Expanding Excellence in England (E3) Round 2 – Funded Projects

Anglia Ruskin University

Unit name

Centre for Equalities in Uniformed Public Services

Investment

£ 11,305,900

Summary

The new Centre for Equalities in Uniformed Public Services will allow Anglia Ruskin University to work directly with Uniformed public services (UPS) (military, police, fire, ambulance and prison services) to improve public services cultures and remove barriers to equality, diversity and inclusion. UPS face unprecedented challenges due to surging demand, pressures on public spending, and global instability arising from war, climate change and a major pandemic. Several recent inquiries across different UPS organisations have revealed cultures and practice that undermine the promotion of an equitable, inclusive and healthy workforce. To respond effectively, UPS need a balanced, healthy workforce, and a resilient, professional culture which is something the new centre will create through excellent underpinning research and collaboration.

Arts University Bournemouth

Unit name

Centre for Plastics Identification and Curation (PlastIC)

Investment

£1,642,000

Summary

The new Centre for Plastics Identification and Curation (PlastIC) will link knowledge of design history from Arts University Bournemouth's Museum of Design in Plastics with the manufacturing and testing capabilities of a new Innovation Studio. This will allow significant expansion of research expertise in design history, specifically in the area of materials (plastics), properties of plastics, and plastics preservation and curation. The PlastIC will explore how plastics degrade over time or behave in different environments, resulting in research which will have international relevance to both museum collections, and modern manufacturing.

Aston University

Unit name

Aston Institute for Membrane Excellence (AIME)

Investment

£9,962,812

Summary

A new Aston Institute for Membrane Excellence (AIME) will be created as a unique, interdisciplinary, intersectoral research, and training hub for translational membrane science that combines two excellent, small-scale centres. Biological membranes are essential for all life, while synthetic membranes seek to mimic biological membrane properties to separate substances. As membranes are incredibly complex, current research typically focuses on their individual components. AIME will provide the environment for a holistic approach to be used in membrane research across molecular, cellular, and organisational scales in a unit that bridges biology, physics, and chemistry.

Cranfield University

Unit name

Magan Centre of Applied Mycology

Investment

£ 7,160,184

Summary

Fungi represents one of the most diverse kingdoms in the classification of all living organisms. Humans have long used fungi for food and medicines, contributing some £42.5trillion to the global economy in 2022. To date, mycology (the study of fungi) has principally centred on mitigating the negative effects of fungi on disease, food loss and toxin accumulation. Evidence has shown that fungi-derived traits could play a transformative role in supporting global net zero ambitions. But its full potential and benefits is yet to be understood. To harness this potential, E3 funding will allow the Magan Centre of Applied Mycology to uniquely focus on unlocking the power of fungi to support the green economy. This will include driving transdisciplinary excellence, creating the next generation of mycology researchers and industrial practitioners, building research capacity, and expanding research in the following areas, mycomaterials, fungal-based bioenergy, sustainable manufacturing, indoor environment and green construction, environmental mycoremediation and sustainable food production.

Falmouth University

Unit name

Centre for Blended Realities

Investment

£ 7,010,805

Summary

The Centre for Blended Realities (CBR) at Falmouth University aims to spearhead our unparalleled expansion of research in the field of blended realities. E3 funding will allow the development of transformative methods that render innovative approaches to the use of novel technologies more accessible to a diverse community of beneficiaries and support the CBR in amplifying its potential impact on society, the economy, and the global creative industries. As we continue to navigate the post-industrial, future economies – whether knowledge, experience, or network-based – we will undoubtedly require creativity as a motor. The emergent ability to blend computer technology with real-world activity will allow for the creation of novel forms of work, potentially leading to entirely new art forms that seamlessly blend the real with the virtual.

Lancaster University

Unit name

Mathematics for AI in Real-world Systems (MARS)

Investment

£ 12,768,704

Summary

Mathematics for AI in Real-world Systems (MARS) is a new investment in Mathematics for AI in Real-world Systems, revolutionising research capacity at the interface of modelling applications, and artificial intelligence. MARS will be a translational research section within the School of Mathematical Sciences, with close links with industry and government partners whose real-world challenges require fundamental mathematics and AI research. MARS will provide mathematical support for Lancaster’s four flagship strategies in experimental and observational science (Materials Engineering, Environmental Science, Health, and Cybersecurity), strengthening Lancaster’s position as a regional, national, and international leader in next-generation research.

Liverpool School of Tropical Medicine

Unit name

Centre for Drugs and Diagnostics

Investment

£9,843,478

Summary

The Centre for Drugs and Diagnostics (CDD) is a recognised centre for excellence in translational infection science within the Liverpool School of Tropical Medicine. National and international global health priorities post-COVID have opened huge opportunities in infectious disease research and development. E3 funding will provide the uplift and expansion of CDD activity in three priority research areas (new therapeutic modalities, innovative diagnostics, and human challenge), supported by an enhanced ecosystem for commercial engagement and workforce development to drive sustainable expansion of the CDD units.

Royal Central School of Speech and Drama

Unit name

Centre for Performance, Technology & Equity (PTEQ)

Investment

£5,633,756

Summary

The new Centre for Performance, Technology, and Equity (PTEQ) will expand the excellent research that is currently conducted in the Performance Lab at The Royal Central School of Speech and Drama, where ground-breaking approaches to immersive and digital technologies are innovated from a performance-led perspective in tandem with promoting social equity. The vision for PTEQ is to catalyse research and development at the intersection of performance and technology with community and cultural industries partners that will champion inclusivity, diversity, and resource equity, to transform the discipline of theatre and performance, foster cross sector-innovation, and position the UK as a global leader in intertwining social justice with technological innovation through the arts.

School of Oriental and African Studies (University of London)

Unit name

Centre for Anthropology and Mental Health Research in Action (CAMHRA)

Investment

£ 7,785,253

Summary

The Centre for Anthropology and Mental Health Research in Action (CAMHRA) is a globally oriented and locally connected centre of excellence for cutting edge anthropological research, education, and public engagement in the field of mental health. Mental healthcare is often poorly adapted to the diverse cultural worlds and needs of those who seek it. Inequalities in access, experience and outcomes persist, while pressures on staff lead to high turnover and burn out. Such issues are particularly acute in London, where overstretched mental health systems struggle to meet the complex and intersectional needs of an urban population. To address these issues, new knowledge is needed about how to reshape mental health systems to cater to diverse needs and support the wellbeing and retention of staff. E3 will support the expansion and increase research capacity for CAMHRA by increase expertise in ethnographic methods for mental health research, to create talent pathways with greater inclusion of people with mental health lived experience in research, and to do so in partnership with NHS Trusts, public health, civil society and community organisations, and international partners.

The Open University

Unit name

Centre for Protecting Women Online

Investment

£ 7,730,000

Summary

We live in cyber-physical-social spaces where lines between ‘online’ and ‘offline’ are increasingly blurred, but also where violence against women and girls (VAWG) thrives. It is therefore more important now than ever for interdisciplinary research and cross-sectoral dialogue to address this contemporary societal challenge. The Centre for Protecting Women online will be a vehicle for understanding and addressing challenges posed to women’s safety online through a novel, interdisciplinary and ambitious research agenda. E3 funding will support this expansion by combining cross-sectoral, collaborative outputs and interventions which inform law, policy, technology development, and practice to reduce online harms suffered by women and girls, minimise anti-social behaviours online whilst promoting pro-social behaviours and help build tech software that helps ensure accountability, credibility, and helps facilitate justice.

University of Bath

Unit name

Centre of Excellence in Water-Based Early-Warning Systems for Health Protection (WBE@Bath)

Investment

£ 8,439,189

Summary

COVID-19 demonstrated how the successful management of disease outbreaks is critically dependent on real-time, cost-effective and comprehensive surveillance systems that enable testing of whole communities, irrespective of location. The new Centre of Excellence in Water-Based Early Warning Systems for Health Protection and an Urban Living Lab facility in England will deliver state-of-the-art analytical capability (a digital water-sensing platform), training base, ideas hub and whole system testing infrastructure that integrates sensing, mathematical modelling, data analytics and informatics with epidemiology and public engagement tools to provide low-cost and real-time community-wide profiling of population health and the environment. In this way, the centre will transform public and environmental health management.

University of Bradford

Unit name

Centre for Digital Innovations in Health and Social Care

Investment

£ 4,860,473

Summary

E3 funding will scale up the Health Technologies for Quality and Safety research group into the establishment of a multidisciplinary centre of excellence: the Centre for Digital Innovations in Health and Social Care. The Centre will undertake high quality, co-created applied research that informs the design and implementation of new technologies in national and international health and care systems; and explores the impact of such technologies on patients, service users, carers, and health and social care professionals.

University of Greenwich

Unit name

Multi-Scale, Multi-disciplinary, Modelling Platform ($M^3$4Impact)

Investment

£ 9,080,177

Summary

E3 funding will enable the expansion of both the reach and ability of multi-disciplinary and multi-scale modelling expertise to tackle major societal challenges affecting the environment, quality of life, safety, security and the economy. This will be achieved through the amalgamation and expansion of two existing award-winning teams and the application of AI-enhanced high-performance computing to create the Multi-scale, Multi-disciplinary Modelling for Impact ($M^3$4Impact) platform. The current focus is on modelling for fire safety, and the proposed expanded unit will have improved capacity in that area, as well as providing new capacities to create digital worlds that predict physically accurate outcomes addressing a wide range of challenges.

The Universities of Hertfordshire, Cranfield, Leeds & Manchester

Unit name

Future Biodetection Technologies Hub

Investment

£13,541,000

Summary

The Centre for Research in Biodetection Technologies at the University of Hertfordshire develops novel techniques for sensing and characterising particles and pathogens. Its technologies allow rapid particle analysis, to understand the composition of bioaerosols without sending them to a lab. This enables the design of scenario-specific bioaerosol sensing systems that inform control measures for environmental and agricultural, healthcare, defence and security, and indoor settings. E3 funding will allow the Centre to expand and unite with:

1) Cranfield University: to collaborate with diverse clusters of expertise spanning three school, in the development and application of sensors to detect and characterise chemical and biological hazards
2) University of Leeds: to collaborate with an embryonic environmental bioaerosol research group focusing on dispersion and exposure in indoor and outdoor air, and
3) University of Manchester: to collaborate with a bioaerosol data analytics sub-group within the Centre for Atmospheric Sciences that researches, develops and deploys date-driver, user facing technologies and platforms that can detect environmental bioaerosols in real time.

This partnership will create a new Future Biodetection Technologies Research Hub which will address the technological leaps required to build safer, healthier, more resilient environments, and deepen our understanding of our changing climate.

University of Kent

Unit name

Durrell Institute of Conservation and Ecology

Investment

£8,302,306

Summary

In 2022, the Convention on Biological Diversity Conference of Parties described the next seven years as our “last chance” to put biodiversity on a path to recovery. E3 funding will allow the Durrell Institute of Conservation and Ecology (DICE) to achieve a step change in its research capacity to develop ground-breaking solutions to current and emerging environmental and conservation crises. It will aim to address a key global conservation challenge of our time: how we reconcile biodiversity protection through conservation areas with other land uses and land values. DICE is perfectly placed to support partners from policy, practice and industry as well as to engage with local communities, to generate the world-leading and high impact interdisciplinary research needed for informed decision-making.

University of Leicester

Unit name

Leicester Lifestyle and Health Research Group (LLHRG)

Investment

£ 14,071,927

Summary

Leicester Lifestyle and Health Research Groups (LLHRG) research harnesses the power of lifestyle behaviours to empower multi-ethnic populations with or at risk of long-term conditions or multiple long-term conditions to live longer and better lives. E3 funding will enable an uplift in capacity to deliver sustainable research excellence through an expanded staff with diversified expertise and new world-class research facilities.

University of Lincoln

Unit name

Lincoln Institute for Rural and Coastal Health

Investment

£ 10,871,367

Summary

The University of Lincoln will synergise rural and coastal health and wellbeing research in a way not yet achieved in England by establishing the country's first integrated and transdisciplinary Institute for Rural and Coastal Health. By scaling up the existing Lincoln International Institute of Rural Health, the new Institute will work to enhance our understanding of urgent place-based inequalities and develop new interventions to improve physical, mental, social, and economic health and wellbeing in coastal and rural communities.

University of Plymouth

Unit name

Centre of Research Excellence in Intelligent and Sustainable Productive Systems (CRISPS)

Investment

£5,723,306

Summary

The new Centre of Research Excellence in Intelligent and Sustainable Productive Systems will exploit the University of Plymouth's demonstrable research excellence in agriculture, aquaculture and sustainable food production to build a vibrant community of researchers who, through a systems approach to addressing the challenges faced in feeding a future global population of 9 billion in a sustainable fashion, will generate innovative advances of national and global significance.