



Poster session at the PGI conference

## Upcoming events

- Fundamentals of Metrology training  
*26<sup>th</sup>-30<sup>th</sup> November, Teddington*
- One NPL end of year celebration  
*29<sup>th</sup> November, Syon Park*
- PGI Winter Warmer  
*11<sup>th</sup> December, location to be decided*
- New student induction  
*12<sup>th</sup> December, PGI common room*

## Director's Message

By Richard Burguete

This issue is really full of great PGI news from the past few months. The 3<sup>rd</sup> PGI conference was a tremendously successful event and built strongly on our previous conferences with much greater industry involvement. The organising committee's commitment and effort in organising the event shone through in the results which were professional, engaging and great fun. I am already eagerly looking forward to next year where this event promises to be even better. It also seems to be the norm that in every issue a PGI student is recognised by receiving a high profile and prestigious award, in this case it is Jasmine Bone (Surrey) who has won an Industrial Fellowship from the Royal Commission for the Exhibition of 1851, so I would like to congratulate her on this great success. You will also notice that our new editors have really moved things on with the new PGI branding, so I hope you enjoy this latest issue even more than usual!

## In this issue

- PGI conference
- Explorathon 2018
- New Scientist Live
- Coaching
- Industrial fellowship

## Your PGI needs you!

We are pleased to announce the latest PGI Induction will take place in Teddington on 12<sup>th</sup> Dec 12-4 pm. This event is aimed at students new to the PGI, or those who have not attended a previous induction. There will be the chance to meet the PGI team, find out about future plans, training provision and our approach to student welfare. The event will also cover the remit of the Supervision Charter and is timed to coincide with our end of year Winter Warmer celebration - so there's also a chance to meet fellow PGI researchers. Book your place by 3 Dec to avoid disappointment by emailing [pgi@npl.co.uk](mailto:pgi@npl.co.uk). If you have any questions about travel for this event please contact our University Liaison Managers.



# PGI Conference 2018

The 3<sup>rd</sup> annual Postgraduate Institute Conference was long anticipated. Building on the successes of last year's event was a challenge in itself, however, this year's committee excelled themselves.

As delegates arrived at the University of Strathclyde's Technology and Innovation Centre there was a real aura of excitement in the air. Coffee being poured. Posters going up on boards. Name badges being straightened. The PGI Director, Richard Burguete, kicked off proceedings with a warm welcome supported by the University's own Professor Erling Riis. Delegates were treated to wise insights into careers and research in the wide world of metrology and industry across the two day conference. Keynote speeches from Dr Fiona Rayment OBE of the Nuclear Innovation and Research Office, Fraser Burton from BT, Professor Liam Blunt from the Centre of Precision Technologies at

the University of Huddersfield and Professor Nick Weston from Renishaw highlighted the importance of metrology in everyday life and the importance of the research being conducted by each individual member of the PGI. I am sure it left the delegates inspired and motivated. Refreshing and honest talks from PGI alumni provided delegates with not only a great perspective and great advice for life during and after their postgraduate journey, but also, I am sure, some comfort too. Talks and posters presented by postgraduate researchers showed the quality and breadth of novel metrology-focused research being conducted by those at the PGI. The networking and panel session provided valuable advice which I'm sure will be put into use by all attendees.

Delegates also headed to the National Piping Centre not only for a relaxed dinner after the first day, but for a traditional Scottish ceilidh hosted by the fantastic Kilter Ceilidh band. That evening will not be forgotten any time soon!

All in all, it was a thought provoking, insightful and inspirational conference. Thank you Glasgow. Thank you sponsors. Thank you speakers. Thank you delegates. Most of all, thank you committee! We await, again with anticipation and excitement, for the next Postgraduate Conference.



## Thank you to our sponsors:

Institute of Physics

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## Well done to the prize winners:

Charlie Jarvis (Cambridge)

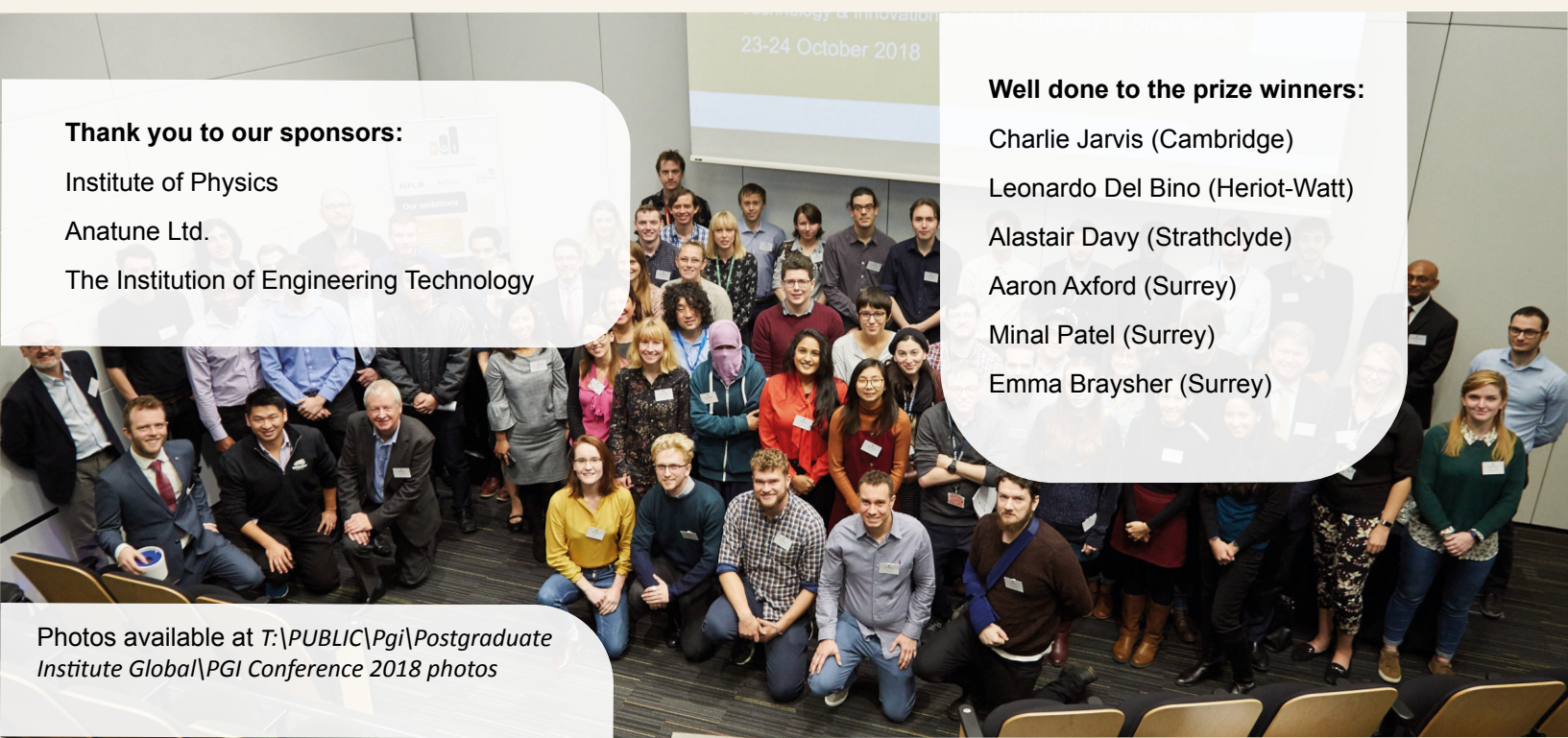
Leonardo Del Bino (Heriot-Watt)

Alastair Davy (Strathclyde)

Aaron Axford (Surrey)

Minal Patel (Surrey)

Emma Braysher (Surrey)



Photos available at <T:\PUBLIC\Pgi\Postgraduate Institute Global\PGI Conference 2018 photos>



# From the committee

By Patrick Bevington (Strathclyde)

Being part of the organising committee was a hugely enjoyable experience. Although event planning is not something I am particularly interested in, I wanted to join the committee to gain some experience and meet more PGI members. It was interesting to see a conference from the other side and be involved in some of the decision making. The event itself was made more enjoyable since, being an organiser, the 'networking' took care of itself and I got to speak to many more attendees than I would have otherwise. I also felt more engaged and comfortable than I had at previous events, which surprised me. I would recommend joining the committee to anyone, particularly to those with ideas about what could be done to improve the event for at least yourself, and hopefully others.

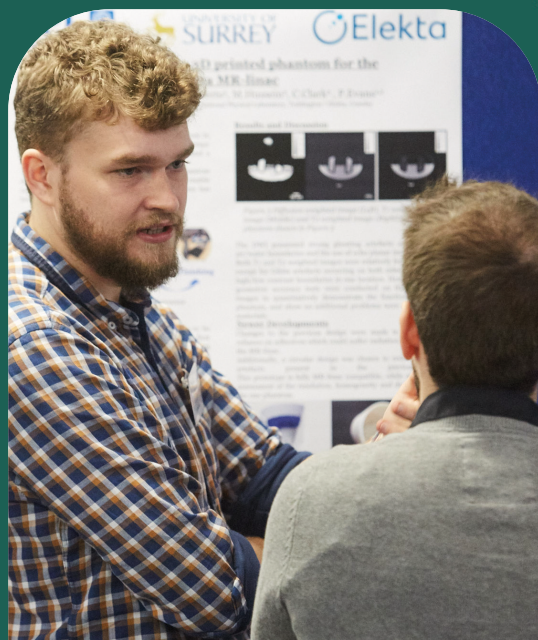
The PGI is looking for students to join the organising committee for next year's conference - if you're interested in joining let us know at [pgiambassadors@npl.co.uk](mailto:pgiambassadors@npl.co.uk).



# From an attendee

By Ben Webster (Surrey)

The PGI conference was an excellent showcase of the breadth of research being conducted by members of the Postgraduate Institute. It was a professional, yet relaxed, platform to present and discuss research with plenty of opportunities to network too. Oh and how could I not mention the conference dinner and ceilidh?! It was great to see so many relaxed and smiley faces (including a very enthusiastic Richard Burquete!) enjoying a good dance; even when we had less than a minute to let our food settle after dinner! It was an excellent evening.



Talks from the key-note speakers also highlighted the necessity of metrology research in every aspect of life; from its impact on health to energy to manufacturing. The PGI alumni talks about "Writing your thesis and defending it" and "Post-PhD life: transitioning into work" were particularly interesting and enlightening. It was also good to hear the pearls of wisdom that both Rob Shearman and Elsje van Es had to share about their PhD experiences. They both were very honest about the challenges they faced and the importance of seeking support from loved ones and from wellbeing centres as and when needed.

Overall it was a very enjoyable and insightful conference. Would recommend to a friend.

★★★★★



# The NPL SI Bots join researchers from Strathclyde for Explorathon 2018

By Allison Strachan



**Explorathon is the European Researchers' Night, held every year on the last weekend of September, where academics from all disciplines go out into the community and showcase their research.**

A team from Electronic and Electrical Engineering at Strathclyde, some of whom are part of the NPL Postgraduate Institute, went along to the Riverside Museum in Glasgow for the showpiece event of the weekend – the Explorathon Extravaganza - to show off their research into energy and the environment, and how they are helping in the fight against climate change. The team discussed their research into more efficient electricity networks, better integration of renewable generation and electric aircrafts, alongside some eye-catching demonstrations of lighting up a bulb without plugging it in – via a Tesla coil – and a student-built working model of John Logie Baird's original 'Televisor'. They also had a giant game of Eco Snakes and Ladders, which certainly pulled in the crowds!

To stress how important good measurements are to engineers, the NPL SI bots came along too. The team devised a 'hunt the bot' game for youngsters, hiding the seven different bots around the stand and giving out SI badges to those who could find them all. While the kids were engaged in the bot hunt, we talked with their parents about measurement. There was a lot of interest in the SI redefinition, and many visitors were surprised that there were only seven SI base units which could be combined to create any other SI measurement unit. Several visitors quizzed the researchers on how various other SI units could be made out of the base units, testing our team's knowledge to the limit!

We had a very successful evening, speaking to over 300 visitors in three hours. With the level of interest in measurement that we saw, a larger NPL stand at next year's event would certainly be welcomed. Time to start planning!

## #BetterLives writing competition

Are you an ESRC-funded student? Are you keen to communicate your research to a wider audience? Then the ESRC writing competition, in partnership with SAGE Publishing, is for you. We want to hear how your research can help people have better lives. Winners will be awarded with cash prizes, and runners up will receive a SAGE master class on how to get published.

To take part, you must be an ESRC-funded student and still in receipt of ESRC funding on 7 December 2018 (the competition closing date). Visit <https://esrc.ukri.org/skills-and-careers/writing-competition/> for further details. #esrcwriting #phdchat #ThisIsSocialScience

## Fundamentals of Metrology training

The Fundamentals of Metrology course will run from the 26-30 Nov in Teddington. The module will provide a detailed grounding in theoretical and practical aspects of measurement science. Following an introduction to the principles and international framework for the bases of measurement, lectures will concentrate on the key aspects of achieving high accuracy measurements of dimensions, temperature, humidity, and mass and related quantities with traceability to the internationally accepted SI system of units. A number of places are available for PGI students so please sign up at <https://bit.ly/2yWUWVl> or email [pgi@npl.co.uk](mailto:pgi@npl.co.uk).



# New Scientist Live

By Madeleine Finlay

New Scientist Live  
20–23 Sept 2018  
ExCeL London

**Do you know how drones are being used to conserve wildlife? Have you ever wondered about boosting your brain power with magnets? Would you want to live forever, if you could? Perhaps not, but these were all questions put to the crowds at this year's 'festival of ideas': New Scientist Live.**

After a manic journey navigating London's endlessly confusing Docklands Light Railway system (I recently discovered that the DLR trains are fronted by windows so you can pretend you're driving the world's dullest rollercoaster), I arrived at the ExCeL centre ready for some serious science. Bustling my way through packs of excited school children, I headed straight to the Technology Stage to catch Physicist and campaigning feminist Jess Wade give a talk about plastic electronics. Forty minutes later, filled with the hope of one day having an uncrackable smartphone screen, I went to have a wander around the maze of stalls.

Between people in VR headsets exploring space and riding rollercoasters (who needs that when you've got the DLR), teachers peering through microscopes, kids making slime, researchers hosting Q&As about dark matter and neuroscience, and some beautiful but terrifying photos of bugs, I finally spotted NPL's stand. Just as I began to investigate all their intriguing gadgets, I realised it was time for NPL's very own Helen Margolis to give a talk about - well, time! My disappointment at being dragged away from discovering more about the SI redefinition (or, if I'm honest, pressing buttons and flicking switches) didn't last long. Helen deftly led the audience through the fascinating history of timekeeping, right up to the newest developments of atomic clocks – no doubt what some PGRs are working on now.

I left inspired but exhausted, my head buzzing with science from fires to frogs, and that was just one day! To find out more about getting involved in New Scientist Live, I caught up with PGR Dan Flintoft from the electronic and magnetic materials group.

"Over the weekend I was based at the NPL stand, telling visitors about NPL and showing them the demonstrations explaining how the SI units are defined. I really enjoyed seeing people's enthusiasm to learn more about science. The people attending, young or old, had such a range of science knowledge, but regardless of this they were still very interested in learning about the SI redefinitions – which was nice to see. Science, especially metrology, is a part of everyday life, whether we realise it or not. Public outreach is a great opportunity to educate people from a variety of backgrounds and ages about science in an interesting and fun way. For younger generations it could even inspire their future career choices.

I'd definitely do something like this again. Now only was it rewarding to teach people something new, but in my breaks I had a chance to wander around the other stalls and learn about different areas of science myself. If you want to volunteer in outreach you can be added to NPL's science ambassador's mailing list, where opportunities are regularly sent out. There's anything from local school science fairs to exhibitions like the New Scientist Live."

If you're interested in getting involved with outreach activities, please contact Andrew Hanson at [Outreach@npl.co.uk](mailto:Outreach@npl.co.uk).





# Coaching

Receiving coaching alongside your work can be highly self-rewarding. Coaching sessions aim to provide an environment in which to explore pre-identified development areas and drill down into the barriers for moving forward, finding creative actions that the coachee can set for themselves in order to make the desired progress.

Such a program may be particularly applicable for those who have recently made, or are about to make, the transition to becoming an NPL employee and want to work on finding their place in the business. Equally those undertaking a PhD, who want further external input into helping them make the most of their project, may find coaching beneficial.

The sessions are confidential and can be used to discuss or sound-board any subjects related to work activities. An initial one-to-one meeting will be held before any formal coaching to assess suitability of the sessions and allow for questions on the process.

Those interested would be expected to meet with the coach for three sessions spaced every 4-6 weeks. For more information please contact Chris at [chris.fury@npl.co.uk](mailto:chris.fury@npl.co.uk).

# Industrial Fellowship

The PGI would like to say a huge congratulations to Jasmine Bone (Surrey), who won an Industrial Fellowship from the Royal Commission for the Exhibition of 1851. The award gives up to £80,000 worth of funding over the next 3 years for Jasmine's EngD work.

It was awarded on the basis of her personal statement and her project work on developing assessment tools for monitoring degradation of polymer composites in marine environments.

The mission of the Royal Commission for the Exhibition of 1851 is to "increase the means of industrial education and extend the influence of science and art upon productive industry".



Jasmine at the awards ceremony at Imperial College

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We're looking for contributions! If you'd like to write for the next issue of GradPost, or have a story or event you'd like to tell us about, please email Emma Braysher at [emma.braysher@npl.co.uk](mailto:emma.braysher@npl.co.uk).

PGI metrology



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