WHRF WILLIAM HARVEY RESEARCH FOUNDATION

December 2020

INSIDE

Welcome

- From Jeremy Tigue, Chair of the Board of Trustees

Welcome to the first newsletter from the William Harvey Research Foundation. We want to showcase the exciting research taking place at Charterhouse Square, tell you about the new ways we are supporting that research and thank our generous donors.

The largest donation this year is £94,000 from the Lorna and Yuti Chernajovsky Foundation for a PhD studentship to study the failing heart in arthritis. We have also received funds of £71,500 from William Harvey Research Limited, which will help support existing PhD students delayed by COVID-19. We thank all our donors for their contribution during the year, which makes such a difference.

2020 saw the second round of our Lay Communications Prize. COVID-19 has shown how important it is for medical experts to be able to explain their work to the public. We hope this prize will play a part in promoting that, and do go to the WHRF website to watch our COVID-19 video diaries: www.williamharveyresearch.com/foundation

Finally, our main fund raising focus is now the John Vane Academy. We plan to launch this formally when conditions allow but we have already received generous donations to support travel grants for future members of the Academy and to support a launch event.

We hope you enjoy reading this newsletter - to contact us please email j.t.cross@qmul.ac.uk

The John Vane Academy

- By Professor Rod Flower FRS, WHRF Trustee

Simple learning about science is not sufficient to become a good investigator.

Sir John Vane, FRS, founder of the William Harvey Research Institute (WHRI) and its charitable arm the William Harvey Research Foundation (WHRF), made important contributions to many fields of research, with a focus on addressing unmet medical needs through therapeutic innovation. He believed that a sound scientific 'apprenticeship' would enable his students to do likewise and so, to commemorate the 30th anniversary of the creation of WHRF, the Trustees of the Foundation are launching a new flagship programme called *The John Vane Academy*. More information will be available in future editions of this newsletter.

The inaugural research priority will be projects addressing 'inflammageing'. As we grow older, the homeostatic systems that preserve our lives can become faulty and may malfunction. This becomes especially evident in our later years: many biologists believe that this is because our physiology, which evolved to deliver us safely through our childhoods and into our reproductive years, was never intended to deal with the unintended biological consequences of the increased life expectancy we currently enjoy.

Amongst those bodily systems which are affected by aging, the immune system is of particular importance. This is highly developed in humans and very finely tuned. When functioning correctly, it constantly shields us from a huge range of infectious agents which would otherwise prove fatal and any tendency for the system to overreact is kept in check by a sophisticated system of controls.

As we age, the ability of the immune system to do its job safely is degraded. This can lead to a failure to combat infections and a persistent low-level inflammation in some organs. One of the sites of ongoing inflammation is in the cells that line our blood vessels. This causes problems in the cardiovascular system including thrombotic episodes. Because many age-related changes implicate a disordered inflammatory response, the phenomenon has been termed 'Inflammageing.' It's manifestation is accompanied by the appearance of characteristic chemical and genetic 'biomarkers' in the body.

Understanding the mechanisms of Inflammageing and devising suitable counter measures is seen as one of the biggest health challenges of our time. The marked age-related susceptibility to COVID-19 may be related to Inflammageing because it compromises both the 'adaptive' immune system (which learns to recognise pathogens and produce long term immunity) and the 'innate' immune system (which mounts immediate inflammatory episodes in response to infection or injury). The gradual age-related decline in hormones such as cortisol, which regulates the immune response, also plays an important role in the Inflammageing syndrome.

At the William Harvey Research Institute, we have a long history of researching these areas extending back many years, as well as a cadre of appropriately trained scientists supported by state-of-the-art equipment. We are thus uniquely placed to advance this important field.

Communications Prize 2020

Laura Deelen successfully engaged our panel of expert judges in her persuasive written submission and final presentation on, "The development of stem cell therapy for heart failure". Laura is a British Heart Foundation Research MRes Student at the WHRI Centre for Microbiology.

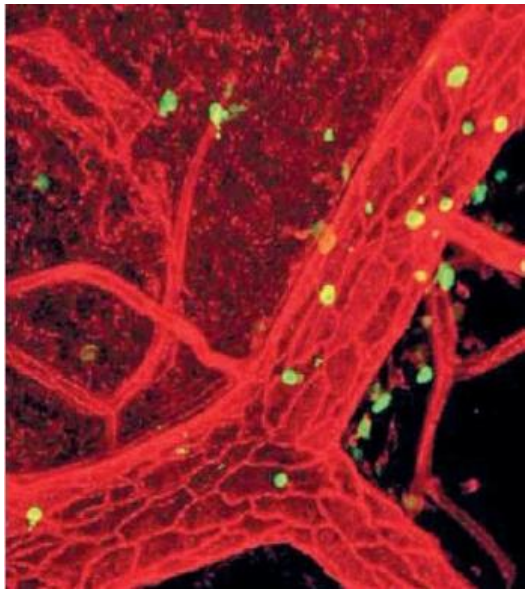
In its second year, the popular WHRF Lay Communications Prize tasks WHRI competitors to submit a description in lay language of work they involved in at WHRI such that it can be understood by and enthuse somebody with no more than secondary-school science education. Finalists then delivered a two-minute elevator pitch to the judges as if trying to convince Bill Gates to fund their research.

On finding out she had won, Laura said: "I found the Competition a great opportunity to communicate my work to a wider audience. It allowed me to practise and support public engagement, and gave me better insight to how our society perceives our research. As the need for improved treatments, knowledge and services increases, this way of communication hopefully underlines the importance of investing in medical research."

Competition Chair and WHRF Trustee, Steve Bates, reiterated the importance of communications to secure sustainable research funding: "Medical science has become increasingly complex even as our understanding of the systems which govern human life have improved. The ability to explain to non-experts why and how particular fields of research are important is more vital than ever in reaching potential donors and in raising the level of the scientific debate generally."

Competition Judge Clare Parsons, Chair and Co-Founder of international PR and Communications agency Lansons was highly impressed by the WHRI entrants: "The candidates remind us that just around the corner in a hidden part of London, are the best of global health researchers, talented PhD students conducting exceptional work, in ground-breaking areas. The shortlisted candidates were concise, compelling and deserve the investment, they are now well-briefed to find a Bill Gates to meet in a lift and pitch to them!"

Go to www.williamharveyresearch.com/news to watch Laura Deelen's video, as well as the videos of runner-up, Chris Smith, and finalist, Rachel Coleby.



This high-resolution image shows white blood cells (in green) that are an essential part of the immune system and defend the body against infections. However, after heart attacks or strokes, these cells become destructive, invading blood vessel walls (in bright red) and damaging the surrounding tissue. Dr Tamara Girbl and Professor Sussan Nourshargh of WHRI are applying this state-of-the-art confocal microscopy to find out why and see how effective therapies can be developed to fight cardiovascular disease.

Donations

In this festive shopping season, **don't forget** to nominate William Harvey Research Foundation as your charitable cause when using Amazon Smile, Give As you Live, or any other online fundraising platform where you can nominate a charity!

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