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PhD Research Studentship (full-time) – Cardiovascular Exercise Physiology:

The School of Sport & Health Sciences at Cardiff Metropolitan University invites suitably qualified candidates to apply for a fully-funded PhD studentship investigating the independent and combined effects of exercise training and statin therapy in the primary prevention of cardiovascular disease (CVD). This project offers the opportunity to work with leaders in the field of clinical exercise physiology and become highly skilled in cardiovascular imaging techniques in order to examine the respective benefits of two frontline CVD prevention strategies.

Package: Three-year bursary plus tuition fees (at EU/UK rate). Stipend amounts are in line with UKRI rates. For 2019/20 this is set at £15,285. For subsequent years, the doctoral stipend will match those outlined annually by the UKRI.

Project Title: The independent and combined effects of exercise training and statin therapy in the primary prevention of cardiovascular disease

Supervisory Team: Dr Chris Pugh (Director of Studies), Dr Eric Stohr and Dr Barry McDonnell.

Project Description: CVD is the leading cause of death and disability worldwide. In the UK, over 7.4 million people are living with CVD, which causes 27% of all annual deaths and costs the UK economy ~£19 billion per year. Regular exercise and statin therapy are widely recommended to reduce CVD-risk. When prescribed after a heart attack or stroke, both exercise and statins reduce the risk of a CVD-related death by ~25%. However, far less is known about the relative effects of exercise and statin therapy in primary CVD prevention (i.e. before a CVD-event). Blood vessel dysfunction represents the earliest stage of CVD, which can be measured with ultrasound to sensitively detect early CVD-risk. Regular exercise provides a variety of cardiovascular benefits and has a direct therapeutic effect on blood vessel function. In contrast, statin therapy primarily reduces CVD-risk by lowering cholesterol, which may also improve blood vessel function. However, the independent effects of exercise training and statin therapy on blood vessel function have never been directly compared in the setting of primary prevention, and it's currently unknown whether a combination of both interventions offers additional cardiovascular benefit. Therefore, the aim of the studentship is to conduct the first randomised controlled trial of the independent and combined effects of exercise training and statin therapy on blood vessel function in individuals at risk of CVD. This project will utilise cutting-edge ultrasound techniques to sensitively examine the respective cardiovascular benefit of these frontline strategies and provide novel insight into the most effective and personalised preventive treatment options to reduce CVD-risk.

The successful applicant will become highly skilled in an array of cardiovascular and physiological assessments using our state-of-the-art clinical cardiovascular assessment unit and exercise testing/prescription facilities. The PhD student will be trained primarily in vascular ultrasonography, phlebotomy, exercise testing and exercise prescription, but will also gain exposure to cardiac and cerebrovascular imaging techniques.

Host Institution: The Cardiff School of Sport and Health Sciences (CSSHS) prides itself on its reputation for 'World Leading' and 'Internationally Excellent' research and was recently ranked 5th in the UK for research quality in Sports Science in the *Complete University Guide* 2021 league table. The successful applicant will join a vibrant postgraduate community within the Cardiovascular Physiology Research Group, which falls within the wide-reaching Cardiovascular Health and Ageing research theme. The global aim of the Cardiovascular Physiology Research Group is to produce impactful and internationally recognised research within the area of integrative and experimental cardiovascular physiology. To achieve this, the group work in collaboration with clinicians, physiologists, local health boards, industry, charities and the public to investigate the acute cardiovascular responses and chronic adaptations to exercise, ageing, disease and pharmacology. In addition, our purpose built fully equipped clinical cardiovascular assessment unit, exercise testing/prescription facilities and linked biomedical laboratories offers the ideal environment for the proposed PhD studentship.

Criteria: Applicants should have a 1st class/2:1 honours degree and/or a Master's degree in a related discipline (e.g. Sport and Exercise Sciences, Human Physiology, Biomedical Science). Some experience of vascular ultrasonography and/or exercise prescription would be beneficial, but not essential. The applicant will be primarily located in Cardiff Metropolitan University, but will be expected to recruit eligible participants across Cardiff/South Wales. A willingness to offer flexible working hours in order to conduct supervised exercise sessions is essential. Crucially, we are looking for a talented and motivated individual who is able to demonstrate the necessary experience or potential to successfully complete a PhD in sub-clinical cardiovascular exercise physiology.

Application: Please complete an application form which is available [here](#). The application form will include a statement detailing how your qualifications, experience and research interests make you a suitable candidate for this PhD studentship. In addition, you will be required to provide the name, address and status of two referees who are willing to provide an academic/professional reference for you. One should be your present or most recent employer/academic supervisor and one other who is able to describe your suitability for this post. References are normally taken up when the candidate is invited for interview.

Please send your completed application form and full CV to: Rachael Lusted (rlusted@cardiffmet.ac.uk), Research and Enterprise Officer, Cardiff School of Sport and Health Sciences, Cyncoed Road, Cardiff, CF23 6XD.

Informal enquiries should be directed to:

Dr Chris Pugh

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