BIMDG Bulletin

British Inherited Metabolic Diseases Group

2022 January Edition

BIMDG Newcastle symposium; Sapropterin; MetBioNet; Dr Simon Olpin; Workshop reports; Dates for your diary

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Bulletin editorial — Greg Toulson

Happy 2022 from the BIMDG bulletin. January 2020 feels like it was simultaneously yesterday and a decade ago, the last two years have apparently been smushed together by the covid time-dilation-effect (is this why covid variants all sound like black-holes?).

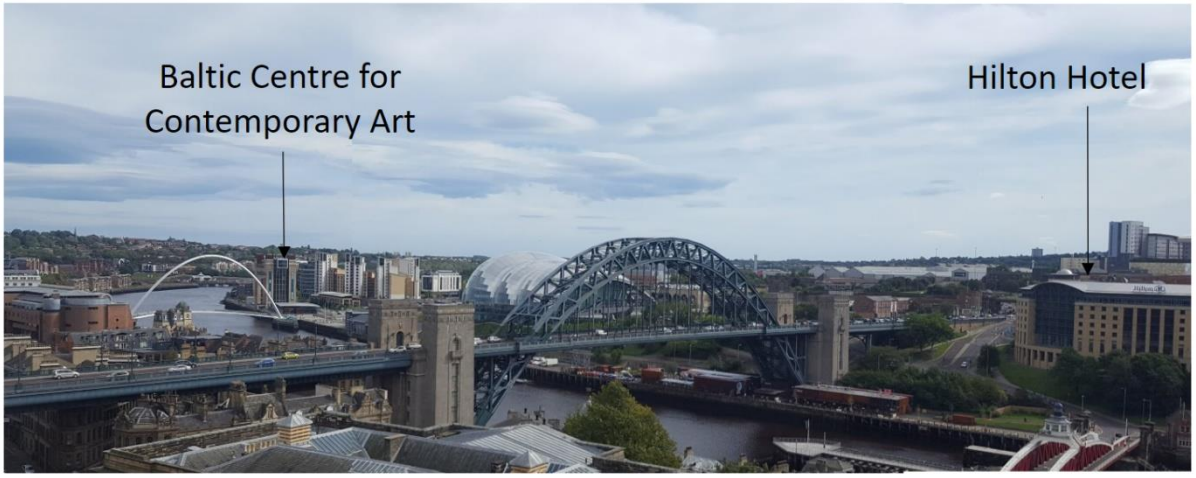
Over 2021 we have again seen the NHS and the metabolic disease community put under a colossal amount of pressure with working conditions being incredibly difficult in nearly all aspects. There has been an impressive national effort to try to tackle the patient back-log that has built up over the last two years despite staffing levels being effectively decimated over the last two months by Omicron. We'd again like to thank BIMDG members for their efforts over the year despite the fatigue and daunting to do list.

Prediction is increasingly a mugs game but hopefully 2022 will see a year where covid looms less largely on the horizon and we can start to move on from the 'new normal' (new-new normal ?).

We wish you all well and look forward to seeing you in Newcastle.

BIMDG 2022 symposium – Newcastle — Ann Bowron

The Newcastle metabolic and mitochondrial teams are looking forward to welcoming the BIMDG to Tyneside in June. There is an exciting programme of talks which we hope has something for everyone.



We would like to encourage you to submit abstracts of research, audit or clinical cases for presentation as posters. Six abstracts will be selected for oral presentation in the Members' Papers session and other accepted abstracts will be presented as posters and displayed throughout the conference. Before the meeting a number of poster authors will be invited to give a very short (3 minutes) oral presentation during a session of 'flash posters' at the end of the first day. This is to raise the profile of a range of posters and to encourage delegates to take time to view the posters in more detail.

The conference takes place at the Hilton Hotel, Gateshead. This is 15 minutes' walk from Newcastle Central Railway Station and Metro Station. Newcastle International Airport is a 30 minute Metro journey from Central Station. The symposium dinner is at the Baltic Centre for Contemporary Arts, a short walk along the Quayside.

Our last annual meeting was in June 2019, so this will be an extra special event and we look forward to seeing you there

BIMDG specialism updates

Pharmacy updates:

- The BIMDG metabolic medications formulary is currently being reviewed (to version 3). Members that wish to update or correct a specific entry should contact faiza.adrees@nhs.net for change requests.
- The BIMDG intravenous drug compatibility project has been completed and is currently being written-up for publication.

Nursing updates:

- A paediatric and adult IMD nursing education programme has now been established. Following a demonstration and selection competition for companies that were able to deliver the programme, OpenHealth have been awarded the contract. Nursing competency modules are now being finalised before going live with the OpenHealth platform.

Scientific trainees updates:

- A contact list of scientific trainees has been established to help enhance outreach to scientists training in metabolic laboratories. As scientists can enter into metabolic biochemistry later in their careers, 'trainees' may not necessarily be in formalised or in a junior role. We would like to invite BIMDG members that feel they may benefit from future scientific trainee content to email greg.toulson@nhs.net to be added to the mailing list.
- Abstract submission for the trainee scientific and medical specialist session of the BIMDG annual symposium is now open. While previous years have been limited to case presentations, we hope to open talks up to also include technical talks and encourage biomedical scientists to apply if they have a topic of interest for discussion.

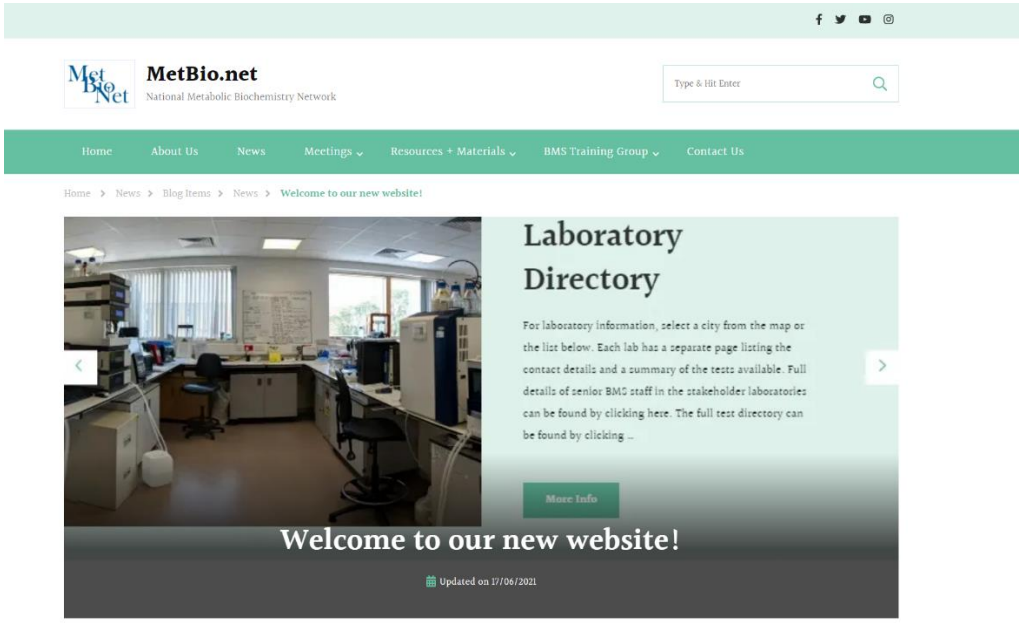
MetBioNet: New board appointments and website launch

Following a membership ballot and stakeholder meeting in December 2021, MetBioNet has appointed a new chair and secretary, to commence in March 2022. Taking up their new roles will be:

Chair: Rachel Carling, Consultant Scientist and Clinical Lead, Biochemical Sciences, Viapath, Guy's and St Thomas' Trust

Secretary: Catherine Collingwood, Consultant Clinical Scientist and Director of Newborn Screening, Biochemistry Department, Alder Hey Children's NHS foundation Trust

MetBioNet has also migrated to a new website (www.metbio.net), providing a new virtual home to the National Metabolic Biochemistry Network. In addition to a cosmetic over-hall that has made the site more navigable and dynamic, this new platform also now hosts a news and blogging area, a laboratory directory of all MetBioNet laboratories and an easily searchable assay directory.



Dates for your diary

Keep an eye on the BIMDG website events page for upcoming training and other meetings.

Inherited Metabolic Diseases for the Paediatrician
Wednesday 23rd March 2022
Bi-annual North West Metabolic Study Day

1st European Society of Human Genetics course on Precision Medicine: A Focus on Clinical Utility
April 25th- 27th 2022
Mater Misericordiae University Hospital, Dublin

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CONFERENCE 2022

THURSDAY 9TH & FRIDAY 10TH JUNE

Venue : Hilton Hotel, Gateshead, Newcastle upon Tyne
Accommodation : Hilton Hotel

Symposium Dinner : Thursday 9th June 2022
BALTIC Centre for Contemporary Art

The programme is organised by the Metabolic and Mitochondrial Teams from Newcastle Hospitals and Newcastle University. See below.

There will be parallel sessions for specialist groups on Thursday morning. Submit your abstracts now.

REGISTRATION OPENS – JANUARY 2022

TO SUBMIT AN ABSTRACT : download the form from the Conference Website – www.bimdgconference.org

Pre-BIMDG event : sponsored by Amicus
Wednesday 8th June from 5pm-9pm including supper

FOR FURTHER INFORMATION CONTACT :
Jacqui McAleer, JM Associates conference organiser for BIMDG
Email : jmassociates1@me.com

Sapropterin approval by NICE — Rachel Skeath

In September 2021 NICE published guidance recommending sapropterin as a treatment option for hyperphenylalaninaemia. In response, a working group of 22 BIMDG members (including physicians, dietitians, clinical scientists and pharmacists) was formed to work with NHS England commissioners to develop practical guidance on how to implement the roll out of sapropterin to responsive patients.

It is expected that around 25% of people with PKU will be responsive and therefore benefit from sapropterin. Common themes in how sapropterin is introduced in different countries are evident in the published literature, but there is no one clear consensus strategy.

Through a series of virtual meetings an initial consensus pathway has been written by the BIMDG working group. The pathway starts with mutation analysis for all patients as those with 2 null mutations will be unresponsive and should therefore be identified at the outset. For individuals with mutations that indicate the potential to be responsive, the pathway provides a series of steps to enable as clear and definitive a response test as possible, aiming to identify all responders. We recognise that as experience increases this sapropterin pathway may need modification, so there is a plan to review the pathway in 6 months' time. It will be extremely useful to collate experiences and the group intends to make proposals on how to collect this data in due course.

Information sheets for adolescents, adults and parents/guardians are being written that explain the response test and the expectations for ongoing prescription of sapropterin.

The consensus pathway and accompanying information sheets are accessible on the BIMDG website via the dietitians tab https://www.bimdg.org.uk/site/dietitians-sapropterin.asp

BIMDG virtual conference — Karolina M Stepien & Alex Broomfield

The annual BIMDG Congress took place on 24th June this year. The virtual event attracted an audience from the UK and abroad, with a record number of 250 registered participants. The meeting, opened by the co-organiser Dr Alex Broomfield from the Willink Biochemical Genetics Department, was divided into dietetic, adult and scientific themed sessions.

The focus of the first session chaired by Alison Woodall, Metabolic Dietician from Salford, was on the dietetic aspect of the management of Wolman's disease and the newborn screening and the UK dietary consensus of Glutaric aciduria type 1. The morning session was closed by Dr Teubner who presented on the management of complex nutritional needs in MNGIE.

During the adult metabolic session we learned that the mutated *ATG7* gene, the principal driver of autophagy, leads to neurodevelopmental disease underpinned by defective, canonical autophagy. Prof Robert Taylor from Newcastle who presented two patients with undetectable ATG7 protein who displayed a relatively mild phenotype, revealing that human life is compatible with the absence of a non-redundant, core autophagy gene.

Dr Fanny Mochel, Consultant Neurologist from Paris, presented her research on late-onset MTHFR. Adult patients affected with this condition often present with walking difficulties, cognitive decline and/or seizures, sometimes associated with mild mental retardation.

After lunch, Radha Ramachandran from St Guy and Thomas's Hospital, chaired the oral papers session. This year a very high number of abstracts were submitted and the jury had a difficult task selecting the most interesting abstract. From six excellent presentations, two scored the highest points. The first prize went to Katie Rowlins for her presentation of a case with sitosterolaemia effectively managed with dietary modification and Ezetimibe. Charlotte Ellerton from UCLH won a second prize for a research presentation on the social, emotional and behavioral outcomes in children born to women with PKU and their relationship with maternal metabolic control. Congratulations to all the presenters for sharing their own original research at this years BIMDG conference.

The third session focused on the biochemical aspects of inherited metabolic diseases. Katherine Booth and Simon Jones presented novel results of their research on laboratory development of clinically useful antibody monitoring in enzyme replacement therapy. It was followed by Dr Helena Kemp who delivered a lecture on the monitoring of inherited metabolic diseases and sample collection during the Covid-19 pandemic, which was relevant to the recent changes in our clinical practice.

This year BIMDG was different as we were not able to network, but we hope that we all can get together at the next annual conference in Newcastle in 2022.

Highly Specialised Enzymology Laboratories Workshop, 8th Sept — Katie Harvey

The aim of this half day virtual workshop was to share experiences of the challenges affecting laboratories performing highly specialised enzymology and to promote a support network. The workshop was well attended with most laboratories performing specialised enzymology represented. Subjects covered in the workshop were selected from a questionnaire sent to laboratories prior to the meeting to ensure they are relevant and topical. Most laboratories were concerned about standards related to UKAS accreditation and the unique challenges that highly specialised laboratories face with providing evidence to meet these standards. IQC, EQA, assay validation and reagent verification with relevance to UKAS were all discussed.

Other areas discussed in this highly interactive workshop was reagent availability, an issue particularly relevant at the moment, and the evolving role of highly specialised enzymology in the post genomic era. Feedback from the meeting was very positive. It is hoped some of the discussions will be used to form the bases of best practice recommendations for specialised laboratories and there are plans to arrange further workshops in the future to expand on this.

Retirement – Dr Simon Olpin, PhD FRCPath

Camilla Scott

On the 17th of September 2021 Dr Simon Olpin hung up his laboratory coat for the last time to begin a much deserved retirement after dedicating 37 years to the NHS and the investigation of inherited metabolic disease.

Simon joined the world of clinical biochemistry as a Basic Grade Biochemist at Addenbrookes Hospital in 1983 and began his metabolic career at Sheffield Children's in 1987 under the directorship of Professor Pollitt where he spent the next 34years investigating, researching and diagnosing patients with rare inherited metabolic conditions and collaborating with national and international scientists to develop functional assays in the areas of enzymogy and fatty acid oxidation. The small tissue culture service that Simon and colleagues founded in 1987 has grown to a biobank of over 10,000 cell lines which on average investigates over 450 patients per year.

Simon has studied and contributed to many areas of biochemistry, (up until the day of his retirement he even continued to contribute to the daily duty biochemist rota!), however he is best known in the biochemistry circle as a world leader on Fatty Acid Oxidation with over 90 original publications in the field and over 140 posters along with several book chapters! Simon has lectured at SSIEM, BIMDG and MetBioNet as well as at various specialist national and international meetings, on MSc Courses, at local hospitals and to patient support groups.

As an enzymologist Simon has established the enzyme assays in Sheffield for Glutaryl CoA dehydrogenase, fumarate hydratase as well as enzymes in the pathways for branched chain amino acid metabolism, the carboxylases, the carnitine transporter systems and most notably the fatty acid oxidation pathways. In addition Simon is a leader in the post mortem investigations for inherited metabolic disease specialising in the area of Sudden Unexplained Death in Infancy and respiratory chain defects. Simon's most recognised work is within the fatty acid oxidation flux pathways and there are few biochemists/medics in the field that will not be familiar with his flux graphs for stratifying risks of infantile verses myopathic Very-Long Chain Acyl-CoA Dehydrogenase Deficiency and the effect of temperature sensitive mutations! Some of the other fascinating areas that Simon has researched into include survival in the high Arctic due to genetic adaption to permanent ketogenesis (The Paradox of the Carnitine Palmitoyltransferase-1 P479L variant in Canadian Aboriginal Populations) and the germline mutations in the fumarate hydratase gene leading to predisposing risk of dominantly inherited uterine fibroids, skin leiomyomata and renal cell cancer.

Simon is well known as a speaker at many national and international conferences. He has imparted both his knowledge and wisdom at SSIEM, BIMDG, MetBioNet, ACB and many other national and local meetings. Anyone who has attended his lectures will appreciate his passion for inherited metabolic disease as well as his passion for growing bamboo.

So many patients, doctors and scientists have benefited from his wisdom over the years and Simon has always been available and approachable to all to discuss patients both day and night; a truly dedicated scientist to the field. Simon is not only an exceptional biochemist but he is somewhat of a local celebratory having appeared on several news channels and in local and national newspapers due to his amazing garden jungle!

Simon is looking forward to spending his retirement with his family and maintaining his amazing tropical garden he is also venturing into the world of breeding poisonous frogs! A true gentleman and friend and we wish him a long, happy and healthy retirement.