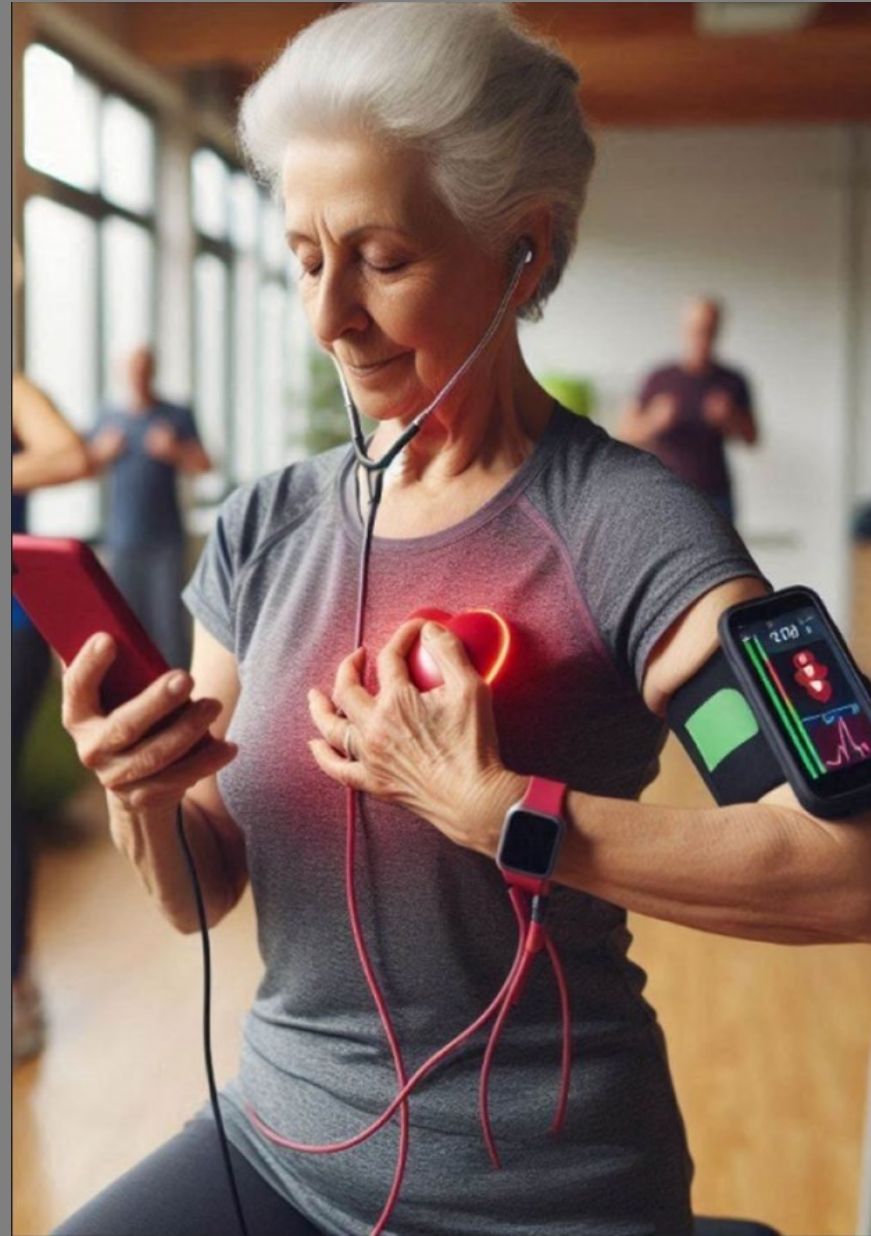


# Visualising Research Competition 2023-24: Entries





### **Digital Cardiac Rehabilitation Using Digital Means**

This image depicts a female cardiac patient using digital technology during one of her exercise-based cardiac rehabilitation sessions. This image was generated using artificial intelligence given the fact that my research “A Digital Beat: The Use of Digital Prehabilitation for Cardiac Rehabilitation Patients in the UK” investigated the use of digitizing aspects of cardiac prehabilitation to help patients through cardiac rehabilitation. There is a growing demand on using digital technology including artificial intelligence to help practitioners deliver healthcare given the current demand placed on the NHS. The research explored filling that gap by providing patients with digital videos prior to attending their cardiac rehabilitation exercise classes which educated them on what exercise targets they were to adhere to in order to see any health benefit.





### **Human and Computer AI**

This visual representation reflects my research in Social Computing. By incorporating Artificial Intelligence, Natural Language Processing (NLP), Machine Learning (ML), and Data Analytics, I strive to solve global issues. Advanced NLP methods enable us to overcome language barriers, promoting more inclusive and effective cross-cultural communication. In Social Computing, we harness digital platforms to strengthen social cohesion and empower communities. Through ML and Data Analytics, I address vital challenges such as healthcare disparities, climate change, and social education. This AI-generated image captures my vision of using technology to create a more interconnected, equitable, and sustainable world. It showcases AI's potential to transform society by bridging divides and fostering positive change.





### AI Text Analytics

By using Artificial Intelligence and Natural Language Processing (NLP), alongside Machine Learning (ML) and Data Analytics, I aim to tackle global challenges. Advanced NLP techniques help us break down language barriers, fostering more inclusive and effective cross-cultural communication. In Social Computing, we leverage digital platforms to enhance social cohesion and empower communities. With ML and Data Analytics, i work to address critical issues such as healthcare disparities, climate change, and social education. This AI-generated image embodies my vision of using technology to create a more connected, equitable, and sustainable world. It highlights AI's potential to transform society by bridging gaps and driving positive change.





### **Mind Over Muscle**

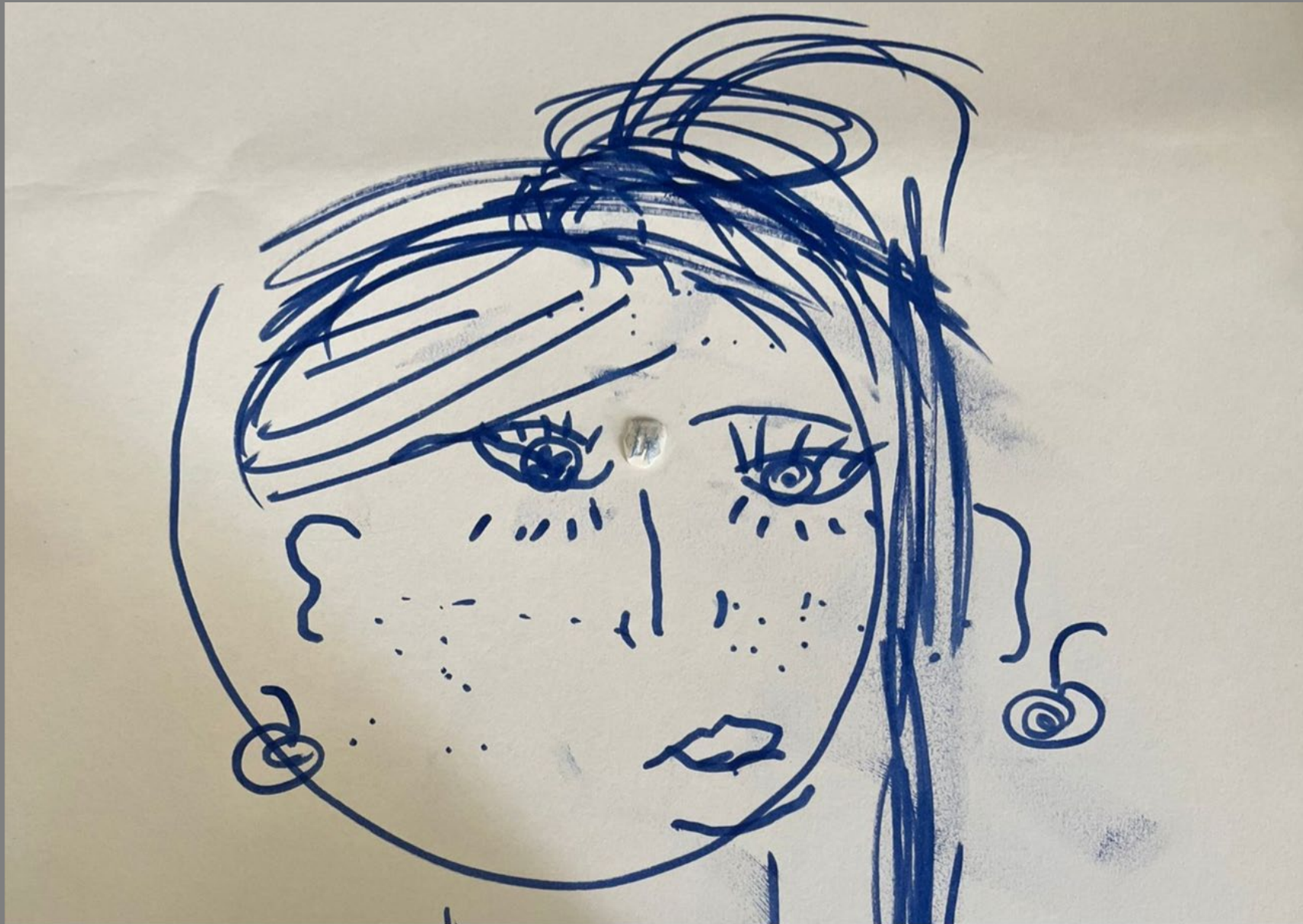
The image shows Chelsea Batty who is a British Powerlifting athlete about to complete a deadlift, and engaging in mindfulness practice before executing. Chelsea approached Tom King, a BPS chartered Sport and Exercise Psychologist to provide psychological support for competing within Powerlifting. Work between Chelsea and Tom largely focused on certain aspects of the 6 core principles of acceptance and commitment therapy (Hayes, Strosahl, & Wilson, 1999), specifically, cognitive defusion, acceptance, contact with the present moment and the observing self. Athlete everyday practice of mindfulness training, has previously shown benefits on attention self-regulation development on present moment awareness, and an antecedent to acquisition of self-confidence within a weightlifting environment (do Nascimento et al., 2022). In short, mindfulness training and acceptance of thoughts (however threat based or unhelpful) were prescribed in order to influence confidence and ultimately perform better within the powerlifting environment.



### Visible Women

My EdD thesis research is grounded in the insights of Criado Perez (2019) from her book 'Invisible Women', who asserts that without women's voices being heard and valued, we only obtain a partial understanding of reality, often excluding women's truths entirely. Criado Perez (2019, p. XI) highlights that men's experiences are frequently generalised to represent humanity as a whole, leading to pervasive silences regarding women's experiences. These silences are everywhere: in transport design, education, healthcare, and sports. As the image depicts, these areas are all marked – disfigured – by a female-shaped 'absent presence' These omissions are not trivial; they have tangible consequences on women's lives. Therefore, it is essential not only to include women's voices in research but also to ensure that women are integral to conducting the research itself. Female academics, according to Criado Perez, are more likely to challenge male-biased analyses, thereby accelerating the closure of the gender gap in research. My thesis study aims to delve into women's perceptions of their motivations, the challenges they face, and the impact on their personal and professional relationships when pursuing an EdD. By focusing on these experiences, my research seeks to amplify women's voices and contribute to a more comprehensive understanding of their realities. WE are VISIBLE WOMEN!





### **Eyes Closed, Mind Open**

This self-portrait was created during a lesson on my Doctor of Education (EdD) programme, where we were planning our theses in context. Drawn with my eyes closed, this image explores unpredictability and the surprising results that occur even when we think we know something intimately, like our own face. The exercise shows how our expectations can differ significantly from the actual outcome when we let go of control and embrace the process of creation.

By not seeing what I was drawing, I relied on my memory and understanding of my features, resulting in a portrait that is both familiar and unfamiliar. This mirrors the research journey, where despite a clear vision of the desired outcome, the path and results often take unexpected turns. The drawing symbolises the unpredictability in research, highlighting the value of unforeseen discoveries and the beauty of imperfection.

The process challenges the conventional pursuit of perfection and encourages acceptance of the unknown. It invites viewers to reflect on their experiences with uncertainty and appreciate the insights that come from embracing the unexpected. This drawing serves as a metaphor for the research process, where the end result, though different from the initial expectation, can still offer valuable insights.





### History in Your Hands

This image features a fossilised plant from the Brymbo Heritage site, showcasing intricate details preserved over millions of years. Holding this fossil provides a tangible connection to the past, illustrating how it can be both beautiful and educational. With its natural artistry, the fossil could belong in a gallery or museum, symbolising the dual nature of art and science.

My doctorate explores arts-based methods in science education, focusing on how creating museum exhibits enhances learning. By engaging with objects like this fossil, students merge scientific inquiry with artistic expression, making science more accessible. Holding and studying a fossil connects learners directly with history, fostering a deeper understanding of scientific concepts through hands-on experience.

This fossil exemplifies how art and science intersect, showcasing the educational potential of combining these disciplines. It encourages students to appreciate the beauty of scientific artefacts and the stories they tell. Integrating artistic methods into science education promotes a holistic view of learning, where students value both the aesthetic and informational aspects of scientific discoveries. This approach enriches education and develops a well-rounded perspective on our natural world.



## I See You

I see you. You see me. We see each other. Who we are, not what we do, makes us.

Our image represents how, although we are both researchers and see the value in research, we see each other as multidimensional beings with thoughts, beliefs, experiences and interests outside of our research pursuits.

Our image represents reflexivity in research – how we acknowledge our own beliefs, judgements and practices across the entire duration of a research endeavor and consider how such attributes may have influenced the research. One such strategy is collaboration and uncovering diverse perspectives and relying on each other to question assumptions and decisions. We go beyond acknowledging our subjectivity and instead consider the asset it may bring.

The bricks behind us represent our many facets including our experiences being neurodivergent, our adversities as well as our strengths, our relationships and our values. We understand that even if we painted over the bricks, they would still exist behind the paint. Our work environment has allowed us to feel psychologically safe and wash away any paint to fully embrace our authentic selves.

This entry was created in collaboration with Pete Davies, who supported us in producing the photograph.





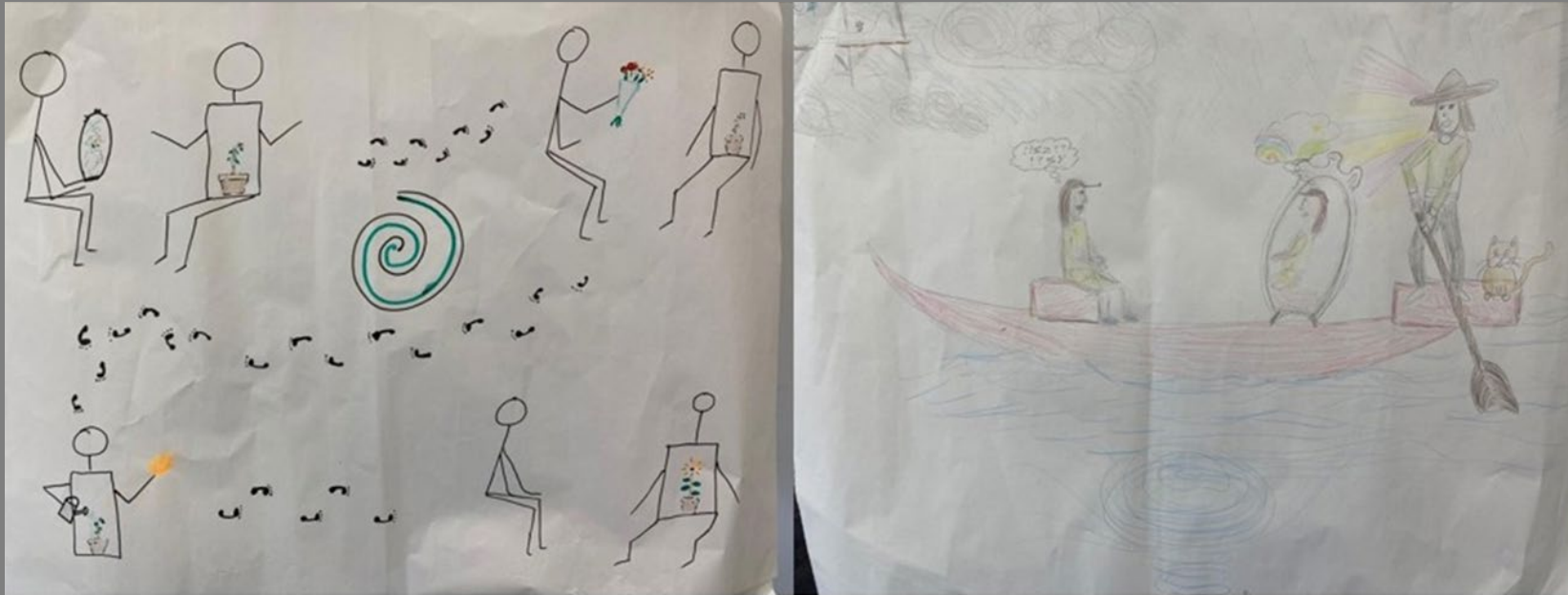
### Webs of Significance

Webs of Significance: How does 'where we have been' pull on our roles as academics?

Geertz (1973) suggested that 'man is an animal suspended in webs of significance he himself has spun [and] I take culture to be those webs, and the analysis of it to be therefore not an experimental science in search of law but an interpretive one in search of meaning' (The Interpretation of Cultures, p5).

Using this as a starting point, despite it bearing little relation to what I had previously considered 'RESEARCH' to be, I set out to explore the ways in which dealing with plagiarism as a lecturer has caused my personal 'webs of significance' to be pulled in disparate directions. Using an autoethnographic methodology, I examined fragments of a single moment ('The Event') through the eyes of different characters from Downton Abbey, allowing competing voices to be heard as each shard pulled in opposing directions. The selection of the Crawley sisters was partly playful, but also a deliberately conscious selection, as they invited comparison between 'culture' and 'Culture' (Eagleton, 2000) and enabled Bourdieu and Passeron's (1990) work on social reproduction and forms of capital to be applied to the ensuing discussion as I explored how different parties navigate the 'rules of the game' (Bourdieu, 1984).







### **Co-production in healthcare research**

This image is a montage of three images. The two images at the top were created by physiotherapist research participants and the repeated images at the bottom were taken by the researcher. The researcher's PhD work explored the implementation of motivational interviewing (MI) into musculoskeletal physiotherapy clinical practice. As part of this work, physiotherapists undertook MI training and used art to summarise and articulate their learning (top two images of the montage). The physiotherapists' summary of learning inspired the researcher to photograph the image of a self-seeded plant being watered by a watering can (bottom images); symbolizing MI as a way to guide and facilitate a patient's innate potential for change and growth.

This montage image encompasses the physiotherapists' perspective of MI as a way of being that is collaborative, accepting, empowering and compassionate. In addition, it demonstrates the co-production of knowledge both between physiotherapists and between researcher and physiotherapists. The physiotherapist and researcher summaries of learning contributed to a further optimised MI training framework that can be used in future research.



### **Ecological Citizens**

The image shows researchers and academic staff from Wrexham University exploring our Northop campus in Flintshire during an Ecological Citizens event. I am a Post-Doctoral Researcher for Ecological Citizens, a project based at the Royal College of Art in collaboration with the University of York's Stockholm Environment Institute and Wrexham University. The project aims to establish the Ecological Citizens Network+, which will create initiatives to engage diverse groups in impactful change through accessible technology and community-focused approaches. Our mission is to promote Ecological Citizenship for positive climate action.

The photograph symbolizes the essence of research—navigating uncertain paths and transforming seemingly random information into valuable insights. The green space, often associated with 'ecological' settings, is our Northop Campus, a historically rich yet under-utilised site. This space, once a drover's road, mill, barracks, and now a place for education and environmental workshops, illustrates how we can adapt and repurpose our surroundings and is therefore a fitting illustration of 'Ecological Citizenship.'



**THE 'NEXT BIG IDEA'...**



### The 'Next Big Idea'...

Q. Are we prioritising technical performance over social needs?

It is possible that social value is being lost as a result of data-driven technology such as Big Data, Artificial Intelligence (AI), Building Information Modelling (BIM), the Internet of Things (IoT), Robotics, 3D Printing etc., with the needs of society being placed secondary to technological considerations, economic outputs and the constraints that these disruptive technologies bring.

By examining social value measures and metrics in the context of the Built Environment, my research aims to further investigate this potential disconnect and provide a framework for the measurement of socially responsible residential housing management to capture, leverage and provide improvements for value delivery through operational phases of the construction process.

The image shows there is more to this problem than meets the eye as many elements of construction are hidden from view. It relates to the many industries and firms (water companies esp.) who put profit ahead of the needs of society and the environment. The poster also works for me on a more personal level and expresses my frustration with research in general, as I have had so many 'good ideas'...







### **Hijab – Global and Local**

In the 21st century in countries across the world the hijab or Muslim headscarf has become the subject of heated debate and media attention. How should it be worn, when and where? Is it obligatory or optional, cultural or religious, a symbol of patriarchal oppression or a brave statement of identity in a non- Muslim society?

As a non-Muslim my research has taken me on a journey of understanding as I have come to know Muslim women in Ceredigion. In their company I am the outsider. Hijabis have to negotiate daily that lived experience of their symbolic difference and otherness.

My multi-media artworks, consider and question popular stereotypes of Muslim women and their media representations.

Hijab means, curtain or veil. Here I show two of my collaged, media-based drawings printed on a fine curtain hanging in front of my window overlooking a Ceredigion landscape – global stories reaching into a local context.



### **Supporting beyond the mask**

Neurodivergence refers to people with different ways of thinking, processing information or communicating to the norm; one in 7 individuals are neurodivergent. Neurodivergent individuals within HE and other workplaces are expected to fit into environments that have been designed by and for those who are neurotypical, but it is important to consider that neurodivergent individuals also have strengths in tasks that other individuals struggle with.

Autism is a form of neurodivergence, and one-way individuals navigate the world is through 'masking' or 'social camouflaging'. Masking is utilised to blend into neurotypical life. The strategy involves observing and mirroring the behaviours of others to adapt to preferences and expectations of others, amending how they express themselves. Masking can lead to shutting down, burnout, isolation and a loss of sense of self. The collaborative research project 'Support for neurodivergent staff in UK HE' aims to explore the current support experiences and wellbeing of neurodivergent staff. The photograph depicts the Merchant Seaman's Memorial sculpture in Cardiff Bay. The sleeping face with empty space behind it reminded me of a mask, resonating with me as symbolic representation of the exhaustion, burnout and isolation that an autistic individual can feel as an impact of their masking.

Additional note: A thank you to the PIs of the collaborative research 'Support for neurodivergent staff in UK HE' Dr Emma Harrison and Dr Nicola Marsh for their support and for inviting me to be part of this project.



Thank You

