Annual Joy Welch Post-Doctoral Grants Fund 2023/24

In January 2024, Lancaster University proudly hosted the third round of the annual Joy Welch Post-Doctoral Grants Fund. This funding initiative was accessible to all researchers at Lancaster University, aiming to support research projects across various fields and disciplines. According to the agreement between the Joy Welch Educational Charitable Trust and Lancaster University, a total of £100,000 was allocated to award at least 12 research grants.

Researchers from Lancaster University's four faculties were invited to submit a research proposal of up to 1,000 words, along with a brief application form. The scheme received 36 eligible applications. A review panel, consisting of four research-active academics from each of Lancaster University's faculties, was assembled to evaluate the applications. Panel members cast their votes for the most promising projects.

The panel included:

- Professor Nancy Preston, Associate Dean for Research, Faculty of Health and Medicine (Chair)
- Professor Carolyn Jackson, Department of Educational Research, Faculty of Arts & Social Sciences
- Professor Jan Grabowski, School of Mathematical Sciences, Faculty of Science and Technology
- Professor Maria Piacentini, Associate Dean for Research, Management School

After thorough consideration, the panel was able to distribute 13 awards, totalling £100,000, to researchers at different career stages and from various disciplines. The panel expressed the University's deep appreciation to the Trust for its generous support, which provides a unique and valuable resource for Lancaster University researchers. The panel members were highly impressed by the number and quality of applications received this year and are excited that 13 awards have been granted to colleagues to pursue original research. We eagerly anticipate the outcomes of their projects in the coming year.

The percentage of applications received:

2023-24	**Eligible Applications assessed by the panel (36)**	**%**
FASS	11	30.5%
FHM	11	30.5%
FST	13	36%
LUMS	1	3%
Total	**36**	100%

The percentage of awards provided:

2023_24	**Awards (13 No.)**	**%**
FASS	6	46%
FHM	4	31%
FST	2	15%
LUMS	1	8%

Awarded Projects

Dr Atanasova Dimitrinka (PI) and Dr Carly Stevens

Linguistics & English Language **Amount requested and awarded £7,206**

Farming and sustainability in Ireland and Northern Ireland: Family farmers' views

In Ireland and Northern Ireland farming has historically had both economic and cultural significance and its environmental significance has also been receiving increasing attention as part of sustainability discussions. 'Sustainability' - meeting the needs of the present while ensuring the ability of future generations to meet their needs encompasses the environment, the economy and society including the preservation of the local, cultural heritage. In Ireland and Northern Ireland where farms are especially small-scale and family-owned in the cross-border region, evidence is beginning to emerge that, despite the challenges from Brexit, small-scale family farms may hold the key to a sustainable future, in terms of economic viability, environmental impact and cultural heritage preservation via cross-border collaborations. Despite prominent calls to consider small-scale family farms at the heart of our sustainable future, there is limited systematic analysis of how the representation of farming vis-à-vis sustainability has changed over time, in Ireland and Northern Ireland, in key media outlets that can influence public perceptions; and research with small-scale family farmers from the cross-border region is absent. The few studies that have investigated the media representation of farming in Ireland and Northern Ireland have analysed a limited number and type of media outlets (typically, the farming press) and narrow timeframes and have focused on 'climate change' (and how farming contributes to a changing climate), not how farming is represented concerning 'sustainability'. This project will address the above-identified gaps by (1) collecting a corpus of news articles from leading newspapers in Ireland and Northern Ireland to systematically analyse the over-time representation of farming vis-à-vis sustainability and (2) conducting pilot interviews with small-scale, family farmers from the cross-border region to start better understanding their views on and experiences with 'sustainability'.

Dr Casey Benkwitt

Lancaster Environment Centre **Amount requested and awarded £9,660**

Do nutrients from seabirds mitigate the impacts of climate change on coral-dependent fish?

Tropical coral reefs, among the most diverse yet threatened ecosystems globally, face severe challenges from climate change, particularly through increasing marine heat waves that lead to mass coral die-offs. This study explores the hypothesis that nutrients from seabirds can mitigate these impacts on coral-dependent fish, specifically the butterflyfish *Chaetodon trifasciatus*. Seabirds transfer nutrients from oceanic feeding grounds to breeding islands, where their guano enriches nearshore coral reefs, acting as a natural fertilizer. Previous findings indicate that seabird-derived nutrients can double coral growth and enhance recovery rates by 18% following heatwaves. However, the potential benefits of these nutrients for coral-dependent fish remain unexplored. The aim is to assess the influence of seabird nutrients on butterflyfish, which are sensitive indicators of reef health due to their exclusive reliance on corals for food. We will test three main hypotheses: (H1) seabird nutrients are incorporated into coral reef food webs, benefiting butterflyfish; (H2) these nutrients enhance butterflyfish growth rates, particularly during periods of reduced coral cover; and (H3) variations in butterflyfish nutrition and growth can be attributed to genetic differences. Fieldwork was conducted in the Chagos Archipelago, a unique setting where islands with healthy seabird populations are juxtaposed with those lacking seabirds due to introduced rats. In October 2023, we collected 56 butterflyfish from both types of islands. Muscle samples were analysed for stable isotopes to trace nutrient flow, while genetic analysis and ear bone growth assessments were performed to

evaluate growth responses. This study highlights the critical role of seabird-derived nutrients in supporting coral reef ecosystems and their dependent fish amidst the challenges posed by climate change.

Dr Laura Clancy

Law School and Health Research **Amount requested and awarded £4,762**

Support for academics experiencing digital hate as a consequence of public academia

This proposal seeks to expand the project "Cultures of Digital Hate," addressing a critical gap in understanding the experiences of academics who are encouraged to engage publicly through traditional and social media. As part of a broader cultural shift towards public academia, this research focuses on the often-overlooked roles of Press Officers, Research Directors, Impact/Engagement Officers, and university management—key figures who facilitate academic visibility and public discourse. Our pilot study revealed that many academics feel inadequately supported by their institutions when facing online abuse, which can lead to severe mental and physical health issues, including anxiety, depression, and even hospitalisations. The threats reported range from harassment and doxxing (the act of publicly revealing personally identifiable information about an individual without their consent, typically via the internet) to more severe forms of violence, highlighting the pervasive misogyny, racism, and other forms of discrimination that characterise online hate cultures. This situation poses significant equity, diversity, and inclusion (EDI) challenges, particularly for marginalised groups who are disproportionately affected. To address these issues, we propose assess the knowledge, resources, and training available to professional and managerial staff regarding digital hate. Our findings will help to understand the perspectives of those who support academics in public engagement, we aim to develop effective strategies for mitigating the impacts of digital hate, thereby enhancing the safety and well-being of scholars in the public eye.

Dr Camilla de Camargo

Criminology, Law Department **Amount requested and awarded £10,403**

When the uniform doesn't fit

Poor workwear designs for women have been evidenced in nearly all emergency service occupations. Previous studies have shown the focus on gendered physicality and embodiment using a uniform in policing and how important the police uniform is to the wearer, which was the subject of my PhD. Original designs of the UK police uniform were designed by men, for men, and designed to fit heteronormative masculine 'ideal' body shapes. The desire to glamourise the first female officers meant that inappropriate and impractical stylings (the use of skirts, tights, kitten heels, and handbags were incorporated into the design of the women's police uniform. Whilst problems with the police uniform in the UK have been acknowledged in a small body of research, little work has been done to rectify the identified issues in any meaningful way and has fallen short of offering viable solutions. This project explores how poorly fitted police uniforms have significant impacts on performance, health and safety, morale, and psychosocial well-being. Since August 2023, focus groups and interviews were undertaken in four UK police forces, speaking to 86 women in total. Initial data collection has informed the survey design of the first-ever national police uniform and equipment survey due to be released in June 2024 to approximately 250,000 officers and staff (of all genders). The resulting data set aims to inform future national decision-making about uniform design, usability, and safety for all officers and staff. The Joy Welch funding will be used for fieldwork costs, transcription of the focus groups, and quantitative data analysis of the survey.

Dr Debra Ferreday

Sociology **Amount requested and awarded £4,570**

Cannibal Cultures

In 1973, cult horror film *Soylent Green* proposed an unthinkable solution to ecocide caused by climate change, overpopulation and social collapse: the transformation of euthanised human 'waste' into ultra-processed food for the masses. The year of this imagined dystopia is 2022. It is striking, then, that recent years have seen a proliferation of cannibal narratives and images in media and popular culture. From metaphors of social marginality and rural poverty in *Bones and All* to images of scarcity, lack and hunger in *Society of the Snow, Raw* and *Yellowjackets* and dystopian games *Fallout* and *The Last of Us* to satires of capitalist excess and the depredations of post-Me Too dating in *Fresh* and *Santa Clarita Diet* to the resurgence of the 'Dahmer industry', eating humans has been described as 'the defining cultural trope of our time' (Summers 2022). Cannibalism is seen as *the* foundational taboo on which civilisation rests. What, then, to make of the contemporary re-imagining of the food/flesh binary? This project aims to map the vast archive of cannibal representations in contemporary media alongside historic narratives and images that shape our current imaginings and re-imaginings of cannibal practices, focussing on the links between cannibal imagery and colonialism. Historically, real or imaginary stories about cannibalism 'have justified colonial projects, sanctioned the recreation of indigenous peoples after white Europeans, and promoted the fabrication of imagined communities' (Morris 2000: 110) – although research shows that more human flesh was consumed in Europe in the early modern period than in the rest of the world combined (Conklin 2001, Woodward 2014). The project will engage with this complex history to explore how colonial ideas about cannibalism live on in our own time in current debates about global food politics, unsustainable agricultural practices, modern slavery and labour exploitation, and ideas about class, race and gender.

Prof Judith Harwin

Sociology **Amount requested and awarded £9,981**

Parental substance misuse, domestic abuse and offending: perspectives on the interface between Care proceedings and the Criminal Justice System

Parental substance misuse is a significant socio-economic issue worldwide, affecting both family and criminal justice systems. It is often linked with domestic abuse (DA) and parental offending, but interventions are typically isolated, lacking coordinated family-crime processes. This fragmentation leads to delays, inefficiencies, additional costs, and stress for families. In contrast, Family Drug and Alcohol Courts (FDACs) offer a problem-solving approach in care proceedings. Unlike standard care proceedings, FDACs adjudicate and treat parents during the court process, addressing these interconnected issues holistically. Interventions are planned from the outset to tackle parents' problems in a coordinated manner, working across family and criminal justice sectors. FDACs have higher family reunification rates and lower relapse rates compared to non-FDAC proceedings. Both parents and professionals prefer FDACs for their compassionate approach and better outcomes. Consequently, governments and policymakers in both criminal and family justice contexts are interested in FDACs and have developed problem-solving pilots for DA, women offenders, and substance misuse. The applicants aim to investigate whether the impact of FDACs on parental offending differs from non-FDAC care proceedings through an ESRC-funded data linkage study in partnership with the Centre for Justice Innovation (CJI). This study is unprecedented in England and internationally. However, there is a lack of descriptions from FDACs regarding their involvement in cases of substance misuse, DA, and parental offending, as well as professional and parental views on

FDACs compared to non-FDAC proceedings and their interaction with the criminal justice system. This proposal seeks to fill this gap, generating practice and policy insights for professionals in the family and criminal justice sectors.

Dr Thomas Jones (PI) and Dr Pier Paolo Comida

Lancaster Environment Centre **Amount requested and awarded £6,995**

Producing next-generation volcanic hazard maps for complex, multicomponent eruptions

Basaltic volcanism is the most frequent form of volcanism on our planet. Eruptions can be long-lived (days to years) and are responsible for significant economic and social damage (e.g., the 2021 La Palma, Canary Islands eruption caused 843 million Euros of damage, destroyed 3,000 homes, and evacuated 7,000 residents). Furthermore, these volcanoes can be highly variable in style, producing both effusive lava flows destroying infrastructure and/or ash fall closing airspace during explosive episodes. Rapid style transitions between effusive and explosive behaviour during a single eruption, along with a highly variable eruption duration and intensity make hazard management a persistent and complex challenge. Detailed investigations of past events are essential for understanding typical eruption behaviours. As such, these investigations are crucial for enabling robust and reliable hazard forecasting. Tenerife hosts a series of rift zones deemed as a likely source of future eruptions in the Canary Islands. Unfortunately, a detailed understanding of past eruptions along these rift zones is lacking and therefore all current hazard maps are inherently limited. In this project, together with local collaborators, we will examine the 1704-05 eruption located in Tenerife's NE rift zone. It is volumetrically the largest and had the longest duration of all historic eruptions in Tenerife. Furthermore, products had erupted along a ~10.4 km long crack displaying a range of hazard types and eruption styles. It therefore presents an ideal location to understand the diversity in hazards presented by basaltic volcanism in Tenerife, inform on future hazard mapping, and more broadly, advance our knowledge of eruption processes.

Dr Martin Quinn (PI) and Dr Divya Jyoti

Lancaster Environment Centre **Amount requested and awarded £7,550**

Before Eden? Mapping Left Behind Places and People Through Economic Regeneration

This project aims to map the economic and social situation in the coastal resort of Morecambe ahead of the launch of the proposed Eden North Project. Once a thriving seaside resort Morecambe has suffered long-term economic decline and as some argue is a prime example of a state of economic deprivation. The proposed Eden North could be a harbinger of change. Already a recipient of £50 million in funding from the Government's Levelling Up Fund, the proposed scheme brings together key local economic actors to develop an environmentally focused tourist and research facility – linked to the Eden Project in Cornwall. Based on evidence from Cornwall this investment is forecast to bring employment, funding and increased visitors to Morecambe. Projects like Eden North are not uncommon – using a key institution as an anchor to facilitate growth and development is a tried and tested policy intervention. Whilst tracking the physical changes set in motion by headline policy initiatives are relatively easier to track, little, if anything, is known about what happens to the businesses and residents already in place when 'development projects' are initiated – do they become a part of any successful growth story? Or are they forced out as newcomers arrive to take advantage of the new economic circumstances available? It is this phenomenon that this project explores. Taking Morecambe and impending Eden North as its empirical context, this project aims to develop a methodology to understand and track the social, economic and emotional impact of development in place.

Dr Buket Kara

Health Research **Amount requested and awarded £9,900**

Exploring parental mental health literacy in a coastal community facing social inequalities and multiple disadvantages

Blackpool is one of the most socio-economically deprived towns in England, with higher levels of poverty, physical and mental health issues, self-harm and suicide rates, a higher proportion of children and young people (CYP) in the care system, poorer educational outcomes, and lower life expectancy compared to the national average. However, Blackpool also hosts an inspiring community and organisations that are committed to improving the lives of CYP and helping them reach their developmental potential. As part of the initiatives to promote healthy development in Blackpool's CYP, this project aims to improve mental health literacy (MHL) in parents, who are best placed to support CYP facing mental health difficulties. MHL refers to the knowledge, attitudes, and beliefs regarding mental health disorders that aid their recognition, prevention, and treatment. This project focuses on exploring the experiences of CYP, parents and professionals supporting them, regarding the role of parental MHL in supporting CYP mental health. Its scope has been determined by the NIHR Research Ready Communities (RRC) pilot, involving a group of young people and representatives of third-sector community organisations (i.e., co-facilitators) living and working in Blackpool. The team will further expand by recruiting academic researchers, as well as parents and mental health professionals as co-researchers with relevant experience. It will collect data via interviews with CYP, parents, and mental health professionals to explore their experiences and perspectives regarding the role of parental MHL in supporting CYP mental health. The findings will be used to co-produce an intervention to improve parental MHL through increased knowledge of risk and protective factors for CYP mental health, help-seeking options and treatments available, and self-help strategies for milder problems, as well as improved attitudes and skills for early recognition of mental health issues and help-seeking behaviour.

Dr Laura Machin

Lancaster Medical School **Amount requested and awarded £7,711**

Breaking the Silence on Adopters in Crisis: Exploring UK Adoption Breakdown.

Coram British Adoption and Fostering estimates that approximately two-thirds of all UK adoption placements are either in crisis or have broken down, which involves the child leaving the adoption placement and returning to care (Coram BAAF, 2018). Adoption breakdown takes place frequently, although official national figures do not exist, and it is rarely discussed within the adoption community or wider society. The adopters involved can experience significant shame and guilt, meaning there can be a reluctance to discuss adoption breakdown openly, and is therefore considered a taboo topic (Paniagua et al, 2019). These adopters exist in the margins of the adoption community, meaning there is a lack of understanding around the impact of adoption breakdown on their mental health, and on their support needs. There is also little understanding of adopters' decision-making in adoption breakdown, although we do know that a predictor for a placement ending is child-to-parent aggression (Selwyn et al, 2014; Selwyn, 2019). For the UK government, there is a real need for adoption breakdown to be averted, not least because there are over 80,000 children currently in care, and there are insufficient numbers of foster carers, care homes, and adopters. This project will involve adopters who have experienced UK adoption breakdown, and we will conduct online workshops to better understand adopters' key decision-making points on the pathway to adoption breakdown, and what support could be preventative from their perspective. We will share our learnings with adoption agencies and local authorities to improve social work

practice and in academic journals, and online media such as The Conversation and Adoption and Fostering Podcast to improve knowledge, awareness and understanding of adoption breakdown and its impact on the lives and mental health of adopters.

Dr Rachel Rigby (PI) and Dr John Worthington

Biomedical & Life Sciences **Amount requested and awarded £4,587**

Stoma feeding: patient experiences and clinical outcomes. Assessing immune cells in distal-fed bowel.

Around 10,000 patients yearly, undergo the surgical formation of a loop ileostomy to divert the faecal stream and allow tissue healing, with the aim of re-joining the bowel a year later. However, 25% of these patients experience severe complications e.g. ileus, inflammation, or anastomotic leak, and 5% cannot undergo reversal, resulting in a permanent stoma. Additionally, 20% of patients suffer from less severe symptoms like bloating, distension, irregular bowel movements, or incontinence. Our data shows that a defunctioned bowel becomes atrophied and that intestinal microflora numbers drop by an average of 62.4%. Patients with a greater reduction in microflora are more likely to experience complications. We propose that replenishing the microflora and promoting host tissue growth before surgery will reduce post-surgical complications. At Lancashire Teaching Hospitals Trust (LTHTR, Preston), a small number of patients receive distal feeding through their stoma into the defunctioned bowel before loop ileostomy reversal surgery. Although distal feeding is believed to improve bowel condition, no scientific studies confirm its pathological basis or the biomolecular mechanisms involved. Distal feeding involves a feeding tube inserted by a stoma nurse, with patients administering the feeding themselves. This process, which starts with saline and progresses to up to 100ml of Ensure™ over four weeks, empowers patients and does not burden NHS resources. We are conducting a feasibility study to assess whether patients can independently manage distal feeding and if it reduces atrophy in the defunctioned limb. We are also evaluating the feasibility through patient 'feeding diaries' and histological analysis of tissues from both functioning and defunctioned limbs. We seek funding to enable immune cell phenotyping of intestinal tissues to determine if distal feeding modulates immune cell phenotype in the defunctioned gut, potentially reducing inflammation upon reanastomosis. If pilot data is promising, we plan to apply for NIHR funding for a randomized, controlled clinical trial to assess whether enteral feeding reduces post-surgical complications.

Dr Jonathan Vincent

Education Research **Amount requested and awarded £9,999**

Developing a culturally sensitive understanding of autism and community needs in Northern Uganda

Autism Spectrum Disorder (autism) is a neurodevelopmental condition affecting communication, information processing, and interaction with the world. Its prevalence is about 1 in 100 (WHO, 2022). However, in Sub-Saharan Africa, including Uganda, understanding of autism is limited (Abubakar et al., 2016). Cultural beliefs often stigmatize autistic traits, attributing them to possession by evil spirits (Kakooza-Mwesige et al., 2014). These norms hinder diagnosis and foster negative attitudes, depriving autistic children and youth of opportunities to improve their health, education, and quality of life (Nalukenge, 2016). Despite Uganda's commitment to the UN Convention on the Rights of Persons with Disabilities and its constitutional mandates to protect vulnerable children (Okurut and Among, 2019), discrimination remains widespread (Kakooza-

Mwesige et al., 2022). Competing health priorities and a lack of culturally relevant evidence for policy development result in inadequate services for families affected by autism (Divan et al., 2021; Kakooza-Mwesige et al., 2022). Studies highlight the need for greater understanding and autism awareness initiatives for teachers, students, and the community (Kakooza-Mwesige et al., 2022). This project aims to collaborate with stakeholders in three districts in Northern Uganda (Gulu City, Amaru, and Pader) to develop culturally sensitive understandings of autism and community needs using qualitative methods. By employing participatory methods, the project will create accessible resources that explain autism and address sociocultural misconceptions. Additionally, it will map autism prevalence in communities using a brief, low-cost, culturally sensitive screener across three sites to support regional policy development for broader autism support.

Dr Nai-Hao

Lancaster Medical School **Amount requested and awarded £6,676**

Investigating Musculoskeletal Tissue Health Non-invasively Through Skin Using Spatially-offset Raman Spectroscopy

Musculoskeletal health is critical for one's well-being and quality of life, particularly in our current ageing societies. Despite being one of the leading causes of disability for people as they age, this field has not received much attention compared to other medical specialities and the research often focuses on the treatments/surgeries instead of prevention. One potential reason is the limited ability to early diagnose musculoskeletal diseases which mostly relies on the subjective report, usually pain or dysfunction, from patients. This often delays the treatment since most of the onset of overuse injuries and age-related degenerative changes are insidious and people usually develop symptoms many years afterward. Imaging techniques (X-ray or MRI) are the current diagnostic standards, but most of the pathological changes precede abnormal macroscopic appearance, which usually occurs at the later stages of the pathology. Raman spectroscopy is an established laboratory technique that uses laser-based principles to characterise the chemical composition of samples, and the technique has been developed to measure biological tissues at depth (< 1cm) using spatially offset Raman spectroscopy (SORS). Applying SORS on relevant musculoskeletal tissues could be the first step towards developing the spectroscopy technique for investigating molecular-level changes in living humans. In this proposed feasibility study, the primary aim is to measure underlying musculoskeletal tissues from intact human cadaver lower limbs using SORS and correlate with conventional Raman spectroscopy, to test the validity of collecting spectra directly through skin. The secondary aim is to perform conventional biochemistry and biomechanical techniques and investigate whether they are correlated with the SORS spectra, as the first step towards developing this technique for medical use.