HERIOT WATT UNIVERSITY

UK | DUBAI | MALAYSIA

Local roots. Global reach.

At Heriot-Watt, we understand the importance of collaboration in driving societal and technological progress. Recognised globally for our rigorous academic research, we offer expertise that extends beyond traditional academia, directly empowering policy development and creating positive impacts across industries. Explore how our commitment to research excellence and accessible partnership working makes us a leading choice for organisations seeking to innovate and solve real-world challenges.

Welcome to Heriot-Watt University: Partnering for Shared Progress and Innovation

Excellence in Research

Our robust research programmes cut across various disciplines, impacting both industry needs and global challenges. Our work ranges from sustainable energy innovations to breakthroughs in digital health technologies, consistently earning international acclaim. This high standard of research is a hallmark of not just our main campuses in Scotland, but also across our international campuses in Dubai and Malaysia, enriching our global perspective and output.

Simplifying Collaboration

Contrary to the perception that academia can be challenging to navigate, we strive to make partnership a smooth and rewarding process. We're equipped with clear, streamlined procedures and a dedicated team focused on facilitating collaborations that benefit all parties involved. Whether through established pathways like Graduate Apprenticeships and Knowledge Transfer Partnerships (KTPs) or consultancy and bespoke research projects, we offer practical avenues for engagement that match the pace and scale of industry needs.

A Network of Global Campuses

Our global presence spans five campuses, each a core component of our extensive research and enterprise network. These campuses not only serve as local hubs of expertise but also connect partners to broader international markets and resources. Our regionally located campuses in Orkney and the Scottish Borders are key points of access to our comprehensive capabilities, linking local industries to global opportunities and expertise.

Diverse and Tailored Engagement

We tailor our offerings to meet diverse organisational needs. From developing future leaders through Graduate Apprenticeships to addressing specific technological challenges via Research and Development collaboration, we provide a variety of options to engage with us. Our flexible approach ensures that all partners, regardless of size or sector, can benefit from our research strengths and innovative solutions.

At Heriot-Watt, we're dedicated to delivering research that drives positive impact, fostering a culture of innovation that drives real-world solutions. By partnering with us, you gain more than just access to research excellence; you engage with a proactive and supportive network committed to mutual success and the advancement of shared goals.

"At Heriot-Watt University, we are committed to fostering innovation and driving impactful enterprising research. Our collaborative approach not only accelerates technological advancements but also transforms industries, creating real-world solutions for global challenges."

David Richardson,
Chief Entrepreneurial Executive

Knowledge Transfer Partnerships (KTPs)

KTPs provide an excellent route for businesses to catalyse innovation and operational transformation by leveraging the wealth of knowledge and technical expertise available at universities. Designed to facilitate the development of new manufacturing processes, innovative devices, or transformative business practices, KTPs are perfect for businesses looking to support significant advancements.

KTPs typically last for 12-36 months and cost around £110,000 per annum, with substantial government funding—67% for SMEs, 50% for larger companies, and 75% for charities. During a KTP, an associate from the University works within the business, aligning academic research with practical, business-led applications to solve challenges and integrate new technologies or processes effectively.

KTPs operate on a rolling submission basis every eight weeks, featuring a managed grant process with a 90% success rate, post initial approvals. The application takes about eight weeks and requires approximately 40 hours of your input for a robust proposal that ensures our goals are strategically aligned.

INNOVATION SPOTLIGHT:
Pioneering Whisky Flavour Innovation

This transformative project, undertaken in partnership with the Port of Leith Distillery, redefined Scotch whisky production through groundbreaking yeast experimentation. The initiative, funded by Innovate UK and completed in 2020, was part of a KTP that explored over 20 different yeast strains to enhance the complexity and diversity of whisky flavours.

Victoria Muir-Taylor, a graduate from our International Centre for Brewing and Distilling, led this pioneering research. Her work showcases how we support businesses by applying academic expertise, directly contributing to product differentiation in a competitive market. The project identified several brewing strains of yeast, typically used in beer production, that demonstrated promising potential for enhancing whisky flavour.

The collaboration between academia and industry not only positioned the Port of Leith Distillery as a pioneer in whisky innovation, but also underscored how KTPs can foster innovation and growth within traditional industries by translating cutting-edge research into commercial successes.

The outcomes of this partnership have had a lasting impact on the Scotch whisky sector, encouraging further exploration and adoption of innovative practices that could redefine the standards of whisky production globally.

Accelerated Knowledge Transfer Partnerships (aKTPs)

aKTPs are more condensed and tailored for businesses needing rapid, strategic innovation. These short-term collaborations last just four months and are conducted primarily on campus, providing an intensive burst of academic insight to address specific business challenges.

With a modest financial commitment of £3,500, aKTPs are suitable for SMEs or start-ups that may not have the resources for a full-scale KTP but want to harness academic expertise to drive innovation quickly. Currently in the pilot phase with a competitive acceptance rate of about 30%, they can be a low-risk way to test new ideas or methodologies in a controlled, resource-efficient manner. Upcoming sessions may be themed, allowing businesses to explore niche innovations relevant to their industries.

aKTPs are ideal for addressing specific, urgent challenges or piloting innovative concepts that could lead to larger projects or more permanent strategic shifts. They offer a quick and impactful way to access necessary tools and insights and explore potential improvements or innovations.

To learn more about aKTPs, contact us at GRID@hw.ac.uk

Graduate Apprenticeships

Our fully-funded Graduate Apprenticeships offer a unique combination of academic and work-based learning, creating degree-qualified employees with key skills tailored to your business needs.

Graduate Apprenticeships are an ideal talent solution if you're looking:

- to fill critical skills gaps in your business
- for a cost-effective way to upskill or reskill existing employees
- to develop talent that can make an immediate impact in the workplace
- for a solution to help retain key staff and improve succession planning.

We're currently working with employers across all sectors of the economy, delivering talent solutions.

INNOVATION SPOTLIGHT:
Graduate Apprenticeships in Action

PLEXUS CORP (KELSO)

Plexus is a global electronic manufacturing organisation and employs around 400 people at their Kelso facility. Graduate Apprenticeships allow Plexus to develop early-career employees through learning while working, meaning they get a highly qualified individual with in-depth company knowledge and experience at the end of the programme.

Gail Traynor, Learning and Development Manager at Plexus says:

"We have been employing Graduate Apprentices for the past five years and plan to continue. This programme offers Plexus the opportunity to develop young engineers in a way that matches our business needs. By the time they are qualified we have a competent engineer that understands our culture and values as well as having the technical skills we require."

Fatima Asif is a Continuous Improvement Engineer at Plexus. In 2023, she won Graduate Apprentice of the Year for her excellent progress. After identifying bottlenecks in a shopfloor process, Fatima promoted and deployed a new process for recording process improvement opportunities, which led to significant annual savings of around £100,000.

Now in the final year of her Graduate Apprenticeship, Fatima sums up her journey so far:

"I will be forever grateful for this opportunity and truly believe that this apprenticeship programme has shaped my future in a way nothing else could have. This apprenticeship has provided me with all the skills and confidence to believe that I have what it takes to achieve all my goals."

To find out how we can help develop the talent you need, visit **www.hw.ac.uk/ga** or email ga@hw.ac.uk

iNetZ+: our Global Research Institute for Net Zero

iNetZ+ is a dynamic Global Research Institute spearheaded by Heriot-Watt University. Comprising a diverse team of interdisciplinary researchers, we're pioneering new solutions that will drive us towards a carbon-neutral future.

Through collaborative research with business and industry, iNetZ+ generates new knowledge, insights, and practical solutions to inform policy development, drive technological innovation, and promote digital inclusion and sustainability in the UK and beyond. We welcome partnerships with academia, industry, and government to address the complex challenges and opportunities of the digital age.

By fostering a dynamic environment that bridges academia and real-world application, we cultivate a culture of innovation and excellence. Join us on this groundbreaking venture as we drive positive change and pioneer solutions for a sustainable and net-zero future.

What we will deliver – our key research and development themes:

1. **Transport**: investigating the integration of digital technologies into transport systems, exploring smart mobility solutions, intelligent transportation systems, and transport electrification.
2. **Energy in Buildings**: investigating the role of digital technologies in optimising energy use in buildings, including smart building management systems, energy-efficient design, and renewable energy integration.
3. **Hydrogen Economy**: investigating and applying the potential of hydrogen as a clean and sustainable energy carrier, focusing on production, storage, distribution, and utilisation.
4. **Materials and Circularisation**: championing the application of digital technologies that enable and promote materials circularity and sustainability.
5. **GeoEnergy**: researching the integration of digital technologies into geothermal, oil, and gas energy systems, exploring advanced monitoring and control systems, reservoir modelling, and enhanced recovery techniques.
6. **Nature-based Solutions**: collaborating with nature to tackle key societal challenges.
7. **Business and Finance**: designing groundbreaking models in harmony with social, economic, and political demands – smoothing the path towards a circular economy.
8. **Manufacturing and Industry**: collaborating with industry to digitally map manufacturing processes and help to develop universally applicable solutions.

Collaborate with iNetZ+ and lead the way in net-zero innovations and sustainable technologies. Rreach out at GRID@hw.ac.uk

INNOVATION SPOTLIGHT:
K-Briq – the world's most sustainable brick

K-Briq, a spin-out company from the University as part of iNetZ+, has made significant strides in the construction industry with its innovative approach to sustainable building materials. Their success highlights the importance of collaboration between academia and industry in driving innovation and creating real-world impact.

K-Briq's flagship product is an environmentally friendly, cost-effective building material that offers a sustainable alternative to traditional clay bricks. Made from 90% recycled construction and demolition waste, the K-Briq not only reduces waste going to landfill but also significantly lowers carbon emissions compared to clay bricks.

In 2019, K-Briq won the prestigious Royal Academy of Engineering's Launchpad Competition, which provided the initial boost needed to develop their building material. This success was followed by securing funding in 2021 to further develop their technology. By leveraging expertise and resources through academic partnerships, K-Briq has been able to develop and commercialise their sustainable building material, contributing to the construction industry's efforts to build a more sustainable future.

Our Global Research Institute in Health and Care Technologies

Our forward-thinking Global Research Institute in Health and Care Technologies is dedicated to delivering innovations that address significant global health challenges, enhancing the quality and accessibility of care.

Beyond rigorous research, the Institute is deeply engaged in shaping health policy and practice. Through strategic partnerships with industry, academia, and governments, we translate academic insights into actionable, real-world health solutions, striving for broad societal impact.

We're a simple-to-access nexus for generating innovative ideas and new technologies. We're keen on partnerships that promote technological innovation, facilitate policy development, and ensure health equity globally. Our collaborative research spans several dynamic fields, ensuring a comprehensive approach to modern healthcare challenges.

We're dedicated to merging theoretical research with practical application, creating an ecosystem where innovation thrives. This philosophy not only propels the development of groundbreaking health technologies but also cultivates future leaders in health science and technology.

What we will deliver – our key research and development themes:

1. **Engineering the Fight Against Cancer**: focused on enhancing diagnostics and treatments to improve outcomes for cancer patients.
2. **Prolonging Life Independence in Healthy Ageing**: innovations aimed at extending the health and autonomy of the elderly through advanced, supportive technologies.
3. **Sensing for Chronic Disease Monitoring**: utilising digital technologies to improve the management and understanding of chronic conditions.
4. **Digitising Mental Health**: developing tools and interventions to support mental health, and neuro-degenerative care, particularly in vulnerable populations.
5. **Innovating for One Global Health**: addressing urgent global health threats through innovative health technologies and strategies.

Advance your health and care initiatives by working with our experts at the Health and Care Technology Institute. Contact GRID@hw.ac.uk today.

Empowering businesses through Heriot-Watt Online

Innovate, attract, and retain talent

In today's competitive landscape, businesses need to innovate and attract top talent. Heriot-Watt Online offers flexible programmes that enhance skills development, drive innovation, and improve employee retention.

Our diverse range of online programmes and courses allow employees to pursue further education without compromising work commitments. Our tailored degree programmes fill critical skills gaps, fostering a culture of continuous learning and making your company a desirable place to work.

By addressing the dynamic needs of modern businesses, we help ensure your workforce is equipped with the latest knowledge and skills in areas such as engineering, data science, and leadership. Integrating cutting-edge research with practical applications enhances your company's innovative capacity and positions you as an industry leader.

For more information, visit **www.hw.ac.uk/online** or contact us at online@hw.ac.uk

INNOVATION SPOTLIGHT:
Sustainable Medical Technologies

A standout innovation from the Institute is the development of sustainable lateral flow tests (LFTs) utilising upcycled materials such as discarded chewing gum and old fridge components. Spearheaded by Professor Maïwenn Kersaudy-Kerhoas, this project aims to significantly reduce the environmental impact of medical waste. The research team has produced prototypes that integrate materials such as High Impact Polystyrenes, Limex, Terralene, and Bio-flex, which are more sustainable alternatives to the plastics typically used in LFT production. This initiative not only addresses the pressing issue of medical waste but also aligns with global sustainability goals by reducing dependency on fossil fuels in manufacturing processes.

National Robotarium: Our Global Research Institute Leading Robotics and AI Innovation

The National Robotarium, a cutting-edge hub for robotics and artificial intelligence (AI), is a joint initiative between Heriot-Watt University and the University of Edinburgh. This national centre is a flagship success story from the City Region Deal for Edinburgh & Southeast Scotland, and serves as a beacon of innovation, designed to translate sophisticated robotics research into practical applications across various sectors.

Located on our Edinburgh campus, the Robotarium is the UK's largest and most advanced facility of its kind, symbolising a major leap in applied engineering and AI research.

Our Commitment to Innovation and Industry Collaboration: Committed to fostering a dynamic ecosystem, the Robotarium unifies academia and industry in addressing pressing global challenges. By integrating research with real-world applications, the institute aims to accelerate the development of robotic solutions that are both innovative and socially beneficial.

Strategic Industry Partnerships: A landmark collaboration with Tata Consultancy Services underscores the Robotarium's strategic approach to global industry engagement. This partnership focuses on key areas such as soft robotics, cobotics, teleoperations, and notably, social and geriatric care—fields where the Robotarium has established significant expertise. These initiatives not only advance technological innovation but also aim to address urgent societal needs, enhancing quality of life and care standards.

Partner with the National Robotarium to revolutionise robotics and AI solutions for your industry. Email GRID@hw.ac.uk for collaboration opportunities.

INNOVATION SPOTLIGHT:
Farming Robot Project

The Robotarium recently sponsored an innovative project focusing on the development of farming robots designed to care for crop plants and reduce chemical use. This project aligns with sustainable agricultural practices, showcasing our commitment to environmental sustainability and technological innovation in critical sectors. The robots are engineered to optimise plant care without the extensive use of chemicals, promoting a healthier environment and sustainable farming methods.

The National Robotarium is not just a research facility but a pivotal platform for generating skilled visionaries and delivering substantial societal benefits through high-impact projects. It exemplifies how targeted research combined with strategic partnerships can propel industries forward and foster a new era of technological advancement.

"Our partnerships bridge the gap between academia and industry, providing a dynamic environment where research excellence meets practical application. This synergy not only enhances business capabilities but also paves the way for sustainable and impactful growth."

Professor Gillian Murray
Deputy Principal for Business and Enterprise

Lyell Centre: Our Global Research Institute Pioneering Earth and Marine Sciences Research

The Lyell Centre stands at the forefront of earth and marine sciences, integrating academic research with real-world application. This collaborative hub co-locates the expertise of the University and the British Geological Survey, driving innovation and sustainable solutions in environmental and geological sciences.

Our Vision: Science for a Sustainable Future

Our multidisciplinary team is dedicated to resolving the challenges of natural and human environments. By nurturing a blend of geology, ecology, and marine biology with cutting-edge technology and data analytics, we aim to foster resilience against environmental changes and promote sustainability globally.

Engagement and Impact: Shaping Global Policies

The Lyell Centre excels in bridging the gap between intricate scientific research and impactful policymaking. We actively engage with policymakers, industry leaders, and communities to embed science-driven decisions into practices that safeguard our planet. Our research influences both national and international environmental strategies, ensuring sustainable development.

Research and Development: Innovating for Tomorrow

The Lyell Centre's rich and varied research agenda focuses on pressing global issues:

1. **Climate Change**: our scientists are at the battlefront of climate research, studying the impacts of climate variability on marine and terrestrial ecosystems to devise robust adaptation strategies.
2. **Biodiversity and Ecosystem Health**: we delve into the complexities of biodiversity, exploring the dynamics of ecosystems to promote their health and resilience.
3. **Energy Transition**: committed to supporting the global shift towards renewable energy, our research explores sustainable extraction methods and environmental impacts of energy transitions.
4. **Ocean Systems**: we pioneer research in marine geoscience and biology, enhancing the understanding of oceanic processes that govern climate regulation and biodiversity.
5. **Environmental Contaminants**: our efforts also extend to studying pollution, focusing on mitigating the impact of contaminants in natural and urban environments.
6. **Geotechnical Engineering**: innovating in civil engineering, we enhance infrastructure resilience through advanced geological and material sciences.

Join forces with The Lyell Centre for cutting-edge research in earth and marine sciences. Email GRID@hw.ac.uk to explore partnership options

INNOVATION SPOTLIGHT:
Orkney Fisheries Flourish

Orkney, a pivotal fishing hub, sought to validate the sustainability of its shellfish for entry into high-value markets. Dependent on fishing, Orkney Fisheries Association (OFA) and Orkney Sustainable Fisheries (OSF) aimed to address this challenge and access premium markets, including high-end supermarkets.

Through prior collaboration with OSF, we identified prime fishing areas and conducted vital shellfish species research. This led to the inception of a groundbreaking Fishery Improvement Project (FIP), aligning with Marine Stewardship Council standards. A UK first, the FIP utilised the Council's benchmarking tool. Collaboration with Marks & Spencer, WWF-UK, Crown Estate Scotland, and Orkney Islands Council was pivotal in developing and implementing the FIP.

The project delivered positive impact for all involved; WWF endorsed Orkney's fishery for "Sustainable Practices in place, enabling the marketing of brown crab as a premium product. Heriot-Watt's scientific support augmented the brown crab's market value by £1 million, strengthening ties with retailers, and the domestic market shielded Orkney from Brexit-related seafood export disruptions. Our industry partners at OFA commended this work as an exemplar illustration of how academia and industry, in tandem, can forge a sustainable model that propels economic growth and environmental stewardship.

Embrace Innovation with GRID

We prioritise the seamless integration of innovation and research to address the unique challenges and ambitions of businesses across the world. Our Global Research Innovation and Discovery (GRID) team stands as your dedicated gateway to accessing a wealth of innovative solutions tailored to foster your business growth and competitiveness.

Through GRID, we offer an easily navigable path to partnership, ensuring that your journey with us is as straightforward and beneficial as possible. Our commitment to simplifying collaboration is matched only by our dedication to providing customised engagement, designed to meet your specific needs. Whether you're seeking to innovate processes, products, or business models, GRID is your partner in transformation, offering direct access to groundbreaking research and a supportive, agile environment.

Partner with Us for Tailored Innovation

If you're looking for a partner that's easy to work with and can offer customised solutions to your innovation challenges, look no further. Contact the GRID team today to discover how we can help drive your business forward:
Email: GRID@hw.ac.uk

Together, we shape the future

Visit **www.hw.ac.uk/uk/business-enterprise**
or scan the QR code to find out more