ERS and ESC Travel Grant winners’ report 2017

Background

In 2017, thanks to a grant from GSK, the PVRI sponsored eight Travel Grants for UK based young scientists and physicians specialising in PVD to attend the ERS and ESC Conferences in 2017. The Travel Grants included the ERS/ESC registration fees for each delegate, as well as all transport and accommodation costs.

The PVRI set up a rigorous application process where interested young scientists and physicians could apply for the grants. The PVRI Grants Advisory Committee reviewed all applications received and then selected the eight most suitable applicants. The PVRI Grants Advisory Committee consists of the following senior international leaders in PVD:

- Paul Corris, PVRI President 2016/17, Newcastle University, UK
- Paul Hassoun, PVRI President 2018/19, Johns Hopkins University, USA
- Many MacLean, Glasgow University, UK
- Nick Morrell, Cambridge University, UK
- Martin Wilkins, Imperial College London, UK
- Marc Humbert, University Paris-Sud, France
- Anna Hemnes, Vanderbilt University, USA
- Aaron Waxman, Brigham & Women’s Hospital, Harvard Medical School, USA
- Qadar Pasha, CSIR Institute of Genomics & Integrated Biology, India
- Jamie Strachan, The Dinosaur Trust, UK

The successful applications were:

- Dr Alexi Crosby, Cambridge University, Basic Scientists – attended the ERS Congress in Milan
- Andrew McNair, Glasgow University, PhD Student – attended the ERS Congress in Milan
- Dr Kathryn Wilson, Glasgow University, Basic Scientist – attended the ERS Congress in Milan
- Dr Alison MacKenzie, Glasgow University, Clinical Fellow – attended the ERS Congress in Milan
- Dr Sarah Woolcock, Newcastle University, Clinical Fellow – attended the ERS Congress in Milan
- Dr Logan Thirugnanosothy, Newcastle University, Clinical Fellow – attended the ERS Congress in Milan
- Louise Harlow, Cambridge University, Basic Scientist & Clinical Trials Co-ordinator, attended the ERS Congress in Milan
- Dr Andrew Constantine – London Brompton, Clinical Fellow – attended the ESC Congress in Barcelona

Successful applications were required to produce a meeting report and submit an abstract to the respected Congress. The following meeting reports were received.

Meeting reports

All delegates found the Congresses in Milan and Barcelona very interesting and reported that they were able to attend many of the different scientific sessions, although some were scheduled at the same time. The following meeting reports were received.
Louise Harlow // Clinical Research Manager for the PVD Unit at Papworth Hospital

Louise attended the following ERS sessions:

- Symposium: Rational strategies for specific treatment situations in lung cancer
- ERS Clinical Research Collaborations (EMBARC)
- Cardiac function assessment in pulmonary hypertension
- New insights into Pulmonary hypertension from recent trials
- ERS/ESC joint session "open questions in pulmonary Hypertension"
- Poster Discussion Outcomes and new treatment strategies in pulmonary Hypertension
- State of the art session "Interstitial lung disease and pulmonary vascular diseases"

Louise said:

'I have recently been involved in managing a multi-centre study in PAH and wanted to attend the CRC meeting to gain some insight into setting up collaborations. I found the session extremely useful and was particularly impressed with the talk on the EMBARC. This collaboration is extremely successful with 44 countries involved and numerous studies and guidelines achieved since its inception. I also found the talk RISE-IIP: Riociguat for the treatment of pulmonary hypertension associated with idiopathic interstitial pneumonia from Steven D Nathan extremely interesting as this study had to be stopped due to safety events. Attending the meeting is a great opportunity to share experiences with other centres. I was fortunate to attend the Actelion meeting on the Monday evening. This was a small group discussion around selected abstracts and presentations from the meeting to date. This meeting allowed a more informal in depth discussion than time allows during the actual conference. It was useful to hear experiences from other centres, including international centres.'
Kathryn Wilson // Post-doctoral Research Scientist at Glasgow University

Reversal of pulmonary hypertension in a Sugen/hypoxic rat model using an ASK1 inhibitor
Kathryn Wilson

Kathryn is investigating novel therapies in pulmonary hypertension and sees attending congresses such as the ERS a vital part of her early career training. She reported:

‘The oral presentation on cardiac function assessment in pulmonary hypertension was of interest as one of my research interests is the right ventricular changes in experimental models of pulmonary hypertension. We are currently trying to establish methods to monitor disease progression in animal models so this session offered an insight into features observed in humans and possible routes of exploration in rodents. Another oral presentation, new insights into pulmonary hypertension from recent trials was also of interest as my current research involves the use of an ASK1 inhibitor in a rodent model of pulmonary hypertension. One of the presentations at this session was summarising the key findings of the ARROW study-a phase 2 clinical trial using an ASK 1 inhibitor in patients. The main finding from the study was that ASK 1 inhibitor given orally once daily for 24 weeks did not lead to a significant reduction in pulmonary vascular resistance in patients with pulmonary arterial hypertension. This data is in contrast to our research, and that of others, which demonstrates a reduction in right ventricular systolic pressure. There was quite a lot of discussion after this presentation and my own oral presentation with a lot of opinions being given from other delegates regarding the relevance of pre-clinical research in drug development. It was a great hear world leaders in my field discuss work which I have direct interest in.

There were a number of poster sessions which were of interest to me. One poster discussed the differences between the response of human and mouse ET-1-pre-contracted pulmonary arteries when exposed to nintedanib. The study demonstrated that human pulmonary arteries relaxed more potently than mice. This poster was of particular interest given the strong discussion in the new insights into pulmonary hypertension from recent trial session (above). Another poster discussed the differences in vascular resistance and vasoactive agents between male and female rats housed in hypoxic conditions as a potential explanation for the sexual dimorphism in the progression of pulmonary arterial hypertension.

The opposing and differing results between animal models of pulmonary hypertension and patients displayed at the congress highlights the need to understand better the underlying cellular and molecular mechanisms involved in the disease pathogenesis. It is also clear that there is still a great deal of research to be carried out.’
Alexi Crosby // Post-doctoral associate at Cambridge University

Alexi who has been researching pulmonary arterial hypertension for 10 years, reported:

'I particularly enjoyed the ERS session entitled, 'New insights into pulmonary hypertension from recent trials'. There was an interesting talk by Marius Hoeper looking at the effect of riociguat on pulmonary arterial compliance. The importance of pulmonary arterial compliance as a measurement was emphasised. Another particularly interesting talk in this session was by Tildman Kramer who showed that iron treatment improved the measured parameters in the trial.

Another interesting session was the session entitled, 'New perspectives form experimental models on pulmonary hypertension'. Of particular interest was the talk given by Ayumi Sekine. Interestingly, they showed that in 3 animal models of pulmonary arterial hypertension reducing BMP9 signalling protected against disease. The mechanism they proposed was that it was through reducing endothelin-1 in pulmonary arterial endothelial cells.

The scientific quality of the talks was good – however, there were more clinical and fewer scientific sessions than I expected. I had time to chat to a number of delegates during the conference.'

Andrew McNair // Second year PhD student at Glasgow Caledonian University

Part of Andrew's PhD involves collaborating with the Scottish Pulmonary Vascular Unit based in the University of Glasgow, was keen to attend the ERS Congress to improve his knowledge and to give him new ideas for his PhD project, which is looking at the role of connexions in pulmonary arterial hypertension. Andrew reported:

'I attended many interesting sessions such as New insights into pulmonary hypertension from recent trials and New perspectives from experimental models of pulmonary hypertension, as well as the thematic poster sessions, which I presented at and also had the chance to look around and see others research. I found sessions like these to be both very interesting as I liked the opportunity to see the latest ideas and research in the field from both a clinical and basic science perspective. Also getting to present my own work and get feedback from many of the leading experts in pulmonary hypertension was an invaluable experience. The suggestions and ideas I received to help further my research will be very helpful going forward into the final year of my PhD. I really enjoyed meeting other delegates from around the world and learning about their experiences. The diversity of the other delegates at the conference also allowed me to chat to both fellow PhD students of my own age about their work and also network with potential future employers about opportunities for me after my PhD.'

Logan Thirugnanasothy // Associate Clinical Researcher, Newcastle University

Logan, who has just completed his higher specialist training in Respiratory and General internal Medicine is due to take up his substantive Consultant post at the Queen Elizabeth hospital, Gateshead. His specialist training in respiratory medicine has included a MD in pulmonary hypertension research, part of which he presented at the ERS in Milan. Logan reported:

'I selected a wide range of sessions to attend, including the clinical year in review, clinical grand round, occupational lung diseases and the lung cancer interactive MDT. I also visited multiple thematic poster sessions and engaged the presenters. Specific to pulmonary hypertension, I attended the symposium "from acute clots to CTEPH" and the smaller sessions, including "Outcomes and new treatments in pulmonary hypertension" and "New insights into pulmonary hypertension from trials". I presented my pulmonary hypertension research in a thematic poster discussion entitled: "Imaging and lung disease in pulmonary hypertension". The standard of the talks delivered at the symposium was very high given the well selected speakers with great expertise in their sub-specialty field. Additionally, the smaller oral and posters sessions led by several facilitators provided lively discussion.'
Each session was an opportunity to interact with other delegates during the conference, including respiratory colleagues from the north east, as well research fellows from other UK Pulmonary hypertension centres centre, such as Glasgow.

Over the last few years, I have attended several international meetings such as the ERS and ATS annual meetings. Such large scale meetings are a very important for my continuing professional development. These meetings cover the entire breadth of respiratory medicine, as well as allied specialties, such as intensive care and cardiothoracic surgery. Therefore, attendance helps keep knowledge and skills up to date, provides networking opportunities and offers new ideas to take back to my own centre, such as developing patient care and services, as well as research ideas.’

Alison MacKenzie // Pulmonary Vascular Fellow at the Scottish Pulmonary Vascular Unit

Alison reported:

‘Attending the conference allows me to fulfil three key tasks:

1. Attend the ERS task force meeting on exercise rehabilitation in pulmonary hypertension
2. Present two posters, both from a PAH specific exercise rehabilitation study I am coordinating
3. Attend other relevant symposia, oral and poster sessions.

1 - ERS Task Force meeting

I am a member of the ERS Task Force on exercise rehabilitation in pulmonary hypertension. Part of my role in this group involved preparing sub-sections of a forthcoming guideline. I had the opportunity to present and obtain feedback the first draft of these sections and listen to presentations from other group members. This stimulated very interesting and constructive discussion regarding the current state of exercise therapy in PAH and future directions for research in this field. It also facilitated useful opportunities to discuss shared research projects and foster new collaborations.
My main research interest is in exercise physiology and exercise therapy in pulmonary arterial hypertension. I am currently coordinating a clinical study looking at the efficacy and feasibility of exercise therapy for patients with PAH in the UK.

I presented data on the haemodynamic changes seen at right heart catheterisation before and after exercise therapy. I received very positive feedback and useful advice from PH experts regarding the changing physiology that we have observed. I also presented data with a physiotherapy colleague on compliance to rehabilitation in patients with PAH and factors that interfere with rehabilitation. This was again a very positive session and we had interaction from a wide variety of health care professionals from Europe and Australia.

Between my presentations and attending the task force meeting, I had the opportunity to attend some excellent sessions relevant to both Pulmonary Hypertension and exercise physiology in pulmonary diseases.

Particular highlights were:

- The lungs and the heart during exercise: This session covered a variety of pulmonary conditions including PAH. I was particularly interested in the findings of a study assessing the positive impact of COPD rehabilitation on endothelial function.
- Cardiac Function assessment in pulmonary hypertension: The group I work with at the Scottish Pulmonary Vascular Unit, have a strong interest in imaging, therefore this session was useful from a research perspective and to hear my colleagues present. I particularly enjoyed hearing about the prognostic relevance of right atrial function in PAH and also RV strain differences between IPAH and SSc PAH, as these are two specific areas that are being studied in our unit.
- New insights into PAH: key findings from large scale drug studies in PH. This was a useful session from a clinical perspective, particularly regarding the efficacy of the endothelin receptor antagonist Macitentan in CTEPH. I was also interested in discussion around the use of Selonsertib in the ARROW study. Our group had been involved in phase 1 and 2 studies of this drug. Although the ARROW study was negative, the results stimulated interesting discussion on trial design and pathways.
- From acute clots to chronic thromboembolic pulmonary hypertension. In addition to Chronic Thromboembolic pulmonary hypertension, I am also involved in the management of acute pulmonary embolism in Glasgow, including advanced rescue therapies, such as catheter directed thrombolysis. This session was useful to hear the latest insights into risk stratifying patients with acute pulmonary embolism and also looking at RV function in CTEPH.

Sarah Woolcock // Specialist Registrar within the Northern Pulmonary Vascular Service at the Freeman Hospital in Newcastle

Sarah who recently completed her MD research project with the team reported:

'The basis of my research is to explore the role for specialist palliative care in the management of patients with PAH. As part of my research I carried out interviews with patients and clinical staff involved in caring for those with PAH, to explore attitudes towards palliative care and evaluate how palliative care is currently delivered in PAH. I am currently in the process of publishing and disseminating my research findings. Whilst I did not present my research findings at this year’s ERS meeting, the meeting provided an invaluable opportunity for me to establish collaborations in this field. The conference also provided opportunity for me to gain further knowledge of current updates in pulmonary vascular disease as well as other respiratory conditions.

Particular highlights of the conference included symposiums I attended on the topics of lung cancer, lung transplantation, COPD and pulmonary vascular disease. The lung cancer ‘Grand Round’ was especially
helpful in discussing the management of difficult cases with a mock MDT setting. I also attended a symposium on smoking cessation which was very relevant to clinical practice. In addition, I also attended a symposium on interstitial lung disease and pulmonary vascular disease which gave a good summary of updates in the management of chronic thromboembolic pulmonary hypertension and acute pulmonary embolism. I was also able to spend time looking at the posters, which were excellent and very interesting.

All of the talks and symposiums I attended were of very good quality and were very applicable to my clinical practice. Each talk provided relevant, up to date research and information and were extremely helpful. Overall I felt that there was a well-balanced programme covering detailed scientific material as well as clinical application. In addition to the teaching programme, the conference provided excellent opportunity to meet with other delegates and discuss my research findings. I hope that I will also be able to build on discussions from the conference and build collaborations in the future.

I am very grateful to the PVRI for supporting my attendance at the ERS for what was an excellent conference, providing good educational and collaborative opportunities which have been invaluable to my ongoing research.'

**ESC Congress 2017 // 26-30 August – Barcelona Spain**

Andrew Constantine // ST4 cardiology specialist registrar, North-West Thames Deanery

Andrew who is completing his cardiology training found that attending the ESC allowed him to keep up to date with the most recent trials in cardiology and more specifically with his chosen field of congenital heart disease and pulmonary hypertension. In addition, he stressed that networking with colleagues and communicating directly with companies at the cutting edge of technology was extremely beneficial. Andrew said:

'I have attended a good number of very interesting sessions over the five days of the congress. Highlights have been the sessions on cardiology in the digital world including the Inaugural session on Cardiovascular Medicine in the Digital Era by Eric Topol, as well as the great number of sessions on congenital heart disease and pulmonary hypertension. These have provided important updates with regards pulmonary valve replacement outcomes and aortic dissection in Tetralogy patients, including from our research group at the Brompton.'
Generally, I was impressed with the scientific quality and standard of the talks. Even at the smaller sessions, including at the rapid fire abstract presentations, the data presented have been of a very high standard. There has been an inevitable variation in the standard of the speakers themselves, based on their experience and grasp of English, but generally these have also been of a good standard (impressive when considering English is a second language for many speakers at the congress). I could meet and talk to many of these speakers; sharing ideas and thoughts about published and future research has been a highlight of the conference for me. My talk was well received and provided important data of a very large number of women with CHD and PAH undergoing pregnancy.

The PVRI thanks all our winners for their excellent efforts.