

ACBNews

The Association for Clinical Biochemistry & Laboratory Medicine | Issue 676 | April 2022

**CONSULTANT
CLINICAL
SCIENTIST**

BIOCHEMISTRY



In this issue

President Elect
2022 – call for
applications

IValueLabStaff

UKMedLab22
Update

ACB Impact
Award

Sustainability
Champion
required

Schools Science
Conference

New Chair
of Trainees'
Committee

Integrated
Care Systems

ACB Wales
Scientific
Meeting Report

Retired
Members'
Group Report

**CLINICAL
SCIENTIST**

IMMUNOLOGY



**MEDICAL
LABORATORY
ASSISTANT**

MICROBIOLOGY





Tailor-Made Training for Faecal Immunochemical Testing

With the ever-changing situation within healthcare, it is important to keep processes up to date.

Alpha Laboratories offers FREE refresher training to all HM-JACKarc users: from *New Starter Training* to in-depth *Advanced User Training*, covering everything from routine use, general sample processing, to detailed procedure reviews.

We're here to help you make the most of your FIT service and minimise the strains on the laboratory as much as possible with:

- Online Refresher Training
- Face-To-Face Refresher Training
- New Starter Training
- Advanced User Training
- Standard Operating Procedure (SOP) Reviews
- Work-flow Analysis
- Pipetting Academies

Certificates are provided upon successful completion of the training.

Please contact us to discuss your requirements.

HM-JACKarc



Supplied by

 **alpha laboratories**
supplying quality to science

Tel: 02380 483000

Email: info@alphalabs.co.uk

Web: www.alphalabs.co.uk

ACB News

The bi-monthly magazine for clinical science

Issue 676 • April 2022

Message from the President	page 4
CEO Update	page 6
General News	page 8
Deacon's Challenge Revisited	page 24
Microbiology News	page 26
Trainees' News	page 29
Meeting Reports	page 30
Honorary Officers Nomination Form	page 36
Obituary	page 37
BIVDA News	page 39
ACB News Crossword	page 41



The Association for
**Clinical Biochemistry &
Laboratory Medicine**

Better Science, Better Testing, Better Care

ISSN 2754-0863

© Association for Clinical Biochemistry & Laboratory Medicine 2022

Front cover: IValueLabStaff campaign

President's Column

April 2022

Just as we get into a groove complaining about our own professional and personal issues, we are once again blindsided by world events, which in comparison, make our own problems seem very trivial. The war in Ukraine is devastating for humanity in terms of the impact on the people directly affected but also what it means for the rest of us, let alone future world peace and stability. We desperately all hope the situation improves and we should all look for ways that we can all help personally and professionally. We are monitoring the situation closely to see how and when the ACB, along with the other professional bodies and associations, can directly contribute.

Face-to-face conferences are back and we should bravely embrace them again. Virtual meetings are great and will have a role going forwards, but the ability to meet people, network and socialise is very much welcomed again. I attended the March IBMS Congress in Birmingham along with 5000 other visitors – the combination of scientific presentations, a large industry exhibition and social events worked extremely well and ACB members should bookmark future events, especially as we are looking to collaborate more with IBMS in the future for such events.

The much delayed EuroMedLab Meeting takes place in Munich in April, which I will attend in person. Both IFCC and EFLM Council/Committee meetings will take place and the issue of Ukraine, including how Belarus and Russia integrate scientifically with IFCC/EFLM, will undoubtedly dominate proceedings.

Meanwhile plans for our own meeting, UKMedLab22, to be held in London (7th-10th November 2022) are well underway. This will combine a Training Day, two full UKMedLab content days and a further whole day scientific programme in

honour of Professor Freddie Flynn. More details to follow.

Now that we are hopefully entering a true recovery phase from the pandemic, many of us are facing significant challenges modifying our services to deal with attempts to tackle waiting lists and backlogs, introduce new services, fill vacancies, reduce waste (including unnecessary testing), adopt new IT and manage the long covid impact. It is vital that laboratory services continue to play a key role in this and the "Build Back with Labs" initiative can now finally get going via the ACB website. This is part of all of our day jobs now, and so by collectively sharing ideas, resources and communications, we do not all have to re-invent the wheel each time. Look out for future calls to share and submit such resources or to get involved in direct initiatives around long covid, workforce planning and demand optimisation.

Finally, environment and sustainability issues have not gone away, despite the energy cost crises looming. It is important that the ACB joins with other groups to look at ways in which we can make our organisation, our labs and the impact of our services align better with the net zero agenda. We will soon identify a sustainability champion from within our ranks to take a lead for the ACB. Again this is an issue that we can all get behind.

Best wishes for the coming months and condolences to those directly connected to the Ukraine war. ■



Bernie Croal, ACB President

RANDOX

QUALITY CONTROL

RIQAS

RANDOX INTERNATIONAL QUALITY ASSESSMENT SCHEME



LARGE DATABASE OF USERS

Over 55,000 participants spanning 134 countries means peer group numbers are maximised ensuring availability of data for a wide range of instruments and methods.



COST EFFECTIVE

An extensive portfolio of 37 programmes, including many multi-parameter options, will help reduce the number of programmes required to cover your test menu whilst saving time and money.



FREQUENCY

A turnaround time of less than 72 hours for most reports means corrective action can be implemented earlier, facilitating troubleshooting and potentially minimising costly errors.



USER-FRIENDLY REPORTS

Multi-instrument & interlaboratory reports allow comparative performance assessment of all lab systems and multiple connected labs. One page per parameter formats enables at-a-glance performance assessment.

Message from the CEO

The sun is shining, the daffodils are out and the ACB headquarters is buzzing with activity once more.

Work on a rebrand for the organisation has kicked off with positive and constructive feedback from the membership and a group of volunteers has put themselves forward for the brand development activity. Thank you to those of you who have come forward – we look forward to working with you over the coming months and to revealing our new brand at UKMedLab in November.

Mike Lester is working with the Education, Training & Workforce Committee on the development of an online learning platform with a test module on Laboratory Method Evaluation. It's a small test to start with which we hope to expand next year with further support from Health Education England.

Mike is also working with the ACB's Company Secretary, Sarah Glover, on a review of ACB membership benefits and structure. It's quite some time since the membership offer was reviewed so, as we look towards growing our profile and reaching and developing the potential of our digital platform, the time is right to revisit the benefits and pricing structure. Again, we will work with a representative group of members to complete this project.

Following the change in ownership of Lab Tests Online we are working in partnership with the Royal College of Pathologists and IBMS plus a wider group of stakeholders to create a new fully integrated digital service for patient information on laboratory tests. The plans are ambitious and require significant funding, so we have commenced the first phase of fundraising to find innovation support to design and build the platform.

In response to requests from members, and following six months development work, the ACB online mentoring platform is now in its testing stage ready for full roll

out next month. If you still want to register as a mentor or a mentee please do get in touch with mike@acb.org.uk
The ACB online bookstore on

Amazon is expanding and over the next few weeks it will be ready to distribute our entire stock of past titles. The ACB's Director of Publications, Kam Chatha, is identifying books that may need an update and reprint as well as exploring ideas for new titles so do drop us a line at enquiries if you have any specific thoughts on this.

In terms of officer positions, we have two very important roles to fill in the coming weeks. We have launched the process to find our next President with an open recruitment process for the first time in the ACB's history. The closing date for applications is 11th April so please either consider submitting an application or encourage others who you believe have the qualities to lead the ACB.

Further details can be found here.

We will shortly follow up with the recruitment process for our next Treasurer as Mike Bosomworth will finish his term at this year's AGM in July. It's a great opportunity for someone wanting to contribute to the profession. Thanks to the dedicated and detailed work of Mike Bosomworth over the past 5 years, it is a well organised and professionally supported role. Look out for a mailing soon or drop me a line directly if you'd like to find out more.

I know times continue to be challenging as COVID-19 is still having a huge impact on staffing levels so as always thank for your dedication, particularly those of you devoting additional time to represent and support the profession. We hope to see you at Tooley Street soon. ■



BIOHIT HealthCare

Innovating for Health

MORE THAN 100 NHS TRUSTS
RELY ON *IDKMONITOR*[®]
FOR ROUTINE THERAPEUTIC
DRUG MONITORING IN IBD*

EXCLUSIVE
DISTRIBUTOR OF



For more information contact us

Phone +44 151 550 4 550

info@biohithealthcare.co.uk

biohithealthcare.co.uk

*Data from Royal Devon and Exeter NHS Foundation Trust

President Elect 2022 – call for applications

The ACB President and Council are delighted to announce the recruitment process for its next President.

For the first time in its history the ACB is running an open process for applications for the position of President Elect from 13th July 2022 leading to confirmation as President in summer 2023.

The ACB President represents the public face of the organisation and leads its members and officers to develop and deliver our strategy and direction. This is an exciting period for the ACB as membership is growing and laboratory medicine has gained a huge public profile.

Applications are invited from any active paid-up Ordinary member of the ACB. Applicants are asked to submit a full CV and a 500-word statement highlighting experience, skills, and values relevant to the role.

The statement should highlight:

- ◆ Your understanding of the ACB's purpose and level of engagement with activities.
- ◆ How your experience and skills equip you to lead your professional body.
- ◆ Your future vision for the ACB.

Applications will be shortlisted by the Nominations Committee for review and interview (which may be conducted online) during week commencing 16th May 2022. We welcome and actively encourage applications from underrepresented groups and will consider adjustments to accommodate any potential barriers.

For full details of the process and to apply to this opportunity please contact mike@acb.org.uk To access the role description please [click here](#).

The application process is open until 11th April 2022. ■

Sudoku

This month's puzzle

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

Solution for February

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

ScheBo® • Biotech UK Limited

ScheBo® • Biotech now provides a choice of faecal elastase tests
- which one is right for your laboratory?

ScheBo® • Pancreatic Elastase 1 Stool Test ELISA

Established non-invasive pancreatic exocrine function test

- The 'original' and fastest faecal elastase quantitative ELISA
- just 60 minutes total incubation time
- Uses monoclonal antibodies
- patients can continue 'enzyme therapy'
- Four standards and two controls, ready to use
- Manual tests or can be automated
- Convenient ScheBo® • Master Quick-Prep™ device available



'Faecal elastase' has become established as the 'gold standard' non-invasive laboratory test for pancreatic exocrine function.



- Confirm or exclude pancreatic exocrine insufficiency
- Results within minutes
- Easy to perform
- Economical, even when testing individual samples
- Kit includes ScheBo® • Quick-Prep™ tubes for simple and convenient sample collection and extraction

Also

ScheBo® • Pancreas Elastase 1 Quick™

Rapid test of pancreatic exocrine function

To discuss your needs and for further information please contact:

Ivor Smith, ScheBo® • Biotech UK Limited, P.O. Box 9459, Lyme Regis, DT6 9FL, U.K.
Tel : 01256 477259 • E-mail : i.smith@schebo.co.uk • www.schebo.co.uk

ACB Impact Award

The ACB is proud to announce a new award that will be open to all members – the ACB Impact Award.

This new award is an opportunity for members of the Association working in laboratory medicine to showcase and be recognised for an initiative they have delivered which has resulted in positive change. This can be positive change in relation to:

- ◆ The patient pathway
- ◆ Health systems and services
- ◆ The laboratory workforce
- ◆ Environmental sustainability
- ◆ Inclusive healthcare

The overarching qualifying criteria is that the initiative submitted is innovative to

the sector and/or your workplace and that it resulted in demonstrable change that benefitted the stakeholders involved.

This initiative must have been implemented and not be solely research or a study. However, it may be something that was already implemented in other industries, communities, or countries that you adapted and refined to solve a challenge related to your clinical practice and/or stakeholders involved in that practice.

We will be opening the application process for this award soon and will be following up with more information on the application process as well. The person awarded will be invited to deliver a plenary lecture about their initiative at this year's UKMedLab. ■

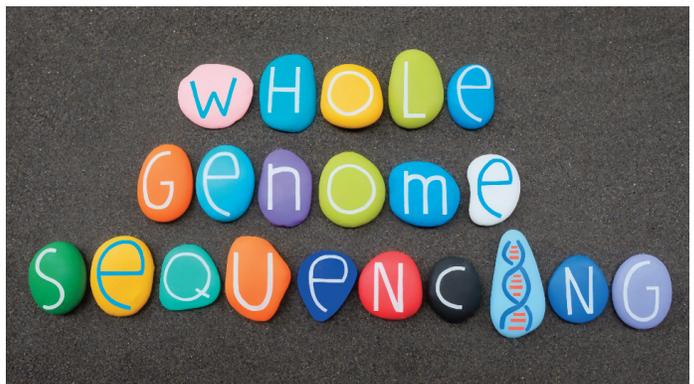
Whole genome sequencing course

The ACB is launching a new course on whole genome sequencing and infection in collaboration with Health Education England, looking at clinical interpretation and implementation of microbiological whole genome sequencing techniques.

It will be an online platform and virtual learning environment delivered by Great Ormond Street Learning Academy. We are seeking to learn how we can fulfil the expectations our members have for this course so that it has maximum benefit for all.

If you are interested in this opportunity, please do take the time to complete a short two-minute questionnaire on our website by [clicking here](#). By providing us with this information you will be directly informing the course delivery and content and helping us bring as much value to our members as possible.

If you have any questions about the survey or the course, please contact mike@acb.org.uk ■





ALINITY i TBI

BLOOD-BASED BIOMARKERS
OF mTBI (GFAP & UCH-L1)

**It's more than a test. It's a
game-changing tool for the
evaluation of mTBI**

Alinity i TBI: a new CE-marked lab-based test that aids in confirming the absence of intracranial lesions—without imaging—when mTBI is suspected.¹



For more information, please email us at wired@abbott.com

REFERENCES:

1. Alinity i TBI H22974R01. Instructions for use. Abbott Ireland Diagnostics Division. Sligo, Ireland; October 2021.

© 2021 Abbott. All rights reserved.

All trademarks referenced are trademarks of either the Abbott group of companies or their respective owners. Any photos displayed are for illustrative purposes only. Any person depicted in such photos may be a model. ADD-136917-EMEA-EN 12/21

CORELABORATORY.ABBOTT

Would you like to be the ACB's first Sustainability Champion?

The ACB is seeking applications for a voluntary Sustainability Champion. The successful candidate will represent the organisation and work with members and officers to develop and deliver our environmental sustainability strategy.

As the ACB's first Sustainability Champion you will be involved in shaping the role and forging partnerships to support our work in this field. This could include such activities as: leading an internal working group; representing the ACB with partner organisations such as the NHS, Science Council, EFLM and others; contributing to ACB meetings and inviting members to share best practice.

So, if you're an Ordinary member and have an interest in environmental sustainability and a commitment to the NHS Net Zero ambition and want to advocate for environmental sustainability both within the ACB and with external audiences and influencers, please take a look at the full role description [here](#) and apply.

If you have any questions or would like to speak to the ACB's CEO in advance of submitting an application, please get in touch.

For more information and to apply, please contact Membership Manager, Mike Lester, mike@acb.org.uk ■



Bromide Analysis

Bromide salts are increasingly being used to treat refractory seizures in children with epilepsy.

The risk of toxicity can be difficult to predict due to considerable individual variation in the threshold for toxicity. Toxicity may be apparent at concentrations well below the therapeutic range. Due to the narrow therapeutic range, regular assessment of serum bromide levels is vital to prevent adverse clinical outcomes.

The Service we provide:

- ICP-MS Technology
- Only a small specimen volume required (50uL)
- Turnaround time within 3 working days
- Cost: £80



☎ 0121 507 5348 @ bcpspathology.info@nhs.net 🌐 www.bcpathology.org.uk

✉ Clinical Biochemistry, City Hospital, Dudley Road, Birmingham B18 7QH

🐦 @BCPathology 📘 BCPATHOLOGY 📺 Black Country Pathology TV News

ACB webinar facilitated by Abbott: Integrated Care Systems and Laboratory Medicine

On Thursday 10th February, the ACB delivered a webinar facilitated by Abbott on Integrated Care Systems and Laboratory Medicine

The webinar was designed to support ACB members in understanding how the NHS Integrated Care System will work in practice, how it will affect their services and the opportunities that will arise from its implementation. This was a highly anticipated subject, reflected in the large number of ACB members who registered to attend, demonstrating the importance that the Integrated Care Systems will play in service delivery.

Lisa Harrison, Marketing Director for Northern Europe at Abbott, facilitated the webinar and was joined by leaders in NHS laboratory medicine who shared their insights on the topic. The keynote speakers were:

- ◆ **Neil Anderson**, Past President ACB, Consultant Clinical Biochemist, Clinical Director, Clinical Diagnostic Services, UHCW
- ◆ **Elaine Cloutman-Green**, ACB Microbiology Professional Committee member, Consultant Clinical Scientist (Infection Control Doctor), Deputy Director of Infection Prevention and Control, Joint Trust Lead Healthcare Scientist, Great Ormond Street Hospital and Clinical Lecturer, Department of Civil, Environmental and Geomatic Engineering, University College London
- ◆ **Bruce Daniel**, Head of Pathology, South West Region – NHS England, previously Pathology Service Manager, Royal Cornwall Hospitals NHS Trust
- ◆ **Saghar Missaghian-Cully**, Managing Director, North West London Pathology, Previously Regional Diagnostics Implementation Lead for Pathology & Imaging, NHS Improvement, and Managing Director, South West London Pathology.



The webinar was broken up into three main sections. The discussion began with a focus on how the Integrated Care System will impact pathology networks and the speakers were invited to share their own experiences and perspectives on the operational elements of its implementation, helping to clarify some of the uncertainty around the practical elements of this new matrix and way of working.

This helped set the scene for attendees and led into a further discussion around the importance of promoting the critical role of laboratory medicine in integrated patient care. The speakers championed the role of pathology and encouraged ACB members and all leaders in the sector to get involved in the discussions around integrated care to help influence its design and implementation. Throughout the exchange, the speakers highlighted the importance of relying on data to demonstrate the value that pathology can bring to integrated patient care and improved patient outcomes and argued that this was a vital tool to bring into these conversations.

The speakers also explored the role that industry should play in this and agreed that links to corporates were key to supporting innovation in the sector. They advocated for allowing more access to knowledge from industry, sharing information and data and how to utilise it in pathology laboratories, so that this exchange may lead to greater efficiencies and improvements in service delivery. The role that professional bodies must play was also touched on, and the

speakers were in agreement that we should liaise with professional bodies from other healthcare disciplines to champion laboratory medicine. This would form a joint approach, with organisations like the ACB supporting the role of laboratory medicine in integrated patient care at a strategic level, while our members and leaders in the sector would be involved on the ground, to ensure that our services are represented in their local integrated care network.

Finally, the webinar concluded with our speakers sharing some practical tips with the audience on how to participate in this process and how to make their voices heard, so that the value that pathology can bring to integrated care systems is clear to everyone involved.

Delegates found the webinar to be valuable and insightful as demonstrated through the feedback received from attendees who rated it 4 out of 5 stars and said they had a much better understanding of the integrated care systems and how it will impact their service after the session: *“Excellent discussion to listen to. I have been thinking about most of these issues, but was not sure how to convey ideas to seniors – this has given me direction and inspiration!”*

All members can [listen to the recording of the webinar here](#), and we plan to run more of these webinars in partnership with Abbott in May, July, September and November. If you have a topic you would like to suggest for one of these sessions get in touch with enquiries@acb.org.uk ■

Careers in Laboratory Medicine

The ACB is proud to have supported a group of passionate Healthcare Scientists to produce a series of short films highlighting the variety of roles in pathology laboratories and how their jobs make a difference to thousands of people's lives.

Pathology laboratories and Healthcare Scientists play a crucial role in healthcare, and although they



are often behind the scenes, they are dedicated and skilled people, always there for us, working hard to have a positive impact on all patients. These films highlight the effort that laboratory staff put into every sample and every test, because every patient matters.

If you are planning to attend events to encourage young people to study in fields related to

laboratory medicine or to promote career paths in Laboratory Medicine, please get in

touch with the ACB team so they can provide you with materials to use, like these videos among other things. We want to support you in motivating a younger generation to follow in the footsteps of these inspirational Healthcare Scientists!

Visit our website to watch the videos produced as part of the IValueLabStaff campaign. ■



Nominations of Honorary Officers

In accordance with the provision of Articles 11 and 14 and the Association Bye-Laws subsection 6.2, we give notice that all Honorary Officers wish to remain in their posts for the coming year, with the exception of the Director of Finance who has reached the end of their term of office.

The nominations process for our next Director of Finance will launch this month and further information will be sent to members by email.

The nominations form can be found on [page 36](#) of this issue. Completed forms should be sent by email to mike@acb.org.uk in the first instance by the deadline: **29th April 2022.** ■

19th Annual Schools Science Conference 2022 and ACB Don Henderson Award

The 19th Annual Schools Science Conference will be held in-person on Wednesday 27th April 2022 at the University of Westminster.

The title for this year's event is "Science for Regeneration", a theme influenced by the unprecedented pandemic-related challenges experienced over the last two years by Healthcare Scientists. Focused on the future of healthcare science, the theme will reflect much more than just the regeneration of services taking place and will take a broader view of regeneration in healthcare science. The theme applies to areas including renewing of tissue as part of a skin graft or organ-transplant; the regeneration of defunct machines and their redeployment back into service during the pandemic; the regeneration of eyesight through gene therapy; neuro-regeneration following injuries to the nervous system; enabling regeneration of the environment by reversing climate change, and so on. Science underpins the whole of healthcare and society and without expert, dedicated scientists

regenerative medicine and regenerative technologies would never take place. This conference aims to inspire a new generation to follow in career paths that may lead to the regenerative technologies of the future.

This will be an interactive conference aiming to excite and enthuse London students in years 9 to 11 to study science and to showcase science and healthcare science careers. If you would like to volunteer to showcase your own profession at the conference with a table stand and help young people explore the different career paths in laboratory medicine please contact Sharon Gage (sharon.gage@srgprojectmanagement.co.uk) by 11th April.

The ACB will once again be supporting this event through the Don Henderson Award, an annual award of book tokens and presentation of a shield to the school giving the best report and presentation at the Schools Science Conference on a piece of research they have undertaken. ■



ACB Southern Region Bill Richmond Prize & AGM

Thursday 21st April 2022

The ACB Southern Region are pleased to invite everyone to join their Bill Richmond Prize Meeting which will take place from 11.00 on Thursday 21st April, followed by their Annual General Meeting (13.00-14.00).

The team are currently finalising the meeting details and more information about the content, including an agenda, will be made available very shortly. In the meantime, they would like to encourage members to register for this event [here](#).

The ACB Members' Papers presentations are a great opportunity to watch your peers from all grades present some of the work they have been doing at a friendly remote regional meeting (via MS Teams). The abstracts will be selected by the judges and then, following the presentations, two winners will be awarded the Bill Richmond Prize on the day.

Cases, audits and projects are all accepted; below are examples of previous presentations to give you an idea of what to expect from the ACB Southern Region's upcoming meeting:

- ◆ The influence of a cooked-fish meal on estimated glomerular filtration rate.
- ◆ Vitamin B12 markers are associated with insulin resistance during the third trimester of pregnancy in South Asian women with gestational diabetes and normal glucose tolerance.
- ◆ Prognostic role of the eGFR in differentiating between true and pseudohyperkalaemia.
- ◆ An unusual cause of abdominal pain.
- ◆ Verification and comparison of total and IgG-specific SARS-CoV-2 antibody assays.
- ◆ Haemolysis correction factor for serum neuron-specific enolase; fit for purpose?

There will be around six 15-minute talks, each involving a 10-minute presentation followed by five minutes for questions by the judges. Once the team have received and short-listed the abstracts, more information about the specific content of the presentations will be circulated.

Don't miss this opportunity and book your place now! ■



ACB News team – one in, one out!

ACB News would like to welcome Elizabeth Ralph to the team as our new Associate Editor for Immunology. Liz works in the Immunology Lab at Great Ormond St Hospital. She replaces Rachel Wheeler from St George's University Hospital.

We would like to say a huge thank you to Rachel for all her input during the time she spent as part of the ACB News team. ■

UKMedLab22

London • 7-9 November

UKMedLab22 – Delegate fees update

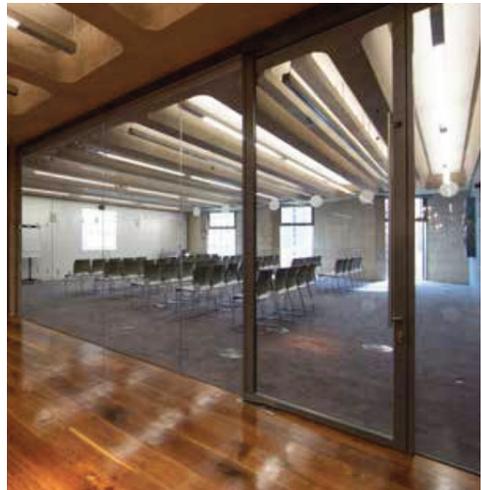
UKMedLab22 will take place from 7th-9th November 2022 at the Royal College of Pathologists' events venue, Events @ No. 6 in Aldgate, London.

As in previous years, we will kick-off with the Training Day on Monday 7th, followed by UKMedLab on Tuesday 8th and Wednesday 9th November. This year we are also offering a bonus Freddie Flynn day in collaboration with the Royal College of Pathologists for delegates who book the full UKMedLab ticket!

Tickets will be made available for purchase in the summer, but in the meantime, we would like to provide you with an update on the ticket prices:

- ◆ Training Day (Monday 7th November): **£100 ticket**
- ◆ UKMedLab (Tuesday 8th and Wednesday 9th November): **£399 full delegate fee; £230 day ticket**
- ◆ Bonus Freddie Flynn Day (Thursday 10th November): **£50** (available to delegates who book the full UKMedLab ticket).

If you are interested in sponsoring UKMedLab22 please get in contact with jane@acb.org.uk to discuss the different opportunities available. ■



I remember when . . .

The evolution of glucose analysis – a potted history

by William Marshall

One of the many notable advances in Clinical Biochemistry in recent times has been the introduction of techniques allowing patients to measure their own glucose measurements, and for such near-patient methods to be available to the busy clinician at the bedside and in the clinic. Indeed, so familiar are we now with near-patient glucose measurement that it's hard to remember that this was not available to previous generations, for whom for many years the standard test was the 'wet chemistry' method of Folin and Wu.

The measurement required 0.5 mL of blood, to which was added (by mouth pipetting) a solution of sodium tungstate and sulphuric acid. This was centrifuged to precipitate the protein and to an aliquot of the protein-free supernatant was added an alkaline copper sulphate solution. The mixture was heated in a boiling water bath, cooled, and a solution of phosphomolybdic acid added, generating a colour that was read at 680 nm. The whole procedure would, in experienced hands, take about 40 minutes. As it was before the introduction of disposable containers, all the glassware had to be washed up.

There was no way of speeding up this procedure; good working relations between clinical and laboratory staff were essential, particularly in the management of diabetes emergencies. Young doctors had to learn to be patient with their laboratory colleagues and then, as now, it was helpful to keep the laboratory staff appraised of the clinical situation. My own



experience as a junior doctor was greatly helped by my having worked in the laboratory before qualifying in medicine, and it is arguable that all medical students should spend some time in the laboratory to give them some insight into the demands they make of their bioscience colleagues.

The Folin-Wu method for glucose was rendered obsolete by the development of enzymatic assays using either hexokinase or glucose oxidase. The reference method is the enzymatic method using hexokinase: hexokinase is used to phosphorylate glucose in the presence of ATP and magnesium; the glucose-6-phosphate is then oxidised by glucose-6-phosphate dehydrogenase to 6-phosphogluconate in the presence of NAD⁺ or NADP⁺. The amount of reduced nucleotide is directly proportional to the amount of glucose and is measured by the increase in absorption at 340 nm.

Hexokinase-based methods are the most widely employed in routine (central laboratory) use but are not suitable for near-patient testing owing to stability considerations. For near-patient testing, methods using glucose oxidase or glucose 1-dehydrogenase are preferred. However, near-patient techniques should not be used for diagnosis.

So, what next? The ultimate aim must be to develop systems that allow amounts of insulin to be provided to the body on a minute-by-minute basis, as determined by transcutaneous glucose measurement; considerable research time and expertise is being devoted to this end.

However, to return to Folin and Wu, who were they? Readers of *Clinical Chemistry* may have seen a recent article by Thomas Annesley: 2020; 66(12): 1577-1578 which answers this question. Otto Folin was born in Sweden but migrated to the USA aged 15 and had an impressive career as a Research Biochemist, being appointed to a Chair at Harvard. Hsien Wu was Chinese and was enabled to go to the USA by virtue of a Boxer Indemnity Scholarship, set up by President Theodore Roosevelt as part of a programme to improve USA-Chinese relations after the Boxer Rebellion. He began by studying naval architecture but became interested in biochemistry and moved to Folin's laboratory, where he developed several analytical methods, including that for glucose which bears both their names



(Folin, O and Wu, H. A System for Blood Analysis, *J Biol Chem* 1919: 38; 81-110); a paper that became a citation classic.

It does us no harm in this highly automated age to remember such pioneers, to marvel at what they achieved and to think how such developments revolutionised patient care in their own time. ■

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:

Jonathan Wild, Associate Clinical Scientist, Royal Infirmary of Edinburgh, UK

Fatih Ozdemir, Director, Babylon Group Ltd, UK

Rona Alkaadi, Trainee Clinical Scientist, South West London and St George's Mental Health NHS Trust, UK

Georgia Pretlove-Smith, Trainee Clinical Biochemist, Nottingham University Hospitals NHS Trust, UK

Carole Spencer, Technical Director, University Southern California, US

Katherine Connolly, Trainee Healthcare Scientist, University Hospitals Birmingham NHS Foundation Trust, UK

Laura Hancox, Chemical Pathology and Metabolic Medicine Registrar, University Hospitals Bristol and Weston NHS Foundation Trust, UK

Settar Kosova, Lab Director, Caycuma Devlet Hastanesi, Turkey

Aruni Kanchana Wijesinghe, Medical Training Initiative – Fellow in Chemical Pathology, Royal Surrey County Hospital, UK

Noor Alrajhi, Physician – Registrar, Kuwait

Khadija Haouit, MSc Student, University College Dublin, Republic of Ireland

Manar Mashhadani, Clinical Scientist, HSST, University Hospitals of Derby and Burton NHS Trust, UK

Emma Henly, Trainee Clinical Scientist, Royal Liverpool University Hospital, UK

Wayne Rankin, Chemical Pathologist, SA Pathology, Australia

Jayagandan Jayamani, Clinical Biochemist, New Mowasat Hospital, Kuwait

Kimberley Game, BSc Student, University of Warminster, UK

Clement Akinnubi, MSc Advanced Biochemistry Student, University of Strathclyde, UK

Elizabeth Thursby, Clinical Scientist, Wirral University Teaching Hospital NHS Foundation Trust, UK

Richard Clamp, Student Teacher/Biomedical Scientist, The Polesworth School – Science Department, UK ■

BIMDG Annual Symposium



The British Inherited Metabolic Disease Group Annual Symposium is taking place on 9th-10th June at the Hilton Hotel, Gateshead (on the Newcastle Gateshead Quayside close to Newcastle Central railway station). There is a pre-meeting event on 8th June in the evening.

The Thursday morning Trainees' session will comprise short talks on cases and audits by Clinical Scientists and Medical staff in training, however non-Trainees are welcome to attend.

Individuals not specialising in IMD are welcome to attend the symposium – the programme content will be of interest to many working in Clinical Biochemistry and Laboratory Medicine.

Details of the meeting can be found [here](#) and registration is now open. An additional charge will be applied for registration after Friday 13th May.

The registration process is sometimes blocked by NHS trust computers but outside of that should work on most platforms including Chrome, Firefox, Safari, Edge etc. ■

ACB National Audit – Critical Results Audit – closing date extended

The aim of the ACB National Audit on Telephoning Critical Results is to assess the similarities and differences in the clinical/laboratory pathways and protocols for communicating critical results in the biochemistry laboratory.

One response per laboratory is required so please discuss with your colleagues as other members in your laboratory may have received this or previous notices and responded on your laboratory's behalf. Your help with this important audit will be very much appreciated.

If are unable to complete all sections of the survey, please complete what is relevant to your service. Please leave sections blank if your laboratory does not test for a certain analyte.

The survey will close 5pm Monday 4th April 2022. ■

Publication Deadlines

To guarantee publication, please submit your article by the 1st of the preceding month (i.e. 1st May for June 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



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

As well as events aimed at LTO-UK users (such as the RCGP Conference or The National Association for Patient Participation), we also attend events for lab professionals to encourage more involvement. This year we were at the IBMS Congress in Birmingham in March to speak to our BMS colleagues. Here's our IBMS Representative, Michelle Brereton, ready to talk to delegates.



Meet the Lab Tests Online-UK Board Deputy Marketing Lead Iain Woodrow



Iain did a PhD in Biochemistry followed by a couple of post-docs before disenchantment with academic research lead them to join the Clinical Biochemistry Grade A Training Scheme (the precursor to the STP) late last century and they have been working in Clinical Biochemistry ever since. Iain initially worked in the Northwest of England at Salford, Liverpool, then Wigan, before hopping over the Pennines to work at Pinderfields in Wakefield and, more latterly, Barnsley where they are now a Consultant Clinical Scientist. Iain is passionate about science communication, having become involved with LTO around a decade ago, and, as Deputy Marketing Lead, has been heavily involved in promoting the site through attending conferences or writing

articles for websites and other publications, as well as being part of developing the marketing strategy for the site.

Outside of work, Iain spends a lot of time with family but is also a keen gym bunny, being a fan of step aerobics, clubbercise and body combat, and recently taking part in a four-hour Fit-a-thon for Ukraine. Iain enjoys cooking and they have also been known to go running for fun! Iain is a (very) amateur stand-up comedian, running Wakefield's longest running comedy night, Jockularity.

What's new on LTO?

There's a new article on the recent announcement that the NHS will now support genetic screening in cancer patient for mutations in a gene responsible for an enzyme which breaks down 5-fluorouracil (5FU). Dihydropyrimidine dehydrogenase (DPD) rapidly degrades 5FU, but about 5% of the Caucasian population have a partial deficiency in the enzyme, allowing build up of the cytotoxic drug which can be potentially life threatening. There will be testing for the four most common genetic variants of DPD which are able to predict 25-30% of early-onset toxicities.

[Read the full article here.](#)

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 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



Deacon's Challenge Revisited

No 19 - Answer

A patient's arterial blood results showed a pO_2 of 12 kPa, haemoglobin concentration of 150 g/L and an oxygen saturation of 98%.

Calculate the total oxygen content of his blood in mL/L.

MRCPath May 1997

$$\text{Total } O_2 = O_2 \text{ bound to Hb} + \text{Dissolved } O_2$$

$$O_2 \text{ content (mL/L)} = \frac{(\text{Hb} \times sO_2 \times 1.39)}{100} + (pO_2 \times 0.23)$$

where $pO_2 =$ oxygen tension in kPa $= 12$

$Hb =$ haemoglobin concentration in g/L $= 150$

$sO_2 =$ oxygen saturation (i.e. % Hb present as HbO_2) $= 98$

Substituting these values:

$$\begin{aligned} O_2 &= \frac{(150 \times 98 \times 1.39)}{100} + (12 \times 0.23) \\ &= 204.3 + 2.8 \\ &= \mathbf{207 \text{ mL/L}} \end{aligned}$$

Without using the above equation an approximate answer can be calculated as follows:

The majority of oxygen is bound to haemoglobin, therefore ignore the dissolved oxygen component.

Convert Hb to molar concentration (MW of Hb approx 65000)

$$Hb = 150 \text{ g/L} = \frac{150}{65000} = 0.00231 \text{ mol/L}$$

Each molecule of haemoglobin contains 4 oxygen binding sites and we are told these are 98% saturated, therefore:

$$\text{O}_2 \text{ content} = \frac{0.00231 \times 4 \times 98}{100} = 0.00906 \text{ mol/L}$$

The oxygen content can be converted to volume using the gram molecular volume of a gas (GMV):

$$\text{GMV} = 22.4 \text{ litres at STP (i.e. normal atmospheric pressure and } 0^\circ\text{C)}$$

$$\text{O}_2 \text{ content} = 0.00906 \times 22.4 = 0.203 \text{ L/L} = \mathbf{203 \text{ mL/L}}$$

If necessary this volume could be converted to any other pressure or temperature using the gas laws. ■

Question 20

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

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 29 from February's ACB News

The following is true of coronaviruses:

- A. SARS-CoV-2 is the only coronavirus to cause disease in humans
- B. There are currently four main sub-groupings of coronavirus
- C. There are seven currently known coronaviruses that can infect people
- D. Coronaviruses are spread mainly via respiratory droplets and small particles that contain the virus
- E. Vaccines can be effective in either preventing or minimising the effects of disease
- F. Antibiotics are an effective way to treat coronaviruses

Answer:

True - B, C, D & E

False - A & F

Question 30

Epstein-Barr Virus (EBV) is associated with:

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

The answer to Question 30 will appear in the next issue of ACB News – enjoy! ■

Microbes in the home

Anthony de Souza, Practice Education for Healthcare Science at Great Ormond Street Hospital

We like to think of microbes such as bacteria and fungi as external agents, but it is futile to argue that our lives aren't inextricably linked. Microbes are present all around us breaking down organic materials such as gardening waste, producing useful compounds such as anti-microbials and in culinary exploits such as bread making and alcohol production.

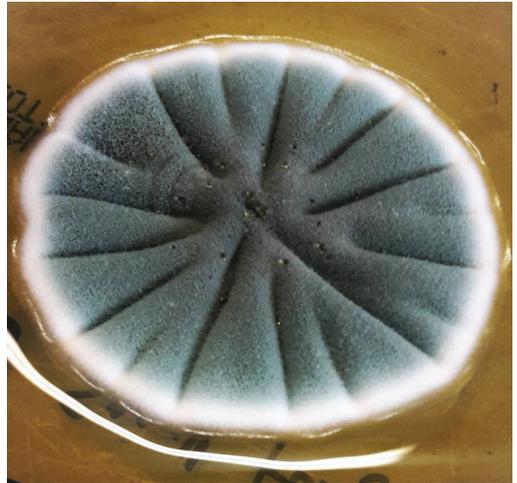
In spite of this, in much of the western world, microbes are seen as 'dirty' and 'bad'. No one is immune to this narrative and even a scientist like me who has worked in Microbiology for 10 years can find themselves lured into this way of thinking from time to time.

They are growing on me...

As the sun set in my dimly lit room, following a long day at work I cleansed my bag of the work items it contained. I pulled my woolly hat from my side pocket haphazardly and tossed it onto my bed, noticing some strange fabric discolouration. Checking I had removed everything from the mesh side pocket, I dug my hand deep inside and pulled out the most otherworldly object, a spherical blueish green ball; it didn't click and I squeezed its unyielding form to gauge an idea of what it was.

It was then that I noticed the powdery texture that was coating the ball, and now my hand!

I froze. I looked to the hat. The discolouration matched this otherworldly ball and the realisation had sunk in. Automatically I took very shallow breaths, the way you do when someone sneezes without a mask on a busy tube. With my frozen left hand acting like a cage I slowly, and calmly, walked to the kitchen



causing as little disruption to this unstable mouldy piece of fruit. Grabbing a food bag out of the drawer I gently placed the mouldy contents into the bag and slowly tied the bag. Looking down at the dark blue/green powder on my hand I felt sick and started to wash my hands profusely. After washing my hands, I went back to my bedroom, picked up my favourite winter hat and placed that in a bag and disposed both it and the offending item into a bin bag (triple knotting it for good measure!)

Washing my hands again felt cleansing but I was in ground zero and my flat felt like an invisible contaminant had taken over. I gathered up my bed sheets and threw them in the wash; the hat had been on it! And opened my windows wide! I then disposed of *that* powdery backpack.

From a microbiological perspective I had a few key concerns:

1. **The distribution of spores across my tiny flat** – that powdery substance contains thousands of spores which are how fungi reproduce (sexually or asexually). Most spores are designed for

airborne dissemination and can easily do so when disturbed. Though the mouldy fruit was initially confined to my bag, an explosion of spores occurred once uncovered and unfortunately squeezed!

2. **The inhalation of spores into my body** – the body is frequently exposed to fungal spores via the lungs and has a resident population of alveolar macrophages to devour them. On average a cubic meter of air contains 200 CFU of fungal spores. This varies seasonally and on the local environment. For most healthy immunocompetent individuals spore inhalation wouldn't be a problem, but the body can get overwhelmed and react. There are often stories in the media about healthy individuals breathing in concentrated spores from compost and falling seriously ill shortly after as the spores grow within the host's lungs. Spore inhalation can also cause asthma attacks and hypersensitivity reactions.
3. **Further unseen growth of spores in my environment** – Carpets are a haven for mould and fungi as they are good at trapping moisture, something which they need to grow. Spores can be thought of as highly resistant seeds, enabling them to survive in harsh, hot,

cold, dry, pressurized or high UV conditions. When favourable conditions arise, intact spores can grow and develop.

The mouldy piece of fruit in question was a satsuma and like any rationally irrational professional, I asked Dr Google many questions in my panic.

An organism called *Penicillium italicum* or *Penicillium digitatum* were likely to be the culprits. Washing my bag at 90 degrees in bleach to, at the very least, reduce the spore contamination seemed beyond my energy reserve so throwing out my powdery backpack seemed like a good idea.

I don't give a shitake

After I eased my mind with a cup of tea and a chocolate hobnob (the king of biscuits), I lay in bed, trying not to disturb any settled spores and thought back to an incident in the lab. I remember a junior colleague telling me that they had grown a beautiful *Aspergillus fumigatus* on a petri dish! As I approached, the agar plate fell out of her hand and hit the floor and I saw a thick mushroom cloud of spores arise to standing height. I must have scowled, my colleague asked me 'Anthony what's wrong?' I held my breath and left the room quickly.

What would you have done? ■



New Chair of Trainees' Committee appointed

Monika Jankute, Senior Clinical Scientist - Biochemistry, University Hospitals Birmingham NHS Foundation Trust



I am honoured to be appointed Chair of the ACB Trainee Committee. I am a Senior Clinical Scientist in Biochemistry at the University Hospitals Birmingham NHS Foundation Trust. I have been involved in the ACB community for over 5 years and during this period I have experienced how laboratory medicine has become a more mature, vibrant and diverse research field. Serving on the ACB West Midlands committee for two years allowed me to work with other fellow committee members to establish a sustainable network and to support West Midlands trainees in their training. Building on my previous experiences and knowledge of the ACB Society, I aim to actively aid the

continuing growth of laboratory medicine and to promote and advance the education and training of trainees at all stages of their careers. Specifically, I would like to focus on two different areas.

Firstly, despite an increase in face-to-face and online laboratory-specific training courses, I believe that even more attention can and should be given to the dissemination, development and improvement of current training materials. More importantly, immunology and microbiology courses are often overshadowed by materials for clinical biochemists. The new ACB website provides an excellent platform through which we can level the field and engage trainees from all three areas of laboratory medicine.

Secondly, I am a strong supporter of standardisation across the field of clinical pathology including improvement of quality in the pre-analytic testing phase and the use of easily accessible and reproducible data processing tools that facilitate large data assessment and management. Statistical programming languages can transform and analyse data and clearly communicate results. The ACB Trainees Committee have the ability to support the growth of data analytics and new generation data processing, and ensure current and future trainees have a wide variety of capabilities when working with data. ■

ACB Wales Scientific Meeting 2022

Manjot Gill, Trainee Clinical Scientist, Swansea Bay University Health Board

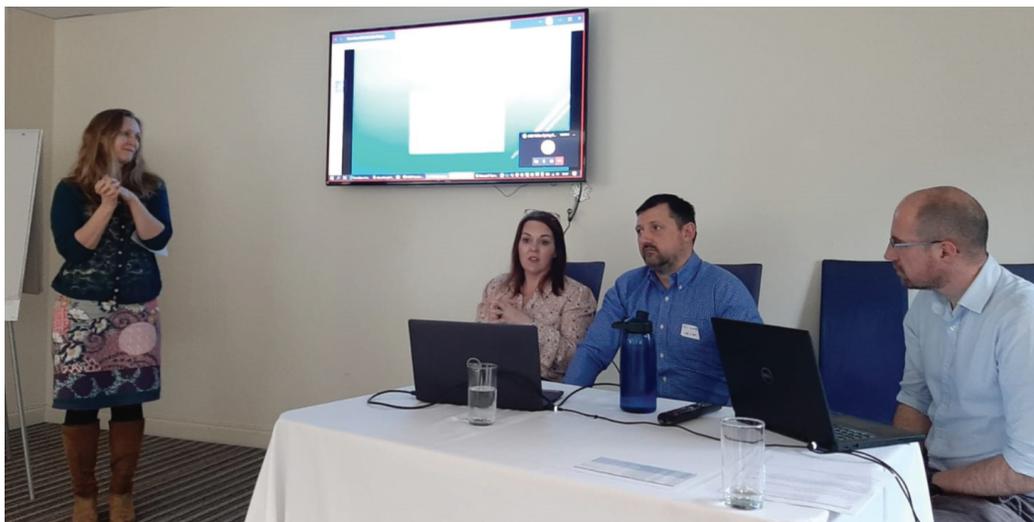
The ACB Wales Scientific Meeting took place on 3rd March 2022. In collaboration with ACB organisers, the staff at Hywel Dda and Swansea Bay University Health Boards delivered an engaging series of presentations based on a focal theme of transgender medicine. Delegates had the opportunity to participate either in-person or virtually. As the resident trainee, I was able to attend the meeting in-person at the Towers Hotel and Spa in Swansea. The day began with a warm reception by the meeting chair, Sue Prosser, and it unfolded into an exciting event, filled with thought-provoking discussion.

On behalf of all attendees, I would like to send a special thank you to Sue Prosser, Natasha Colman, Craig McKibbin and Anthony Jackson-Crawford for their considerable efforts with organising the meeting. Also, an extended thanks to Nuno Menezes from the ACB office who helped coordinate the event. This event

was kindly sponsored by Citadel Health and Waters™.

Session One

The meeting commenced with a presentation by Matthew Burke, Business Development Manager at Citadel Health. He provided an overview of the services offered by Citadel Health, with a particular focus on Evolution vLab, a flexible Laboratory Information Management System (LIMS) currently connecting more than 30 laboratories in Australia into a single, standardised LIMS. Matthew briefly discussed the company's new venture in Wales, which involves connecting 21 laboratories using Evolution vLab and implementing a national multi-site pathology workflow by 2024. Keeping to the theme of the day, Matthew then expanded on solutions to record patient pronouns and additional gender information into LIMS. He concluded his



presentation with a key message that Citadel Health offer fully configurable systems and are actively seeking collaboration from pathology managers on how to implement solutions for a gender-inclusive LIMS.

The next sponsor presentation was delivered by Dominic Foley, a principal scientist at Waters™. His talk was titled "Confidence in your calibrators. An introduction to the MassTrak endocrine steroid calibrator and QC set". Dominic discussed the limitations of steroid measurement in the lab, with a particular focus on testosterone measurements in female patients, and he introduced the MassTrak endocrine steroid calibrator and QC set offered by Waters™. The product consists of seven calibrator vials and three QC levels, and all materials are traceable to reference materials. Dominic explained the advantages of the product, which included improved laboratory efficiency, broad assessment of the reference range, and improved metrological traceability.

Following on from the sponsor presentations, Dr Sam Rice, Consultant Physician and Endocrinologist at Hywel Dda University Health Board (HDUHB), presented a series of cases on male hypogonadism. The first case was an unknown cause of raised sex-hormone binding globulin (SHBG); this was followed by a case on low sperm count and infertility due to high-dose testosterone replacement. Dr Rice cautioned against the inappropriate use of testosterone, and explained how the second patient required venesection therapy to treat a raised haematocrit. Throughout the presentation, Dr Rice mentioned the high number of referrals for obesity-related low testosterone, and he neatly concluded the session by presenting two cases of low testosterone in patients with high BMI and hypertension.

Session Two

After a short break, Dr Kusuma Boregowda, Consultant Endocrinologist at Swansea Bay University Health Board (SBUHB), gave an overview of the diagnosis of polycystic ovarian disease (PCOS). She described the role of laboratory testing and, in particular, the interpretation of free androgen index in patients suspected of having PCOS. To highlight the challenges in diagnosing PCOS, Dr Boregowda presented a case of amenorrhoea, hirsutism, high testosterone and low SHBG in a female patient. She explained that before diagnosing PCOS, more consequential causes should be ruled out, including congenital adrenal hyperplasia and androgen secreting tumour. After delivering her presentation, Dr Boregowda participated in a Q&A session, where she was asked about the diagnosis of PCOS in transgender men. In a conscientious manner, she explained that although she had limited experience, her consultation would be driven by patient-led care and treatment decisions would target the presenting concerns of the patient.

In the next presentation, Dr David Price, Consultant Endocrinologist at SBUHB, spoke about the endocrinology of gender, and discussed his experience of delivering care for transgender patients as a non-specialist. He gave an insight into the importance of individualised treatment decisions, and explained the value of measuring testosterone in transgender men on testosterone therapy. Dr Price concluded his talk with a nod to specialist centres for transgender medicine, which provide holistic care for their patients. In the Q&A session, Dr Price was questioned on which clinical details he thought should be written on test request forms. The general consensus amongst the audience that writing 'hormone therapy' helps to inform the duty biochemist whilst mitigating any breaches in patient confidentiality.

Session Three

The first half of this session consisted of an insightful presentation by the Diversity and Inclusivity Team at HDUHB. Kathryn Cobley, Diversity and Inclusion Manager, outlined the extensive issues associated with handling sensitive data on transgender patients. Kathryn introduced key messages from the Gender Recognition Act (2004), and outlined the clinical risks related to acquiring a new NHS record or changing gender on an existing NHS record. She also described pragmatic approaches to overcome existing limitations. For example, upgrading administration systems to capture information on gender history, and exploring options to retain and link previous medical records to new medical records. Following this, Alan Winter, Senior Diversity and Inclusion Officer, spoke about transgender medicine and patient care in a wider context, discussing the potential for updating maternity policies with gender neutral language. Kathryn concluded the discussion by reiterating the need to work with the Welsh government, as well as representatives from the transgender community, to resolve issues with existing, constricted software systems.

In the next session, Dr John Dean, the NHS Gender Specialist, gave an excellent talk titled "Laboratory services and the healthcare of trans and gender diverse people." Dr Dean provided an overview of the inequalities facing the transgender community. He discussed the importance of language, and articulated the need for respectful, tailored word choices. Dr Dean then spoke about patient consent, the intricacies of patient registration, and the moral responsibilities of healthcare professionals. The second half of his presentation was focused on delivering individualised interventions for transgender patients. He provided an overview of the services offered by the Welsh Gender Service and the role of local gender teams. In the context of pathology, Dr Dean then discussed the problems with existing reference ranges and documenting sex and gender on laboratory request forms and reports.

Session Four

The final session of the day was opened by Professor Jonathan Kay, Chair of the Faculty of Clinical Informatics. He spoke on innovative solutions to improve information workflows in pathology. To begin, he discussed the failures of not



delivering reports to the right clinicians at the right time, and the manipulation of digital reports as they are transferred between clinical systems. Professor Kay urged laboratory staff to measure, audit, review, and minimise quality issues associated with the delivery and format of reports. This can help identify issues between interfaces. Continuing with his breakdown of overlooked issues, Professor Kay described the problems with strict reference intervals and the transferability of results, especially with endocrine tests, between laboratories. To conclude, Professor Kay stated that issues with technology are not unique to transgender medicine but, instead, they extend to wider problems, and laboratory staff have an extended role to play.

In the next presentation, Dr Sean Costelloe, Consultant Clinical Scientist at Cork University Hospital, delivered a pre-recorded presentation on behalf of the ACB Pre-Analytical Phase Special Interest Group (ACB-PA-SIG). He reinforced the shortcomings of laboratory services, including recording only single sex/gender in LIMS, and problems with accessing correct test sets. Dr Costelloe went on to highlight that even if we did collect more data on reference intervals in transgender patients, the LIMS functionality is still not fit for purpose. He then described the findings of a survey distributed by ACB-PA-SIG to laboratories in the UK and Republic of Ireland based on transgender medicine. Key findings included that most laboratories enter sex only into LIMS, and when procuring new LIMS, many labs did not enquire about data fields to support gender identity, sex assigned at birth, and inventory of current organs. Dr Costelloe concluded his talk by mentioning an ongoing study called

TRANSRIHTS, 'Trans and non-binary reference intervals while on hormone therapy study'. This study involves recruiting transgender patients on masculinising and feminising therapy and measuring 27 routine chemistry tests to improve existing literature on reference intervals.

The final presentation of the meeting was delivered by Tash Oakes-Monger, National LGBT Project Manager. Tash provided valuable insight into the trans and non-binary health inequalities present in our healthcare system, and they educated the audience on how to challenge assumptions in their practice. To begin with, Tash encouraged the audience to follow transgender people on social media and build diverse relationships. They also reiterated a common theme of the day: the importance of using respectful language. Tash specifically advised against asking unnecessary questions on gender history. They also encouraged the audience to be more conscious of micro-aggressions based around cis-normativity and the dismissal of identity, and highlighted the importance of achieving this by presenting examples of unacceptable patient experiences in the NHS. To conclude, Tash urged the audience to break the cycle of assumptions, and help create open communication and opportunities for informed consent.

The meeting's chair, Sue Prosser, concluded the ACB Wales scientific meeting by thanking the audience and the speakers for their time and participation. It was a day that stimulated important discussions and, personally, provided me with valuable learning points on improving care for transgender patients. ■

Retired Members' Group

Mrs Ruth Lapworth MBE

The second virtual event of the Retired Members' Group was held on Tuesday 23 November 2021. Our two speakers were Dr Nuthar Jassam and Dr Martin Myers, who gave excellent presentations on "Harmonisation of adjusted calcium: Is it a realistic goal?" and "Pathology GIRFT: Implications for the future," respectively.

Dr Jassam began her talk by showing us some recent NEQAS data demonstrating the lack of agreement of adjusted calcium concentrations in UK laboratories. She explained that harmonisation of adjusted serum calcium includes harmonisation of both practice and outcome. The aims of harmonisation are to enable calcium results to be transferable from one location to another and to ensure the measured calcium concentration reflects the patient's true calcium status.

The adjusted calcium concentration is dependent on a number of variables; these include:

- ◆ The method for measuring serum calcium

- ◆ Concurrent serum albumin concentration and its method of measurement
- ◆ Method of data collection
- ◆ Population studied
- ◆ Equation used to make the adjustment.

Dr Jassam highlighted issues with the analytical methods used to measure serum calcium. She described the proportional bias of some commercial methods and the impact this has on reference ranges. Dr Jassam then discussed the even more problematic issue of albumin measurement – the difference between BCG and BCP methods for measuring serum albumin and variable standardisation of commercial methods linked to the traceability of calibrators. The age, gender and posture of the patient can also affect serum albumin concentrations, as well as the population used (primary/secondary care), when interpreting the results. All of these issues can affect adjusted calcium harmonisation, particularly if a single albumin result is



Dr Nuthar Jassam



Dr Martin Myers

used in the equation to adjust the calcium concentration.

Dr Jassam reminded us that it has been suggested that use of any equation to adjust serum calcium concentration should be abandoned in patients with renal failure and should not be used in paediatrics. In addition, she proposed that equations could be modified according to an individual's gender, age, pregnancy and menopausal status. This could lead to the use of one of a number of equations depending on the patient, which has the potential to confuse service users.

In the follow-up discussion, a view was expressed that harmonisation of adjusted calcium cannot be achieved unless the methodological issues affecting both serum calcium and albumin measurement are resolved. Audience members were hopeful that Dr Jassam's work in this area would progress to improve patient care.

The second speaker, Dr Martin Myers, is the Clinical Biochemistry Representative on the Pathology Project team for Get it Right First Time (GIRFT). He began his presentation by explaining that the GIRFT initiative was successfully pioneered by Professor Tim Briggs in orthopaedics. The subsequent changes in practice and improvements in patient care seen in orthopaedics led to the programme being extended into other clinical areas, including laboratory medicine. Whilst we are all familiar with the assessment of pathology services using total quality management systems, Martin's view is that these have an inherent bias, and we should also be looking at the service from the patient's perspective.

He described the various stages in the GIRFT methodology which have been used to review 137 pathology services in Trusts in England over the last year. The first step was collection of relevant data from each Trust using a questionnaire. After reviewing the data submitted,

each Trust was given a report comparing their performance to the national picture prior to the next step – a visit by the GIRFT team to discuss the findings.

The aim of GIRFT is to highlight areas of best practice and unwarranted variation for each pathology service. Ways to improve productivity or reduce demand for specific tests can then be discussed, and whether implementation of requesting using care sets or alteration of test profiles would make a difference.

Sample-taking (phlebotomy and sample labelling) and sample transport to the laboratory were also reviewed, as well as sample processing within the laboratory. Martin emphasised the importance of these areas due to the unacceptable sample rejection rates that are reported by some laboratories.

GIRFT also reviews other potential areas of variation such as minimum retest intervals, reference ranges, guidelines for telephoning results, electronic referral of requests to reference laboratories and AKI reporting.

The third step in the GIRFT process is the agreement of a local action and implementation plan with a view to improving the clinical effectiveness of the pathology service.

A National Report was launched in January 2022. It highlights best practice, concerns and challenges, and also includes 21 recommendations which, if implemented, will lead to improvements in patient care by reducing variability between services. However, liaison between the relevant professional bodies will be required to ensure that the necessary changes to practice are made and sustained. ■

- ◆ **The next meeting of the Retired Members' Group will be held on Monday 25th April 2022.**

Dr Moira Kaye

It is with a deep sadness that we report on the sudden passing of our dear friend and colleague Dr Moira Kaye. Moira was a driving force and ever-present member of the Association for Clinical Microbiology (ACM) and then the Microbiology Professional Committee of the ACB for 20 years, many of these as Secretary.

Moira trained at Birmingham Heartlands as a Clinical Scientist. She moved to Telford's Princess Royal Hospital in 2002 before taking on the role of Unit Head at PHE's Food, Water and Environmental Laboratory at Good Hope in 2013, where she remained until the announcement of its closing, when she then became Laboratory Manager at the Microbiology Laboratory in Hereford. In recent years, she moved back to Royal Shrewsbury Hospital as Consultant Clinical Scientist, leading on their response to COVID-19 for the past two years.

The Microbiology Professional Committee were devastated to hear this news and tributes to Moira flooded in. There were many recurring themes: descriptions that appeared again and again. 'Smiley, friendly, kind, funny, enthusiastic, optimistic, always willing to help, a credit to our profession, a source of knowledge, guidance and support, a genuinely lovely person'. Alongside these descriptions, Moira's friends repeatedly said that she had a wonderful ability to make people feel welcome. Because she genuinely did. We all felt it.

Many commented on how welcoming Moira was to all; new and old members alike. Multiple colleagues recalled that Moira was the first person who sought them out at their first ACM/ACB meeting. Many also commented on her kindness, for example Gemma Clarke said, "Moira left an imprint on those she met and her kindness to me won't be forgotten,



and makes me want to be just as kind to others".

Moira was a great champion of Clinical Scientists and genuinely cared about our trainees; the next generation of Clinical Scientists who would be working in laboratories, caring for patients, for years to come. She wanted to support them as best as she possibly could, despite her incredibly busy day job. Penny Cliff said "I always came away from conversations with her with greater belief in myself and my ability to achieve, and I expect there are many others who would say the same. We'll always be incredibly grateful to her, and I know that our profession is too."

I think Moira's kind character and ability to make friends is best summed up by the words of her friend and colleague, Dr Derren Ready. "Moira and I met on the very first day I attended the ACM Scientific meeting. I was a newbie to the profession and as the only Trainee Clinical Scientist at my workplace, I didn't know anyone and felt quite uncomfortable. Moira walked up to me, said hello and we chatted over tea and biscuits. Moira was and will always be

the first person to welcome me into the profession. She was so very kind that day and not only did she see what I needed, she took the time to be with me and make me feel part of our profession. We have subsequently caught-up at countless ACM and then ACB meetings, both sat around a series of different tables in numerous ugly meeting rooms, eating more biscuits, drinking more tea, me chatting, whilst I watched Moira busily scribbling down yet another set of minutes or kindly pulling out an extra copy of the agenda for me, because I'd forgotten mine."

"Moira was such a great Clinical Scientist, she embodied our professional standards and through her organisational skills she got us moving along as a professional group, which is definitely no mean feat. Although we never worked in

the same lab or trained together, I consider Moira a very close friend and dear professional colleague. I'm still very sad that I won't be able to chat with Moira whilst munching on yet another biscuit (I suppose that's why our professional fees are so expensive) or share another cup of tea with her, I know I was very privileged over the years to have spent so many fun times with her, and even when the meeting was boring, Moira was a joy to be with."

Moira is survived by her husband, Jason, and by two sons, Alex and Ethan. A charity donation page has been set up in her honour https://www.memorygiving.com/drmoira_kaye and the Microbiology Professional Committee are planning to commemorate her memory. She will be deeply missed. ■

RS

Industry Insights: April 2022

Doris-Ann Williams, Chief Executive, BIVDA

It actually feels like someone has pressed reset on life after two years! It's difficult to be too upbeat while this awful war is waging in Ukraine but I'm writing this on my return from the IBMS Congress and it was a real boost to see so many industry and NHS colleagues again in three dimensions, not least of which the ACB President himself!

So what new shoots are there for the IVD sector this Spring (and apologies if I push this analogy too far)? We are still waiting to see germination of the seedling UK regulations from the MHRA/ Government with implementation still set at 1st July 2023. BIVDA's concerns are in parallel to those for the IVD Regulation in the EU: will there be enough Approved Body capacity; surely transition time will

need to be extended; what will happen to lab developed tests and indeed with re-structuring and people leaving the med tech roles at MHRA; will there be sufficient IVD expertise for a national regulator?

Looking at laboratory diagnostics though, the Government does still seem very engaged with the early diagnosis and prevention agenda and I recently spoke to Earl Howe, former Health Minister and now deputy leader of the House of Lords who told me, without me asking, that diagnostics are a leading topic of conversation in Parliamentary and Ministerial circles in Westminster which is encouraging. The Diagnostics Strategy which was started under Lord Bethell and then went via Lord Kamal to Health Minister Edward Argar MP has now been



*Doris-Ann Williams
with the BIVDA
Regulatory Affairs
Manager, Ashleigh
Batchen*

passed to the MedTech Directorate and will be published as a stand alone part of the MedTech Strategy this summer.

I've also been thinking a lot about the role of the Lighthouse Laboratories and I hope that some of the capacity can be re-purposed to supplement the NHS now, perhaps help reduce the backlog in the short term and be used in surveillance and similar initiatives. Certainly the Integrated COVID-19 Hub in Newcastle looks like it will be another great help for industry for running evaluations at different stages of a product development and collecting samples suitable for each diagnostic test studied as well as helping with access to residual samples. BIVDA would be really interested in a joint meeting to look at what options are available to support the NHS laboratory service and maximise investment made by the Government.

But back at BIVDA we are also continuing and strengthening our workstreams to support the members with interweaving AMR, COVID-19 and Sepsis into an overarching Infectious Disease group, bringing manufacturing issues into a group alongside export support and pushing forward with our sustainability programme. We also need to follow the money and held a workshop with NHS managers looking at the way funding flows will (eventually) change as Integrated Care Systems starts on 1st July and we'll be continuing to help members monitor this with workshops and individual sessions if needed.

So plenty to keep us busy as we emerge from the short winter days and all look forward to meeting friends and enjoying better weather ahead. ■

ACB News Crossword

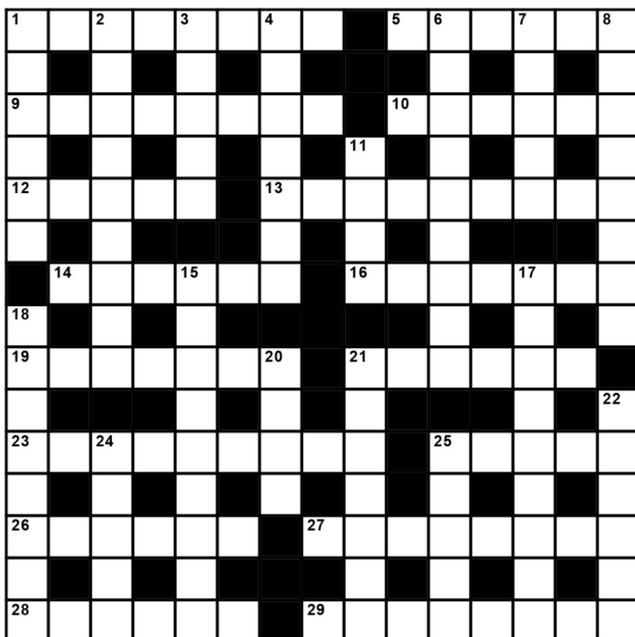
Set by Rugosa

Across

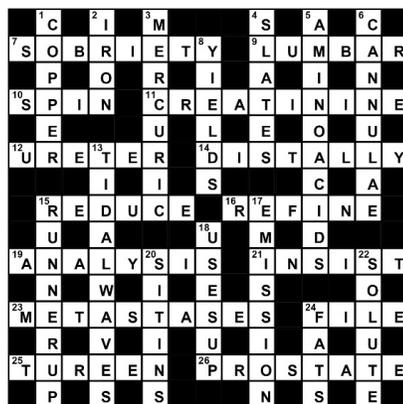
- 1 Gas about greyhound not acceptable (8)
- 5 Concerning file about response to pain treatment (6)
- 9 Research lead in pursuit for new treatment of skin condition (8)
- 10 Swap coins (6)
- 12 Becoming so may require some new wardrobe selection (5)
- 13 French friend has no current identification for compound (5,4)
- 14 Go round clique (6)
- 16 Country provides aromatic ingredients for all except meal starter (7)
- 19 Dreadful rascals these Indian sailors (7)
- 21 Unusual state of gas in odd dirty kitchen (3,3)
- 23 Locating unknown origin of unhealthy non-enzymatic reaction (9)
- 25 Joins course (5)
- 26 Non-maritime shanty (4,2)
- 27 Gagged about leading share's decline (8)
- 28 Did veterinary operation excise vein instead? (6)
- 29 Contagious disease causes affected physiologist to go off (8)

Down

- 1 Extraordinary philosophers (no losers) form culture movement of spoken verse, music and dance (3-3)
- 2 Is it cured using these drugs? (9)
- 3 Compound verse about team (5)
- 4 Ate two French crumbles, got an effusion (7)
- 6 They log on for revising the study of human races (9)
- 7 One of our strengths, being incongruous without resistance (5)
- 8 Re psychiatrist – treatment refund first class! (8)
- 11 Element of last waltz in first composition (4)
- 15 Hesitation after domestic performance of oddball (9)
- 17 Little sister leaves difficult calisthenics involving applied science (9)
- 18 Damaged a leg in bad fall, but able to move about (8)
- 20 Short drive in Nash-Healey's Pininfarina (4)
- 21 Stupidity affecting odontology not right (7)
- 22 A team's under breath remarks (6)
- 24 Pick out an essential precursor of tipsy-cake ingredients (5)



Solution for February Crossword



ACB News

The Editor is responsible for the final content; advertisers are responsible for the content of adverts. Views expressed are not necessarily those of the ACB.

Lead Editor

Dr Gina Frederick

Pathology Laboratory
Royal Derby Hospital
Email: gina.frederick1@nhs.net

Associate Editors

Mrs Sophie Barnes

Department of Clinical Biochemistry
Charing Cross Hospital
Email: sophiebarnes@nhs.net

Mrs Nicola Merrett

Department of Laboratory Medicine
University Hospital Southampton
NHS Foundation Trust
Email: nicola.merrett@uhs.nhs.uk

Dr Christopher Pitt

Department of Biochemistry
NHS Ayrshire & Arran
Email: christopher.pitt@aapct.scot.nhs.uk

Miss Wendy Armstrong

Clinical Blood Sciences
Croydon University Hospital
Email: wendy.armstrong4@nhs.net

Dr Becky Batchelor

Department of Clinical Biochemistry
Western General Hospital
Email: becky.batchelor@nhslothian.scot.nhs.uk

Dr Elaine Cloutman-Green

Dept of Infection Prevention and Control
Great Ormond Street Hospital
Email: elaine.cloutman-green@gosh.nhs.uk

Dr Jenny Hamilton

Department of Clinical Chemistry
Southern Health & Social Care Trust
Email: jenny.hamilton@southerntrust.hscni.net

Dr Katy Hedgethorpe

Derriford Combined Laboratory
Derriford Hospital
Email: katy.hedgethorpe@nhs.net

Ms Elizabeth Ralph

Immunology, Camelia Botnar Laboratories
Great Ormond Street Hospital
Email: e.ralph@nhs.net

Situations Vacant Advertising

Please contact the ACB Office:
Tel: 0207-403-8001
Email: admin@acb.org.uk

Display Advertising & Inserts

PRC Associates Ltd
1st Floor Offices
115 Roebuck Road
Chessington
Surrey KT9 1JZ
Tel: 0208-337-3749
Email: mail@prccassoc.co.uk

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>

Twitter: @TheACBNews



The Association for
Clinical Biochemistry &
Laboratory Medicine

Better Science, Better Testing, Better Care

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.

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

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.



**The Association for
Clinical Biochemistry &
Laboratory Medicine**