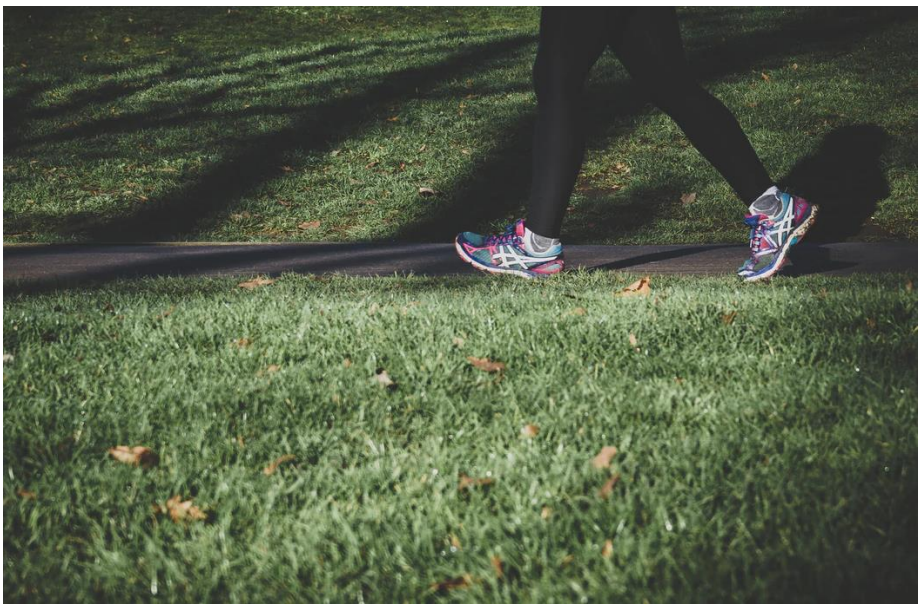
The **University of Wolverhampton**

PhD Studentship
Exercise in Disease manaGement and rEhabilitation (EDGE): Rheumatoid Arthritis



Applicant Pack

University of Wolverhampton

PhD Studentship

We are offering a fully funded PhD at the University of Wolverhampton.

Closing Date: 16th December 2021

Interview Date: Week commencing 10th January 2022

PhD Role Descriptor

Funding is available to support a full time fully funded (£15,609 stipend and paid tuition fees) PhD, over a three-year period from December 2021 (or as soon afterwards as possible). This PhD studentship will form part of the Exercise in Disease manaGement and rEhabilitation (EDGE) project and will focus on investigating the effects of exercise on rheumatoid arthritis treatment and will examining the physiological and biological mechanisms that may underpin these effects.

The EDGE project is a University of Wolverhampton funded, multidisciplinary project that utilises existing experience and expertise of exercise physiologists, behavioural psychologists, immunologists, rheumatoid arthritis consultants, pharmacologists, nurses, and computer scientists. The project has two strands: an investigation of the acute and longer-term effects of exercise in 1) women with breast cancer, and 2) rheumatoid arthritis patients. In both strands, acute and longer duration trials will be co-designed with the help of patients (i.e., for increased adherence, sustainability, and scale-up of the investigated interventions).

The PhD student will usually be located at the University of Wolverhampton but will also be expected to attend the hospitals where the trials will recruit and conduct at least some of the testing and interventions. The student will be provided with associated tuition, general research, statistical, and clinical trial management training, intervention and testing instruction, and mandatory attendance at the Annual Progress Review. Under the tutelage of immunologists at University of Wolverhampton, the student will also use fresh blood and biopsy tissue from people with rheumatoid arthritis to undertake serological and cell-based assays to identify key cellular and molecular changes in the immune response as a result of exercise. The successful candidate will develop expertise in a number of immunological techniques including PBMC culture, flow cytometry, ELISA, and confocal microscopy, in a highly supportive environment.

Project: Exercise in Disease manaGement and rEhabilitation: Rheumatoid Arthritis

Despite the improvements in pharmaceutical therapies, many rheumatoid arthritis (RA) patients do not reach complete remission and may still experience eventually variable levels of disability. For example, 20% to 40% fail to respond while some patients lose response over time and/or experience adverse events. These facts suggest that there is a measurable therapeutic void in RA while at the same time, RA treatment costs remain high. It is necessary, therefore, that the overall management of RA should also focus on adjunct non-pharmacological interventions with proven effectiveness, in

order to improve quality of life and reduce, prevent or help to better cope (physically, emotionally and societally) with the activity limitations and adverse effects of suffering from RA. A promising and well-researched intervention that can significantly improve symptoms and quality of life in RA, is physical activity. Importantly, there is biological plausibility to suggest that exercise could even enhance the efficacy of biological medication, however, this remains to be investigated.

This PhD programme aims to investigate if exercise can: a) enhance the efficacy of biological medication in RA and b) improve symptoms in patients that receive specific biological medication. Specifically, the PhD aims to:

1. Review the effects of exercise on pharmacodynamics and pharmacokinetics in RA using a systematic review and meta-analysis
2. Investigate the effects of acute exercise on the efficacy of biological medication in RA
3. Understand the trajectory of inflammation and related symptoms and biomarkers during biological medication interventions in RA
4. Examine the effects of an exercise intervention as an adjunct treatment to biological medication in RA patients

It is anticipated this research will draw on a range of methodologies within exercise physiology, immunology, as well as other aspects of RA care. The precise research question(s) and methodologies adopted will be negotiated with the successful applicant.

Studentship

The studentship is for three years and is intended to start in December 2021. The studentship provides a tax-free stipend of £15,609 per year plus the tuition fees at the UK rate. We anticipate submission at month 36 of study. An additional maximum of 12 months can be applied for but the pro-rata cost of £1,000 for this additional period will need to be covered by the applicant, should they wish for this additional time. Due to funding restrictions, this studentship is only open to UK applicants.

Person Specification

	ATTRIBUTE	ESSENTIAL		DESIRABLE	
1.	**Academic Qualifications**	1.1	An undergraduate degree (2:1 or above with honours) in Sport & Exercise Science, Biological Sciences, Physiology, Biochemistry, or related area (cv)	1.2	A masters-level qualification in Sport & Exercise Science, Biological Sciences, Physiology, Biochemistry, or related area (cv)
2.	**Professional Qualifications**			2.1	Accreditation or desire to work towards accreditation from relevant professional body e.g., BASES (cv)
				2.2	A current first aid or basic support qualifications from a recognised organisation (cv)
3.	**General Skills/ Experience**	3.1	Good IT skills, including data analysis skills (cv)	3.3	Personal initiative, reliability, attention to detail (cv and interview)
		3.2	Good communication and interpersonal skills, written and oral (cv and interview)		
4.	**Specific Skills/ Experience**	4.1	Knowledge of delivering exercise sessions to clinical populations (cv, interview)	4.4	Evidence of managing research projects (cv, interview)
		4.2	Good understanding of clinical and quantitative research methods and designs (cv, interview)	4.5	Knowledge of monitoring health and wellbeing using various methods (cv)
		4.3	Understanding of the mechanisms that underpin the role of exercise in the prevention and management of chronic diseases (cv, interview)	4.6	Experience of delivering exercise sessions to clinical populations (cv, interview)
5.	**Specific Qualities related to particular position**	5.1	Experience of analysing quantitative data (cv and interview)	5.4	Able to handle multiple simultaneous demands and activities (cv)
		5.2	Ability to work as part of a multidisciplinary team (cv)		
		5.3	Ability to work independently and set realistic but attainable goals (cv, interview)		
6.	**Other**	6.1	Commitment to the University's policy framework on diversity and the University's and partner hospital's policies on health and safety (cv, interview)		
		6.2	The studentship will involve times to suit the scheduling of study participants which will include some evenings, weekends and bank holidays (interview)		
		6.3	Commitment to open science and improving transparency and a credibility within the field of clinical exercise science (interview)		

How do I Apply?

For an informal discussion about this opportunity please email Dr Mark Burnley m.burnley@wlv.ac.uk or Dr Ian Lahart i.lahart@wlv.ac.uk
Applicants should email a CV and covering letter detailing their suitability for the project and contact details of two referees to m.burnley@wlv.ac.uk. Please clearly indicate the reference "PhD EDGE Rheumatoid Arthritis" in the title of the email and on your cover letter.