St Andrews Interdisciplinary Research Support (STAIRS)

Round 1 – 2021

The catalyst funding scheme, St Andrews Interdisciplinary Research Support (STAIRS) aims to support high-quality collaborative interdisciplinary research that closely aligns to the University Strategic objectives. Launched in May 2021 by the Vice Principal for Research and Innovation, the call was extremely popular and was oversubscribed. It received 44 applications totalling £2,073,910.57 for a share of the £270,000.00 fund available. A review panel awarded funding to 5 projects totalling £265K.

Funded Projects:

**PI:** Areti Manataki  
**School/Dept:** Computer Science  
**Project Title:** Multimorbidity

This provides a unique opportunity for interdisciplinary research at USTAN that allows new data science methods from the Schools of Computer Science (SoCS) and Mathematics & Statistics (SoMS) to be deployed in one of the School of Medicine’s (SoM) key research areas. Expertise from the School of Geography & Sustainable Development (SoGSD) will also enable new insights regarding sociodemographic inequalities in disease trajectories.

**PI:** Ifor Samuel  
**School/Dept:** Physics and Astronomy  
**Project Title:** A Frugal Engineering Approach to Laser Treatment for the Prevention of Blindness

Dr Blaikie and the team of Prof Samuel in the Arclight Project [http://med.st-andrews.ac.uk/arclight/](http://med.st-andrews.ac.uk/arclight/) have created a uniquely low-cost (£25) Binocular Indirect Ophthalmoscope (BIO) called the ‘Holo’. The purpose of this proposal is to form a new collaboration between the School of Medicine and the School of Physics and Astronomy to pursue interdisciplinary research to identify how this could be further developed to enable not only diagnosis of eye disease, but also its treatment. Combining expertise in ophthalmology from the School of Medicine with expertise in lasers and optoelectronics from the School of Physics and Astronomy to identify how the existing ophthalmoscope could be modified to make it suitable for laser treatment of debilitating eye disease.

**PI:** Peter Donnelly  
**School/Dept:** School of Medicine  
**Project Title:** Combining Artificial Intelligence and Applied Epidemiology to enhance Cancer Screening (IntelliScreen)

In this study the team seek to bring together three areas of expertise under the umbrella of the Mackenzie institute for early diagnosis; clinical, epidemiological and computer science (artificial intelligence) with the aim of designing a system that maximizes the number of cancers found early
whilst minimizing unnecessary investigation which is a nuisance for patients and a burden on the NHS.

**PI:** Ralitza Nikolaeva  
**School/dept:** Management  
**Project Title:** A pilot study of the acceleration of the adoption of carbon-reducing technologies – Power-to-X in Scotland

This interdisciplinary research looks at political, economic and societal barriers to the adoption of carbon-reducing technologies based on a case study of Scotland. The project actively engages with the planned activities at Eden Campus surrounding carbon capture and green hydrogen. The interdisciplinary team harnesses the strengths of chemistry, political science, and management from conceptual frameworks to methodologies. The goal is to develop a survey instrument measuring key stakeholders’ susceptibility to institutional pressures that can enable better-informed decisions at the level of policy-making and implementation.

**PI:** Richard Irvine  
**School/dept:** Philosophical, Anthropological, and Film Studies  
**Project Title:** Sustainable futures: understanding drug use in the context of energy transitions

This project will examine the relationship between addiction, drug use, and energy transition, asking what lessons can be learned from Scotland’s own industrial history in moving towards sustainable futures. The project forms an interdisciplinary collaboration at the intersections of anthropology and medicine, employing a cross-cutting methodology that combines ethnographic and qualitative methods.