

April 2020

Greetings from the Head of School

Welcome to the first public version of the School of Physics and Astronomy newsletter. For many years we have produced an internal newsletter but I felt it was time the fantastic achievements of our staff, students and alumni reached a far wider audience. This is the first of what I hope will be quarterly updates.

A huge thanks to everyone in the School who has helped to ensure that teaching has continued remotely during this unprecedented Covid-19 crisis. It was a huge effort and I am so pleased of how everyone moved so quickly to online delivery and support. Secondly we have managed well with remote meetings, though not seeing each other in person is a significant social disadvantage. Colleagues have continued, where they can, with their research and many thanks indeed to the small number of staff who have come in, with permission, to ensure that vital services within the School are still running safely; I really appreciate your collegiality.

I could write more, but the newsletter is not about me and thus I will stop here and let the stories speak for themselves.

Best wishes, take care and stay safe
Prof Peter Hobson

WELCOME

As the Tracker Upgrade (ITk) for the ATLAS Detector at the Large Hadron Collider (LHC) ramps up toward detector construction later this year, our team has been joined by a new member, [Dr Paul Miyagawa](#). He joins us from the University of Sheffield and has hit the ground running to help finalise our preparations for silicon microstrip sensor testing and for the quality assurance of the local supports for sensor modules that will form the construction elements for the ITk. We welcome Dr Miyagawa and look forward to the challenge of constructing this new detector for the LHC over the coming years.

The Astronomy Unit is delighted to welcome two new postdoctoral researchers, [Dr Catherine Watkinson](#) and [Dr Chiara Moretti](#). Dr Watkinson, previously based at Imperial College London, is working on Epoch of Reionization physics with the

Square Kilometre Array. Dr Moretti, previously based at SISSA, is working on large scale structure cosmology with a focus on the Euclid satellite mission. Their research is supported by a UKRI Future Leaders Fellowship (held by Dr Alkistis Pourtsidou) and they are located in Office 504.

Dr Maryana Asaad has joined Centre for Condensed Matter and Materials Physics (CCMMP) at as a Postdoctoral Research Assistant. She joins us from the National Graphene Institute at the University of Manchester, and will be working with Dr Jan Mol on the fabrication and characterisation of molecular-network heat engines. Her desk is in the new postdoc office, 232, and you will see her around the third floor CCMMP lab.

[Evangelin Hutamaningtyas](#), PhD student in Centre for Condensed Matter and Materials Physics (CCMMP) group

CONGRATULATIONS

A novel 5-year EPSRC doctoral programme was successfully funded for £1.6m led by [Dr Eram Rizvi](#), Prof Mark Sandler (School of Electronic Engineering and Computer Science, EECS), Prof Nick Bryan-Kinns (School of Electronic Engineering and Computer Science, EECS) and Dr Jun Chen (School of Engineering and Materials Science, SEMS). It aims to offer doctoral training to those from diverse non-academic backgrounds and will be open to all Science & Engineering schools. Industry partners will enrol employees engaged in workplace-based applied research and co-supervise them at Queen Mary, University of London. They will undertake a new professional doctorate qualification (EngD) which allows a thesis dissertation by portfolio (multiple shorter projects). The programme will also widen access to doctoral training by additionally targeting talented individuals who left academia and opted not to do a PhD due to financial constraints, or due to a lack of self-confidence. A novel recruitment method will be launched with pre-application workshops in overcoming imposter syndrome, and higher stipend rates.

[Prof David Dunstan](#) et al who have been involved in the paper *Nanostrain sensitivity in a wire torsion experiment* which is was published in Nature. Please click here to [read more](#).

[Rob Miles](#) received a [Going the Extra Mile \(GEM\) Award](#) last November. He had received the award in recognition for his fantastic job in organising two major events both happening on 6th November - he was the main organiser (along with the academic lead, Dr Adrian Bevan) for the STFC School visit and the co-organiser of the Science and Engineering (S&E) Faculty FIRED-UP event. Due to Rob's careful planning and support, the events were a success."

Grant Success, The grant "*Heliospheric and Planetary Research 2020-2023*" (Principle Investigator [Prof David Burgess](#)) has been awarded a total value of £787,396 and the grant "*Astronomy Research at Queen Mary 2020 - 2023*"

(Principle Investigator [Dr Karim Malik](#)) has been awarded a total value of £2,345,552. That's £3.1M in total, roughly a 25% increase to the previous round and very pleasing considering the current funding situation.

[Dr Julian Adamek](#), has been awarded one of the Eccellenza Professorial Fellowships by the Swiss National Science Foundation. Please find the [awardees list](#) and the [press release](#).

[Nejc Ceplak](#) has been awarded the [Postgraduate Teaching Champion](#), for outstanding teaching or support from a postgraduate teaching assistant, demonstrator or advisor



Professor Derek H Martin

We are saddened to announce that Professor Derek Martin, Emeritus Professor and former member Dean of Science and Senator of the University, died on 14 February 2020 aged 91. Derek was a pioneer of the study and use of the Terahertz electromagnetic spectrum.

To read tribute for Prof Martin [click here](#)

Fellowship Forum - Nanoforce Seminar room

The 2019 Nobel Prize winner in Physics, Prof. Didier Queloz, came to Queen Mary to present a public lecture on “*Finding Life on Other Planets*” and a seminar in the School of Engineering and Materials Science. Additionally he attended a Fellowship Forum, organised by Dr Stoyan Smoukovin, where several of our colleagues were invited to present their research.

Prof Didier Queloz (Cambridge and Geneva) won the Nobel Prize for Physics, jointly with Prof James Peebles and Prof Michel Mayor, for his work on the first confirmation of an exoplanet (51 Pegasi b).

Picture: You can see our colleagues Dr Alkistis Pourtsidou, Dr Christopher Chen, Dr Thomas Haworth and Dr Maritza Soto with Dr Stoyan Smoukovin and Dr Angadh Nanjangud from the School of Engineering and Materials Science.



Careers activities

SPA Alumni Careers Panel - 25th February 2020

We had 20 students attending the School of Physics and Astronomy Alumni Careers Panel. We had a great panel of alumni working in space, investment banking and health physics. We are grateful to Sophie-Lynne Jory (MSc Astrophysics 2018), Charles Asadi (BSc Physics 2017) and Fatima Mahmood (MSci Physics 2019) for sharing such useful tips and insights! After the panel we had some networking time over pizzas. The students that attended feedback that they found the event really useful and that they would like to see more events like this.

SEPnet Summer Placements Scheme Update

QMUL SPA students have been very engaged with SEPnet Summer Placements, eligible students are still able to apply (deadline: 24 April, 2020). We have negotiated with the organisations offering placements and have arranged for placements to take place remotely/virtually where possible, or be deferred to next summer, 2021. If you,

or your students, have any questions about the scheme feel free to direct them to Melanie Christou at m.christou@qmul.ac.uk

Please find Maria Carmona Sanchez-Pinilla's [alumni video](#). Maria was a former BSc Astrophysics student, who is currently the Graduate Project Engineer at Vattenfall.

Equality Diversity and Inclusion (EDI) committee updates

We would like to thank and welcome Shufang Zhou to the role of PhD student representative. The full list of EDI members is available [here](#)
The EDI committee has funds for hosting diverse lectures, if interested in organising one of these lectures, please contact Dr Costis Papageorgakis. Please note this the fund is allocated on first come first served based.

On Friday 6th March women in all roles across the department, and supporters of women in Science Technology Engineering and Maths (STEM), came together over lunch to celebrate International Women's Day. We had a great turnout from the ladies of G.O.Jones, and hope to organise similar events later in the year.

Picture: Women's lunch



Paper - T2K Neutrino experiment

An exciting new result from T2K, a neutrino experiment located in Japan and designed to investigate how neutrinos change from one type to another as they travel, has our colleague Dr Alex Owen as the only author from Queen Mary.

The paper, Abe, K., Akutsu, R., Ali, A. *et al.* "Constraint on the matter–antimatter symmetry-violating phase in neutrino oscillations." *Nature* **580**, 339–344 (2020). The [Constraint on the matter-antimatter symmetry-violating phase in neutrino oscillations](#), provides the strongest constraint yet on the parameter that governs the breaking of the symmetry between matter and antimatter in neutrino oscillations. A more detailed description of the result and information about the T2K experiment and collaboration, can be found here, [read more](#)

Investigating hard carbons for battery materials

A collaboration between Imperial College London, Queen Mary university of London and Surrey University on turning biowaste into sustainable next generation batteries have been highlighted by the Science and Technology Facilities Council (STFC), [read more](#)

This work has focused on hard carbon anodes for sodium ion batteries, currently one of the few technologies being commercialized as an alternative to the current lithium ion technology. Combining advanced muon spectroscopy and computational method has allowed for new insight into the diffusive behaviour of sodium ions in hard carbon anodes improving our understanding of the rate performance of these materials.

Jobs

We are currently recruiting for a number of positions in the School. For more information please click [here](#).

If you have any news for the School newsletter. Please contact Sri - s.kulandaivelu@qmul.ac.uk



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SPA Monthly newsletter

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