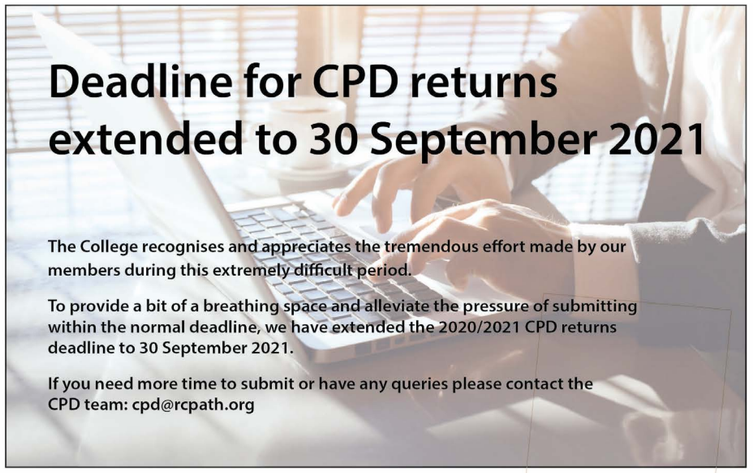
NOTICEBOARD



Legacies

Daniel Ross

The objectives of the College are to develop and maintain high standards of pathology education, training and research; promote excellence and advance knowledge in pathology practice; increase the College's influence through a clear, coherent, professional voice; and resource the future of the College. Financially, the College aims to match activities to projected income. The College is funded from subscriptions, examinations and related fees, investment income, grants from outside bodies and charitable donations.

Bequests or legacies are always gratefully received. Leaving a gift to charity in your will is a very special way of helping to secure the future for organisations such as the Royal College of Pathologists. Legacies to the College have the added benefit of being exempt from inheritance tax.

An open legacy may be made toward the general purposes of the College. This is preferred because it allows the College to apply the funds donated where the need is greatest at the time the legacy eventually becomes available. This can be quite different from the perceived need when a will is made. However, you may legally oblige the College to spend the money in a particular area of College work or for a specific purpose by making a restricted legacy.

The College undertakes many educational initiatives. We are actively undertaking an outreach programme that spreads the awareness of pathology throughout the UK and abroad. No other UK college has committed so much time and resources to the future of our profession. This will promote the importance of pathology to the grass roots of this country through schools, colleges, hospitals and many other sites where the general public can have access to important healthcare information. If we are to safeguard the future of our profession in the face of increasing competition from other medical and science career opportunities, it is vital that we commit ourselves to the promotion and awareness of pathology, and continue to train our young professionals to the very highest standards.

This public engagement programme will require financial support from the College for years to come and we hope very much that we can build on the tremendous support you have already given and ask if you would consider leaving a legacy. Additions to your existing will can be made using a 'Form of codicil', available on our website. Alternatively, please write to us and we will be happy to post you a copy.

Please note that witnesses should be present when you sign the form, but it should not be witnessed by a College member or the spouse of a College member. We recommend consulting a solicitor or qualified will-writer before making a will; they should give you all the legal and tax advice that you require.

If you are considering including a legacy to the College in your will, we would very much appreciate being informed of your generous act. To inform us of your bequest or for specific advice on legacies to the College, please contact me.

Daniel Ross
Chief Executive
(daniel.ross@rcpath.org)

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Form of codicil

(Please photocopy and complete in block capitals)

I .....(name) of .... (address) declare this to be a Codicil, which I make this ..... day of ..... 20..... to my Will, which bears the date ..... day of .....(month) .....(year).

I give to the Royal College of Pathologists ('the College'), registered charity number 261035, the sum of £..... (amount in words) .... free of all taxes whether payable in the United Kingdom or in countries overseas for the general purposes of the College and I declare that the receipt of the Honorary Treasurer for the time being of the College shall be sufficient discharge to my executors.

In all other respects I confirm my said Will. In Witness thereof I have hereunto set my hand the day and year first written above.

Signed by the Testator/rix: ..... (signature) as a Codicil to his/her last Will in our joint presence and by us in his/hers.

FIRST WITNESS: .... (signature of first witness)

Name and address: .....
.....
.....
.....

SECOND WITNESS: ..... (signature of second witness)

Name and address: .....
.....
.....
.....

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College conferences

PATHOLOGY AND THE ENVIRONMENT - VIRTUAL EVENT
11 FEBRUARY 2021 + ICAL
1 CPD CREDIT

MEDICAL EXAMINER ANNUAL CONFERENCE - VIRTUAL EVENT
27 APRIL 2021 + ICAL
6 CPD CREDITS

THE BEAUTIFUL BRAIN
15–16, APRIL 2021 + ICAL
To be held in London - North, Central and East London , The Royal College of Pathologists
13 CPD CREDITS

UPDATE ON PLACENTA: PHYSIOLOGY AND NEW CONCEPTS
17–18, JUNE 2021 + ICAL
To be held in London - North, Central and East London , The Royal College of Pathologists

CPD-accredited events

22 JANUARY 2021 — **Into clinical practice: Pneumonia**
LONDON - NORTH, CENTRAL AND EAST LONDON 6 CPD CREDITS EXTERNAL EVENT

10 FEBRUARY 2021 — **British Association of Urological Pathologists Virtual Bladder Pathology Course**
9 CPD CREDITS EXTERNAL EVENT

21 APRIL 2021 — **Non Operative Breast Pathology Update Course**
5 CPD CREDITS EXTERNAL EVENT

RCPath CPD accredited online resources can be found here

To see all 2021 conferences visit our website.

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Pathological Society of Great Britain and Ireland

Pathological Society
Understanding Disease — Guiding Therapy

The Pathological Society of Great Britain and Ireland offers a wide range of grant schemes.

EDUCATION GRANTS/COMPETITION	
Bursaries for undergraduate elective or vacation studies (available to Associate Undergraduate Members of the Society)	**27 February & 28 April**
Education Grant	**1 April & 1 October**
Intercalated Degree (available to Associate Undergraduate Members of the Society)	**NEW date: 1 October**
Student Society Bursary Scheme (available to Associate Undergraduate Members of the Society)	**Open**
Undergraduate Essay Competition (available to Associate Undergraduate Members of the Society)	**31 August**
New for 2020	
Jean Shanks/Pathological Society Summer Studentships	**1 March, 1 July & 1 October**
RESEARCH GRANTS	
Best Trainee Research Impact Award	**1 October**
Best Trainee Research Paper Award	**1 October**
Consultant's Pump-Priming Small Grants Scheme	**1 April & 1 October**
CRUK/Pathological Society Predoctoral Research Bursary	**26 March & 17 September**
Cuthbert Dukes Grant	**1 April**
Early Career Pathology Research Grant – Hodgkin & Leishmann	**1 April & 1 October**
Equipment Scheme	**1 April & 1 October**
International Collaborative Award	**1 October**
PhD Studentship	**1 October**
Post-Doctoral Collaborative Small Grant	**1 April & 1 October**
Trainees Collaborative Small Grant	**1 April & 1 October**
Trainees-Clinical Scientist Partnership Grant Funding Scheme in Morpho-Molecular Pathology	**1 October**
Trainees' Small Grants Scheme	**1 April & 1 October**
Visiting Fellowships	**1 April & 1 October**
TRAVEL GRANTS	
Pathological Society Meeting Bursaries	**31 May & 31 December**
Pathological Society Meeting Bursaries for undergraduate	**31 May & 31 December**
Travel & Conference Bursaries	**Open**
JEAN SHANKS/PATHOLOGICAL SOCIETY (JSPS) RESEARCH GRANTS	
Pre-Doctoral Research Bursary	**1 April & 1 October**
Clinical PhD Fellowship	**1 April & 1 October**
Clinical Lecturer Support Grant	**1 April & 1 October**
Intermediate Research Fellowship	**1 April & 1 October**
New for 2020	
Clinical Lecturer Grant	**1 April & 1 October**
Clinical Academic Research Partnership (CARP)	**1 April & 1 October**
OTHER GRANTS	
Open Scheme	**1 March, 1 June, 1 September & 1 December**
Pathological Society Meetings Bursaries	**31 May & 31 December**
Public Engagement	**1 March, 1 June, 1 September & 1 December**

Full details are available on our website: www.pathsoc.org or from:
Julie Johnstone, Deputy Administrator, Pathological Society of Great Britain and Ireland. E: julie@pathsoc.org
Manchester Pathology 2021 – fully virtual meeting, 6–8 July
Due to the COVID-19 crisis, grant deadlines may be changed and/or rescheduled. Please refer to our website for updates.

www.pathsoc.org

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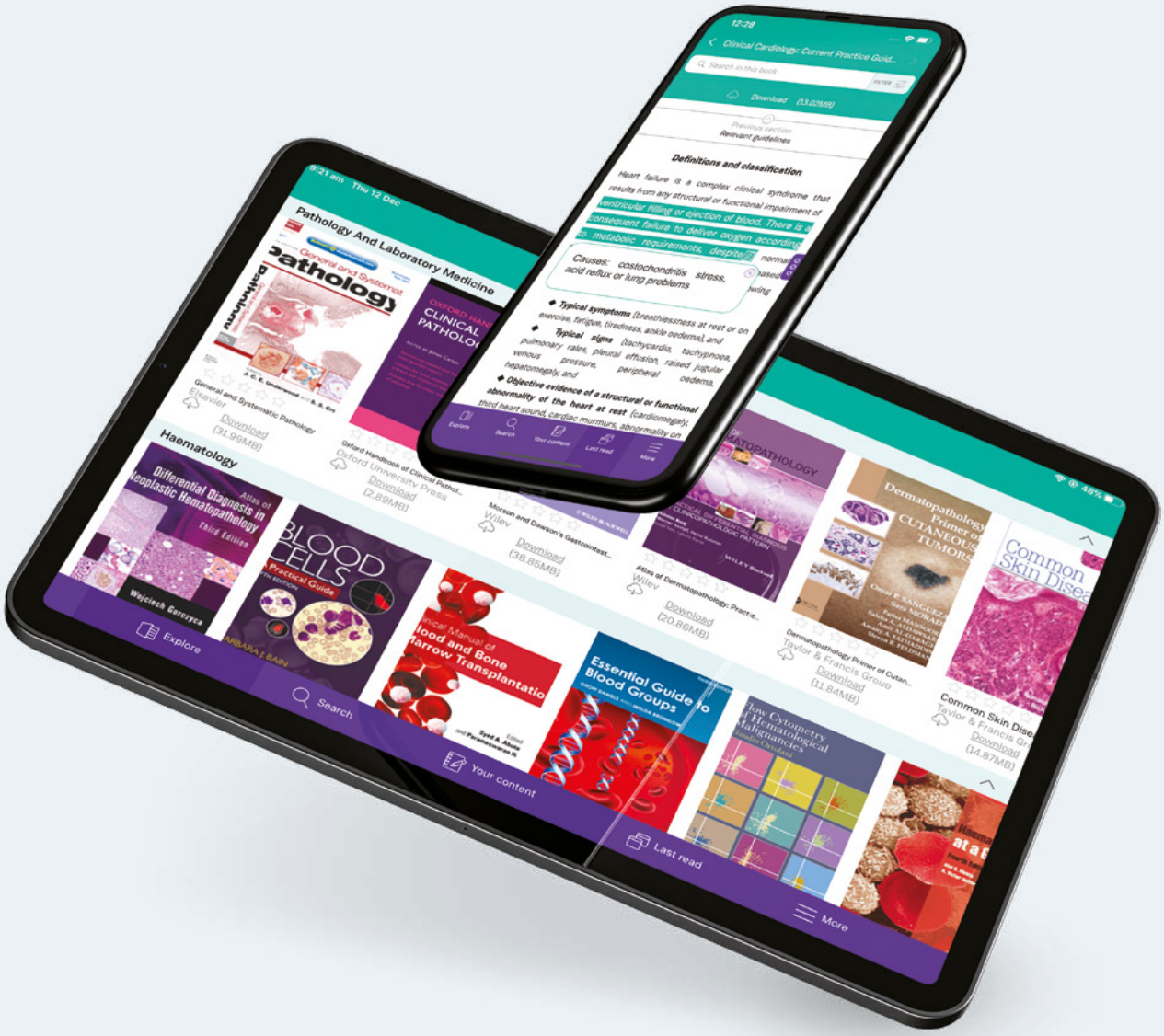

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