



## **RSC ABG Newsletter**

2<sup>nd</sup> Issue Autumn 2024

Dear Readers, fellow RSC –ABG members,

With great pleasure we are sharing the second issue of our group’s newsletter.

Please send your feedback and any content for the next issue by emailing the group email ([rsc.abg@gmail.com](mailto:rsc.abg@gmail.com))

In this issue:

### **CHAIR’S REPORT 2**

Welcome Our new Committee members **3**

Hamish Stewart **3**

Mollie A Glenister **3**

Antony Sullivan **3**

### **ECRM 2024 4**

ECRM Chair’s Reflection **4**

2024 Prizes **7**

Learn More About our 2024 ECRM Winners **8**

### **RSC-ABG Annual General Meeting 10**

### **Knowledge Sharing 11**

What our committee members have been up to **11**

What others have been up to **13**

Share your own work **14**

## CHAIR'S REPORT

The Analytical Biosciences Group's chair Henry Day has given us an update on ongoing matters and more in his report.



### Outgoing Committee Member

As we welcome our new committee members, we would also like to thank Dr Frankie Rawson, who has decided to step down upon reaching the end of his maximum term on the committee. We'd like to thank Frankie for his valuable contributions over the last 9 years, including a 5+ year stint as our treasurer. We wish Frankie all the best and look forward to hearing more about his research at future Analytical Bioscience Group events.

### RSC Prizes

Nominations open in October for the RSC's prizes to be awarded in 2025. There are several prizes for the Analytical community aimed at different career stages as well as to groups or individuals. Many of the prizes are open to self-nominations. Nominations close in January, use the links below to find out more and consider applying or nominating one of your colleagues.

[Technical Excellence Prize](#)

[Analytical Science Horizon Prize](#)

[Analytical Science early career prize: Joseph Black Prize](#)

[Analytical Science mid-career Prize](#)

[Analytical Science open prize: Theophilus Redwood Prize](#)

### Chair speaks at Future Focus III Conference

Our Chair Dr Henry Day attended and presented at the Future Focus III conference in Cambridge on 25<sup>th</sup> – 26<sup>th</sup> September. This is a small but growing conference organized by Element Lab Solutions to bring together scientists from industry and academia across a broad range of analytical disciplines to discuss a common theme each year. This year's theme was "Exploring Complexity in Analytical Science" with sessions dedicated to challenges faced in each of four key areas: Sampling & Sample Handling, Sample Preparation, Instrumental Analysis and Data Processing. Henry gave a talk on analysis at the interface of complex systems describing the challenges faced when developing DNA sequencing technologies and how multiple methods are used to understand and interrogate the wide variety of complex molecular interactions.

**Join Our LinkedIn Group**  
[RSC ABG LinkedIn Group Page](#)



## Welcome Our new Committee members

### Hamish Stewart

Senior Staff Scientist, Life Science Mass Spectrometry BU,  
Thermo Fisher Scientific

Hamish's introduction:

I am a Senior Staff Scientist at Thermo Fisher Scientific in Bremen, Germany, where I develop new commercial mass spectrometers, along with novel related concepts and technologies. I've developed Orbitrap and Astral analyser-based instruments, which now operate in labs all around the world. Previously, I obtained a PhD in Physical Chemistry from the University of Nottingham, and then worked for Shimadzu Research Laboratory Europe in Manchester, where I developed new time-of-flight analyser technologies. Moving out to Germany in 2015 ended my prior volunteering for the RSC, so it is a great pleasure to once again be able to contribute to the profession.



### Mollie A Glenister

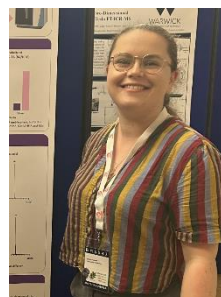
PhD Student, School of Chemical, Materials  
and Biological Engineering, University of Sheffield

Mollie's introduction:

I am currently undertaking a PhD at the University of Sheffield. Where my project looks to develop novel mass spectrometry methods to analyse oligonucleotide therapeutics.

Being at the start of my career and wanting to stay in the academic sphere once I finish my PhD, I feel this would be a great opportunity for me to gain experience in working with people from different backgrounds and career stages, to put on events and help engage people within analytical biosciences.

Additionally, as someone very early in their career, I'd think engagement in communities like this can be daunting. So it would be great to be able to help others in similar positions to engage more.



### Antony Sullivan

Account manager, Waters Ltd

I'm an Account Manager at Waters Ltd, with over 25 years of experience in the field of chromatography and mass spectrometry. I did a part-time PhD in mass spectrometry while working at Ciba-Geigy in Manchester, followed by a short post-doc and a 5-year stint in the US, returning in 2006 to start a career in sales with Thermo. I set up the first LBMSDG committee that year – the group is still very much alive and kicking, now 69 meetings in. I also served as BMSS Meetings Secretary from 2012-2016, responsible for the annual meetings. I am very excited to be a part of the RSC Analytical Biochemistry committee, bringing my experience to a new set of challenges and opportunities.



## ECRM 2024

The 2024 Annual RSC ABG ECRM meeting was held in Nottingham in the spring this year. The venue at the Medical Technologies Innovation Facility (MTIF) on the Clifton Campus of the University of Nottingham and Nottingham Trent University proved to be a great venue and we had a well-attended meeting as in previous years.

For more details, please visit the registration page:

[11th RSC Analytical Biosciences Group Early Career Researcher Meeting](#)

We once again had a great program with many keynote speakers and early career scientists.

---

### Keynote Speakers

**Prof Bhavik Patel**

University of Brighton  
*Electrochemistry*

**Dr Rebecca Beveridge**

University of Strathclyde  
*Protein Complexes*

**Dr Neil Gostling**

University of Southampton  
*Palaeobiology*

**Prof Robert Forster**

Dublin City University  
*Photonic materials*

**Tabatha Hambidge**

LGC, NML  
*Analytical Automation*

**Dr David Scurr**

University of Nottingham  
*Skin Permeation*

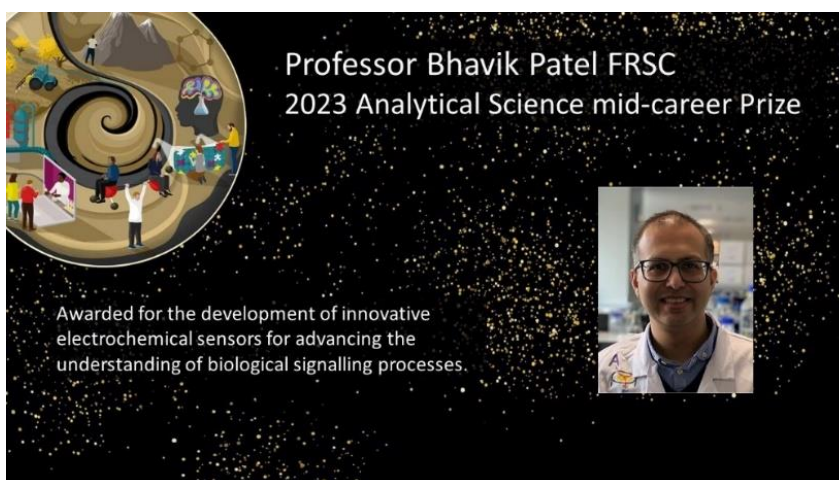
## ECRM Chair's Reflection

As we approach our Annual General Meeting, I take the time to reflect on the committee's activities over the last year. As always, a particular highlight was our annual Early Career Researcher Meeting. This year, in its 11<sup>th</sup> edition, the event was held in Nottingham, hosted by Nottingham Trent University's Medical Technology Innovation Facility. Like previous years we had a packed agenda deliberately aimed to cover the broadest spectrum of Analytical Biosciences. Whilst year on year we have regular themes such as electrochemistry and sensors, mass spectrometry and chromatography, we always like to include a keynote talk on a more unusual topic to highlight the breadth of applications in our field. This year was no exception with Dr Neil Gostling's talk on pliosaurs, dinosaurs and the evolution of birds a real crowd pleaser.



Photo of ECRM attendees in front of the MTIF Building

The Keynote talks help us setting the general direction of the event each year but the real stars of the event are our early career speakers. This year we were again incredibly impressed by the quality and variety of the science presented, so much so that we elected to award 3 prizes this year and you can read more about them and their experience of the event later in this Newsletter. Unusually this year, we dispensed with our normal poster session and encouraged poster presenters to give a flash presentation instead. Many presenters were speaking at a conference for the first time, and we were delighted by the enthusiasm with which they shared their work, we hope to hear more from all of our presenters at future ABG events.



Finally, in a first for this year's ECRM, we had the pleasure of hosting Professor Bhavik Patel and presenting him with the 2023 Analytical Science mid-career Prize following his talk on the development of novel sensors to monitor mucosal signalling in the gut.

The committee would like to extend a special thanks to Prof John Hunt for leading the organization of this year's event, all of our speakers, our sponsors the MTIF, Horiba, Element Lab Solutions and RSC Analytical Journals for their generous support. Planning is already in progress for next year's event to be held in Sheffield and we hope to see as many of you there as possible.



Professor Patel receiving his award from RSC – ABG Chair Henry Day

Some highlights from our attendees through social media posts.

[Thank you for our sponsors](#)

[Memorable moments of presenting the RSC Mid-Career Research Award](#)

[Medal and Certificate](#)

[A lovely bunch of people at a great venue](#)

## 2024 Prizes



Following our traditions, we awarded prizes for best poster and best oral presentations at the ECRM. And this year we were lucky enough with sponsorship that we could allow a 3<sup>rd</sup> prize.

Sponsored by the RSC's journals *Analyst* and *Chemical Science and Chemical Communications*

Oral Presentation Award Winner

**Mollie A Glenister**

Short talk Prize Winner

**Dr Tania L. Read**

Poster Presentation Award Winner

**Nafiz Biswas**

## Learn More About our 2024 ECRM Winners

### Dr Tania L. Read - Short talk prize Winner

Attending the RSC Analytical Biosciences Group Early Career Meeting for the first time I was a little unsure what to expect, but in the lead up to the event the organisation team were incredibly helpful and responsive to my (many) queries. Upon arrival we were met with a friendly and welcoming environment which really embraced and celebrated the work of early career researchers from across the field. The diverse array of research presented and the variety of passionate and engaging invited speakers made for a truly enjoyable event. I had the opportunity to present a whistle-stop tour of my research on developing boron doped diamond electrochemical sensors for biomedical applications, from blood gas analysis to gastrointestinal pH mapping.

Despite my research being somewhat different to many of the other attendees, it was a pleasure to present to an attentive and engaged audience of my peers and I was honoured to receive a short talk prize from the committee. I would thoroughly recommend this meeting to any early career researcher in the Analytical Biosciences area who is looking for a friendly and inclusive conference at which to share their research and build connections.



Tania in front of the MTIF Building in Nottingham where the ECRM took place



### Nafiz Biswas – Winner

The Analytical Biosciences Early Career Research Meeting 2024 was a great first conference to attend as a PhD student. It had a laid-back and very friendly atmosphere,



making it a lot easier to give an oral presentation – especially if it's your first one ever! A wide range of analytical topics and techniques were covered, including electrochemical sensing, mass spectrometry, and even CT scanning of dinosaur bones! Many UK universities were represented at the meeting, but it was also great to see presentations given by Horiba and Element Lab Solutions, that gave insight on analytical techniques and demonstrated the importance of certified standards in research.

The research I presented on during the meeting described the use of an internal reference to remove reference electrode drift when measuring pH in biomedical settings. In real world electrochemical devices, reference electrode drift is a major issue when the voltage of the analytical signal corresponds directly to your analyte concentration. To overcome this, an internal reference peak, provided by a redox couple is introduced to the internal electrolyte solution. If the analyte signal drifts due to reference electrode drift, so too will the redox couple signal and thus reference electrode drift can be completely negated! In this work, a boron doped diamond electrode was used to measure the pH of the solution, and potassium hexachloroirridate was used as the internal reference. The result provided proof of concept that this technique works, but that alternative redox couples that are more stable and cheaper are required.

Overall, I was very happy to have the chance to present my work at the Analytical Biosciences ECRM 2024 and am grateful that my talk was deemed prize worthy.



Nafiz accepting the Award from our RSC-ABG chair Henry

## Mollie A Glenister - Oral Presentation Winner

I was presenting my research on developing Mass Spectrometry Methods to analyse oligonucleotide therapeutics at the RSC-ABG ECRM. My talk focused specifically on

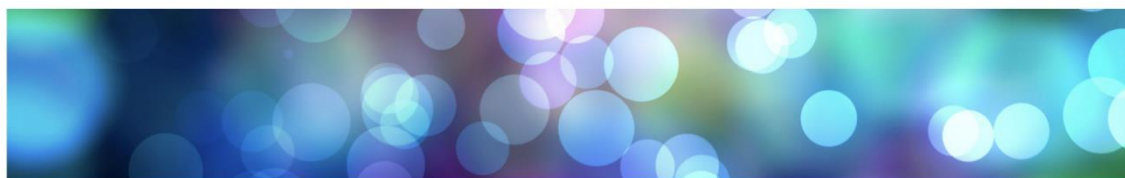
overcoming some of the challenges associated with combining ion pair chromatography with mass spectrometry for the purpose of characterising these therapeutics. I presented new ways to improve compatibility between the LC and MS techniques and new methods for adduct removal.

I really appreciated the opportunity to give my first PhD talk in such a welcoming and friendly setting. It was a great experience to attend this event and meet many of different researchers who are at similar career stages as myself. It was also great to see how varied the field of analytical bioscience is and learn new things outside of my field. I especially enjoyed the keynote talk on dinosaurs as it was so different from all other topics. Overall, it was a great few days and John Hunt was a great host who really showcased the Medical Technologies Innovation Facility where the event was held.



Mollie Glenister presenting her work on Oligonucleotide analysis at the ECRM

## RSC-ABG Annual General Meeting



Analytical | Biological | Chemical Biology & Medicinal | Human Health | Industry | Physical

### RSC Analytical Biosciences Group Annual General Meeting 2024

20 November 2024 14:00-18:00, London, United Kingdom 📅

The Analytical Biosciences Group will be holding our 79th Annual General Meeting on the 20th of November 2024. The meeting will take place at the University College London and will also be live streamed via an online platform. The meeting is open to all

group members and external guests and aims to engage early career researchers in debate and discussions about all areas of analytical biosciences and provide the opportunity to network with other researchers in the field.

[AGM Registration page](#) - Click and register



## Knowledge Sharing

---

### What our committee members have been up to

**Prof Mark Dickman** was presenting some of his research group's recent research developing novel HPLC and Mass Spectrometry methods for the analysis of mRNA at the mRNA Process Development, Quality & Manufacturing Summit in **Vienna March 26th-27<sup>th</sup>**

The development and manufacturing of mRNA therapeutics and vaccines present a remarkable advantage in terms of simplicity, scalability, and speed. The mRNA Process Development, Quality & Manufacturing Summit in Vienna was dedicated to accelerating the end-to-end mRNA process development and manufacturing, enabling successful scale-up of mRNA therapeutics and vaccines, utilising new technologies and ensuring product quality, formulation, delivery, and managing complex supply chains. Throughout the VLMRNA summit, attendees and presenters delved into key areas for process optimisation, cost efficiency, and managing tactical complexities across various steps of mRNA process development.



**mRNA**  
Process Development,  
Quality & Manufacturing  
SUMMIT  
March 26-27, 2024 | Vienna & Online

**Characterisation of mRNA  
therapeutics/vaccines using  
mass spectrometry**

#VlmRNA  
www.vonlanthenevents.com

**Dr. Mark Dickman**  
Professor of Bioanalytical Science and  
Engineering, Dept of Chemical and  
Biological Engineering  
The University of Sheffield

His team also recently published a paper in *Front. Mol. Biosci.* [Anion exchange HPLC monitoring of mRNA in vitro transcription reactions to support mRNA manufacturing process development](#)



**THE SCRIVENS SYMPOSIUM**  
★ LONDON ★ 01 MAY 2024 ★

Dr Krisztina Radi helped organizing the Jim Scrivens Symposium which took place 1<sup>st</sup> May in London.

The event was a very successful and heartwarming celebration of Jim's contribution to the mass spec field with also many memories shared by his wife Elaine and his great friend Prof Mike Bowers.

[The official event page](#)

Dr Lynn Dennany was invited to be a keynote speaker at the Biosensors 4<sup>th</sup> International Electronic Conference which took place from the 20<sup>th</sup> - 22<sup>nd</sup> May. Lynn gave a talk on her research aimed at the development of point of use analytical tools for the detection of different chemical and biochemical entities.



IECB  
**2024**  
Conference

**The 4th International Electronic  
Conference on Biosensors**  
20-22 May 2024 | Online

Invited Speaker Announcement  
**Dr. Lynn Dennany**



MDPI biosensors

## Recent Noteworthy Publications from our members

1. **Nanoarchitectonics of Bactericidal Coatings  
Based on CaCO<sub>3</sub>-Nanosilver Hybrids**

Ferreira, A.M. Vikulina, A.S. Bowker, L. Hunt,  
J.A. Puddu, V. Volodkin, D.

**ACS Applied Bio Materials, 2024, 7(5), pp.  
2872–2886.**

<https://doi.org/10.1021/acsabm.3c01228>



2. **Stretchable electronic strips for electronic textiles enabled by 3D  
helical structure**

Stanley J, Kunovski P, Hunt JA, Wei Y..

Sci Rep. 2024 May 4;14(1):11065.

<http://dx.doi.org/10.1038/s41598-024-61406-7>

## What others have been up to

If you are interested in mass spectrometry and you are based close to the capital or just want to have a day trip LONDON BIOLOGICAL MASS SPECTROMETRY DISCUSSION GROUP organizes great meetings regularly.

Sign up or get more information here: <http://lbmsdg.org/>



## Analytical research forum 2024 (ARF24)

18 June 2024, London, United Kingdom 📅

---

### Many great speakers from Industry (AZ, GSK) and Academia [Analytical Research Forum 2024 Page](#)



#### Share your own work

Part of being a member of the RSC is to allow one to build professional networks, meet people with similar interest and even find opportunities to collaborate.

If you are a student and would like to highlight your first Publications on your research – we would like to offer you that opportunity.

The Analytical Biosciences group would love to help you by creating a platform of sharing News about you, our members with other members of our group.

We would like to hear about your scientific achievements, your publications or conference participations and presentations which you would be happy for us to share with our members. We are hoping to highlight the work of our members and share the knowledge you all work hard to build day by day.

What we need:

- Details of publication: Title, Journal, etc and a 50 words summary on why you think our members would benefit reading it
- Conference Participation – initial motivation to attend, what you liked about the conference, and who do you think would benefit from attending in the future
- Presentations – conferences, webinars – not all our members are academics, and our work may get presented, but not published – let us know if you have recently had the opportunity to showcase your work somewhere online or in person

Or do you just have an analytical topic you are passionate about and would like others to learn more too – we welcome short high level summary articles written by our members.

**Please drop us an email ([rsc.abg@gmail.com](mailto:rsc.abg@gmail.com))** if you are interested in helping us help you sharing knowledge and highlighting your work.

---