1. Preparing primary trainee teachers to teach children from Black, Asian and other minority ethnic (BAME) backgrounds or groups: participation, experiences and perceptions of trainee teachers.

This research was conducted in response to the exit survey of a cohort of Primary PGCE trainee teachers at a UK University in a predominantly White area who indicated low confidence in teaching children from Black, Asian and other minority ethnic (BAME) backgrounds at the end of their course. The research aimed to find out why trainee teachers felt unconfident in teaching children from BAME groups or backgrounds. Using qualitative methods, findings were analysed using a Critical Race Theory framework. Many of the trainee teachers who participated in this research demonstrated a lack of understanding of their own White privilege and a deficit discourse when discussing children from BAME backgrounds. The study explored how ITE (Initial Teacher Education), which is often short and already crammed with content, could embed quality training in race and diversity throughout courses in a way that will both challenge individual perceptions and encourage trainee teachers to examine structural barriers within schools.

2. Intersectionality in Bama’s Autobiography, Karukku

Discrimination on the basis of caste in India is three-thousand-five-hundred years old (D’Souza 2012: 1) and continues to be practiced in modern India. Dalits still bear the stigma of untouchability even though untouchability was abolished after 1947. Dalits continue to face widespread discrimination and extreme poverty in modern India ("India’s Caste System", The Guardian, 2016). The intersection between caste and class, especially caste and labour, can be observed in Bama’s autobiography Karukku ([1992] 2005). Bama exposes how Dalits “have been enslaved for generation upon generation” (Bama 28) and are not even considered “as human beings” (25). Her community is in constant poverty because even after doing “hard and incessant labour” (48), Dalits are not paid enough and “they never received a payment that was appropriate to their labour” (54). Bama points out that her community’s “hard work was exploited half the time” (53) by the upper caste employers and so, “there is no way at all for the Dalit who sticks to fair methods, and toils hard all her life, to make good” (53). Hence, she calls out to “all Dalits who have been deprived of their basic rights” (28) to unite and create a “just society where all are equal” (28). Thus, the question that motivates this paper is: To what extent does Bama address the intersection of caste and class in her autobiography, Karukku?

3. Emotion regulation in the workplace: A cultural perspective
In times of globalization, it is crucial to study role of emotion regulation at work in an intercultural context. This research will be carried out in US-based multinational companies (MNCs) in India, where the individual values of the employees would be primarily and largely influenced by their own national culture (India), however, the organizational values of the MNCs are largely influenced by the national culture of its home country (US). This mismatch of cultural values that the employees experience is called cultural dissonance. The PhD thesis is divided into two studies. The first study will be a cross-sectional quantitative study with the aim of investigating the relationship between emotion regulation strategies and wellbeing when this relationship is moderated by cultural dissonance. The second study will be a qualitative study with the aim of gaining in-depth understanding of the how cultural values impact emotion regulation in the workplace. The research would provide valuable insights on overcoming the cultural challenges during cross-cultural Mergers and Acquisition, social integration of expatriates and MNC expansion.

4. Language and Belonging: Language Service Provision and Negotiating Belonging in Norwich

The number and variety of languages spoken in the UK and the creative ways in which language is used by migrants can be seen as illustrative of the superdiverse nature of society in the UK. The concept of superdiversity has been adopted by very different areas of study, nowhere more enthusiastically than in the field of sociolinguistics (Vertovec, 2017). In their work on developing a sociolinguistics of superdiversity, Creese and Blackledge (2010, p. 556) argue that because different linguistic resources are afforded different values and offer variable access to power in society, and because not everyone has access to the same linguistic resources, it is important that ‘analysis of language practices in superdiversity should attend to ... relations of inequality and power’. With regard to language policy in the UK, however, this linguistic diversity is largely ignored, and an ideology of monolingualism can be seen to be at play. One of the consequences of the monolingual mindset in the UK is that English language acquisition by migrants is viewed as the principal solution to the ‘integration’ of migrants, with the result that translation and interpreting services are regarded as hindering or even undermining integration (e.g. DCLG, 2012), thus justifying the ongoing reduction in resources for and political support of language provision. While there has been a great deal of research on the impact of language barriers on access to formal services, there has been little research into the interaction between language and affective belonging in the UK. In my research I am conducting semi-structured interviews with migrant participants to explore this topic. My initial data from these conversations about migrants’ experiences of receiving and, significantly, not receiving interpreting and translation services have raised themes of loss of control, security, shame and anxiety. Importantly, the findings also reflect the impact on language service provision of a decade of austerity and the ‘new drivers of policy in Britain, such as the notion of community resilience and the shifting of risk to local government and households’ (Tipton, 2019, p. 16).
5. David Bowie is the Englishman from Mars: An Examination of Englishness through Stardom

"Throughout his five-decade career, David Bowie played the role of pop star, sophisticated actor, alien from Mars, Berlin dweller and more. His propensity for change established a star identity that challenged societal norms, creating a new representation of English identity that was rarely seen in mainstream media. In this research, I explore how David Bowie, framed as an actor rather than a musician, used his celebrity status to project new types of English characters on to the screen. I examine specifically Bowie’s most famous character, Ziggy Stardust, to illustrate how Bowie’s desire to push societal boundaries as an artist created a new representation of Englishness that contrasted the stereotypical Englishman present in post-war cinema.

I explore how, as a self-created character, Ziggy Stardust queers the Englishman on-screen through D.A. Pennebaker’s film Ziggy Stardust and the Spiders from Mars [The Motion Picture] (1983). Through his extravagant costuming and homosexual performance, Bowie uses queer semiotics to project a queer reading of the middle-class Englishman, which was rarely seen in British cinema at the time. By examining the codes presented in this film, I illustrate how Bowie’s performance is constructed to challenge our understanding of Englishness through media texts, allowing us to challenge the connotations associated with English masculinity, sexuality and otherness and present them in a new way. This research attempts to highlight how David Bowie used his star status, as both a celebrity and as an actor, to project the modernising English identity that flourished during the counter-cultural era; an identity that challenged the institutionalised traditionalism of Englishness crafted by upper middle-class cinema and stars and, instead, reflected a new wave of English identity."

6. Tiny but mighty – The power of stem cells and microcarriers for advancing regenerative medicine and tissue repair

Stem cells are a unique type of cells that are present in the human body. Like a small super-hero, stem cells have the ability to self-renew, turn themselves into different types of cells, and even repair and regenerate tissues. Hence, their use in regenerative medicine and as a potential treatment for different diseases has been object of intense scrutiny for decades. For example, there is a pressing need in the development of cell therapies for cardiac or musculoskeletal diseases, as those tissues have minimal regeneration capacity. But to properly use them, a large quantity of stem cells is needed. Conventionally, cells are expanded in flat dishes, but this procedure would be inapplicable and inefficient for using stem cells as a treatment for multiple patients or as a large scale therapy. As a solution, microcarriers have been developed for the expansion of stem cells. Synthetic or natural materials are fabricated in a small spherical structure, in which stem cells can adhere in a 3-dimensional shape, and therefore grow in a larger area, compared to a flat dish. In this project, we have developed new types of microcarriers in the lab using a high throughput technique that allows the fabrication of larger amount of identical microcarriers. Made of cell-adhesive
biocompatible synthetic materials, stem cells successfully attached to the microcarriers with no cytotoxic effects and were optimally expanded for larger periods of time. Although tiny, the mighty union in between microcarriers and stem cells can be used for large expansion of cells, contributing to the development of potential therapies for musculoskeletal diseases, acute or chronic degenerative syndromes, and even for organ transplantation.

7. Utilising a 3D Mathematical Modelling Task to Investigate Communities of Practices of Prospective Teachers

The purpose of this research project is to investigate the learning theory of communities of practice on prospective teachers whom are going to teach applications of mathematics in the future. Using a theoretical framework based on Lave and Wenger (1991) and Wenger (1998), this research project investigates prospective teachers through the properties of communities of practice: mutual engagement, joint enterprise, and shared repertoire. The project focuses on prospective teachers who are currently undergraduate education students. They should have a basic understanding of mathematical topics from GCSE courses and could teach the application of mathematics in their future classrooms. However, at this point in their education, prospective teachers are focused on general education and may not have selected a speciality. The project will use a 3D mathematical modelling task to examine how prospective teachers understand themselves as part of mathematical communities of practice. By incorporating a 3D mathematical task with qualitative narrative approaches, this research project will examine how this task could impact how they see themselves in relation to teaching mathematics - as mathematical learns, educators, or just students in an undergraduate course.

8. The Language of Life: Unravelling DNA’s i-Motif Structures

DNA, life’s genetic code, is most familiar as a twisted ladder structure known as a double helix. DNA is composed of four bases: adenine (A), thymine (T), guanine (G), and cytosine (C). In double helical DNA bases bond to their complementary partner on the opposite strand, A to T and G to C, to form the steps on the ladder (Watson and Crick, 1953). However, bases do not always follow these pairing rules and can form alternative structures. Most recently a twisted knot structure, called i-motif, has been discovered in cells (Zeraati et al., 2018). i-Motifs occur in C-rich sequences where C bases (C-C+) on the same strand bond, holding the twisted knot together (Gehring, Leroy and Guéron, 1993). Evidence suggests i-motifs are a way to turn genes on and off, which could be important for normal cell functions and in unravelling the mysteries behind diseases such as diabetes and cancer. Interestingly, i-Motifs are also found at the ends of DNA which is associated with the ageing process (Wright, Huppert and Waller, 2017). Thus, these structures are essential to understanding healthy and diseased states, providing a promising avenue for developing therapeutics. One such i-motif may act as a switch for the gene c-Myc, a hallmark of cancer (Gabay, Li and Felsher, 2014). Despite the importance of c-Myc to cancer progression, the role of DNA structures in turning
c-Myc on or off is yet to be discovered. Understanding this could be key to unearthing a powerful approach for cancer therapies.

Exploring this big question requires probes to study these fascinating structures and explore their potential as therapeutic targets. To begin to address this aim two screening techniques have been utilised to identify molecules that bind to the i-motif. One technique is a light-based assay that monitors changes in glowing that occur when molecules bind to the i-motif. The other is known as phage display which works like fishing, where the DNA is the bait and any molecules that are attracted to this are the fish that get caught. Thus, this work is essential for exploring the function of the DNA structures controlling the c-Myc gene and investigating its potential as a potent therapeutic cancer target.