ACB News

The Association for Clinical Biochemistry & Laboratory Medicine | Issue 677 | June 2022

In this issue

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ACB News

The bi-monthly magazine for clinical science

Issue 677 • June 2022

The Association for Clinical Biochemistry & Laboratory Medicine

Better Science, Better Testing, Better Care

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Message from the President

The impact of Brexit/the Pandemic/Ukraine on inflation, supply chains, the energy market and the overall economy means that life is getting much tougher for everyone. This could not come at a worse time for healthcare in the UK, notably for the NHS, with much needed huge investment in infrastructure and additional staffing unlikely to materialise anytime soon. Despite such doom and gloom, this is where the value of Laboratory Medicine in optimising patient pathways and outcomes is so important. Sharing great ideas, innovations on how best to provide services, bids for funding and new staff skill mixes is something we need to collaborate on as much as possible – coming soon is a new web presence to showcase and share such ideas, and why not apply for our new Impact Award at UKMedLab22.

In recent years we have seen a significant growth in testing being offered direct to the public from the private sector. While there is a place for such activity, especially given the difficult challenges across the NHS, we need to ensure that testing is appropriate, affordable and provided with the same standards of quality that we would expect across the NHS. In addition, much needed standardisation in providing test results and public access to informed interpretative advice is vital. The ACB, along with other organisations, is planning a policy statement and will investigate options for further patient centric work, as part of the evolution of on Lab Tests Online.

Workforce planning for doctors and scientists working in Laboratory Medicine has been extremely poor in recent years, despite good efforts by the ACB, RCPath and others. Basic UK level data on number of existing posts, number of Trainees, attrition and retainment impacts,

retirement profiles and current and future workloads are simply not available. Survey attempts provide only patchwork information while Foundation Trusts in particular remain unengaged, hiding behind data laws and commercial sensitivity. The ACB and the RCPath are now working together to improve data intelligence and hope Pathology Network level data in England can be pulled more efficiently and complement already existing good data from the devolved nations. We all have a vital role in supporting and contributing to such data collection, so that the strongest possible case can be made for future training and substantive posts across healthcare.

UKMedLab22 takes place in early November – look out for opportunities to submit abstracts to be considered for poster presentations, competitions, awards and other prizes.

Finally, summer is upon us, the first one for three years with most of the pandemic restrictions lifted – hopefully you all get the opportunity to go on a well-deserved break. ■

Bernie Croal, ACB President

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CEO Update

As we head into summer the staff team are excited to be working on several new initiatives that will roll out over the coming months.

The pilot of the mentoring programme is underway, and mentors and mentees have been invited to browse the platform and sign up to get started on your mentoring journeys.

Two dedicated working groups from the membership will report to the Executive Committee and Council this month on progress so far on the rebranding of the ACB and the development of a new membership offer and pricing structure. Our ambition is to rebrand the ACB to reflect our strategic goals and to simplify and add value to the membership offer. You'll hear more at our AGM in July with a view to putting the changes in place for 2023.

We are testing the Laboratory Medicine Learning Academy concept with a limited cohort of learners and a pilot module on Laboratory Method Evaluation which will be live by the end of the month. We are hopeful that Health Education England will provide further funding to expand the offer to members in 2023.

Health Education England have also agreed to fund the development of a course on Whole Genome Sequencing which we will be delivering in partnership with Great Ormond Street later in the year. Watch this space for further details of this free course.

Work on the next version of Lab Tests Online continues with a funding application in to Innovate UK and additional development support from

IBMS and the Royal College of Pathologists. This is a truly collaborative project that has the potential to significantly increase the profile of laboratory medicine with the public and government. In the meantime, the existing Lab Tests Online website will transfer to us at the end of the year and we continue to build links with the NHS to provide information support for patients accessing their results digitally from this year.

On the staff front we have been joined by Ioana Andrei who will be leading our marketing and comms activity and Giustina Marilli joins us later this month to undertake PA duties and manage regional events and training days.

We look forward to working with you over the coming months and hope to see you at UKMedLab22 in November. In the meantime, enjoy the summer.

RANDOX
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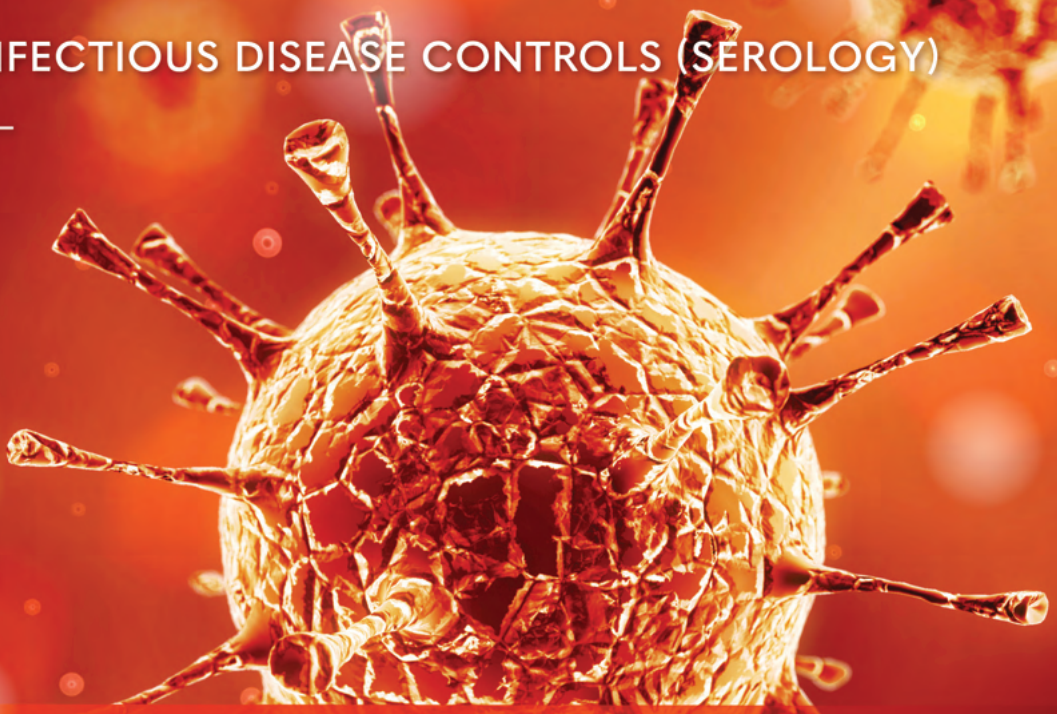

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Annual General Meetings

The AGMs for the Association for Clinical Biochemistry and Laboratory Medicine (ACB) and the Federation of Clinical Scientists (FCS) will take place on Wednesday 13th July 2022 at 1.30 pm via Microsoft Teams.

A notice will be sent to all Members in advance, including the Annual Report, agenda, minutes from previous AGMs and notice of special resolutions.

One of the main topics to be discussed at the AGM will be a review of the ACB's membership offer – an indepth piece of work that our Members and Committees have been involved in for several months.

We've looked at the structure of the membership offer, a rebranding of the Association and other forward-thinking proposals that members will be able to consider at the AGM. There are new benefits to being a member of the ACB on the horizon!

This is a very exciting time for the organisation and we look forward to discussing our past, current and upcoming developments with our members. We hope to see you there! ■

ACB online bookstore

The ACB recently launched an **online bookstore** on Amazon through which members and the public can buy our publications at a discounted rate. If you are interested in purchasing one of our books you can simply visit **ACB's Bookstore** to browse our initial selection. You will find some popular titles like *Clinical Cases and Laboratory Medicine*, *Neonatology and Laboratory Medicine*, among many others. We are also planning reprints of popular titles and new titles which may be of interest to members so please feel free to **contact us** with your suggestions. ■

Sudoku

This month's puzzle

S	I						C	Y
			M	T	I			
		H		M		E		
			T		R			
	Y		E		S		H	
C	T						M	E
E	S						I	H
			Y		T			

Solution for April

C	T	R	E	S	Y	H	M	I
E	M	Y	H	I	R	S	T	C
H	I	S	C	M	T	R	Y	E
I	R	H	M	Y	C	E	S	T
S	Y	E	T	H	I	C	R	M
T	C	M	S	R	E	I	H	Y
M	E	I	R	T	S	Y	C	H
Y	S	T	I	C	H	M	E	R
R	H	C	Y	E	M	T	I	S

Laboratory Medicine Learning Academy

The ACB has proposed to Health Education England, East of England (HEEOE) a two-year pilot to design, launch and test the new Laboratory Medicine Learning Academy.

Once operational, this will provide a blended learning experience, including online training courses, live lectures and webinars. On top of that, it will act as a repository for educational resources, such as selected scientific presentations, lectures and management training programmes from national and regional ACB events.

Whilst awaiting confirmation of funding, we are entering an early test phase and have an exclusive opportunity for a limited number of ACB Members to test the learning platform. In exchange for early access, the test group will provide constructive feedback, helping to assess the programme, develop further modules and roll out an effective resource to the membership later in the year.

There are test user spaces remaining. If you are an ACB Member in training and wish to gain early access to the Laboratory Medicine Learning Academy, please contact Mike Lester at **mike@acb.org.uk**

The test phase will launch this month with the module Laboratory Method Evaluation.

Laboratory method evaluation is a critical step in providing a safe and effective laboratory service for patient care. At the core of method evaluation is the assurance that a method is fit for the purpose for which it is intended. The principle is at the heart of ISO15189 accreditation.

The first step in method evaluation is the setting of a quality standard to which the test must perform, this is the specification of the fitness of purpose. The next step is deciding if a validation or a verification exercise is required.

The terms are different. Validation refers to confirming that a laboratory developed test is producing accurate and reliable results. In contrast, verification ensures that a method is performing according to specifications outlined by the manufacturer.

Finally, results are produced and compared to the initial target specification to determine if a method is fit for its intended purpose and can be applied to the clinical setting for which it is designed.

Laboratory Method Evaluation learning outcomes

- How to select appropriate targets
- Validation and verification experimental design
- Evaluation of experimental data and comparison to target values.

Abbott

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IT'S THE FIRST LAB-BASED MILD TRAUMATIC BRAIN INJURY (mTBI) BIOMARKER ASSAY OF ITS KIND.

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*Alinity i TBI is used in conjunction with other clinical information.

REFERENCES: 1. Alinity i TBI H22974R01. Instructions for use. Abbott Ireland Diagnostics Division. Sligo, Ireland; October 2021. **2.** Data on file at Abbott. **3.** Bazarian JJ, Biberthaler P, Welch RD, et al. Serum GFAP and UCH-L1 for prediction of absence of intracranial injuries on head CT (ALERT-TBI): a multicentre observational study. *Lancet Neurol*. 2018;17(9):782-789. doi:10.1016/S1474-4422(18)30231-X **4.** Wang KKW, Kobeissy FH, Shakkour Z, Tyndall JA. Thorough overview of ubiquitin C-terminal hydrolase-L1 and glial fibrillary acidic protein as tandem biomarkers recently cleared by US Food and Drug Administration for the evaluation of intracranial injuries among patients with traumatic brain injury. *Acute Med Surg*. 2021;8(1):e622. doi:10.1002/ams2.622 **5.** Bazarian JJ, Welch RD, Caudle K, et al. Accuracy of a rapid GFAP/UCH-L1 test for the prediction of intracranial injuries on head CT after mild traumatic brain injury. *Acad Emerg Med*. 2021;10.1111/acem.14366. doi:10.1111/acem.14366 **6.** Michelson EA, Huff JS, Loparo M, et al. Emergency department time course for mild traumatic brain injury workup. *West J Emerg Med*. 2018;19(4):635-640. doi:10.5811/westjem.2018.5.37293

For In Vitro Diagnostic Use.

Membership Review

The changes that have taken place in Laboratory Medicine over recent years cannot be overstated. Yet, the last time the ACB made significant changes to its membership structure and offer was in 2008/9. At the Council meeting in March 2022, our leaders posed the question: is it time to review what we offer our membership?

Thus began a process of forming a task group for the membership review, made up of self-nominated members. The volunteers spanned varied Laboratory Medicine specialities, regions and career stages and included Trade Union and Retired Members.

Starting on 30th March 2022, workshops took place that reviewed the ACB's current membership benefits and member feedback gathered through recent surveys. We began exploring what could be offered in the future, as well as how we are serving different categories of professionals.

This was a useful exercise as we mapped out the components of an ACB membership from a member's point of view, including both tangible and intangible benefits.

Key principles that were agreed included a simplification of the membership structure, engaging members from a diverse range of institutions, delivering cost-effective and high-value services, as well as diversifying the range of subscription payment options.

The task group presented a proposal for an improved membership structure to the Council on 31st May 2022. The next step is for the Council to take recommendations to the Annual General Meeting on 13th July 2022.

We're all looking forward to sharing the outcome of this intensive membership review with our members and begin a new chapter for the ACB. ■

Condolences

It is with great sadness that we must inform you of the death of Professor Jim Shepherd who passed away on 26th April 2022. Jim worked in Clinical Biochemistry in Glasgow Royal Infirmary, establishing the Lipid section of the department from 1977. He was appointed as Head of Department in 1988 and received the ACB Foundation Award in 1999. ■

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EDI Working Group Member profile

Dilini Peiris – Clinical Scientist and ACB Ordinary National Member, University Hospitals Southampton NHS Foundation

I am a Clinical Scientist in Biochemistry at University Hospitals Southampton NHS Foundation Trust. Having completed the STP programme in 2018 after obtaining an MSc in Biomedical Sciences from the University of Southampton, I am now in the fifth year of my post working towards the FRCPath in Clinical Biochemistry.

I have a specialist interest in Trace Elements and ICP-MS and am developing technical as well as clinical experience in these areas, participating in the Trace Elements Supra-Regional Assay Service Group. I am also keen to raise the profile of Pathology within the Trust as well as the wider community, by improving its interconnectivity between disciplines and departments both publicly and online. To this end, I am heavily involved in the Trust's Equality, Diversity and Inclusion (EDI) agenda. As a British-born Sri Lankan,

I have had the best of both worlds; the fusion of two very different cultures, and thus exposure to a huge variety of experiences, influences and insights, which of course also comes with a real appreciation of the barriers and obstacles that exist. I am an active member of the Trust's One Voice Network (staff group for ethnic minorities) as well as the LGBTQ+ network and have been involved in reciprocal mentoring with the Chief Operating Officer for the Trust. This has been particularly valuable, with the focus being on EDI, actionable allyship and effective leadership.

I was appointed ACB Ordinary National Member in 2020, viewing it as the ideal opportunity to be part of the ACB's mission of promoting the highest standards in laboratory testing, with a particular interest in progressing its profile on diversity, inclusion and public engagement. I consider these all as important agendas for the ACB and its future, particularly considering current global events and the continuing pandemic. I have recently been asked to participate in the ACB's EDI Working Group; a prospect I am extremely excited about. I see it as a great chance to help improve the visibility of the ACB's EDI strategy, as well as the opportunity to encourage much needed conversations within our professional community. ■

I remember when . . .

by Gordon Challand

We think that Clinical Biochemistry is a relatively new subject, but the carved Physician's Tablet in Kom Ombo Temple on the Nile shows an unmistakeable urine collection pot (the shape hasn't changed for more then 2000 years). The Egyptians had developed a bioassay for glucose by pouring urine on the sands of the desert and counting the number of ants which collected around it. Probably at a similar date, the Chinese had developed a physico-chemical method for urine protein by beating the sample with a bamboo stick to see if a lasting froth could be produced. I haven't tried either of these since there are no desert sands or bamboo sticks in Berkshire, but I have tried panning for gold in a sample from a spoil heap in Alaska, and even managed to extract a few milligrams. Gold Dredgers were of course an early example of automation in a physico-chemical technique.

Falstaff: *'Sirrah, you giant, what says the doctor about my water?'*
Henry IV part 2, Shakespeare

I started my Clinical Biochemistry career in 1970 at St Bartholomew's Hospital in London. The staff didn't know what to make of someone with a PhD who wanted to work in the diagnostic laboratory, so found me a job befitting my status: measuring the volume of 24 hour urine samples. I graduated to operating a Technicon AutoAnalyzer, dabbled with computer programming and quality control techniques, used some traditional chemical methods for hormones (although I was never allowed to try the Mattingly method for plasma cortisol) and learned the rudiments of a very new technique at the time, radioimmunoassay.

From there I moved to Glasgow to help set up the RIA Unit based at Stobhill Hospital and developed the first semi-automated assays for thyroxine and tri-iodothyronine, and then on to Cambridge to set up the Regional Hormone Assay Service. This was much needed because the mice required for the classical mouse uterine weight bioassay for gonadotrophins had produced no results for 14 months as they had stopped breeding. I then moved to more research, developing radioimmunoassays at St Bartholomew's Hospital and then moved to Charing Cross Hospital to help with the evaluation of the American Monitor Parallel analyser. The official evaluation protocol had been set up some 25 years before and was designed for the first mechanically simple automatic analysers; it contained no assessment of mechanical reliability so was not entirely suitable for modern automatic equipment. However, I realised the importance of political consideration with high level decision making, and managed to have a letter published in *The Guardian* under the sub-heading of 'Taking the Urine Sample'; and realised I had an alter ego: a conference of witch doctors was held in Tanzania organised by a certain Doctor Gordon Challandula.

I finally settled at the Royal Berkshire Hospital in Reading where a chance remark from a Chinese visitor set me off on a new direction. She was fascinated by the concept of a Duty Biochemist adding interpretative comments to a report, but simply asked 'how do you know your comment is correct?' This led to the initiation of 'Cases for Comment' distributed through the ACB mailbase. When I started this, I thought that every Case would lead to a clear consensus comment which would obviously be the most

appropriate response, but the opposite happened and I realised how important education in commenting was. Cases for Comment proved very popular, with contributors from 28 different countries, but if I had realised how much work would be involved I would never have started! After 100 Cases I moved it to a formal UK NEQAS scheme, but had not expected how controversial this would prove, and it even attracted what some might describe as hate mail. I asked Tom Whitehead what the reaction was when he started analytical EQAS, and he said "for 5 years my in-tray was full of letters saying 'when you get the sample right, I will get the results right". He also observed that some laboratories would be better employed collecting random numbers. After circulating a further 150 Cases I retired from the Scheme and handed it over to younger minds, and I'm pleased to say it is still going strong 25 years after the first Case for Comment.

I came into lecturing quite by accident when, at a meeting I had organised, the lecturer failed to appear, and I had to extemporise a talk on trace metals, a subject I knew almost nothing about. Many years later, a colleague told me that I was the only person he knew who could talk for twenty minutes about something I knew nothing about. I can recommend learning how to do this; at times you can appear a total idiot, but sometimes there can be a very happy accident. At a meeting in Dublin, I was asked to join the team of experts reviewing Case presentations from members of the audience. The first Case concerned a lady whose biochemistry went pear-shaped after she gave birth; the Chairman turned to me and said 'what do you think, Gordon?'. I had no idea, so turned to the microphone and said to the audience 'Help!' This created some laughter and a round of applause, because perhaps inevitably the lady was suffering from HELLP syndrome. My reputation in Ireland was assured!

I had a little experience of setting practical examination when I did Voluntary Service at the University of Ghana, so was asked to help with practical examinations first for the MCB examination and later for MRCPath. In those days the practical examination was basically testing the candidates' ability to carry out a wide range of different techniques in a limited time, a little like cooking a five course dinner in three hours. Marks were often allocated on the basis of how close the candidate's results were to the mean value. Personally I thought that this approach was outmoded, and started trying to set practicals which required some thought. These practicals were certainly different, and afterwards I was sometimes phoned by a candidate's supervisor who asked 'was that practical one of yours, you ****?'

I also gained a fearful reputation as an examiner, because I would deliberately ask candidates questions to which I did not think they would know the answer (such as 'why is blood red?'). I simply wanted them to say 'I don't know', because in my opinion a candidate who thought they knew everything could be dangerous in a laboratory. However, I was totally disarmed by one charming candidate, who smiled at me and said 'If that happened in my laboratory, I would phone you and ask what the answer was'.

When I retired, I thought that I had had one of the best jobs in the world, but I am very glad I retired when I did. I made so many good friends and colleagues, too many to mention individually, and with some of whom I had the good fortune to work. It seems as though it was a golden age; and now we live in an environment where the prevailing philosophy is that every test is infallible, and anyone can carry out a laboratory test. I remember when I tried to rationalise urine dipstick testing on the wards at the Royal Berkshire Hospital. Afterwards I was phoned by one irate nurse who told me that half the tests I had recommended didn't work. I asked what she was doing and she said 'Sister told me to cut the strips in half to save money, and the bottom half works fine, but the top half doesn't work at all'. Enough said! ■

ACB new Members 2022

The ACB is proud to introduce you to our new Members who have joined us since the last edition of *ACB News,* and we hope everyone will extend a warm welcome to:

Hannah Turner, Royal Cornwall Hospitals NHS Trust
Anisha Mathew, Senior resident in Department of Biochemistry, Lady Hardinge Medical College, New Delhi
Eleanor Hickman, Trainee Clinical Scientist, Oxford University Hospitals NHS Foundation Trust
Alexander James Walton, Senior Clinical Scientist, University Hospitals Plymouth
Emma Keen, Trainee Clinical Scientist, The Royal Marsden NHS Foundation Trust
Azul Zorzoli, Trainee Clinical Scientist, NHS Lothian
Holly Ciesielczuk, Trainee Clinical Scientist, NHS Blood and Transplant
Faeiza Hussain, Senior Director Clinical Risk Management Lead, GSK (GlaxoSmithKline)
Amira Ibrahim, ST3 Chemical Pathology, St Helens and Knowsley Hospitals NHS Trust
Rebecca Ilyas, Healthcare Scientist, Manchester University NHS Foundation Trust
Wings Tjing Yung Loo, Medical Technologist, Essence Medical Laboratory, Hong Kong ■

Meet Ioana: our new Marketing and Communications Manager

Ioana (pronounced ee-wah-nah) joined us as Marketing and Communications Manager, in April 2022. Coming from a management consultancy, marketing and copywriting background, she now oversees the ACB's overall marketing strategy, as well as external communications with Members and the general public, such as event announcements, website content and certain membership publications.

Ioana is currently coordinating the marketing and communications for flagship ACB activities including UKMedLab22 and the organisation's Annual Report. She can be reached at **ioana@acb.org.uk** ■

Publication Deadlines

To guarantee publication, please submit your article by the 1st of the preceding month (i.e. 1st July for August 2022 issue) to:
editor.acbnews@acb.org.uk
We try to be as flexible as possible and will accept articles up to the 20th to be published if space allows. Otherwise they will be held over to the next issue. If we are aware that articles are imminent, this gives us more flexibility and we can reserve space in anticipation.
If in doubt, please contact Gina Frederick, Lead Editor, via the above e-mail. ■

LAB TESTS ONLINE UK

Your Trusted Guide

Peer Reviewed • Non-Commercial • Patient Centred

Produced by The Association for Clinical Biochemistry & Laboratory Medicine

With support from The Royal College of Pathologists
Pathology: the science behind the cure

IBMS

Lab Tests Online-UK is a non-commercial website written by practising laboratory medics and scientists with lay editorial review of content to ensure its suitability. The aim of the website is to help patients and the public, including healthcare professionals, understand the many clinical laboratory tests that are used in diagnosis, monitoring and treatment of disease.

LTO-UK fact of the month

Our editorial panel includes representation from all the major disciplines of Pathology and Laboratory Medicine to ensure that all of our content is correct at the time of writing and as up-to-date as possible. However, we're always looking for new editors and contributors, especially with expertise on new developments in the field. We also accept contributions for our news items on the front page about any stories about Laboratory Medicine that gain wider news exposure. If you want to find out more about joining the team, please contact us at the address at the bottom of the page.

Meet the Lab Tests Online-UK Board

Royal College of Pathologists Representative, Lance Sandle

Lance was born and educated in Leeds. After pre-registration posts at St James's Hospital he trained in general and Chemical Pathology in Manchester. He was Consultant Chemical Pathologist at Trafford General Hospital (and latterly at Manchester Royal Infirmary) from 1986 to 2020. Locally he served as Clinical Audit Chair, Clinical Director, Deputy Medical Director and Interim Medical Director. Lance continues to work as a vaccinator at COVID-19 vaccination clinics, together with his wife Linda who is a retired GP.

Lance was Director of Professional Standards at the Royal College of Pathologists 2007-2011, Vice-President for Professionalism 2014-2017 and is currently Registrar. He chaired the RCPath Informatics Committee 2017-20, on which he continues to sit. Within the College Lance has roles in committee governance, equality and diversity, and college representation on, and in collaboration with, outside bodies and sister organisations. Whilst Vice-President, Lance represented the College in the process of forming the Faculty of Clinical Informatics, of which he is a Founder Fellow. He serves on Faculty Council and is lead for Continuing Professional Development. He believes in the power of an open information resource on laboratory tests to demystify, justify and amplify their role in care pathways.
Away from medicine Lance plays bass in a band specialising in jazz and Brazilian music. He also plays piano and guitar, but the band won't tolerate that on stage!

What's new on LTO?

The first face-to-face spring conference season since lockdown is now in full swing. We've been at the IBMS Congress at the ICC in Birmingham; the British Society of Haematology Scientific Meeting in Manchester; and early in May we were at the Primary Care and Public Health 2022 event at the NEC in Birmingham for the first time. This last event was a revelation as we spoke to a much broader range of healthcare professionals than we'd normally encounter. People like dieticians, physiotherapists and podiatrists who visit patients at home have lots of time to chat to them about their healthcare, including their blood tests, so are in the perfect position to tell them about LTO-UK!

How to get involved

Join the editorial team

If you are interested in contributing to the vital work of the editorial team to keep the website up-to-date and to introduce new material please contact us for more information.

Become a Lab Tests Online-UK champion

Join our army of Champions and promote LTO-UK locally and nationally. Champion packs provide a great starting point with ideas and marketing materials, for more information or to join our champions please contact us.

Email: labtestsonlineuk@acb.org.uk Website: labtestsonline.org.uk Follow us

UKMedLab22 – Meeting update

This year, UKMedLab is taking place in-person at the Royal College of Pathologists' **Events @ No 6 venue** in Aldgate, City of London. **Save the date for November 7th, 8th and 9th – ticket sales will open soon!**

The structure and pricing for the event is:

- **Monday 7th November 2022:** Training Day (£100 ticket)
- **Monday 7th November 2022:** Microbiology Training Day (£100 ticket)
- **Tuesday 8th and Wednesday 9th November 2022:** Science & Education and Leadership & Management conference streams (£399 full delegate fee; £230 day ticket).

While the full conference agenda is yet to be released, the overarching theme of this year's National Meeting is **Building Back**. Here's a teaser of what you can expect from the two conference streams.

Leadership and Management

- Covid Recovery sessions chaired by Bernie Croal (ACB President), including topics such as Long Covid and demand optimisation strategies for labs.
- Net Zero carbon emissions sessions including topics such as the NHS environmental sustainability strategy, practical ways labs can reduce carbon, and the how the supply chain is responding.
- Sessions chaired by Neil Anderson (former ACB President) on maintaining quality in the changing face of service delivery, covering new ISO standards and the NHS collaborating with the private sector.

Science and Education

- Sessions chaired by Kevin Deans (Chemical Pathologist) on the future delivery of lipid services, including topics such as recent drug releases, Lipoprotein (a) and implications for Clinical Scientists running clinics.
- Renal-focussed sessions chaired by Alex Yates (ACB Director of Scientific Affairs), with topics including lessons learned on AKI 10 years on and KFRE and CKD discussions.
- Future biomarkers sessions chaired by David Gaze (ACB Chair of Clinical Sciences Reviews Committee), looking in-depth at specific biomarkers and processes for establishing new ones.

Special Plenary Sessions will also be delivered by the President of the European Federation of Clinical Chemistry and Laboratory Medicine (EFLM), and by recipients of the Foundation, Transatlantic and Impact Awards. Confirmed Plenary speakers include:

- **Foundation Award Plenary:** Judith Strachan (Foundation Award winner), speaking about her substantive work in bowel cancer screening.
- **Transatlantic Award Plenary:** Shannon Haymond (President of AACC and Transatlantic Award winner), speaking about the building of data literacy and analytics skills among clinical laboratorians.
- **EFLM Plenary:** Tomris Ozben (EFLM President), speaking on EFLM's Green Labs initiative.

UKMedLab22 attendees can also enjoy a multitude of member-led posters and Clinical Case presentations on various topics throughout the conference.

UKMedLab22: submit your abstract and apply for the Impact Award

We're pleased to announce that submissions are now open for poster abstracts and for the Impact Award, each of which has its own submission form and review process.

Poster abstract submissions

If you'd like to submit an abstract for UKMedLab, **please complete this short Poster Abstract submission form.** Any professional, either in training or in work, can submit an abstract.

If your abstract is accepted, you'll be invited to either create a poster or an Oral Presentation for UKMedLab22. Posters are displayed at the National Meeting and, additionally, abstracts are published in the *Supplement of Annals of Clinical Biochemistry and Laboratory Medicine.*

A shortlist of poster abstracts will be considered by judges for the Clinical Cases Poster Prize and the Audit Poster Prize. The best Clinical Cases Oral Presentation will be voted for by the audience at UKMedLab22. The winner from each category receives £100 and the runner-up receives £50 (in vouchers).

Some abstracts may additionally be eligible for the Medal Award, which rewards the winner with a silver medal and a £300 cash prize, and the runner-up with £150.

Read more about the process by selecting **Poster Prizes on our National Conference Award page**.

The deadline for poster submission is 30th June 2022.

Impact Award submissions

To be considered for the Impact Award, **complete this online form.**

The Impact Award is an opportunity for ACB Members working in Laboratory Medicine to showcase and be recognised for an initiative they have delivered, either as an individual or group, which has resulted in positive change to a service.

This could be related to the patient pathway, health systems and services, the laboratory workforce, environmental sustainability, or inclusive healthcare.

The person(s) awarded will be invited to deliver a Plenary Lecture about the initiative at UKMedLab22.

Read more about the process by selecting **Impact Award on our National Conference Award page.**

The deadline for submission for the Impact Award is 31st July 2022.

UKMedLab22
London • 7-9 November

Deacon's Challenge Revisited

No 20 - Answer

In a random sample of 100 pathology request cards, 36 were found to have an error associated with either their name or date of birth. What is the probability that more than 42% of pathology request cards have such errors?

MRCPath, May 2002

Examination of each request card has only two possible results – error or no error. This is an example of the binomial distribution. For a sample of 100 cards the possible total errors (a) are 0,1,2,3.....100 . The proportion of cards found with an error (*a*/*n*) will depend on the probability of an error occurring (*p*) i.e. $a = np$. If *p* is not known, then provided the number of cards examined (*n*) is reasonably large (>30) and *p* is not too close to zero or 1 then *a*/*n* approximates to *p*. The estimate a/n of the unknown probability, *p*, together with its standard error is given by:

$$\frac{a}{n} \pm \sqrt{\frac{a/n\,(1 - a/n)}{n}}$$

Estimate of $p = \frac{a}{n} = \frac{36}{100} = 0.36$

Standard error of $p = \sqrt{(0.36 \times 0.64/100)} = \sqrt{0.00230} = 0.048$

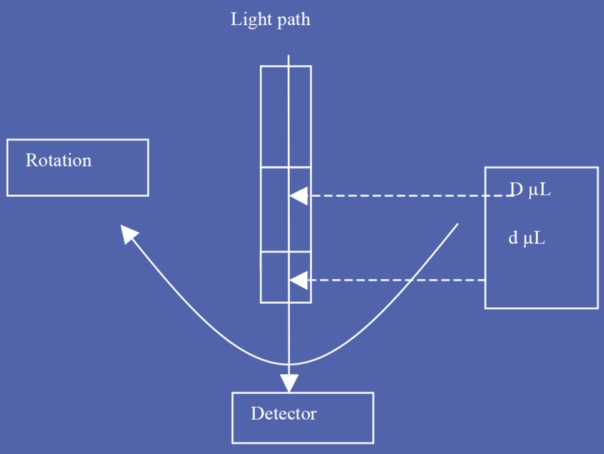
To find the probability of finding 42% errors ($a/n = 42/100 = 0.42$) calculate the *z* value in the usual way:

$$z = \frac{(a/n) - p}{\text{Standard error}} = \frac{0.42 - 0.36}{0.048} = \frac{0.06}{0.048} = 1.25$$

From tables of *z*, the probability of obtaining a *z* value greater (i.e. use one-tailed) than 1.25 (i.e. finding more than 42% cards with errors) is **0.11.** ■

Question 21

A centrifugal analyser is designed so that the light travels on a longitudinal path through the rotating cuvette (which has a constant cross-section C cm^2) rather than perpendicularly through the sides of the cuvette as is more usual. A solution of a light absorbing compound Y, volume d µL at a concentration of y mmol/L, is diluted with a volume D µL of an optically clear reagent.



Using the Beer-Lambert equation, prove that the absorbance of light through the diluted solution of Y is independent of the volume of diluent (D) when absorbance is measured longitudinally in this system.

MRCPath, November 2002

The Diggle Microbiology Challenge

These multiple-choice questions, set by Dr Mathew Diggle, are designed with Trainees in mind and will help with preparation for the Microbiology Part 1 FRCPath exam.

Question 30 from April's ACB News

Epstein-Barr Virus (EBV) is associated with:

A. Infectious mononucleosis
B. Hepatitis
C. Burkitt's lymphoma
D. Nasopharyngeal carcinoma
E. Oral leukoplakia

Answer:

They are all true. Epstein-Barr virus (EBV) is a human γ-herpesvirus that is able to establish a long term, latent infection in human B cells for the life of the host. Once infected, a lifelong carrier state develops whereby a low-grade infection is kept in check by the immune defenses. Low-grade virus replication and shedding can be demonstrated in epithelial cells of the pharynx of all seropositive individuals.
EBV is able to immortalize B-lymphocytes in vitro and in vivo. Furthermore, a few EBV-immortalized B-cells can be demonstrated in circulation, which are continually cleared by immune surveillance mechanisms. EBV is associated with several very different diseases where it may act directly or as one of several co-factors. EBV infection is associated with B-cell mediated infections such as Infectious mononucleosis, Chronic active EBV, Hodgkin Disease, Burkitt Lymphoma and Lymphoproliferative disease as well as a range of other human cancers, including Nasopharyngeal carcinoma, Gastric carcinoma, Nasal T/NK cell lymphomas and oral leukoplakia.

Question 31

Adenoviruses:

A. Are associated with genital cancers
B. May cause gastroenteritis
C. May cause conjunctivitis
D. May cause pneumonia
E. May cause warts
F. May cause Hepatitis
G. Have more than 50 immunologically distinct types

The answer to Question 31 will appear in the next issue of ACB News – enjoy!

Review of the ICAP in 2021 – the sixth workshop and current perspectives

Elizabeth Walker

I have reviewed this special report on the International Consensus on ANA Patterns (ICAP) in 2021 which was published in January of this year. The article summarises the main discussions which took place at this meeting, recommendations which came from it and outlines current plans for the ICAP committee. This was the 6th workshop of this committee and took place as a satellite meeting of the 15th Dresden Symposium on Autoantibodies. It was attended by experts from all over the world. In this review I will summarise the paper, highlighting the points which may be useful for Immunology laboratories.

Antinuclear antibodies (ANA) are vitally important in the diagnosis and classification of systemic autoimmune rheumatic diseases. In 2009, the American College of Rheumatology ANA Task Force recommended that indirect immunofluorescence (IFA) using HEp-2 cells should be the 'gold standard' for ANA detection. However, there are large variations in methodology, with numerous assays and platforms available. The ICAP committee recognises the need for harmonisation of ANA methodology and reporting and has several resources available to further this aim:

- Reference materials
- ICAP website and classification tree
- Advice
- Training

Reference materials

The primary objective of the Autoantibody Standardisation Committee (ASC) is to promote accuracy in autoantibody testing and has identified 23 reference reagents which are available free of charge to research, diagnostic laboratories and commercial organisations which develop autoantibody diagnostic kits. They can be found on the **ASC website, under the Reference materials tab.**

ICAP website: This initiative is to promote the harmonisation and understanding of IFA ANA reporting and to provide guidelines for ANA pattern interpretation. ICAP has recently recommended that ANA should be described as autoantibodies to cellular antigens or anti-cell antibodies, as IFA not only identifies antibodies to antigens in the nucleus, but also in the cytoplasm and mitotic cells. Since the first ICAP workshop, 30 different HEp-2 IFA patterns have been categorized into four major groups: negative, nuclear, cytoplasmic and mitotic. These have been arranged into a classification tree, in which each pattern is designated an anti-cell (AC) code, for example, nuclear homogenous pattern is AC-1. The classification tree can be found on the **ICAP website**, along with possible associated autoantibody targets, clinical relevance and includes recommendations for follow-up or confirmatory testing, where appropriate. The website provides free downloadable images and has been translated into 12 other languages, the most recent being Japanese!

Advice

Registered ICAP users can ask the ICAP members for advice on unique or

unclassified ANA IFA patterns. Any which are deemed of common interest can be viewed under the **Frequently asked Questions (FAQ) section on the ICAP website**.

Training

Those registered on the ICAP website also have access to a training module, accessed via the Training Tab on the website. This training module introduces the ICAP objectives, how to make the best use of the resources on the website and gives technical advice on performing ANA on HEp-2 cells. A certificate is available to those who complete the training and further training modules are being developed.

The article goes on to summarise the most recent ICAP meeting in Dresden, held in September 2021. There were eighty participants and during the meeting, improvements were made to the classification tree, a new initiative was introduced and various other studies were presented.

The classification chart was revised in three ways, to provide better visual distance between nuclear and cytoplasmic patterns and clear distinction between what are considered 'competent' and 'expert-level' patterns. Firstly, user feedback influenced the decision to change the nuclear envelope pattern from expert to competent level. This was due to the fact that this pattern has clinical significance and therefore should be widely recognisable. Also the pleomorphic patterns, such as PCNA and CENP-F were also changed from expert to competent level. Secondly, nuclear dense-fine speckled (AC-2) and the Topo-1 like (AC-29) patterns have been moved closer to the nuclear homogeneous (AC-1) pattern to highlight the similarities in staining mitotic condensed chromatin and the interphase nuclei. This means that only speckled pattern (AC-4 and AC-5) are classified as competent level patterns, as it was recognised that many laboratories do not distinguish between the two when reporting. Finally, the cytoplasmic discreet dots pattern (AC-18) has been separated from cytoplasmic dense-fine speckled (AC-19) and cytoplasmic fine-speckled (AC-20), as these are quite obviously different patterns. AC-18 has been re-classified as expert level, while AC-19 and AC-20 remain competent level patterns. A new ICAP initiative, called Clinical and Immunological Characterisation of HEp-2 patterns (HEp-2 CiC) was also discussed and has three objectives:

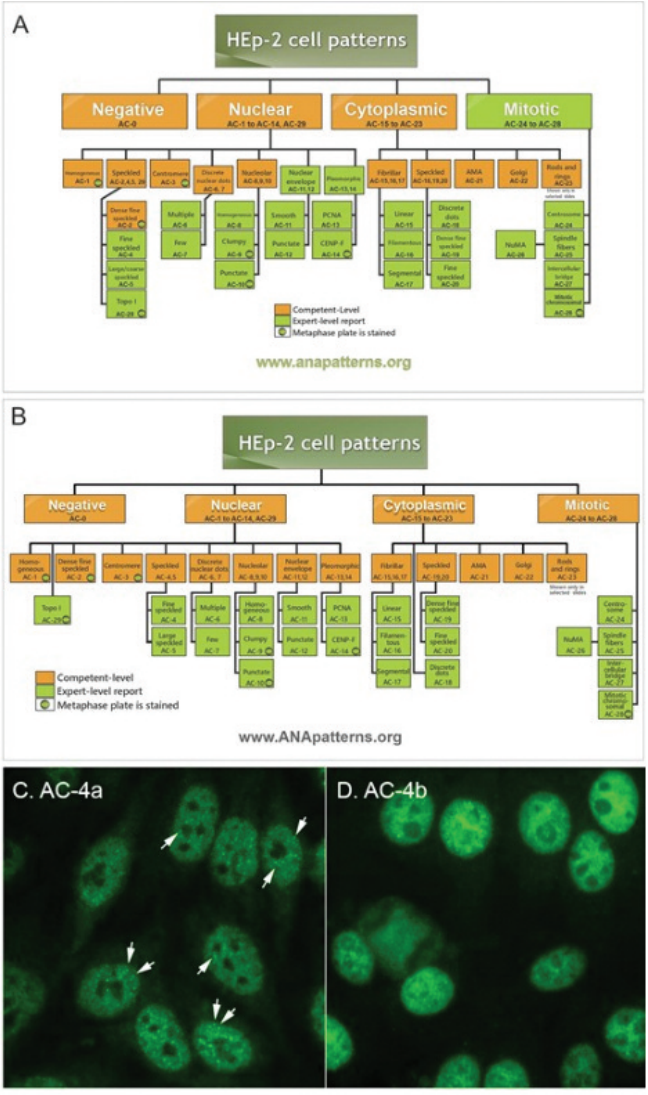
- To determine the prevalence of ICAP patterns worldwide.
- To establish clinical associations with selected ICAP patterns.
- To characterise the antigenic specificity of selected ICAP patterns.

It is hoped that this will lead to worldwide collaborative study of these ICAP patterns and a greater understanding of their clinical associations in diverse geographical and ethnic settings.

There were several other interesting presentations mentioned in this article, including implementing the ICAP terminology and how this led to improved interaction between local and regional laboratories, heterogeneity in HEp-2 results using differing brands of HEp-2 substrate and the use of artificial intelligence in automated IFA systems using ICAP terminology. Two recent publications were also discussed, which are referenced in the article. Firstly, a test report template has been accepted for publication, based on the practices of 118 laboratories in 68 countries, with the aim of standardising HEp-2 reporting to clinicians. This contained endpoint titres, patterns and ICAP nomenclature and comments on any follow-up testing. There was also discussion on how to report cytoplasmic or mixed patterns and their titres in the same patient sample.

In a second study, AC-4, nuclear fine speckled patterns were classified into AC-4a – discreet nuclear speckles - which was found to be associated with Ro-60 antibodies and AC-4b – the plain fine speckled pattern – which was rarely found to be associated with Ro antibodies. However, it was noted that the AC-4 nomenclature should be kept as an umbrella term for fine speckled patterns as it may not always be possible to distinguish between the two. The distinction between the AC4 patterns will be discussed further at the next ICAP meeting. The article concludes that the ICAP meeting was a good opportunity to be able to come together and put the COVID-19 pandemic 'in the rear-view mirror'!

In conclusion, this report is a useful summary of the 6th ICAP meeting, which outlines the aims and objectives of the group, and includes links to free reference materials and educational resources. ■



Change in ICAP classification chart and refined definition of nuclear fine-speckled (AC-4). (A) ICAP classification chart in use from 2015 to 2021. (B) The revised ICAP chart in use since September 2021. (C and D) Indirect immunofluorescence of HEp-2 cells showing the proposed AC-4a and AC-4b patterns. AC-4a (C) exhibits the characteristic myriad of discrete nuclear speckles that are essentially absent in AC-4b (D). See text for discussion.

ACB Southern Region – Bill Richmond Prize Meeting

Miss Wendy Armstrong, Clinical Blood Sciences, Croydon University Hospital

This prize is named in memory of Bill Richmond. Bill worked as a Biochemist, first in Scotland, and later at St Mary's in London, where he was a Consultant Clinical Scientist. Lipidology was his area of interest; his 1973 paper in Clinical Chemistry described the use of cholesterol oxidase as a key enzyme in the enzymatic measurement of cholesterol and this remains the basis of all routine enzymatic measurements.

The aim of this prize is to encourage high quality oral presentation of scientific data, cases and audits by Southern Region ACB Members, especially Trainees. Members are invited to submit abstracts, which are scored by a panel of three senior members based on content, including originality and clarity of the information given. Those achieving the highest scores are invited to present, to compete for the Award. The speakers are given ten minutes for their presentations, with a further five minutes for questions from the audience. The presentations are judged on the basis of content, oral presentation, use of audio-visual aids, response to questions and adherence to the allotted time. The marks from the judges are pooled and the winners will be the two individuals with the highest scores.

This year's prize meeting was held on Thursday 21st April, via MS Teams, and we were treated to five excellent presentations.

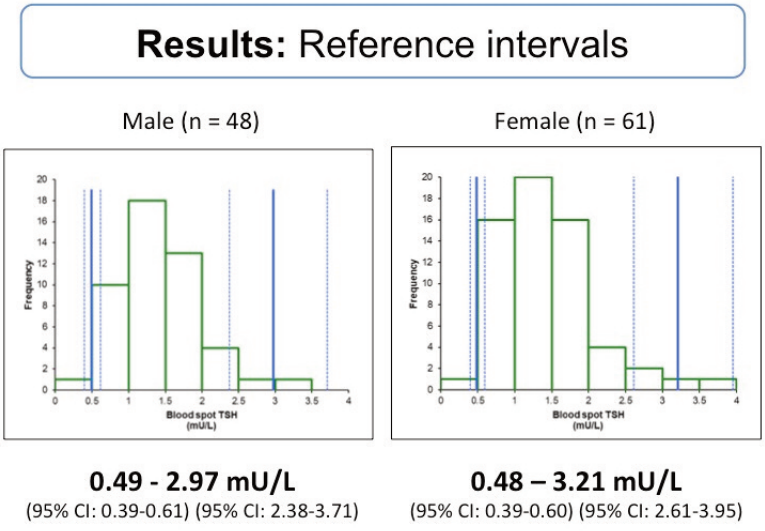
Kade Flowers, from the Royal Sussex County Hospital in Brighton, presented 'A Curious case of Vanishing creatinine'. This was based on work he did while still an STP Trainee at St George's Hospital to investigate an undetectable creatinine in a

This year's speakers included Kade Flowers (left) and prize-winner Rebecca Biss (right)

patient. He found that this was only a problem when the sample was analysed on the local Roche platform, with results achievable on other automated platforms and by LC-MS/MS. Investigations revealed that a component of the enzymatic creatinine assay was causing the formation of a precipitate in the sample. IgM interference was confirmed as patient serum precipitated with polyethylene glycol (PEG) and anti-IgM antiserum yielded detectable Roche enzymatic creatinine results comparable to unaffected methods. You can read more about this case in this month's *Annals* (*Ann Clin Biochem* 59 (3) 205-210).

Rebecca Biss, from The Royal London Hospital, presented her MSc project: 'Development and validation of a six steroid LC-MS/MS panel in whole blood collected using volumetric absorptive microsampling (VAMS)'. The aim of the project was to establish a route by which CAH patients on glucocorticoid replacement could have their steroid hormones monitored without the need for phlebotomy, which is inconvenient, resource intensive and problematic in a pandemic. VAMs from fingerprick samples can be returned to the lab by post, facilitating remote monitoring of these patients. Rebecca described how she established an LC/MS-MS method for the simultaneous measurement of 11-deoxycortisol, 17-hydroxyprogesterone, androstenedione, cortisol, DHEAS and testosterone in 10 µL venous whole blood samples collected by VAMS. Comparison with serum assay demonstrated an expected negative bias, indicating the need to establish whole blood reference ranges. Overall, the method shows promise for home sampling, raising the possibility for remote monitoring in the future for this group of patients.

The next presentation was from **Thomas Morris**, from St Helier Hospital, describing his work to establish an adult reference range for blood spot TSH. There is no established adult blood spot TSH reference interval, but this would be useful as some patients cannot tolerate venepuncture so blood spot collection is seen as an acceptable alternative. In this study, both blood spot samples and serum samples were collected from euthyroid

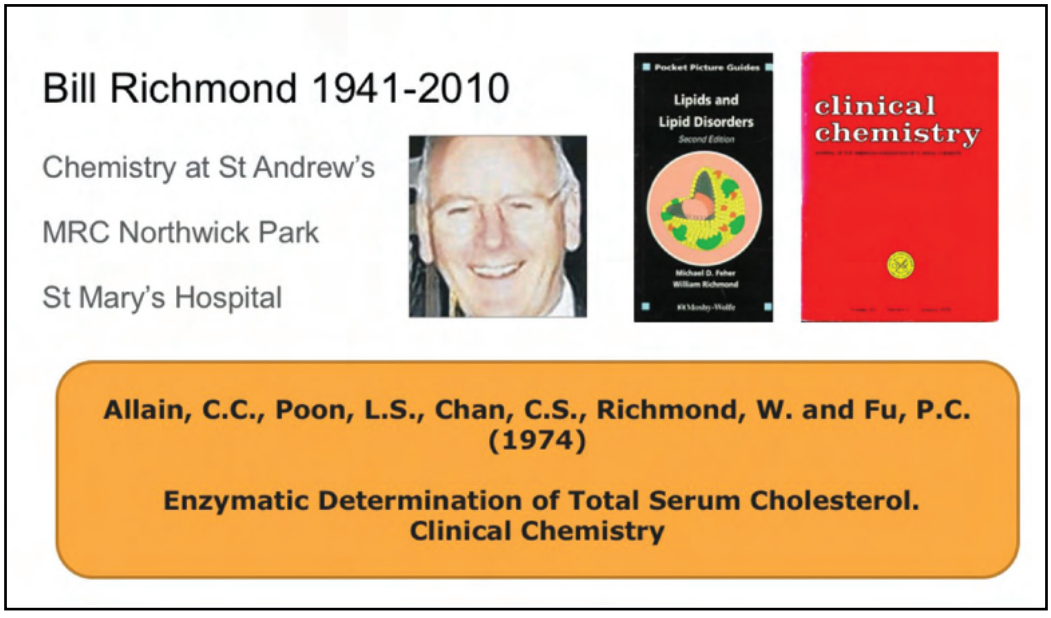


Calculated reference intervals from Thomas Morris' presentation

adults, not on thyroid medication and with a normal haematocrit. The lab at St Helier is home to the South West Thames Newborn Screening service, so they were able to take advantage of their PerkinElmer GSP® Instrument for blood spot analysis, and the serum TSH was measured on the Abbott Architect. The relationship between the two sample types was determined and by transforming the data, a reference interval was calculated, thus facilitating improved interpretation of adult blood spot TSH.

Charles van Heyningen (pictured right), formerly of Aintree University Hospital, now retired, presented 'A case study of childhood cardiovascular disease'. Charles began with a biography of Bill Richmond, after whom today's prize is named, highlighting Bill's contribution to the field of lipidology, and then went on to describe a case of compound heterozygous familial hypercholesterolaemia he had encountered while in practice. This patient had presented as a child with raised cholesterol and xanthoma. Despite diet

and medication, their cholesterol remained high, and it took LDL apheresis to reduce their cholesterol to the 'normal' range. At the age of 14, they underwent aortic valve replacement and CABG, and due to worsening prognosis, at 17 years, they underwent a combined heart and liver transplant. Combined with statin therapy, this was effective for over a decade, until they developed



autoimmune rejection of the transplant. Genome analysis showed two different mutations in the LDL receptor gene. Charles concluded with a review of recent guidance and therapeutic options for homozygous familial hypercholesterolaemia.

The final presentation was from one of our Microbiology colleagues, **Jaya Shrivastava**, from the UK Health Security Agency, who presented 'A new UK NEQAS Parasitology external quality assessment scheme for molecular detection of faecal parasites'. Jaya described the journey to launch a new EQA scheme. Protozoan infections are twice as common as bacterial for infectious gastroenteritis. A number of molecular methodologies are available for their detection, each with their own pitfalls and limitations, hence there was a need for an EQA scheme. Jaya told us about the steps they had to go through to establish what the best specimen would be, how it should be prepared, and the pre- and post-distribution quality checks that were required. Laboratories around the world took part in the pilot study with excellent results demonstrating that the chosen sample matrix was suitable for purpose. The scheme has now gone live, has been shown to be fit for purpose, and is now undergoing assessment as part of the accreditation process.

All the presentations were well received by the online audience, and the high quality of all five talks meant that scoring proved challenging for the judging panel. Following much discussion and close examination of the rules of the competition, this year's prizes were awarded to Rebecca Biss and to Thomas Morris. ■

ACB News Crossword

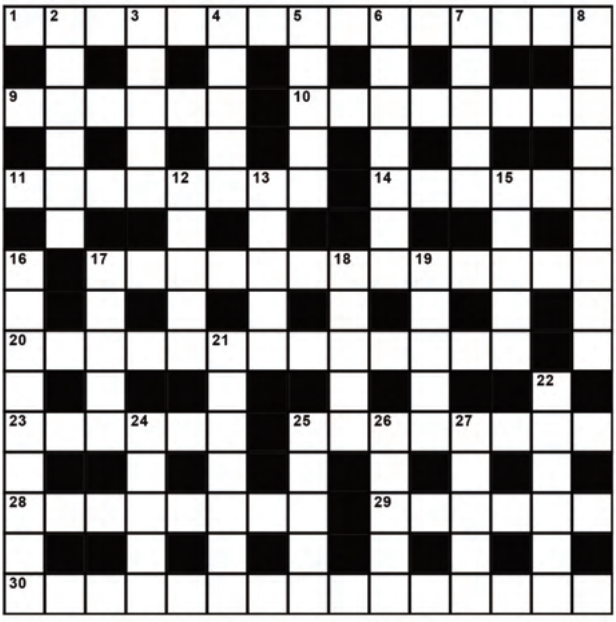
Set by Rugosa

Across

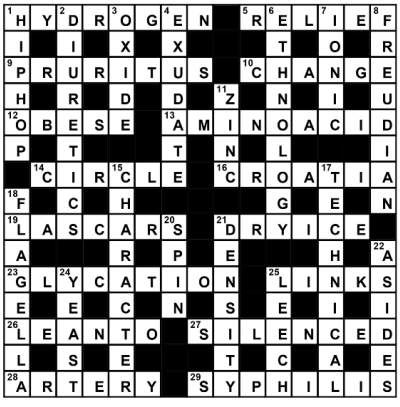
1 Revive duplicate use for diagnostic test performance (10,5)
9 Upset, traumatised, stateless gets early cancer treatment (6)
10 Complexities (some omitted) made clear (8)
11 He is one of about 80% of over 400,000 young members (3,5)
14 Re-do it, literally, for reviser (6)
17 Sad – erratic car results in life-threatening emergency (7, 6)
20 Initial research all in lecture about main sodium distribution (13)
23 Development of a trend to be zealous (6)
25 Element said to lack activity, but will move to fill available space (5,3)
28 First emergency operation for discharge (8)
29 King George very keen, expectant (6)
30 Data for diagnosis: parameters follow written recommendation (9,6)

Down

2 Work out motive (6)
3 They can produce audible signs of a leaking valve (5)
4 Brief appearance came to nothing (5)
5 Desist out of disinterest, become inactive (5)
6 Respiratory infection, emphysema, request for quiet ignored (7)
7 Good excuse: I get bail (5)
8 GI problem exciting current interest (9)
12 Minder as career: work without quarter (5)
13 Leave to reorganise routine waste material (5)
15 Part of the ironware belonging to others (5)
16 Without cost, private sector adapted armed ship (9)
17 Some tacit editing leads to being quoted by others (5)
18 Content of protocol oncologists mark before a list (5)
19 Measure controller (5)
21 Canary-yellow colouring makes it nicer (7)
22 Hide gangster inside compound (6)
24 Follow in green suede shoes (5)
25 Description of strength that is double-edged, omitting resistance (5)
26 Agree to be more enthusiastic (5)
27 Coach convoy (5)



Solution for April Crossword



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ACB Headquarters
Association for Clinical Biochemistry & Laboratory Medicine
130-132 Tooley Street
London SE1 2TU
Tel: 0207-403-8001
Email: admin@acb.org.uk

ACB President
Dr Bernie Croal
Email: president@acb.org.uk

ACB CEO
Jane Pritchard
Email: jane@acb.org.uk

ACB Home Page
http://www.acb.org.uk

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Develop your career and support your profession

ACB welcomes applications for membership from health professionals and corporate bodies from the whole spectrum of laboratory medicine and healthcare science around the world. We are the representative voice for laboratory medicine and an established scientific authority.

ACB members have access to:

- a unified community platform to share best practice in laboratory medicine
- support from the recognised trade union for clinical scientists in the UK
- an internationally peer reviewed journal – Annals of Clinical Biochemistry
- news and updates on current issues and development opportunities in pathology through a regular newsletter and digital communications
- a programme of CPD accredited national and regional education and training events at discounted rates
- grants, bursaries and scholarships to support scientific research and innovation
- the opportunity to contribute to the profession and build your profile through committee engagement, peer reviews and expert representation.

To find out more about the benefits and eligibility for membership please contact Mike Lester: mike@acb.org.uk or +44(0)20 4542 6044

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