

# Welcome to Aston University and School of Life and Health Sciences



Candidate brief

## Welcome from Professor Alec Cameron, Vice-Chancellor & Chief Executive



### Dear applicant

The HE sector is currently experiencing an unprecedented scale and pace of change, combined with a high degree of ambiguity and uncertainty. Those universities able to adapt swiftly to a changing and increasingly competitive market will thrive. As a mid-sized, focused university Aston has the advantages of agility, innovation and team working that some other institutions do not. Our integrated placement year, our applicable, exploitable research, and our commitment to widening participation all help to make Aston distinct.

The 2014 Research Excellence Framework results recognised the quality and impact of Aston research. This research directly influences medical breakthroughs, advancements in engineering, innovation, policy and practice in government, and the strategies and performance of local and international business. The Times Higher Education REF rankings placed Aston University 35th in the UK and 78% of our submissions were judged to be World Leading or Internationally Excellent.

Teaching quality and the student experience are an important focus at Aston. We are committed to doing all we can to address the needs of students and to assisting them to achieve their career ambitions on graduation.

We very much look forward to receiving your application and learning more about how you would contribute to Aston's continuing success.

A handwritten signature in blue ink that reads "Alec Cameron." The signature is fluid and cursive, with a period at the end.

**Professor Alec Cameron**

# About Aston University

Founded in 1895 and a University since 1966, Aston is a long established research-led University known for its world-class teaching quality and strong links to business and the professions.

## Outstanding graduate employability

Aston has been a leading university for graduate employment success. With placements integrated into our degree programmes, students develop essential work skills, build industry connections and a professional profile. The majority of Aston graduates go on to graduate level jobs or further study within six months. We have strong relationships with national and international graduate employers, as well as smaller and local employers. These relationships are extremely important and make a real contribution to graduate employability.

## Career focused programmes

Aston's close and established links with business, the public sector and the professions ensure that our career focused degree programmes are inspiring, challenging and constantly updated to equip students with essential work-related skills and experiences.

## Excellence in teaching and research

We are committed to high quality teaching and academic excellence, ensuring we provide the highest standard of education to our students. Awarded TEF Gold in June 2017, the Teaching Excellence Framework (TEF) found that students from all backgrounds achieve 'consistently outstanding outcomes'.



Aston has an excellent reputation for research which shapes and improves lives. We're proud of the quality of our research and the real world applications developed as a result – it makes a substantial and beneficial difference to people, organisations and society.

## International

Aston University is a popular choice for international students. We recognise and welcome the important academic contribution and cultural diversity international students bring to our university environment. Students from over 120 countries study at Aston University each year.

## Birmingham – one of Europe's liveliest cities

Birmingham has a rich history which makes the city a unique and inspiring place to visit. It is internationally recognised as a leader in leisure, entertainment, shopping and sport and is an international centre for business, commerce and industry, housing numerous UK and overseas banks and law firms. Birmingham is home to world-class companies, innovative entrepreneurs and has one of the youngest populations in Europe. It is a dynamic, thriving and business-focused region and one that is well connected and centrally located in the UK.

## A green, sustainable campus

Located in the centre of Birmingham our green, 40 acre campus houses all the University's academic, social and accommodation facilities for our 15,783 students. All staff have the opportunity to contribute to our sustainability agenda and practices.

# University values

All staff are expected to demonstrate/promote the University's values and expectations, which are an integral part of our strategy and underpin the culture of the University.

In addition, our leaders are expected to be accountable, help to execute strategic visions of the University and share and set clear expectations that inspire those around them.

Our mission is to be the UK's leading university for students aspiring to succeed in business and the professions, where original research, enterprise and inspiring teaching deliver local and global impact.

In 2022 Aston University will have an international reputation for delivery of outstanding graduate outcomes and equipping business and communities with the skills for future success.

## Staff expectations

All staff are expected to:

- Be committed to delivering high performance
- Recognise and praise the high performance of others
- Remain open to new ideas and seek to act quickly for positive change
- Develop themselves, and support the development of others
- Be ambitious, for themselves, their teams and the university
- Engage with others, listen, observe and communicate
- Focus on excellent customer service, finding solutions and saying "yes"
- Make reasoned decisions without fear of blame
- Engender trust through their own actions
- Be fair in all matters

## Our beneficiaries

The University's beneficiaries are identified as three groups:

### **Students**

The first and primary beneficiary of Aston University are the individuals who form our student body and who progress to become our alumni. Aston places students at the heart of our academic and professional endeavour.

### **Business and Industry**

Our new strategy also has an emphasis on the businesses and other external organisations who engage with the University. Aston University is a market leader in industry-engaged research, as well as graduate employability.

Our industry partners benefit from Aston's work both through our leading research and knowledge exchange, and from the quality of graduates we produce. Each student at Aston is offered the opportunity for a year-long work placement; these placements not only cement our relationships with industry but ensure businesses have access to work-ready graduates.

### **Region and Society**

We are committed to having a positive and transformative impact on Birmingham and the West Midlands. Birmingham is one of the youngest cities in Europe and Aston University plays an important civic role by educating the leaders of the future. By emphasising research that has a regional impact, engaging with local businesses to develop a strong economy and educating top graduates, we are helping to shape our society around us.

# The School of Life and Health Sciences

All the activities within the School of Life & Health Sciences affirm the mission of Aston University to be an international centre of excellence in learning & teaching, research and community engagement.

Taught Programmes

<http://www1.aston.ac.uk/lhs/undergraduate/>  
<http://www1.aston.ac.uk/lhs/postgraduate-study/>

The School offers a range of HEFCE funded undergraduate programmes spanning the life and health sciences, all of which were rated as excellent in the last Quality Assurance Agency (QAA) teaching assessment.

There are currently around 2200 undergraduate students studying within the school of whom the majority are on single honours programmes. Entry to all single honours programmes is highly competitive with entry qualifications in excess of BBB at A-level.

The school also offers a range of taught postgraduate programmes focused upon the developing career needs of health professionals. The current teaching activities within the school are divided into subject groups of audiology, biology, optometry, pharmacy, and psychology, each of which is led by a Subject Leader. Under each subject there are a range of undergraduate and postgraduate programmes each led by a Programme Director.

## **Research**

<http://www1.aston.ac.uk/lhs/research/>

The exceptional quality of the research in the School has been demonstrated once again in the 2014 Research Excellence Framework (REF2014) results. Research in LHS is ranked 5th overall from 94 UK Higher Education institutions in Allied Health Professions, Dentistry, Nursing and Pharmacy, top 10 in the UK by every measure, and 1st for Environment which assesses the “vitality and sustainability” of our research. In LHS, 94% of our academic research is classed as world leading or internationally excellent. This outstanding performance reflects the vibrant, world class research environment, and is a testament to the worldwide reputation and outstanding scientific activity of our research staff.

The School of Life & Health Sciences is equipped with state-of-the-art facilities to pursue cutting-edge research. Aston University Day Hospital is a >£10m flagship clinical

research centre and day hospital which accommodates Optegra (ophthalmology services) and Birmingham Children’s Hospital Cochlear implant team. The Day Hospital, which opened in the spring of 2004, is designed to support the core health research and clinical activities within the School. It is a European centre of excellence in Ophthalmic research (cornea and refractive surgery, human myopia, vascular imaging) and other health-related research including paediatric Cochlear Implantation and Rehabilitation. A further investment of around £3.5m in laboratory refurbishment and equipment has occurred in the last four years. In addition, the University has invested a further £3m towards the virtual Aston Research Centre for Healthy Ageing (ARCHA) encompassing researchers from all disciplines within the School and a further £3.6m towards the Aston Brain Centre (ABC).

Specialised Research Facilities in the School of Life & Health Sciences:

## **Biomedical Sciences**

Biomedical Sciences have invested in scale-up facilities for protein expression and purification; this is supported by a range of chromatographic separation equipment (HPLCs, FPLCs, amino acid analyser) which can be used for DNA, protein and carbohydrate analysis. Real-time PCR is available for quantification of specific gene expression and our proteomics facility includes peptide sequence analysis by LC-MS/MS. Cell analysis work is also undertaken using flow cytometry resources, confocal, epifluorescence and atomic force microscopy (shared with the School of Engineering and Applied Sciences) while In vivo investigations of disease process, progression and management are undertaken within the newly refurbished Biomedical Facility.

The new ARCHA imaging facility provides research groups with access to state-of-the-art equipment enabling users to carry out a range of experiments from sample screening to deep tissue imaging. The new facility, located in the main building consists of a Leica Widefield Fluorescence Microscope Leica SP5 multiphoton Laser Scanning confocal microscope.

## **Pharmaceutical Sciences**

Novel compound discovery is supported by computer aided drug design; synthetic chemistry laboratories are well furnished for

synthesis of novel entities and understanding is further extended by determination of molecular structure using x-ray crystallography. Drug Delivery and Drug Dosage Form design is undertaken in our Pharmaceutics laboratories which are furnished with a large range of state of the art analytical equipment (e.g. pharmacopeial apparatus, particle sizing equipment; Differential Scanning Calorimetry; Thermogravimetric Analysis). Small molecule chemical synthesis and analysis facilities include high-field NMR, GC-MS and LC-MS.

### **The Aston Brain Centre**

The Aston Brain Centre is a research facility comprising specialist assessment and laboratory provision, primarily for the School of Life and Health Sciences, although collaborations across the University are established and encouraged.

Operational from July 2011 the newly constructed ABC building accommodates an integrated research facility for the study of neurodevelopment in health and disease. It provides a novel training centre for Magnetoencephalography (MEG) and Electroencephalographic studies incorporating translational and humane research. The ABC was funded through £3.6M Science Research Infrastructure Funding (SRIF) together with £800k from Aston University, and houses The Wellcome Trust laboratory for MEG studies, first established in 1999 to for the first whole brain MEG system in the UK, and soon to be the location of the world's first high-resolution paediatric-compliant MEG system (supported by The Wellcome Trust grant - Ref: 088314/Z/09/Z).

The facility also houses the Development and Dyslexia Assessment Unit and the Clinical Neurophysiology Unit, comprising two dedicated Sleep Laboratories, 128 channel dense array EEG dense, a Transcranial Magnetic Stimulation Laboratory and a sound proofed auditory laboratory for clinical testing. A dedicated computer analysis and training suite provides an environment for collaboration and integration of scientists and techniques from diverse disciplines.

### **Clinical Audiology Research Centre**

This centre opened in September 2006, and includes sound-treated test rooms and specialised equipment for clinical and applied hearing research.

The centre provides a specialist audiology clinical service to the local area as well as supporting the research of the Audiology staff and research students.

### **Vision Sciences and Day Hospital**

Over the last 30 years, Aston University has developed a strong track record in conducting ophthalmic research, which is recognised internationally. Within the Ophthalmic Research Group (ORG), optometrists, ophthalmologists and biomedical engineers work within an integrated investigative framework to advance understanding of the development, use, preservation and restoration of ocular function. Using bidirectional transfer of research between structure, function and clinical application provides the flexibility to address a range of contemporary research issues: the development and management of refractive error; the diagnosis and management of major ocular pathology and the management of ocular dysfunction and pathology in the ageing eye. Studies are conducted in a series of self-contained laboratories designed for clinical investigations. These facilities are housed within the Vision Sciences building and the Aston University Day Hospital. The former offers over 3,000 appointments per year for members of the general public and specialised clinical facilities in all areas of optometric investigation, while the Day Hospital provides a platform, unique in the UK, for the combination of leading edge clinical research in optometry and ophthalmology.

Under development is our new £2m 3D visualisation teaching labs and CAVE virtual environment for the teaching of anatomy, physiology and computer aided design as well as a research into vision and perception, which will be operational by the end of 2015.

### **Centre for Vision and Hearing Research**

Aston University has a strong international track record in the fundamental workings of the normal human visual and auditory systems. Investigations into how sensory data is picked up and encoded by our brains to build meaningful representations of the outside world are performed using non-invasive techniques of psychophysics, functional imaging and computational modeling.

### **Aston Laboratory for Immersive Virtual Environments (ALIVE)**

This recently built (2015/16) facility has been funded by the Wolfson Foundation, the Eranda Foundation, the Cadbury Charitable Trust and the Eveson Charitable Trust, and comprises a motion capture laboratory, a driving simulator and large interactive CAVE virtual reality platform. It pulls together researchers from the

CVHR, the ABC and ARCHA from the School of Life and Health Sciences (see above) and from the Aston Interactive Media Laboratory in the School of Engineering and Applied Science, to carry out multi-disciplinary research in visual perception, social perception and cognition, social neuroscience, pedestrian and driver behaviour, ambulation and navigation.

**Organisation**

The School is led by an appointed Executive

Dean, Professor Chris Hewitt, and operates through three key committees: Senior Management Committee, Teaching Committee and Research Committee.

The Executive Dean is supported by a Deputy Dean and six Associate Deans. All undergraduate and postgraduate programmes have a Programme Director and are delivered by the staff from the subject groupings.

For more information, visit our website [www.aston.ac.uk/lh](http://www.aston.ac.uk/lh)

