IRISH RESEARCH COUNCIL
An Chomhairle um Thaighde in Éirinn

An Roinn Gnóthaí Eachtracha
Department of Foreign Affairs

An Roinn Tithíochta, Rialtais Áitiúil agus Oidhreachta
Department of Housing, Local Government and Heritage

An Chomhairle Oidhreachta
The Heritage Council

COALESCE 2021 COALESCE Research Fund

Collaborative Alliances for Societal Challenges

in partnership with

Department of Foreign Affairs – Irish Aid
National Monuments Service, in partnership with the Heritage Council

STRAND 1L - INSTAR+
National Monuments Service of the Department of Housing, Local Government and Heritage, in partnership with the Heritage Council
Supporting small, discrete collaborative projects between researchers and civic society groups in the community and voluntary sector

1. Dr Benjamin Gearey, University College Cork - *Irish Peatland Archaeology Across Time*

Four decades of both state and commercially funded archaeological excavations in midland industrial raised bogs have generated a large volume of information on the nature and distribution of Irish peatland archaeology. Many of these sites have been dated by radiocarbon and/or dendrochronology (tree-ring dating), while programmes of palaeoenvironmental analysis (study of the ancient environment), have produced a significant body of data on bog development, climate change and past human impact on the landscape. There have, however, been few attempts to analyse and integrate these strands on inter-regional or national scales. As commercial peat extraction ceases and the focus shifts to peatland rehabilitation for the restoration of ecosystem services, peatland archaeology represents a key resource for community groups engaged in peatland conservation initiatives. Irish Peatland Archaeology Across Time (IPeAAT) seeks to gather these strands through the compilation, collation and formal analysis of the archaeological and palaeoenvironmental datasets. This project will address key knowledge gaps concerning site types, spatial distribution and chronology, and the interrelationship between past human activity in peatlands and environmental change. It will also address how these data can be better communicated to stakeholder groups, in particular public society and organisations involved in peatland conservation and rehabilitation and ask how archaeological and palaeoenvironmental perspectives can be employed to create positive narratives concerning future climate and environmental changes. Collation of these findings will also generate the development of a research framework for Irish peatland archaeology.

2. Dr Tomás Ó Carragáin, University College Cork - *Digital Atlas of Early Irish Carved Stones (DAEICS)*

Carved stone monuments are among our most tangible links to the distant past. From the La Tène-decorated examples of the Late Iron Age (AD 1–400), to the ogham stones, cross-slabs, and high crosses of the early medieval period (AD 400–1200), people in late prehistoric and early historic Ireland used stone carving to express their values and identities as skilled craftspeople and as members of kin-groups and wider communities. Stones were carved to preserve the memory of revered ancestors and deceased loved ones, to assert ownership of tracts of land, and to serve as focal points for communal rituals and devotions. The finest examples, like those at Turoe or Monasterboice, are artistically on a par with anything produced in metal or velum, but even the simplest carvings could serve an important purpose, for example if added to an ancient standing stone or placed on a boundary. Carved stones have huge potential to enhance our understanding and enjoyment of Ireland's past and its links to the wider world, for some designs indicate connections across Europe and as far afield as the Middle East. Yet, to date, that potential remains unrealised. Building upon crucial work by the Irish National Monuments Service and the Northern Irish Historic Environment Division, the Digital Atlas of Early Irish Carved Stones (DAEICS) will map the c. 4000 examples on the island, allowing scholars and the public alike to explore regional and chronological patterns as never before. In collaboration with local communities, the project team will use the atlas to inform and enable detailed studies of outstanding collections centred on Clonmacnoise, Armagh, and Iveragh. Through training in digital recording techniques, citizen scientists will be empowered to make an enduring contribution to the study of carved stones, thereby promoting the public appreciation and conservation of these fascinating monuments.

3. Dr Katharina Becker, University College Cork - *New Pastures. Livestock and lifeways of the Irish Iron Age*

The excavations conducted during the development boom of the Celtic Tiger, and again more recently, have had great impact onto our understanding of the past. Especially for the Iron Age, new sites and finds are changing what we know about this important period at the transition between prehistory and early history. While the Iron Age had been one of the most elusive parts of the Irish past, more and more evidence has emerged that tells the story of life in the Iron Age, which appears to have been organised around small farmsteads, with large sites like Dún Ailinne acting as supraregional places of gatherings and exchange. Aspects of this period however remain unclear, among them the question how mobile Iron Age populations were and what form the management of grazing stocks such as cattle, sheep and horse took. The project will apply a range of modern analytical methods such as aDNA and isotopic analysis to the study of a range of important animal bone assemblages from sites found on road and other developer-led construction schemes in Counties Kildare and Laois, in order to trace the movement of livestock and people and create understanding of lifeways of the Iron Age.

4. Dr Joanna Brück, University College Dublin - *Archaeology of the Irish Revolution*

The sites and landscapes of Ireland's revolutionary period rarely enjoy statutory protection and have frequently been removed or substantially altered to make way for new development. The potential of archaeological approaches to illuminate the events of the period, to speak powerfully of the texture

of human emotion and experience, and to act as a medium for social repair in the present has therefore not been fully realised. Taking East Limerick as a study area, this project will reveal the research value and community-building potential of revolutionary-period heritage in four work packages. 1) Mapping revolutionary heritage. In collaboration with local communities, revolutionary-era heritage will be identified, mapped and recorded to create interactive online maps and a database of sites and features; to interrogate these data to understand how complex events unfolded; and to consider the implications of such data for the development of future planning policy. 2) Oral histories of revolution. Interviews will be conducted with local residents to record oral histories of the conflict; to understand how communities engage with the material residues of difficult histories; and to consider how such residues offer the potential for social repair in the present by elucidating different experiences. 3) The material culture of revolution. Collections in National Museum of Ireland, Limerick Museum and private ownership will be examined to identify artefacts relating to the revolutionary period in East Limerick; to consider their links with places and landscapes; and to explore how these are incorporated into practices of meaning-making and remembrance in the present. 4) Exhibiting the revolution. Co-curation of two pop-up exhibitions with the local community and with refugee groups will explore the potential of artefacts to tell new and different stories; to create space for alternative perspectives; to explore contemporary resonances; and to enhance understanding of others' experience, memories and histories.

5. Dr Helen Lewis, University College Dublin - *Developing the resource of museum collections of Ireland's ancient animal bones: climate change, ecosystem reconstruction, and indicators of Pleistocene human presence from past excavation archives*

This is a very exciting time for our understanding of Irish antiquity. We recently discovered indicators of human presence in Ireland from the Palaeolithic, pushing back the known date of people in Ireland by many thousands of years. These ancient people were hunting - and possibly herding - reindeer and using other extinct animals in a tundra-type environment, linking them with other cultures seen in Europe around 33-18,000 years ago. Our evidence comes from detailed study of animal bones from antiquarian excavations of Irish cave sites. Some of these bones have cut marks, representing butchery by ancient people. The country was covered with ice in the last Ice Age, apparently erasing all traces of this long time period from the surface of the island, so the cave evidence is vital. We know that people were living in nearby - and at times connected - Britain from at least half a million years ago, and that at least three Homo species lived there. The people using reindeer in Ireland were likely modern humans because of the dates, but there may be older remains in the archive with similar indicators. This project focuses on identifying species and cultural indicators from the animal bone archives to explore these issues further. The data generated by this project will be used to model climate and environmental change over the Pleistocene and into the Holocene, to explore early human activity in Ireland, and to develop better understanding of the context of the cave bones: how did the animal bones get into the caves? How do the various bones relate to each other and to the sediments in which they are found? By developing and interpreting the archives, our only window into Pleistocene Ireland, we will discover the first people to ever live on this island.

6. Dr Meriel McClatchie, University College Dublin - *FOODSEC: Food security in Bronze Age Ireland*

Achieving food security is a key concern in modern societies but the challenge of ensuring that food is available and accessible stretches back thousands of years. Without food security, even the most complex societies in prehistoric Europe could have faltered. This project will pose the question: how did past societies in Ireland manage food security? The Bronze Age is one of the most interesting periods in Ireland's past. It is perhaps best known for the introduction of metalworking, and the creation of complex and exquisite bronze and gold objects. But the Bronze Age also heralded a time of significantly increased agricultural production and many innovations in agricultural management. Although archaeologists have uncovered evidence for what crops and animals were raised and where, there is less understanding about how people stored food and built-up surpluses, and the impact of these practices on food security. Over the past three decades, there have been thousands of archaeological excavations in Ireland, which has resulted in many finds of food remains (such as animal bone and burnt seeds) and the places where people stored their foods (such as containers and underground pits). Detailed analysis of this new evidence can help us understand food security in Ireland's past. But this is a complex topic that needs a novel approach. To achieve this, the project brings together a diverse group of people from archaeology, folklife, food science and farming to examine different strands of evidence and discover how past societies dealt with the challenges of achieving food security. A new scientific basis will be established to understand food security in prehistoric Ireland, thereby helping us all reconnect with lost practices and learn about Ireland's deep history as a food producer.

STRAND 2A - Open call for interdisciplinary research
Irish Research Council
Open call for interdisciplinary research addressing national or global societal challenges, led by AHSS PI with STEM co-PI

1. Dr Mark Faulkner, Trinity College Dublin - *Searobend: Linked Metadata for English-Language Texts, 1000-1300*

The Middle Ages saw a considerable quantity of writing in English, with perhaps 5m words surviving from the eleventh century alone. Much of this material is available digitally in corpora or other text archives, but at present it requires considerable expertise to know where. Nor is it clear what is not available digitally. Indeed, scholars do not at present have a firm grasp of how much English was written in many centuries or regions. The Searobend project – which takes its name from an Old English word meaning 'clever linkage' – will use techniques from Computer Science to link fifteen major resources for the study of English texts from the High Middle Ages (c. 1000-1300), making much clearer how much survives and what proportion of this is available digitally, considerably enhancing the utility of these resources for scholars and facilitating the next generation of research on this formative period of literary, linguistic and cultural history. It will also bring significant benefits for non-specialists approaching the medieval period, including schoolchildren, undergraduates and community groups, by reducing the sometimes confusing variety of names by which some works are known and providing basic information about each, including links to public domain translations. The project will thereby give users enthused by the rich array of recently digitised medieval manuscripts a ready way into what the texts they contain actually say, facilitating those users to engage more deeply

with these manuscripts. It will thus address Irish and international challenges around the facilitation of public access to national library collections, the safeguarding of our textual heritage and our understanding of cultural diversity, providing a blueprint for future text-focused pre-modern projects to address these challenges.

2. Dr Meriel McClatchie, University College Dublin - *CROPREVIVE: mapping underutilised crops in Ireland -- past, present and future*

Farming in Ireland has a long and complex history. The first farmers began growing crops in Ireland almost 6000 years ago, but these were different types of crops compared to the varieties we grow nowadays. There was significant diversity in the crops grown in Ireland's past, but our crop diversity has become more restricted over time. This is a problem because over-reliance on a narrow variety of crops threatens our food security (our ability to access food) at a time of climate change and environmental degradation. Changes in climate and extreme weather events can severely damage crops and our food supply. To tackle this, we urgently need to find and develop resilient crop varieties and increase our sources of nutrition. Crop diversity is at the centre of climate change adaptation strategies, and ancient crops can help in developing solutions to food security and agricultural sustainability. A new research project has been developed to tackle this issue: CROPREVIVE. The project will explore the distant past, drawing upon archaeological and historical evidence to find out what crops were grown in Ireland from 6000 years ago up to recent centuries. The project will reveal how crops such as rye, emmer wheat and peas became underutilised, despite the fact that they are nutrient-dense, suited to European climates and environments, and viable for sustainable production. CROPREVIVE will merge these findings with exciting new insights from plant sciences to seek modern crop varieties that can be sustainably produced and grown successfully into the future, even in the changing environments and climates that we are experiencing. The project aims to encourage farmers to diversify their crop production, thereby supporting local communities and enterprises, as well as the wider national economy.

3. Dr Michael Lennon, University College Dublin - *Green Space Engage*

The 'new normal' of remote working presents an opportunity for enhanced urban health and wellbeing by localising work, services and recreation in walkable neighbourhoods. However, this pandemic-transformed context also poses a challenge for urban planning and design as the increased demand for public green spaces during the pandemic outlasts the crisis. Pre-pandemic research conducted by this project's AHSS PI, and subsequently substantiated by others, suggests that there is divergence between the aspirations of green space users and how such spaces are planned, designed and managed. Yet there remains a knowledge deficit on how to address this issue. This results in the persistence of green space interventions that are unresponsive to changed/changing user desires. This knowledge gap risks impeding the advancement of public health through effective green space planning and design. This project directly tackles this problem by harnessing and integrating a range of social science and computer science research approaches to produce an innovative knowledge co-creation methodology. Grounded in a novel theoretical approach, a unique coalescence of research methods will be mobilised with local communities and key decision makers to co-create new knowledge on green space perceptions. This integrative approach will open new lines of research at the interface of public health, planning, geography and landscape architecture. This new knowledge will also inform the co-production of planning, design and management guidance for public urban

green spaces in response to evolving patterns of living that have intensified and diversified the demands placed on such spaces as local anchors for maintaining and enhancing health and wellbeing.

4. Dr Sinéad McNally, Dublin City University - *Autism-Friendly Schools: Including the Voices of Autistic Pupils in Educational Provision in Ireland*

Autism is a neurodevelopmental condition traditionally characterized by differences in social skills, repetitive behaviours, speech and nonverbal communication. Autistic children and young people may require a range of individualised supports to take a full part in education. Current policies are intended to provide efficient and equitable access to a common set of services across Ireland, but the voices of autistic children and young people are not included. Autism is relatively common with approximately one in 65 pupils in primary and post-primary schools in Ireland recognised as autistic (Boilson, Sweeney, & Staines, 2014). The full inclusion of all children in education is a United Nations' Strategic Development Goal (4) and enshrined in the United Nations Convention for the Rights of Persons with Disability. Yet autistic children may experience exclusion and challenges in education which result in lifelong difficulties (Humphrey & Symes, 2011). The proposed study will work together with young autistic people, family members and experienced educators, to capture the missing voices of autistic pupils in policy and practice to address ongoing challenges around the full inclusion of autistic pupils in education. To further identify barriers to inclusion, the study will also examine attitudes to, and understanding of, autism among the wider educational community of parents and teachers. Informed by a child-centred view of development and emphasising children's right to be heard and listened to (Lundy, 2007), this study will use methodologies from a range of disciplines including psychology and health to ensure the voices of autistic pupils, including children at all levels of need, are included. This survey project aims to be the first study of the experiences of autistic pupils in Ireland and to identify clear guidelines for supporting the inclusion of autistic children in education.

5. Dr Denis O'Hora, University of Galway - *Wind Sense: Generating Wind Turbine Noise Annoyance Maps for Ireland*

Ireland now ranks second in the EU, behind Denmark, for its share of wind generated electricity (28.1% in 2018), and as part of the Irish Government's Climate Action Plan (CAP, 2019), has committed to an ambitious target to generate 70% of Irish electricity needs through renewable sources. To meet this commitment, Ireland must expand its development of onshore wind farms to deliver 260 MW of installed Wind Energy capacity, per year. The expansion of wind energy in Ireland must seek to minimise the impact on those who will live near wind farms. Wind turbine noise (WTN) has been found to cause increased annoyance that leads to negative mental and physical health outcomes. While the relationship between WTN and annoyance remains unclear, available research has examined the effects of WTN on annoyance ratings and has identified exposure-response thresholds for components of WTN, informing turbine design and government policy. However, the exposure in such thresholds is typically measured in terms of amplitude or loudness of WTN, rather than the prevalence or strength of specific features of WTN that are associated with annoyance (e.g., amplitude modulation). The proposed research will investigate the prevalence and annoyance impact of WTN features around Irish wind farms. The STEM partner will model the prevalence of WTN features related to annoyance in the proximity of designated wind farms. The Psychology partner will then present combinations of WTN features derived from these models to volunteers under

laboratory conditions to assess the annoyance of these features alone and in combination. By combining these findings, the partners will generate WTN annoyance maps for the candidate wind farms and pave the way for a national WTN annoyance map to inform turbine developers and policy makers. Dissemination plans include a focus on public/community outreach and aims to reach an international audience.

6. Dr Helen Phelan, University of Limerick - *The Arts, Data Literacy and Diversity (ADD)*

This research examines how the arts can be used to develop data literacy. Data literacy is the ability to get meaningful information from data. The United Nations has reported that many people are excluded from the new world of data by language, poverty, lack of education, and discrimination. This research will develop a project that shares songs and data, in partnership with communities from different cultural backgrounds. It combines the arts and statistics to explore the impact of musical sharing on how data is understood and interpreted. The COVID-19 pandemic has meant that we rely more on technology and has increased the gap between the data rich and data poor. Refugees and migrants are among the groups at risk of being left behind, while false information about them, deliberately created to harm them, is on the increase. It is often assumed that just showing someone that information is false may stop them from believing or sharing it. However, our response to data is also influenced by our background and whether we trust the source of the information. The arts play an important role in how we respond to experiences and information. Music is important for tuning into others, developing social bonds, and building trust. The data and singing exchange project will help identify the best ways in which the arts can be used to help build trust, curiosity and openness to different experiences and information. This research will identify existing studies on how the arts can help develop data literacy. It will carry out a study on the data and singing exchange project and investigate if this study could be used nationally and internationally to increase understanding, bring communities from different backgrounds closer together and reduce the gap between those who are data rich and data poor.

7. Dr Mel Duffy, Dublin City University - *Homecare, Inclusive & Diverse (HID) - Person-Centred Homecare Services for Community Dwelling Lesbian, Gay, Bisexual, Transgender, & Intersex (LGBTI) People*

In Ireland little is known about the experiences of community dwelling older Lesbian, Gay, Bisexual, Transgender and Intersex (LGBTI) people of receiving homecare. This study seeks to understand these experiences from the perspective of older LGBTI themselves, and by exploring the attitudes and knowledge of professional care givers who provide care to LGBTI people in their homes. The literature that does exist in the area suggests that community dwelling older LGBTI people are vulnerable when receiving homecare. This may cause them to either try to conceal their LGBTI identity or neglect their healthcare needs. General studies on the needs of older LGBTI people suggest that people want to be accepted for who they are including their sexual orientation and/or gender identity. Just as older people in general, older LGBTI people want to feel respected in their interactions with healthcare providers. This study will explore what it is like to be an older lesbian, gay, bisexual, transgender or intersex person having a professional carer come into their home to provide care. The study will also examine the knowledge and attitudes of professional carers who provide homecare to older LGBTI people. Based on both the experiences of community dwelling older LGBTI people, and the knowledge and attitudes of professional home care providers, an educational resource for homecare

services will be developed. This resource will be used to enable homecare providers to develop new skills in the area of diversity and inclusion which will facilitate the provision of respectful, appropriate person-centred services.

8. Dr Anushree Priyadarshini, Technological University Dublin - *Food Waste in Ireland – Assessment, Environmental & Economic Burden, and Mitigation Strategies (FORWARD)*

Food waste burdens waste management systems and worsens food insecurity and is a major contributor to the crises of climate change. The Food and Agriculture Organization (FAO) of the United Nations estimates that 690 million people were hungry in 2019, with this number is expected to rise sharply during and post-COVID-19, while a staggering 3 billion people cannot afford a healthy diet on a day-to-day basis. Yet, the sheer scale of the food waste challenge has not been fully qualified or quantified, and thus, cannot be appropriately understood or confronted. FORWARD focuses on the 'National Waste Action Plan for a Circular Economy' to support a 'Zero Waste' approach by facilitating an integrated reduce, reuse, recycle approach. It will quantify food waste generated by Irish households and identify food waste clusters as a critical first step to supporting effective prevention and reduction strategies. Additionally, for turning waste to value it will develop a roadmap for bioconversion of household food waste into high value-added products using a circular bioeconomy approach. Finally, conducting the sustainability assessment of the generated food waste and its conversion into value added product(s) it will develop an Environmental-Economic (EN-EC) Footprint Index and a Project Development Assistance (PDA) Tool. FORWARD will provide improved evidence-based policy alongside reduced waste creation via accurate estimation of GHG emissions, water and land use, together with individual- and household-scale economic losses per kg of food waste generated. In parallel with demonstrating the feasibility of household food waste as a sustainable feedstock and source of sustainable revenue by creating new business opportunities through household food waste recovery and valorisation.

9. Dr Aoibhinn Ni Shúilleabháin, University College Dublin - *Is fearr DEIS chun chainnte – promoting productive Mathematical practices in underprivileged classrooms*

The income background of young people continues to influence the quality of education they experience. Across the globe, underprivileged students experience poorer qualities of education than other students. Ireland is no different. Learners in socioeconomically disadvantaged schools are more likely to be taught through rote-learning, more likely to lack confidence in their ability and experience anxiety with regards to their learning, particularly for girls. Teachers in these school's face pressures in terms of catering for the emotional and social needs of their students, which can result in reduced time and resources spent on classroom activities. Students in these schools are 30% less likely to continue education beyond secondary school, perpetuating the cycle of poverty. Mathematics is a subject integral to the overall educational successes of a student. How well a student does in Mathematics is a predictor of their educational achievement and earning capacity in later life. This is particularly the case in Ireland where studying Mathematics at higher level provides more opportunity of access to university through Leaving Certificate 'bonus points'. Students attending underprivileged schools, however, are 40% less likely to study Mathematics at this level, with some schools not even offering the subject at this level. This project will address education inequality by tackling the issue of Mathematics education in underprivileged schools. After closely examining what works, the project will design and pilot a school-based intervention to improve students' classroom experiences and

mathematical achievement. The project will introduce a collaborative form of professional development for Mathematics teachers to schools, thereby demonstrating how changing the classroom environment to one which encourages communication, develops problem-solving skills, and motivates students' thinking can impact teachers' knowledge and students' achievements. The project will influence policy on teacher education and student learning, specifically in underprivileged schools. Resources developed will be freely available to download.

10. Dr Marius Claudy, University College Dublin - *Gendered Artificial Intelligence (AI): An Exploration of how Gendered Digital Assistants can Perpetuate Occupational Gender Biases*

Digital assistants powered by artificial intelligence (AI) continue to be widely adopted by consumers. To increase acceptance and engagement with AI, firms often give digital assistants humanlike characteristics such as names, genders, and humanlike physical traits such as voices and facial features. Most digital assistants, such as Apple's Siri, Amazon's Alexa or Microsoft's Cortana, are gendered as females. This gendering is deliberate, because consumers perceive female AI as 'warmer' and more 'humanlike' than male AI. This proposed research aims to investigate if the 'gendering' of digital assistants perpetuates gender stereotypes and biases. This proposed project has four objectives. First, it aims to understand whether people's existing gender stereotypes regarding occupational roles influence their preferences for female (vs. male) digital assistants regarding certain tasks. For example, people might prefer a female AI when it comes to secretarial tasks like dictating a shopping list but might prefer a male AI when they require legal advice. Secondly, research has shown that consumers adapt their communications behaviour depending on the gender of the person they are interacting with. This study aims to investigate whether people's communication behaviour (e.g., language) changes depending on the gender of the digital assistant, and on the task the AI is expected to complete. Finally, we investigate the possibility that interacting with gendered digital assistants may strengthen existing occupational gender stereotypes, which may undermine progress towards achieving gender equality. The research thus hopes to advance our understanding of the role of gender in AI-human interactions and aims to provide policy recommendations on how to design artificial forms of intelligence that do not undermine but help to advance gender equality in our societies.

STRAND 2B - Better World Awards 2021
Department of Foreign Affairs (Irish Aid)
Providing opportunities for new collaborations between researchers in Ireland and researchers in eligible partner countries, based around excellent research projects aligned to the policy priorities set out in A Better World: Ireland's Policy for International Development.

1. Dr Caitriona Dowd, Dublin City University - *Gendered Dimensions of Hunger in Peacebuilding (GDHP)*

According to the most recent Global Report on Food Crises, acute food insecurity is increasing around the world. Violent conflict and insecurity is the single greatest driver of food crises, and long after conflict subsides, the legacy of both violence, and extreme hunger, cast long shadows in societies seeking to build lasting peace. While devastating, conflict and hunger do not affect all members of

societies, communities or even households equally: women and girls, and men and boys, experience conflict and extreme food insecurity very differently. When efforts turn to building peace, women and girls are often excluded or relegated to more minor roles in peace processes, despite their right to meaningful participation, and the unique insights diverse stakeholders can bring. They may also experience postconflict food security very differently, typically playing a greater role in household food collection and preparation, with more limited rights in terms of land and livestock. While extensive research has documented the ways gender matters in conflict, peace, hunger and food crises, very limited research to date has specifically explored when, where and how women and girls' food rights and experiences of hunger have been integrated in peacebuilding from the local to the international level. The Gendered Dimensions of Hunger in Peacebuilding project seeks to fill this gap, by asking: how, when and why are gendered aspects of hunger and food rights integrated in peacebuilding in diverse peacebuilding contexts? Through a mixed-methods approach that combines i) study of key policy frameworks and international resolutions, with ii) content analysis of key peace agreements, and iii) stakeholder consultation in three peacebuilding contexts (South Sudan, Liberia and South Africa) the project aims to explain the inclusion of women and girls' food rights and experiences of hunger in peacebuilding, and develop recommendations for more effective peacebuilding policy, practice and research.

2. Dr John Devaney, Maynooth University - *Future Proofing Senegal's Great Green Wall*

The Sahel is a semiarid region of western and north-central Africa that forms a transitional zone between the Sahara Desert to the north and tropical savannas to the south. Across the Sahel, unsustainable land management practices such as deforestation and overgrazing have led to widespread desertification. Climate change has worsened the destructive impact of desertification on ecosystems in the Sahel. This has heightened food, water, and energy insecurity and placed barriers to development in a region already experiencing widespread poverty. The Great Green Wall (GGW) is one of the world's largest and most ambitious ecosystem restoration initiatives that spans 8,000 km across the Sahel. The GGW is a broad initiative (including reforestation) that seeks to restore landscapes and improve livelihoods. However, a recent report revealed that only 4% of the targeted restoration area has been achieved. In Senegal, >18 million trees have been planted as part of the GGW, yet this represents <10% of the targeted restoration area. Replanting efforts have been hampered by low seedling survival rates and a lack of monitoring data. Our project aims to work with Senegal's National Forestry Research Center to address these challenges and improve GGW restoration outcomes. The project will - 1) grow GGW seedlings in specialized growth chambers under future climate conditions to identify tree species that are best adapted to climate change, 2) work with Senegal's National Forestry Research Center and local communities to build capacity for monitoring GGW reforestation and associated benefits in Senegal, and 3) inform policies that can help realize the full spectrum of environmental and societal benefits of the GGW. This project will strengthen research collaborations between Irish and Senegalese researchers.

3. Dr Christine Bonnin, University College Dublin - *SYNERGI: Mozambique (SociallY iNclusive Edible uRban Green Infrastructure)*

Low income and vulnerable households, social groups, and communities living in rapidly growing cities across Africa face concurrent challenges of maintaining food security whist coping with experienced impacts of climate change. The aim of SYNERGI is to investigate the potential for co-creating socially

inclusive edible Urban Green Infrastructure (UGI) as a strategy to support food security and climate resilience in two such rapidly growing cities in the context of Mozambique: the national capital Maputo and Nampula city. Our focus is on socio-economically vulnerable communities whose access to sufficient and good food is limited, as is their participation in food system structures and outcomes. Our research team will work with CSOs and community groups, using participatory action research and citizen science to co-design, implement and evaluate edible UGI initiatives as practical ways to improve food security outcomes while enhancing climate resilience. Our research will be guided by the following questions: 1) How can edible UGI in Maputo and Nampula be made more socially inclusive? What is required for edible UGI in these cities to effectively address the practical and strategic needs of vulnerable groups? 2) What are the most effective edible UGI designs in Maputo and Nampula for addressing affordability, sustainability, social inclusion, food security and appropriateness? What aspects might be transferable to other city contexts in Africa? 3) What contributions do community UGI initiatives make to food security and climate resilience at micro (household and community) and meso (city) scales in Maputo and Nampula? 4) What governance and policy supports are needed to ensure an enabling environment for socially inclusive edible UGI at these city and local scales? 5) How do our co-produced, bottom-up, empirically grounded understandings and conceptualisations of socially inclusive edible UGI in Maputo and Nampula advance scholarly debates on urban agriculture and climate resilience strategies in Africa's cities?

4. Dr Leo Casey, National College of Ireland - *What makes a good teacher? The challenge of enhancing teacher professional identity and capability in Cambodian schools*

This research addresses the question of teacher effectiveness in the context of early grade school education in Cambodia. In all education settings the challenge of enhancing teaching capability to achieve better learning outcomes is complex and multifaceted. In the context of early grade education in Cambodian schools, this is especially the case. Cambodian education is like the 'perfect storm' of challenges. This study will investigate how teachers in Cambodia and specifically the Battambang region, can be enabled to improve their teaching practice and engage in a path of professional development. It will focus on the tasks and challenges of building teacher professional identity; how teachers see themselves and how this may change over time. Teacher professional identity is a core enabler for a wider framework of teaching capability and competence. Effective teaching requires a disposition for practice in a continuous cycle of professional improvement. This study combines field work with design-based research to provide a learning path for enhanced teaching capability. A sample of 25 early grade teachers will be recruited as volunteer research participants. Two rounds of data collection, comprising in-class observation, teacher interviews and 'school and community' profiles, will take place one year apart. Workshops on teacher professional identity will be delivered to the participants, one following the first and one following the second data collection round. At each stage analysis of data will inform the learning design for the workshops. The data and the workshops will also inform the development of a Framework for Teacher Professional Identity in Cambodia and materials for an associated structured professional learning module. The research will also provide new insights on what's happening in Cambodian schools and foster further research collaboration between Irish and Cambodian investigators.

5. Dr Eilish McAuliffe, University College Dublin - *Gendered Leadership Advancing Systems and Structures: Through Collective Leadership, Networks and Mentorship (GLASS)*

The proportion of women compared to men in leadership roles in the health sector remains quite low, despite evidence that women leaders have a positive influence on access to healthcare and patient outcomes. The importance of having more women in leadership positions has received international attention from the World Health Organisation and other international agencies. Many governments have agreed to take action to address the gender imbalance in leadership in healthcare. The question is "What action should they take and is it likely to make a difference?". Research in this area has focused more on highlighting the barriers to women advancing to senior positions, rather than the solutions that might be put in place to help women advance. This project will work with 120 female health workers in Tanzania to understand the issues they face in applying for and obtaining leadership positions. We will use the best available evidence coupled with their real-life experiences to design solutions that will then be put in place alongside a mentoring programme. A novel aspect of the mentoring programme is that the health worker will have 2 mentors, a senior male healthcare leader in Tanzania and a senior female healthcare leader in Ireland. Research has shown that male mentors who are in influential positions can help draw attention to the mentee's leadership skills and help advance their careers. In the Irish health system, many nurses have advanced to senior leadership positions and sharing their experiences with the mentees may provide support and encouragement to these women. The primary aim of this project is to design and deliver a programme to address the barriers to the advancement of women to leadership positions in the Tanzanian health sector and to evaluate the influence on their leadership skills and actions they take to advance their careers.