Our commitment to research at Warwick is that it will be internationally **leading**, **impactful**, and **provocative**. It will change the world, making lives **healthier**, **safer**, more **resilient**, more just and more fulfilled. Our research produces **transformative and lasting solutions** to the multidisciplinary **global challenges** of both today and the future.

Our research will maintain its foundation in disciplinary and interdisciplinary strengths. It will define the frontiers of knowledge and will take place in innovative multidisciplinary spaces.

OUR RESEARCH STRATEGY

WARWICK
THE UNIVERSITY OF WARWICK

THE SIX STRATEGIC PRIORITIES ARE:

- **Disciplinary and Interdisciplinary Excellence:** Enhance our existing strengths and develop others

- **Transformative Interdisciplinarity:** Combine approaches to make a step change

- **Excellence with Impact:** Extend and apply the best research to make real-world differences

- **Global Reach and Significance:** Deliver and promote our research on the world stage

- **Partnership:** Key collaborations with industry, national and international institutes and other higher education providers

- **Innovation:** To be at the heart of everything we do.

UNDERPINNING THESE PRIORITIES ARE SEVEN WORK STRANDS:

WORK-STRAND 1

▶ Support, foster and showcase the talent and ambition of all our researchers.

At the heart of the University's research mission is our commitment to the appointment and development of world-class researchers. Our University is one in which talent and ambition are recognised and nurtured through a supportive environment for all faculty - from early career and doctoral researchers, to research leaders and experienced professors.

The ambition of all our researchers is supported by an academic promotion process that recognises the importance of contribution across the full range of academic activity. This includes Research and Scholarship, Teaching, Impact, Outreach and Public Engagement.

We will encourage and support the nomination of our researchers for prestigious national and international research prizes and fellowships. We will celebrate success both internally through our own community, as well as externally by reaching out to wider audiences.

We will recognise and showcase academic endeavour in research and impact, launching our research stars of the future and communicating the strengths of our important external research partnerships.

The important place of the individual researcher and their group in the complex landscape of different University structures will be rearticulated with the aim of providing a simpler, more accurate reflection of research life at Warwick.

WORK-STRAND 2

▶ Undertake world-leading research at the forefront of knowledge.

The enhancement of our facilities and recruitment and retention strategies will ensure that we are best placed to attract and nurture the best scholars. Warwick faculty will be encouraged and supported to collaborate nationally and internationally. This will include the establishment of new strategic partnerships (Europe, USA and China in addition to the Monash-Warwick Alliance). The study leave scheme will continue to be protected and valued in support of the best research outcomes.

The central pillar of academic research excellence remains publication in high quality journals, or publication of monographs with leading publishers. In a climate where Open Access and Open Research Data are increasingly standard, we will support the academy via the provision of the necessary Library services, funding and support, to ensure our researchers embrace the Open Research agenda.

We will grow our PhD student base, attracting students of the highest quality, by institutional investment and through the leverage of significant external funding. This will include, for example, competitions for Centres of Doctoral Training and the provision of a central scholarships budget.

The challenges and opportunities of a shifting external funding and policy environment will be addressed by a strategic forward-thinking approach. Departments will be supported by high quality research plans to ensure necessary and timely investments to progress and grow activities.
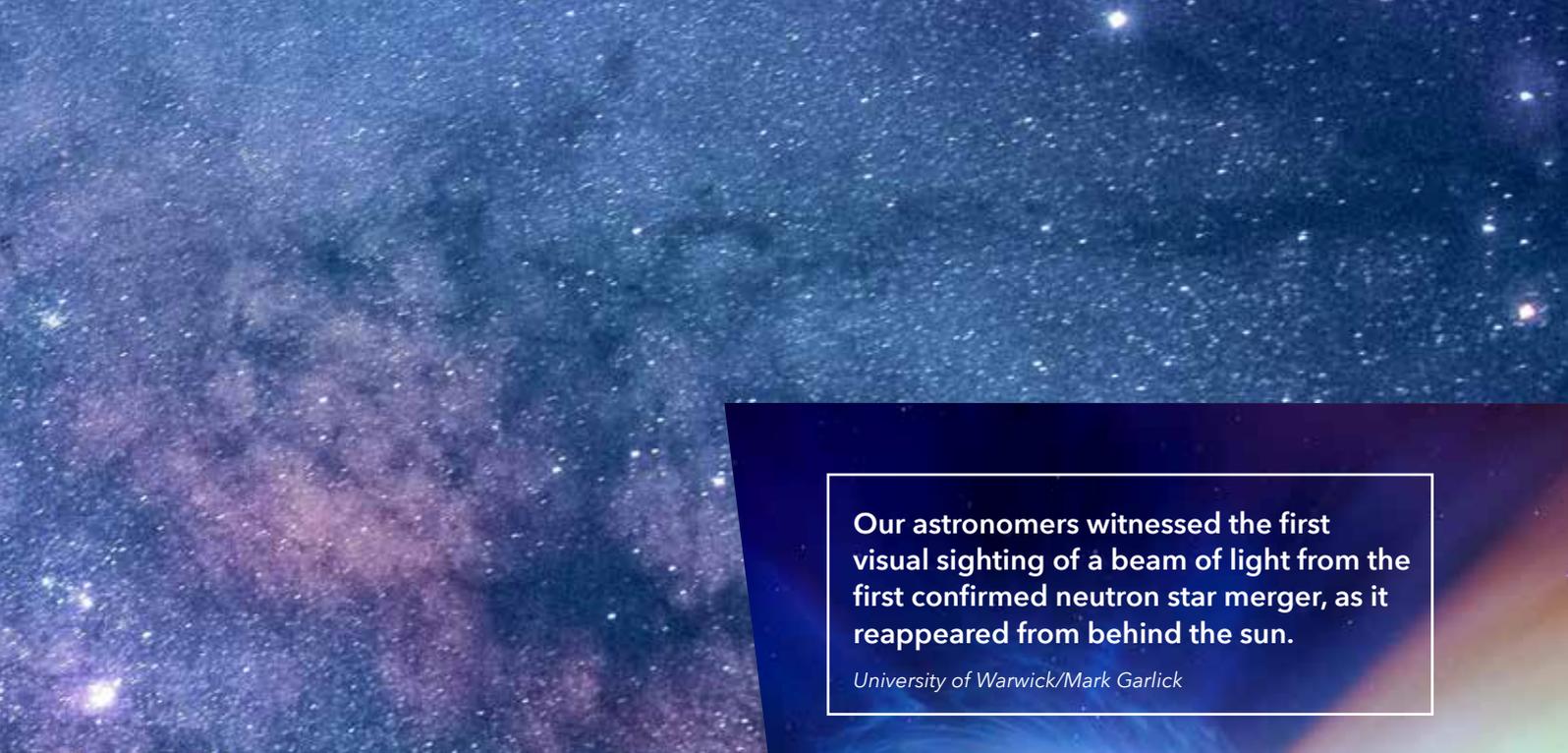
Our astronomers witnessed the first visual sighting of a beam of light from the first confirmed neutron star merger, as it reappeared from behind the sun.

University of Warwick/Mark Garlick

Support for the generation of research income will continue to be reviewed. This will ensure that specialist knowledge is appropriately deployed for initiatives such as the Industrial Strategy Challenge Fund, the Global Challenges Research Fund and the new interdisciplinary calls under UKRI - over and above our usual indicators.

WORK-STRAND 3

▶ Spearhead research with relevance for impact and innovation.

Our refreshed Research Strategy will take a synergistic approach to impact and innovation, providing a framework in which impactful research is recognised, supported, and celebrated.

Warwick faculty will be supported to deliver impact via the Warwick Impact Fund and through our portfolio of Impact Acceleration Accounts, with academically-led internal panels reviewing and awarding internal grants for innovative ideas with high potential for future impact.

Internal investment will be available to support a range of innovation activities, from industry-University secondments, industrial fellowships in areas of relevance to the Government's Industrial Strategy, collaborative research projects with practitioners in the public and private sector and with creative industries, 'industry engagement days', and 'proof of concept' and commercialisation funding.

Our investment into a central Impact Team will support Departments to embed impact within the University's research environment, whilst also providing specialist practitioner support to deliver and evidence impact across multiple sectors. The University's expert commercialisation

team, Warwick Ventures, will increase its service delivery with regards to business development, innovation and commercialisation across all departments, supporting impact from the Arts, Social Science, Medicine and Science.

An Impact Capture System will support the academy in the preparation of REF 2021 impact case studies. This in itself is an example of Warwick innovation – being developed internally by colleagues in Warwick Business School.

Impact, outreach and public engagement are now included within academic promotion criteria and we will build on this by celebrating innovative and impactful research through impact events.

Bespoke training for impact and public engagement will be provided, hosted and arranged by the University's Learning Development Centre and Research & Impact Services. This will encompass impact in a variety of contexts, including public policy impact, social, economic, cultural and environmental outcomes, and commercial exploitation.

WORK-STRAND 4

▶ Cultivate world-class interdisciplinary research communities.

Interdisciplinary research is ubiquitous at Warwick. As such we are in a strong position to attract research collaborators and external investment, and to contribute meaningfully to national and international challenges.

The University's programme of Global Research Priorities (GRPs) will be relaunched as a coherent programme, well-placed to support transformative, truly interdisciplinary research that spans across all University faculties. The connection of the GRPs to Research Centres will be clearly articulated. A clearer vision describing this interdisciplinary landscape and how it relates to our discipline-focused Departments will be showcased and communicated.

The Institute for Global Sustainable Development (IGSD) will be developed to provide a focal point for Warwick's work on the UN Sustainable Development Goals. The inter-relation between the IGSD and the GRPs will be articulated and correlated with the activities of Research Centres - particularly the Category II Research Centres that work across Departments and Faculties. The important relationship between the GRPs and the Institute for Advanced Studies (IAS), with its cohort of ECRs, will be further enhanced.

Continued development of interdisciplinary research in response to the Industrial Strategy Challenge will be supported by round table events to discuss opportunities, pump-priming funding to develop proposals and specialist research support.

Challenge "champions" will work to support interdisciplinarity in areas such as Data Science, Artificial Intelligence, Cultural Industries and Digital Humanities inter alia. This will also help leverage our involvement in national ventures such as the Alan Turing Institute and the Faraday Institution.

We will nurture our interdisciplinary activities through a range of internal support mechanisms, such as Warwick's Research Development Fund that helps academics establish networks and develop future funding applications, and the Institute for Advanced Studies (IAS), which funds visiting academics and practitioners as well as interdisciplinary activities aligned to Warwick priorities. The key connectivity of inherently interdisciplinary Departmental entities, such the Centre for Interdisciplinary Methodologies (CIM), will be embedded fully to enhance our structures. In addition, the Institute for Advanced Teaching and Learning (IATL) will facilitate student interdisciplinary research and students will be encouraged to engage with research across the University.

WORK-STRAND 5

▶ **Pioneer state-of-the-art accessible research infrastructure.**

Our researchers will be supported to deliver world-leading research and innovation by access to centrally maintained state-of-the-art equipment and facilities. This will include the provision of bespoke training, input from dedicated technical staff, and access to printed and electronic journals and other media.

To achieve this, we will take a proactive approach to the future planning of our research environment to ensure that investment is strategic and targeted, making us an attractive place for highly talented research staff.

Our institutional Research Technology Platforms (RTPs) will provide an integrated network of world-class technologies for our users, with each servicing a multidisciplinary user base. The programme will meet the changing needs of our research community, with expansion into new cutting-edge technologies, creating new platforms to facilitate this where required. We will develop our digital capabilities and invest in state-of-the-art digital technologies.

We will periodically review the costing procedures and requirements within each individual RTP to ensure each contains internationally competitive technologies and is fully utilised, both by researchers at Warwick, as well as externally through collaboration with industry partners and other HEIs.

Our technical staff are recognised as a valuable asset, and as such we were proud that the 'Technician Commitment' was launched at the Higher Education Technicians Summit 2017, hosted by Warwick.

We are enthusiastic advocates of this commitment, and will develop technician job family profiles with transparent opportunities to progress through to professorial-grade equivalent. Our technicians will be supported to receive professional registration and the appropriate credit on journal articles. We will deliver events aimed at technical staff, host the TechNet webpages to act as a central source of information, and take a strategic approach to succession planning and retention, with investment in the future of our technical workforce through staff and degree apprenticeships.

WORK-STRAND 6

▶ Communicate our research to provide leadership and influence in the global knowledge economy.

Our new Research Communication Strategy will support a refreshed approach to the internal and external communication of our research and impact. We will publicise our research strengths regionally, nationally, and internationally to ensure that the valuable work of individual academics is recognised by the local community, and on the world stage.

We are committed to translating our world-leading research to wider society, reaching out to connect our research to the issues that matter to people and to help solve real-world problems.

Our integrated approach to communications will see us showcase our research through multi-media channels to highlight interesting and newsworthy articles. We will ensure our web presence is vibrant and engaging, by reacting to audience feedback and keeping our stories up-to-date and relevant.

Researchers at the University will be encouraged to share their insights and the outcomes of their work, and to act as agents of change in their fields of expertise. We will provide them with the knowledge to use social media effectively to disseminate the results of their research and to reach audiences through new channels. This will include targeting potential collaborators and future post-graduate students.

We will enable more internal research collaborations by raising the profile of research successes and expertise on internal communications channels, including the University intranet and regular research news circulations.

The investment made into our research by funders and partners will be demonstrably justified by the regular presentation of exciting and innovative case studies that showcase how our research makes a positive contribution to society. We will promote the impact of our research by presenting impact case studies on the University web pages, through high quality publications and via impact related events.

A series of Research Themes has been developed which reflect Warwick's world-class areas of research excellence and curiosity-led research. They encapsulate and accentuate our reputation for world-leading and purposeful disciplinary and interdisciplinary research and signpost our future. The academy has been consulted on these research themes in order to ensure that they are inclusive and that researchers can identify their own research within one or more of the themes and the overall ethos.

WORK-STRAND 7

▶ Build an income and partnership platform to sustain and grow our world-leading activity.

We have ambitious plans to increase our research income. We will support our researchers at all levels and in all disciplines to apply for and be successful in winning research grants and securing contracts for research. We will encourage and support high quality grant applications and contract negotiations and ensure delivery to funders' requirements.

In the changing funding landscape, the University will seek to diversify sources of funding, and to compete successfully for new funding from UK Research and Innovation (UKRI) by demonstrating the relevance and excellence of our research in high quality applications. In response to Brexit and changes to European funding, we will continue to focus on the opportunities presented by the European Research Council (ERC), building on previous successes in these prestigious competitions. We will also look to establish partnerships that support continued European collaboration.

Our links to industry partners and collaborations with organisations such as The Turing Institute and the Faraday Institution will act as a catalyst for new research networks that in turn will attract investment from a range of funders. We will provide dedicated support for all our researchers - from early career through to mid-point and senior professors, to ensure that the volume and quality of our research bids continue to grow, and to facilitate competitive interdisciplinary research applications in response to funder demand.

Within our departments we will support the formation of internal peer review processes and will support academic mentoring schemes to ensure that our bids are highly competitive across a range of funding schemes. We will also make sure that our strategic partnerships with funders and collaborators are nurtured so that we understand the key challenges and ensure that our research applications are best placed to meet them.

We recognise the importance of collaboration with industry. We will look further to build existing partnerships and develop new partnerships with companies of all sizes in order to undertake world-class and innovative research. We will explore key research themes and global challenges, and operate in areas of strategic importance regionally, nationally and internationally.

We will connect with initiatives such as City of Culture and support the development of research activities aligned to excellence arising from this.
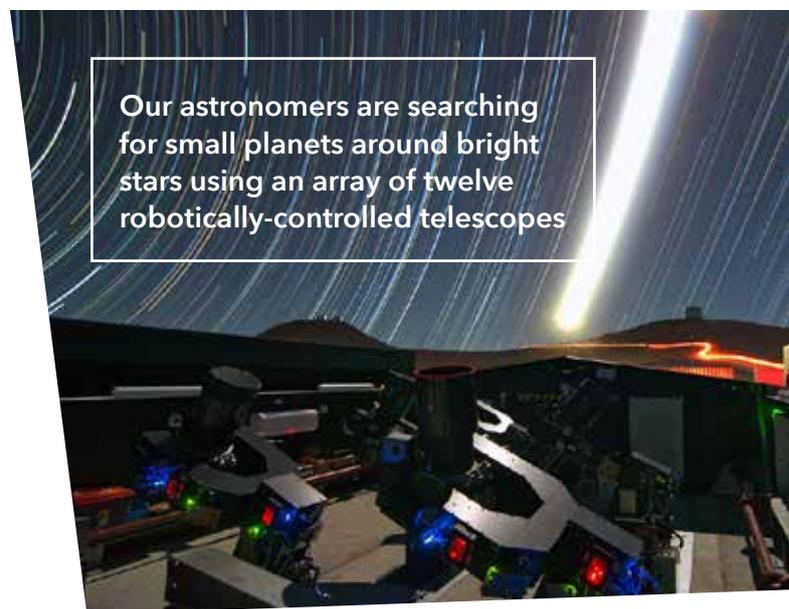
Our astronomers are searching for small planets around bright stars using an array of twelve robotically-controlled telescopes

OUR RESEARCH THEMES

LIFE SCIENCES AND HEALTH

- Our highly impactful research exemplifies how we change lives and transform clinical practice. This includes our clinical trials and miscarriage research

- Improved mental, global and public health are key strengths and objectives of this theme

- With strong mathematical underpinnings, research in Life Sciences and Medicine illuminates the molecular basis of life and the many areas of health importance, through disease modelling and quantitative biomedicine

- Warwick's health research is truly interdisciplinary, concerned with health across the lifespan, with particular strengths in antimicrobial resistance, infection, cancer, neuroscience, mental health, health economics, medical ethics and society, technologies for health, healthcare organisation and management, medical humanities and history of medicine.

DATA, SCIENCE AND SOCIETY

- Living in the generation of big data presents a wealth of multidisciplinary research challenges in how we understand the nature and uses of big data and the impact of data on our daily lives

- Our status as a founding member of the Alan Turing Institute places our researchers on a world stage

- Together with Warwick Manufacturing Group, and in collaboration with all faculties, we will position the University as the premier research centre for data science, with a focus on health, manufacturing and transport

- Examples include: Behavioural economics, decision making, resilience, the construction of risk, ethical challenges and opportunities posed by artificial intelligence, individual freedom, privacy vs. convenience, democratisation and smart cities

- Our research will contribute to the development of Cyber Security and Artificial Intelligence technologies and the impact of these on society

- This theme includes the challenge of how research embraces the digital agenda across all of our faculties.

MATHEMATICS AND ITS REAL-WORLD APPLICATIONS

- Warwick is world-renowned for its Mathematical Sciences

- Research in this area is a combination of disciplinary excellence in Mathematics, Statistics and Computer Science

- We will use innovative interdisciplinary approaches with real-world significance

- Examples include: Epidemiology, biometrics, forensics, risk and financial mathematics, modelling complex systems

- In all faculties, our researchers utilise statistical data to better understand the world around us.

THE ENGINEERED WORLD: FROM MOLECULES TO MACHINES

- A uniting principle of science and engineering is creating a better world through innovation

- New products and technologies underpin this research theme with researchers working at the interface of novel fundamental research with applied engineering and design

- Our world-class and transformative research encompasses a spectrum of areas, from synthesis of novel polymers to 3D printing of artificial hip joints

- Examples include: Synthetic biology, drug design, new materials, advanced manufacturing, autonomous vehicles, battery development and low-carbon catalysts

- Warwick researchers work in partnership across industrial sectors to accelerate the impact from our research so that the economy grows and society can prosper.
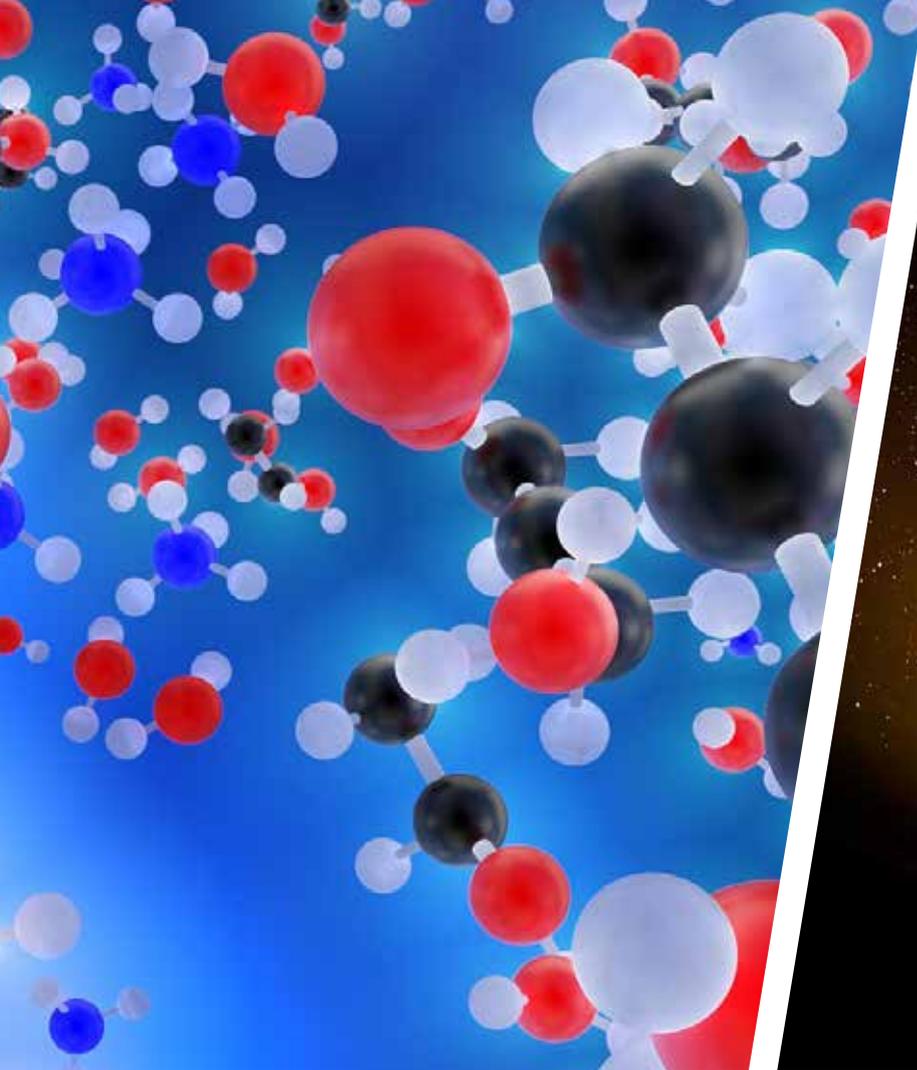
SUSTAINABILITY AND DEVELOPMENT

- As sustainable development becomes increasingly important in the coming decades, this theme will be given greater prominence in Warwick's research

- This theme is aligned with the UN's Sustainable Development Goals, but still challenging of them

- We will tackle global challenges through truly interdisciplinary research across the arts and humanities, social sciences, science and medicine

- Our research will take place in multiple sectors, such as energy, agriculture, economy, finance, transport, urban science, environment, policy, education, materials, manufacturing and technology

- Examples include: Energy politics and the transition to a zero-carbon world, culture and climate change and ethics in the Anthropocene.

UNDERSTANDING THE HUMAN

- Identifying, understanding and enhancing human knowledge, imagination, learning, cultures and behaviours is crucial in this theme

- The theme is central to research excellence in the Arts, Social Sciences and Behavioural Sciences and is strongly interdisciplinary

- Alongside theoretical explorations of human behaviour, our expertise involves work to understand and change behaviour patterns and influence public policy in these areas

- Examples include: Digital humanities, education science, the politics of language and wider communication, the production of knowledge, human consciousness and emotions, happiness and productivity, understanding science, evidence and proof, punishment, autonomy and voter behaviour and artificial intelligence.

HISTORIES, CREATIVITY AND THEORY

- Warwick researchers are developing dynamic connections between the past, present and future, across different spaces and communities in ways that challenge our perceptions of society, politics, economies and culture

- Our research is characterised by innovative engagement with history, theory and memory, from the ancient to the modern, the local to the global

- We provide meaning through the critical interrogation of texts, material, visual and oral culture, as well as the interface between language, identity and thought

- Creativity is present across the disciplines - from writing to entrepreneurship, collaboration with the creative and heritage industries, the study of performing arts, cultural production and the media.

ETHICS, RIGHTS AND SOCIAL JUSTICE

- Our research investigates and addresses the ethical challenges of governance for a secure future

- This theme includes research activities across all faculties into the ethical, legal, political, cultural and economic issues which affected the past and continue to affect the world today

- The impact, challenges and opportunities of globalisation and democratisation are key to this theme, including human, political, social and economic rights regarding gender, education, language and culture

- Areas include: Democracy and governance, global justice, criminal justice and punishment, diversity and inclusion, inequality and discrimination, fairness and impartiality, poverty, migration and borders, territory and place, citizenship and participation, corruption, violence and conflict management, terrorism, trade and regulation, manufacturing, finance, healthcare, labour markets, artificial intelligence and cyber security, environmental justice, bioethics and food security.

UNDERSTANDING THE ROLE AND FUNCTION OF ORGANISATIONS AND MARKETS

- A cross-cutting theme combining world-leading expertise from different academic disciplines, including Warwick Business School, the Department of Economics, PAIS, the School of Law and the Department of Sociology

- It focuses on how individuals, groups and collective actors construct, manage, resist and change organisational and market structures, including the associated processes and practices, and how they shape and influence society

- It includes work focused on the political and social challenges involved in the regulation of markets and organisations operating locally, nationally and globally, as well as research focused on the concept of the market itself – its historical and philosophical origins - and its role in how we think about and study contemporary social, economic and political phenomena

- Research addresses real-world issues and is supported by world-leading Research Centres of excellence. Areas include SME growth, work and employment, gender inequality, entrepreneurship and economic outcomes in both developed and developing countries

- It combines key academic and user engagement from across sectors to address research challenges at local, national and international levels.