



Universities



Welcome to the West Midlands. The heart of the UK. The home of industry. The place to make your mark.

The West Midlands is undergoing a transformation. The birthplace of the industrial revolution is powering forward. Increased investment, strong growth and infrastructure improvements are driving the economy. And at the same time, our region is enjoying yet another cultural renaissance.

With a rich heritage of business and intellectual leadership, the West Midlands is home to three thriving cities: Birmingham, Coventry and Wolverhampton. Our region is flourishing as our economy expands, with a GVA growth rate of 15% over the last five years. The West Midlands' success is helping to drive forward the United Kingdom's growth.

The strength of the West Midlands is its diversity. It's home to the UK's youngest population and to leaders in the finance, health and life sciences, digital, automotive and aerospace sectors. No surprise, therefore, that international firms such as HSBC, Deutsche Bank and PwC have also made their home in the West Midlands.

Our success story has an impact across the globe. Exports have increased by 26% over the last 3 years, and the West Midlands now has more Foreign Direct Investment projects than Israel, Norway or Greece. In fact, no other part of the UK outside London has created more jobs from international investment.

The next chapter in our story is just beginning.

Follow us

@wmgrowth wmgrowth.com

Our population is predicted to grow by half a million over the next 20 years. To meet this new demand, major housing investment will deliver 215,000 new homes by 2031.

Our region has 2 million square feet of prime office space under development, and £3 billion in long-term infrastructure investment is transforming local and national transport connections. When HS2 arrives in 2026, travel times to London will be reduced to only 45 minutes.

Join us and make your mark.



13,500 life sciences companies and 6,700 medical graduates from our universities each year.



The heart of the UK's transport network, shaping the future of sustainable and intelligent travel.



World class university-led research in heating and cooling systems, fuel cell and battery technology.



13,900 tech companies supported by local universities at cutting-edge of AI and VR research.



Universities in the West Midlands

An internationally recognised academic community, world class research institutions, and boundless talent. The West Midlands' universities accelerate discovery, innovation and technological development.

For centuries, the West Midlands has helped drive Britain forward and shape the world. It has always been an engine of growth and a catalyst for change, a magnet for inquisitive minds and commercial innovators. And as we move forward with ever increasing pace, our universities provide the acceleration.

West Midlands universities educate 150,000 students and produce more than 50,000 graduates each year. Working closely with business and industry, their individual research and innovation specialisms combine to secure our region's economic future.

Rooted in the West Midlands, their impact is global. Our universities are at the forefront of positive change: improving health, driving transport forward, storing energy, improving construction, advancing manufacturing, enabling entrepreneurs and making people's lives better.

Each university makes a vital contribution, offering leadership and game-changing innovation in specialist fields. Our universities are researching, designing and building new business opportunities that drive the West Midlands forward. Engaging with universities in the West Midlands gives business the opportunity to:

- Access the latest in sector innovation and thought-leadership
- Solve real-world problems with up-to-date academic expertise
- Bring products to market in a reduced-risk environment
- Benefit from tailored support and growth advice
- Be part of a supportive and entrepreneurial network that connects research with application across business sectors.

The West Midlands' universities are at the forefront of positive change.





Aerospace

A long tradition of precision engineering excellence has made the West Midlands the natural home for the aerospace sector. Industry leaders including Meggitt, Moog, Rolls-Royce and Collins Aerospace all have important centres here. Universities in the region work in close partnership with key organisations throughout the sector supply chain.



Efficiency and safety in aerospace are West Midlands specialities. Working together with industry, universities across the region are developing new ways to reduce cost, improve performance and limit the sector's environmental impact.

Keep it light

Engineering expertise developed at universities in the West Midlands allows companies to achieve cost and fuel savings by reducing weight in aerospace applications. Our universities explore innovative design and manufacturing techniques and assess the potential of new materials such as magnesium to enable the sector to respond effectively to the low-carbon agenda.

Rapid prototyping

The industry benefits from close collaboration with university research into rapid, low-risk prototyping. Alongside Additive Layer Manufacturing (3D printing), emerging virtual and augmented reality techniques are also in development at our universities. These new developments enable fast testing in a cost-effective "virtual factory" of research labs and imaging suites.

The human factor

The sector also calls upon university expertise in human-systems integration. This work, delivered in partnership with leading companies, is guiding the design of future flight-decks and improving monitoring and training systems. Advanced information processing and pattern analysis techniques developed by universities improve monitoring of human performance and modelling of faults in complex systems.

More than 15,000 people study technology and engineering-related subjects at West Midlands universities each year. Aerospace companies can rely on their skills and expertise to accelerate their businesses.



Key University Centres

Aston University

Institute of Photonic Technologies

Aston University has been innovating in optical sensing systems for 20 years, delivering practical solutions for the aerospace sector, such as advising on the application and utilisation of Fibre Bragg gratings to next generation composite wing and fuselage structures.

[Website](#)

Birmingham City University

Institute of Sustainable Futures

iSF connects organisations with BCU's specialists to help them find solutions to business or societal challenges. Current projects include UAV (unmanned aerial vehicle) testing in densely populated and built up city environments.

[Website](#)

Magnesium Innovation Group

A strategic alliance with Meridian Lightweight Technologies UK, the world's largest producer of magnesium high pressure die-cast components. The group's work makes it easier to develop lightweight, low-volume magnesium components for use in the aerospace and automotive sectors.

[Website](#)

University of Birmingham

Advanced Materials Engineering

Projects developed here in partnership with groups such as BAE Systems, Rolls-Royce and the European Space Agency are creating the ability to 'print' complex items such as engine components in their finished state.

[Website](#)

Coventry University

Engineering, Environment and Computing

Using multi-simulation facilities at the High-Performance Engineering Centre, the EEC team delivers large-scale research into next generation flight deck technologies with BAE Systems, General Electric, Rolls Royce and DLR. Complementary work in the Human Systems Integration Group adopts a systemic approach to the implementation of human factors in the aviation industry.

[Website](#)

University of Warwick

Lightweight Technologies Centre of Excellence

This centre of Excellence designs and manufactures the next generation of transportation lightweighting solutions. The lightweight materials deliver fuel efficiency and reduce carbon emissions.

[Website](#)

University of Wolverhampton

Centre for Engineering Innovation and Research

A focal point for new engineering and materials technology. Research groups are involved in optimising materials for aerospace applications and developing 3D printing techniques for metals.

[Website](#)



Automotive & Transport Technologies

The West Midlands is a world leader in transport technologies. There are more than 500 specialist automotive firms in our region, employing close to 47,000 people in vehicle manufacturing and around 126,000 in the wider advanced engineering sector.

More than a third of all UK automotive sector employment is concentrated in the wider West Midlands. Internationally recognised brands such as Jaguar Land Rover and Aston Martin thrive here in partnership with our universities.

On track

Adopting innovation and embracing new ideas are also key to the success of the rail industry in the West Midlands. Universities, business and government are working together to develop advanced control systems using digital solutions to solve problems in traffic and capacity management on the railways.



Carbon reduction

In response to calls for reduced carbon emissions, universities in the West Midlands are working with the transport sector to refine energy storage and e-drive solutions for electric vehicles. In addition, scientists and technologists are developing new materials and techniques to reduce weight in transport applications.

The focus in the region is on carbon reduction science that is ready for industry. Longstanding links between the transport technologies sector and higher education institutions ensure that research breakthroughs are achieved in partnership and new ideas are developed quickly into practical applications.

21st century driving

A new era in transport is fast approaching. Alongside developments in low-carbon technology, universities in the West Midlands are helping businesses address the challenges of autonomous vehicle design and testing.

Improving the competence of autonomous vehicles and developing secure connected vehicle systems will transform the way we travel in the near future. University expertise combined with a commercial mindset and entrepreneurial spirit are opening doors to new transport opportunities.

Key University Centres

Aston University

Aston Logistics and Systems Institute

ALSI has an extensive range of expertise in supply chain and logistics and is helping businesses with supply chain design and integration, ICT and analytics and sustainable supply chain management.

[Website](#)

European Bioenergy Research Institute

EBRI leads the development of the next generation of electric vehicle charging infrastructure which allows power to flow both from grid to vehicle and from vehicle to grid.

[Website](#)

Birmingham City University

Institute for Sustainable Futures

iSF develops state-of-the-art driverless cars to cut congestion, reduce emissions and improve transport access for people that are blind, visually impaired or have problems with mobility.

[Website](#)

Coventry University

Institute for Advanced Manufacturing and Engineering

Collaboration between Coventry University and Unipart Manufacturing Group. This “faculty on the factory floor” brings together the best in academia, industry and R&D in a “live” manufacturing environment. Learning and research is carried out at AME’s 1700 sq ft manufacturing hub, housing state-of-the-art robotic automation, forming, joining, analysis and simulation, metrology and product verification technology.

[Website](#)

National Transport Design Centre

The NTDC investigates influences on future vehicle design to create safe and sustainable transport solutions for the cities of the future. The centre houses equipment such as precision CNC milling machines for scale model creation; a range of 3D printing technologies; large bed graphics printers and structured white-light 3D scanning for reverse engineering.

[Website](#)

Centre for Connected Autonomous Automotive Research

CCAAR is a joint initiative of Coventry University and HORIBA MIRA, a world-leader in vehicle engineering, research and product testing. It develops and tests the latest intelligent connected vehicle technology and is located at the HORIBA MIRA headquarters in Nuneaton.

[Website](#)

School of Art & Design

The largest and longest established automotive & transport design programme in the UK. It collaborates with most major international automotive manufacturers and its alumni are employed in design studios around the world.

[Website](#)

University of Birmingham

Vehicle Technology Research Centre

The centre develops new combustion and energy conversion technologies, along with alternative fuels, as a means to create clean, efficient and sustainable power sources.

[Website](#)

Birmingham Centre for Railway Research and Education

BCRRE is Europe’s largest rail research group, working in partnership with international companies such as Siemens and Bombardier to develop new aerodynamic models, power and traction systems, condition monitoring and environmental and geotechnical engineering.

[Website](#)

University of Warwick

WMG

WMG specialises in mechanical and electrical engineering, new materials, 3D X-ray analysis and design. Its wide range of industry partnerships develops hybrid vehicles and manufactures low-carbon and battery technologies.

[Website](#)

National Automotive Innovation Centre

NAIC is a partnership between WMG at the University of Warwick, Jaguar Land Rover, and Tata Motors UK. It is the largest research centre of its kind in Europe, with 33,000m2 dedicated to automotive innovation. The centre’s work is focused on the long-term challenges outlined by the UK Automotive Council, including electric vehicles, carbon reduction and smart and connected cars.

[Website](#)

Advanced Propulsion Centre UK

A central hub to provide the UK automotive industry with resources and facilities to develop advanced propulsion systems and supply chains.

[Website](#)

University of Wolverhampton

Centre for Engineering Innovation and Research

The centre conducts leading research into the design and development of lightweight materials for automotive applications. Its work includes materials development, energy storage and research into advanced manufacturing engineering.

[Website](#)

Key University Centres

Aston University and University of Warwick

Enterprise Research Centre

A joint initiative of Aston and Warwick Business Schools, the Enterprise Research Centre is the UK's leading centre of excellence for research into the growth, innovation and productivity of SMEs.

[Website](#)

Aston University

Advanced Services Group

A centre of excellence at Aston Business School, the Advanced Services Group supports manufacturing and technology-innovating SMEs as they explore new business models, revenue models and contract models as part of their servitization journey and advanced services transformation.

[Website](#)

Aston Centre for Growth

Aston University has held the Small Business Charter since 2014. At the Centre for Growth, SMEs are supported with investment-ready pitching competitions and on high profile programmes such as Goldman Sachs *10,000 Small Businesses*.

[Website](#)

Aston Degree Apprenticeships

Aston pioneered degree apprenticeships in the UK. Designed specifically to fill skills gaps, degree apprenticeships can upskill existing staff and nurture new talent that brings fresh ideas to business and industry.

[Website](#)

Birmingham City University

Centre for Enterprise, Innovation and Growth

A practical research centre dedicated to developing a stronger understanding of the foundations and process of growth in firms, particularly SMEs.

[Website](#)

Coventry University

Trading Floor Training

Coventry Business School has the largest academic trading floor of its kind in Europe. The trading floor gives students real-world experience and the opportunity to obtain Bloomberg and Thomson Reuters certifications.

[Website](#)

STEAMhouse

Free workshops and events allow organisations to share and develop ideas with experts from many different backgrounds. Members can access co-working, co-making spaces, equipment and grants to bring ideas to life. In addition, advice from industry experts and practical business support, STEAMhouse enables businesses to collaborate in the generation of new thinking.

[Website](#)

International Centre for Transformational Entrepreneurship

The Centre investigates sustainable socio-economic transformation through systemic approaches to entrepreneurship in communities nationally and internationally.

[Website](#)

University of Birmingham

Centre for Women's Enterprise, Leadership, Economy & Diversity

WE-LEAD blends research with contemporary business understanding and engages with policy makers and businesses to answer important questions about female enterprise.

[Website](#)

Lloyds Banking Group Centre for Responsible Business

Located within Birmingham Business School, and funded by the Lloyds Banking Group, this strategic initiative champions responsible business. It develops new sustainable business models which deliver positive social, environmental and economic impact.

[Website](#)

University of Warwick

Innovation, Knowledge & Organisational Networks

Established in 1997, the IKON unit at Warwick Business School studies the interactions between innovation, knowledge and networks. Its work with organisations such as the UK National Health Service helps the public and private sectors innovate by exploiting knowledge.

[Website](#)

University of Wolverhampton

Management Research Centre

The Management Research Centre concentrates research on labour processes and employment relations, labour market economics and human resource development.

[Website](#)

BPFS



Business, Professional and Financial Services

The West Midlands is the largest regional BPFS hub in the UK. With world-renowned business schools and innovative programmes that support sustainable SME growth, our universities are driving forward a sector that contributes more than £24 billion GVA to the West Midlands economy.

The BPFS sector provides employment for around 350,000 people in the West Midlands. The region is emerging as a global BPFS hub, with firms such as HSBC, KPMG, PwC and Deutsche Bank expanding their presence here. Our universities train more business students than any other part of the UK outside London, and their joint initiatives with leading companies advance our understanding of business growth and leadership.

Nurturing acorns

Universities in the West Midlands are partnering with international consultancies and SMEs to develop new ways for smaller companies to achieve growth. SME support from universities and global leaders such as Goldman Sachs is key to enabling new and established businesses to unlock their potential and create wealth in our region.

Responsible and Resilient Business

Our universities play a leading role in the development of intelligent and ethical business practices. Multi-disciplinary work spanning finance, economics and engineering is helping businesses and policymakers understand and address the complex factors that contribute to financial crises.

As society's expectations of business evolve, researchers in the West Midlands are also working with global and national leadership teams to identify new opportunities for ethical business.

Leadership

Universities engage with business, government and the third sector to advance the art of leadership and deliver training and development solutions. Triple-accredited (AMBA, EQUIS and AACSB) business schools in the West Midlands are part of an elite group of global institutions translating academic research into operational business practice.

Diversity in business and leadership are also increasingly at the forefront of public debate and our universities are helping to lead the discussion.

Tomorrow's specialists

More than 34,000 people study business-related subjects in the region each year. Around 16,000 FinTech students graduate from our universities annually, each equipped with the new skills the industry demands. As a result, there are now more than 2,000 FinTech companies operating in the West Midlands.



Creative Industries

There are almost 10,000 creative enterprises in the West Midlands. A concentration of talent that contributes more than £4 billion in GVA and sustains a robust, world-class arts and creative scene across the region.

The West Midlands is also home to a substantial advertising, marketing and design sector, including web, product and fashion design, PR and marketing data analysis.

New platform and content creation techniques are developing across the West Midlands. Merging advanced technology with creative vision, companies in the region are bringing new immersive experiences to gaming and on-screen media.

Universities in the West Midlands nurture outstanding creative talent. 10% of the UK gaming industry is located in the West Midlands, and more than 11,000 students study creative or media related subjects each year.

Creative Gaming

The West Midlands is home to a globally significant cluster of more than 40 gaming companies. "Silicon Spa" has a 30-year history in game development and hosts key industry names including Codemasters, SEGA and Ubisoft.

Supporting the industry, universities across the West Midlands are at the cutting-edge of artificial intelligence and virtual reality research.

Backstage

Universities in the West Midlands have an enviable track record in media education and training, ensuring that our region's creative industries have ready access to the next generation of technical specialists. Film and TV crews, sound engineers, designers, directors and producers all learn their trade in the West Midlands.

World Stage

The West Midlands is home to the Royal Birmingham Conservatoire, a world-class institution providing exceptional training for the musicians, actors, stage managers and performers of the future. The Conservatoire attracts the best and brightest students to the West Midlands, along with internationally renowned performers and teachers.

10% of the UK gaming industry is located in the West Midlands, and more than 11,000 students study creative or media related subjects each year.

Key University Centres

Aston University

Systems Analytics Research Institute

Experts in SARI are supporting the sector across a range of areas including user experience evaluation, 3D modelling, motion capture and audience augmentation. Aston University's talented Product Design and Engineering students showcase their work each year at the Aston Inspired design show.

[Website](#)

Birmingham City University

Royal Birmingham Conservatoire

The Royal Birmingham Conservatoire is an internationally respected institution renowned for producing high-calibre musicians, actors and theatre professionals. The Conservatoire works directly with industry to ensure students become successful and employable.

[Website](#)

Birmingham School of Media

The School of Media is centre of excellence, providing educating and supporting the development of professional skills for multimedia creative production industries.

[Website](#)

Coventry University

Centre for Dance Research

Using breakthrough technologies, including advanced motion capture systems and life-size holograms, this research centre is transforming dance learning and documenting dance heritage.

[Website](#)

School of Media and Performing Arts

Nurturing talent and honing professional skills in dance, theatre, music technology, media and communications, digital media, journalism, media production and photography. The School maintains close links with artistic employers and organisations in the West Midlands, nationally and internationally and leads the Coventry Dance HUB Project.

[Website](#)

The Hyper-studio

A radical and innovative approach to disciplinary projects in the arts and creative industries. The initiative links traditional practice, emergent media technologies, creative practitioners, scientists and industry in the delivery of a programme of challenge-based projects. The hyper-studio will become a physical and virtual space in the Faculty of Art and Humanities redevelopment project in 2020.

[Website](#)

School of Art & Design

The School leads national and international research projects looking at health, lifestyle and leading the conversations about the arts.

[Website](#)

Centre for Post-Digital Cultures

The Centre explores cross-disciplinary and creative approaches to open and disruptive media, the posthuman, the posthumanities, the Anthropocene and the Capitalocene to help 21st century society respond to the challenges they face in relation to 'the digital' at a global, national and local level research has been funded by Jisc, the National Lottery Fund, the EU, and the Arts and Humanities Research Council.

[Website](#)

University of Birmingham

Centre for Contemporary Literature and Culture

A home for studies in literature, film, TV and popular culture. The Centre maintains strong connections with artists, venues, production companies and other research institutions.

[Website](#)

The Shakespeare Institute

Located in Stratford-upon-Avon, the Shakespeare Institute has been a beacon for international scholarship since its foundation in 1951. It also collaborates closely with the Royal Shakespeare Company's artists and practitioners.

[Website](#)

University of Warwick

Centre for Cultural and Media Policy Studies

The centre extends and defines the field of cultural policy research, focusing on evaluation and impact studies and Creative Industries policy.

[Website](#)

University of Wolverhampton

University of Wolverhampton Science Park

Home to a cluster of companies from the creative and digital media sector. Its SPARK business incubation centre supports and nurtures new and young businesses in the Creative Industries sector.

[Website](#)

Wolverhampton School of Art and Media

Building on a heritage that stretches back to the Great Exhibition of 1851, the School maintains close links with the creative industries sector and with practicing artists and makers across the West Midlands.

[Website](#)



Gaming & AI

University expertise in gaming and artificial intelligence is leading the West Midlands economy into the third decade of the 21st Century and Industry 4.0. More than 11% of the UK's games workforce is based in the West Midlands, and universities in the region produce more than 1,800 Computer Science graduates each year.

Serious Games

The West Midlands' gaming cluster is supported by university initiatives such as Gamer Camp from Birmingham City University. Recognised by the UK Interactive Entertainment Association for its meaningful business engagement, Gamer Camp kick-starts careers through intensive, industry-backed undergraduate and higher degree courses.

Universities in the West Midlands are also accelerating developments in the fields of simulation and modelling. These developments provide solutions to business that transform planning and training, allowing major event organisers, for example, to model security incidents as they train their staff.

Human-Machine Interaction

Our universities are working with partners to develop a new understanding of the opportunities technology can offer. Practical developments include digital manufacturing techniques, touch-table interaction with cultural heritage and mobile learning solutions. Using cutting-edge machine learning techniques, researchers and clinicians are also teaching robots to recognise and react to human emotions. Applications include elder and paediatric healthcare and education.

Making Sense of Big Data

Universities in the West Midlands are working in partnership with businesses to identify needs and develop new intelligent algorithms that ask the right questions of big data. Smaller businesses often find it difficult to exploit the latest developments in this field, but initiatives such as Aston University's Think Beyond Data project give SMEs access to some of the most advanced data-processing techniques in the world.

Keeping us safe

Digital security and privacy are growing global concerns. Universities in the West Midlands are working closely with industry and with government to advance our understanding of the ever-changing world of cyber security. The West Midlands is recognised by the UK Government as a centre of excellence for research and development in cyber security.

“The Midlands is literally the heart of game development in the UK.”

Louise O'Connor, Executive Producer at Rare

Key University Centres

Aston University

Aston Lab for Intelligent Collectives Engineering (ALICE)
ALICE research expertise includes various forms of intelligent, social and collective computing systems: multi-agent systems, evolutionary computation, swarm intelligence, artificial social agents, machine learning, self-adaptive, self-organising and self-aware systems. ALICE's work is being applied to a wide range of domains including sensor networks, swarm robotics, computer-generated art, decision support systems, economic modelling, healthcare, smart manufacturing, and intelligent virtual agents.

[Website](#)

Birmingham City University

Digital Media Technology Lab
The Lab develops new applications in mixed, augmented and virtual reality. It works with some of the world's leading international companies to develop novel solutions for remote demonstration of medical procedures, eye-gaze computer interaction for disabled users and on-set pre-visualisation of effects for the film industry.

[Website](#)

Coventry University

Disruptive Media Learning Lab
The Lab bring together world-leading experts in research, innovation, game-based learning, serious games and gamification. Responding to the disruption of connected media technologies, the lab develops radically new approaches to teaching and learning. It provides the support, expertise and resources needed to enable projects to experiment with pedagogies, business models and technologies.

[Website](#)

University of Birmingham

Academic Centre of Excellence in Cyber Security Research
A national scheme jointly supported by the UK Government and the Research Councils' Global Uncertainties Programme. The group continuously researches the impact on national resilience of cyber threats to financial services, electronic voting and personal privacy.

[Website](#)

Human Interface Technology

The University of Birmingham's Human Interface Technology team works with the Royal Defence Medical College, a centre of excellence for defence medical research, to implement augmented and virtual reality solutions to help personnel train for battlefield incidents.

[Website](#)

University of Warwick

Centre for Applied Artificial Intelligence
A development centre for new technologies in machine learning and large-scale data analysis. It provides solutions to pressing problems in sectors including transport, healthcare, and cyber security.

[Website](#)

University of Wolverhampton

Wolverhampton Cyber Research Institute
The Institute works in collaboration with academic, industry and government partners on all aspects of security and privacy. Its focus is on security for critical national infrastructure. It develops new techniques to secure healthcare applications, autonomous transport communications and infrastructure such as power and water networks.

[Website](#)

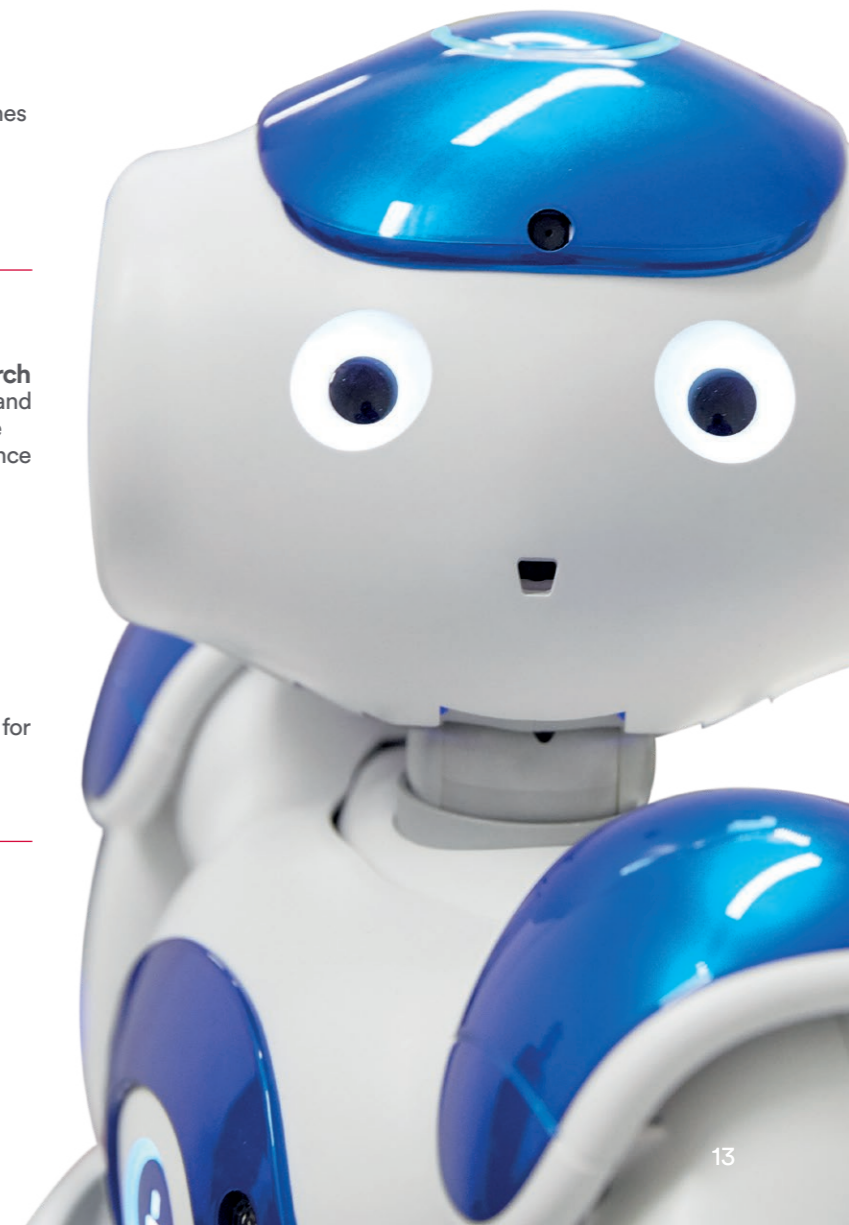
Smart Homes

In partnership with Wolverhampton Homes and Mr. Electric, the UK's leading electrical franchise brand, the University of Wolverhampton is developing smart heating systems to help homeowners reduce their energy consumption.

[Website](#)

Institute of Coding

Universities across the West Midlands are partners in the UK Government IoC initiative to develop the next generation of digital specialists.



Health & Life Sciences

With state-of-the-art clinical facilities, a diverse population and pioneering partnerships between academics and clinicians, the West Midlands is at the cutting edge of medical technology and global healthcare.

There are 13,000 health and life sciences companies in the West Midlands, a testament to the region's strength in the sector. Businesses and clinicians are attracted here by the ideal landscape for clinical trials, a strong talent pool and world-class university medical facilities.



Key University Centres

Aston University

Aston Brain Centre

A specialist centre focusing on epilepsy, dyslexia, autism, ADHD and sleeping disorders. Its mission is to develop translational applications of fundamental neurophysiological research to clinical service provision.

[Website](#)

Aston Medical Research Institute

Part of Aston Medical School, the Medical Research Unit develops new clinical solutions to life-threatening cardiovascular and maternal health conditions, and is undertaking important research into the biomanufacturing of advanced cell and gene therapies

[Website](#)

Ophthalmic Research Group

Optometrists, ophthalmologists and biomedical engineers work together in an integrated research group to advance understanding of preservation and restoration of sight.

[Website](#)

Birmingham City University

School of Life Sciences

The Birmingham City University School of Life Sciences is the West Midlands' largest provider of qualified health and social care professionals.

[Website](#)

Coventry University

Centre for Sport, Exercise and Life Sciences

CSELS applies biological and exercise-related sciences to improve diagnosis and prevention of disease. Four specialist areas within the centre advance knowledge in the fields of sport and human performance, physical activity and exercise interventions, health and mechanisms of disease and functional genomics.

[Website](#)

Centre for Advances in Behavioural Science

A research centre focused on the development and evaluation of theoretically-rooted, evidence-based psychological interventions.

[Website](#)

School of Nursing, Midwifery and Health

The School delivers undergraduate, post graduate and doctoral courses for a range of health professions including nursing, midwifery, physiotherapy, occupational therapy, dietetics, paramedic science and operating department practice.

[Website](#)

The Alison Gingell Building.

A new five storey building that includes a simulated house, an ambulance cab, an operating theatre, a ward and various laboratories. Designed to give students a real-life experience in paramedic intervention, nursing, occupational therapy and other health related studies without compromising patient safety.

[Website](#)

University of Birmingham

Centre for Human Brain Health

A specialist facility dedicated to improving understanding of what makes a brain healthy, and how to prevent and reverse damage. It develops new and non-invasive neuroimaging methods and investigates early intervention into mental disorders.

[Website](#)

Healthcare Technologies Institute

The Institute brings together leading experts to advance new technologies and treatments that encourage better tissue healing and rehabilitation.

[Website](#)

Henry Wellcome Centre for Biomolecular NMR

A global network of researchers developing actionable insights into the molecular basis of human health, cancer progression and infectious diseases.

[Website](#)

Institute of Translational Medicine

Scientists, researchers, clinicians and industry partners work together at the Institute to turn medical science into innovative patient and healthcare system applications.

[Website](#)

University of Warwick

Institute of Digital Healthcare

Working closely with industry and the UK's National Health Service across disciplinary boundaries, the Institute's objective is to improve the quality, safety, accessibility and productivity of healthcare. It supports the implementation of digital solutions for the public, patients and professionals.

[Website](#)

University of Wolverhampton

Research Institute in Healthcare Science

Interdisciplinary research at the Institute explores opportunities for advancement in the understanding of cancer, diabetes, molecular medicine and pharmacology amongst other fields.

[Website](#)

Tried and tested

The West Midlands has a large, ethnically diverse and non-transient regional population of more than six million people, offering the perfect landscape for delivering clinical trials. This has long been recognised by the UK National Health Service and by international life sciences partners - many of which have important centres linked to West Midlands universities.

The West Midlands has one of largest clinical trial portfolios in Europe. It offers immediate access to both state-of-the-art facilities for experimental medicine and world-leading academic expertise, enabling new treatments to move efficiently from trial to the dispensary.

Expert workforce

Almost 4,000 students study medicine in the West Midlands each year, and around 20,000 study related subjects. Training for clinicians, scientists and associated practitioners is a key component of the West Midlands universities' contribution to the strength of the sector.

New business

Our universities are also supporting business growth in the health and life sciences sector. Initiatives developed in the West Midlands provide a strong offer to biopharma and MedTech innovators seeking rapid and cost-effective commercialisation of new discoveries. MD-TEC - an initiative led by University Hospitals Birmingham in partnership with the University of Birmingham and Aston University - helps SMEs bring products to market quickly, at lower cost and with reduced risk.

Translational medicine

In order to ease progress from laboratory discovery to improved and personalised patient care, universities in the West Midlands are increasingly focused on translational medicine. The world-renowned Institute of Translational Medicine is a pioneer in this field, with bioinformatics and precision medicine at its core.



Low Carbon Technologies

Low Carbon Technologies

The birthplace of the first industrial revolution is now a hotbed of innovation in a new, low carbon revolution.

World-class university-led research is accelerating low carbon technology development in the West Midlands. Almost 9,000 West Midlands companies are active in the low carbon Technologies sector, specialising in heating and cooling systems, fuel cells and batteries. West Midlands university research excellence and industry expertise work hand-in-hand to tackle some of the biggest energy challenges facing the UK.

Energy storage

Some of the most innovative and practical energy storage solutions in the world are in development in the West Midlands today. In partnership with industry, universities are developing new battery materials and chemistries that enable electric vehicles to travel faster and further.

There has been a surge in demand for electric vehicles in recent years. In the UK alone, new registrations of plug-in cars increased from 3,500 in 2013 to more than 166,000 by August 2018. Over the next five years, WMG will develop the manufacturing systems needed to meet this demand at its UK Battery Industrialisation Centre.

This new technology is not just for travel and transport. Efficient energy storage also helps homes and businesses use green energy generated on-site more effectively. Technology is evolving in the West Midlands to enable energy stored at home or in vehicles to be returned to the grid.

Energy from waste

Alongside efficient storage, generating clean energy is also essential to a low carbon future. Universities in the West Midlands are developing new ways to generate energy from a wide range of waste and bio-products, working directly with businesses to help them implement cost-saving solutions.

Accelerating industry and business in the West Midlands – sustainably.

The low carbon technologies sector is thriving in the West Midlands. More than 63,000 people work in the sector, and our universities train around 15,000 engineers and technologists each year. R&D is creating new opportunities for responsible and sustainable business development.

Key University Centres

Aston University

The European Bioenergy Research Institute

EBRI provides practical solutions to help companies and local authorities in the UK, Europe and beyond explore the growing bioenergy market.

[Website](#)

Birmingham City University

Powertrain Test and Development Facility

A unique, independent auto-industry research facility catering for hybrid-engine research and the exploration of cleaner burning fuels and bio-fuels.

[Website](#)

Coventry University

Institute for Future Transport and Cities

The institute brings together expertise in disciplines across art and design, human factors, engineering, manufacturing, computer systems and business studies to deliver a vision of safe and sustainable transport solutions fit for the cities of the future. It works across three core themes of training, skills development and research to demonstrate and commercialise new technologies to deliver impact and business growth.

[Website](#)

Centre for Advanced Low Carbon Propulsion Systems (C-ALPS)

A new advanced testing and research facility for the transport industry. The new £50m centre creates cleaner mobility solutions for the global transport sector. With a limited number of test beds available for manufacturers to utilise in the UK, C-ALPS will drive research into low carbon transport propulsion solutions and associated development methods and tool chains.

[Website](#)

University of Birmingham

Birmingham Energy Institute

The Institute is dedicated to changing the way we deliver, consume and think about energy. A focal point for the University and its national partners, it combines expertise in the fundamental sciences with engineering and business experience to create technology and inform public policy.

[Website](#)

University of Warwick

Energy Innovation Centre

The Energy Innovation Centre is a national facility for battery research across the R&D process - from materials and electrochemistry through to application integration and recycling.

[Website](#)

University of Wolverhampton

Brownfield Research & Innovation Centre

In partnership with local government and business, the University of Wolverhampton has brought together public and private sector stakeholders to develop cost effective and sustainable solutions to brownfield development.

[Website](#)

Built Environment Climate Change Innovation

The team promotes sustainable economic opportunities and growth by working with SMEs to develop innovative climate change solutions within the built environment.

[Website](#)

Almost 9,000 West Midlands companies are active in the low carbon technologies sector.



Materials

Materials underpin the history of industrial and advanced manufacturing excellence in the West Midlands. Today, university innovation is powering the development of a new generation of Materials sector technology and helping new industries make their mark.

The West Midlands is home to the largest concentration of materials-related employment in the UK. The region's expertise feeds into the supply chain of major industries, especially in the Automotive, Aerospace and Rail sectors. Working in close partnership with industry, universities in the West Midlands are ensuring that our materials expertise will always be fit for the future.

A low carbon future

Materials research and development in the West Midlands leads the way in helping the transport sector reduce its carbon emissions. Lightweight technologies developed at our universities deliver fuel savings in automotive and aerospace applications. Innovative use of materials such as magnesium, pioneered in the West Midlands, aims to reduce global transport's impact on the environment.

Supply and demand

West Midlands university know-how is identifying alternative sources for the scarce elements behind solar, wind and fuel cell technologies. New science and recycling techniques help safeguard industries against shortages of these critical materials as demand increases.

New materials

Our universities investigate new materials, assess their suitability for processing and develop engineering solutions that are ready for the factory floor. SMEs across the West Midlands are supported as they seek to adopt resource-efficient materials processing techniques.

With almost 20,000 students studying engineering, technology and the physical sciences each year, businesses in the West Midlands and beyond have access to the talent that will help them grow.

Birmingham has the largest concentration of materials related jobs of any regional city.

Key University Centres

Aston University

Aston Institute of Materials Research

Research and development at the Institute includes carbon fibres, ceramics, glasses, nano-diamonds, nanotubes, polymers and thin films for real-world applications.

[Website](#)

High Temperature Research Centre

A partnership with Rolls-Royce, the centre develops advanced manufacturing technologies for high temperature materials. Using production-scale experimentation, it delivers rapid innovation in design and manufacturing techniques for the aerospace sector and related industries.

[Website](#)

Birmingham City University

Centre for Advanced Manufacturing and Materials

Specialises in creating practical engineering solutions through the application of materials-led design thinking and analysis.

[Website](#)

Birmingham Centre for Strategic Elements & Critical Materials

The centre develops new scientific and technological solutions to address the challenges posed by supply constraints on scarce and industrially valuable materials.

[Website](#)

Institute of Sustainable Futures

The Magnesium Innovation Group develops innovative uses for magnesium which deliver fuel efficiency through weight savings. The group's work is an exclusive partnership with Meridian Lightweight Technologies, the world's largest producer of magnesium components.

[Website](#)

University of Warwick

High Value Manufacturing Catapult

A technology and innovation centre based at WMG. It accelerates R&D into commercial success, collaborating with transport sector partners to exploit emerging lightweight technologies.

[Website](#)

Coventry University

Institute for Advanced Manufacturing and Engineering

Established in partnership with Unipart Manufacturing Group, the Institute combines academic excellence with industry expertise to create a 'live' manufacturing environment ideally suited to advanced R&D and training. The Institute houses the Centre for Manufacturing and Materials Engineering which deals with a wide range of expertise: Functional Materials, Metrology, Welding & Joining, Magnetohydrodynamics and electromagnetic processing of materials (MHD), Materials, Mechanics and Measurement, Collaborative and Sustainable Manufacturing, and Materials Engineering and Structural Integrity.

[Website](#)

Lightweight Technologies Centre of Excellence

A centre of excellence which develops and proves manufacturing processes that can be used to produce lightweight, robust and reliable structures for practical application.

[Website](#)

University of Wolverhampton

Environmental Technologies and Resource Efficiency Support Service

EnTRESS supports small and medium-sized enterprises to adopt environmental technologies and resource efficiency processes.

[Website](#)

University of Birmingham

Advanced Materials and Processing Laboratory

AMPLab develops new materials and assess their suitability for processing using a number of advanced manufacturing methods.

[Website](#)



Universities

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