**University of Leicester**

**Future 50 PhD Scholarship**

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| **Project Reference** | CVS Ng |

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| **First Supervisor** | Professor Andre Ng | | |
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| **Second Supervisor** | Professor Tom Yates | | |
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| **Additional Supervisor** | N/A |

**Section 2 – *Project Information***

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| **Project Title** | Testing a personalised digital walking programme (P-STEP) in atrial fibrillation prior to scheduled ablation | |
| **Project Highlights:** | 1. | Utilising University of Leicester designed and developed digital solution P-STEP (Personalised Space Technology Exercise Platform) |
| 2. | Development of statistical and qualitative skills and training in clinical trial design |
| 3. | Development opportunity for nurse practitioner/non-clinical researcher |
| **Project Summary** | | |
| Atrial Fibrillation(AF) prevalence is estimated at 2.5% in 2016, translating to ~1.4 million people in England alone[[1]](#footnote-1). Drug therapies are prescribed as treatment, if these fail then catheter ablation may be indicated. As well as other co-morbidities, many patients undergoing AF ablation are overweight (BMI:>30 in 46%; 26-30 in 34% at University Hospitals of Leicester(UHL)).  Several studies report positive impact on decreasing AF burden from lifestyle changes targeting weight loss, physical activity, and risk factor modification – which also enhance the benefits of treatment received[[2]](#footnote-2).  Physical activity can be challenging as AF patients often experience symptoms such as breathlessness or chest pain. Although light to moderate-intensity physical activity is safe in AF and is recommended, the symptoms of AF often discourage purposeful exercise due to a fear of making things worse[[3]](#footnote-3).  A multi-disciplinary, cross-departmental team at the University of Leicester, funded by European Space Agency, has developed a new App called P-STEP (Personalised Space Technology Exercise Platform) for people living with long-term cardiovascular conditions, aimed at providing personalised walking prescriptions combined with air quality information on walking routes - an important innovation as air pollution exacerbates symptoms of heart problems, including AF. Translation of this flagship project into programmes of research provides key evidence to inform clinical practice.  This project will phenotype patterns of physical activity in AF patients using wearable devices, and undertake a randomised controlled trial (RCT) testing the P-STEP app in inactive patients. The intervention will target those on AF ablation waiting-list. At UHL, 300 AF ablations are performed annually, with a waiting-list time of about 12-months, providing a unique opportunity to support AF patients awaiting treatment. The impact of exercise is assessed comparing measurements at baseline, pre-ablation and post-ablation including 24hr-ECG to assess autonomic function, symptom-score and other patient reported outcomes.  Prof. Ng will provide training/supervision in AF and cardiac electrophysiology and RCT set-up; Prof. Yates will provide training/supervision in physical activity.  References   1. PHE (2017) Atrial fibrillation prevalence estimates in England. <https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/644868/atrial_fibrillation_AF_prevalence_estimates_technical_document.pdf> 2. Chung et al. (2020) Circulation 2020;141:e750–e772 <https://doi.org/10.1161/CIR.0000000000000748> 3. Elliott et al. (2021) Eur Heart J 2021;42(38):3989-91. <https://doi.org/10.1093/eurheartj/ehab520> | | |

1. [↑](#footnote-ref-1)
2. [↑](#footnote-ref-2)
3. [↑](#footnote-ref-3)