School of Physics, Engineering and Computer Science

Powering Potential

Whatever your background, wherever you are from, higher education can be a transformational experience. And whoever you are, the application of university research can impact your life. We are committed to having a positive transformational impact on every member of our university community, and to sharing our successes with the community around us.

Professor Quintin McKellar CBE

Vice-Chancellor

Ranked 4th globally for research culture

Postgraduate Research Experience Survey, 2019

Awarded an Ecofriendly campus platinum award

EcoCampus

Ranked 4th globally for research culture

Postgraduate Research Experience Survey, 2019

One of 17 universities awarded the Race Equality Charter Mark

One of only 20 universities awarded University Enterprise Zone status

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Welcome to the University of Hertfordshire

Set across two campuses in Hatfield, Hertfordshire, just 20 miles from London,

we’re an innovative, enterprising university, focused on transforming lives. We give staff and students the opportunity to succeed no matter what their background.

We drive economic growth through cutting-edge research, creative and innovative thinking, skills development, bespoke training, and facilities that help businesses achieve their potential. All of our activities are underpinned by our core values; we are friendly, ambitious, collegiate, enterprising, and student-focused in everything we do.

We have more than 25,000 students studying over 550 undergraduate, postgraduate and research degrees. Of those students over 4,000 are international students from 100 countries. We also have more than 6,000 students taking courses outside the UK through international partnerships and franchise arrangements.

Our teaching is delivered across eight academic Schools: Creative Arts, Education, Health and Social Work, Hertfordshire Business School, Hertfordshire Law School, Humanities, Life and Medical Sciences, and Physics, Engineering and Computer Science.

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Our history

1952-1959 Hatfield Technical College

1952 saw the opening of a new Technical College in Hatfield, with HRH Prince Phillip, Duke of Edinburgh performing the opening ceremony. With its roots in Britain’s pioneering aeronautical industry, the College soon established itself as an innovative force in education, awarding our first BSc (Engineering) qualifications to external students of the University of London in 1959.

1960-1968 Hatfield College of Technology

In 1960, the institution was renamed Hatfield College of Technology and began to invest in computer science, buying the College’s first digital computer in 1963 – a National Elliott 803B digital computer, at a cost of £24,010. In 1965, the college became recognised for 13 Honours Degree courses, including Computer Science and Civil Engineering, with BA (Hons) Business Studies coming a year later.

1969-1991 Hatfield Polytechnic

In 1969, the College was designated as Hatfield Polytechnic, and by 1970 had formed the best equipped and staffed Computer Centre in the public sector in education. In 1975, the Polytechnic was reorganised into five schools of study and a centre for Management Studies.

1992-Present University of Hertfordshire

Hatfield Polytechnic became The University of Hertfordshire on 29 June 1992. In 1998, our prestigious Formula Student team competed in the first ever competition held in the UK, winning the prize for the Best Presented Team. In 2003 the de Havilland Campus, a £120 million project, opened. Today, we have a student community of over 25,000 on UK based programmes across our two campuses.

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Executive team

As Chief Executive, the Vice-Chancellor exercises considerable influence upon the development of University strategy, the identification and planning of new development and the shaping of the University ethos. The executive team - the Deputy Vice-Chanellor, Group Finance Director, Secretary and Registrar, the Pro Vice-Chancellor Business and International Development, Pro Vice-Chancellor Research and Enterprise, and the Pro Vice-Chancellor Education and Student Experience all contribute to this aspect of work.

Professor Quintin McKellar CBE, Vice-Chancellor and Chief Executive

Quintin has been the Vice-Chancellor and Chief Executive of the University since 2011. His responsibilities include the day-to-day running of the institution, the delivery of strategic and operational plans, performance, its internal structure and organisation, and its interface with external bodies and agencies. In 2015 he was elected as a Board member of Universities UK, and in 2020 was elected as Vice-President (England and Northern Ireland). He was made Commander of the Order of the British Empire (CBE) in 2011 for services to science.

Professor Matthew Weait, Deputy Vice-Chancellor

Matthew joined the University in March 2020, and as the sole Deputy Vice-Chancellor he is engaged in all strategic and operational decisions which underpin the positioning and success of the University. He will be leading the implementation of a new strategic plan for the University. Matthew has overall responsibility for University planning, including the development of all academic areas through the respective deans, staff development, international and regional partnerships and developments, recruitment, induction and retention of students, student experience and student outcomes.

Dr Mairi Watson, Pro Vice-Chancellor (Education and Student Experience)

Mairi joined the University in May 2020 as Pro Vice- Chancellor Education and Student Experience. She leads strategy and performance, as well as policy development and delivery, in learning and teaching, student experience, quality assurance and student union relationships. Mairi is a Chartered Fellow of the Chartered Management Institute and regularly contributes to external events on the leadership of educational change in challenging contexts.

Professor John Senior, Pro Vice-Chancellor (Research and Enterprise)

Appointed in 2006, John is responsible for leading University research and the delivery of research degrees, chairing the University Research Committee, developing international research partnerships in Australia, China, Malaysia, and Vietnam, and overseeing the Doctoral College, which is a community of more than 700 research degree students.

From 2003 to 2006 John was the University Director of Enterprise and Knowledge Transfer as well as being a Dean of Faculty.

He has an international research profile in the field of optical fibre communications and networking, is on the Executive Committee of the Engineering Professors Council and chairs the Research and Enterprise Network for Universities (RENU).

Professor Julie Newlan MBE, Pro Vice-Chancellor (Business and International Development)

Julie is responsible for innovation, international growth and partnerships, enterprise, business development, and marketing and communications. As well as overseeing strategy in these areas, she manages teams and initiatives relating to commercial income, knowledge transfer, graduate enterprise and employability, reputation management, fundraising, and recruitment. Julie’s role also covers leveraging intellectual property and developing enterprise and entrepreneurship opportunities for students and staff.

Alistair Moffat, Group Finance Director

After a career in senior finance positions in the commercial world, Alistair was appointed Group Finance Director in 2009. He has responsibility for all aspects of financial management within the group, including financial control, statutory reporting, treasury, tax, insurance, payroll, pensions and procurement.

His role also incorporates board responsibility for the management of the Estate and Sport. He is a director of UH Holdings Limited, which oversees the commercial subsidiaries in the group, and is a director of our subsidiary companies.

Alistair is joint chair of the London and South-East British Universities Finance Directors’ Group (BUFDG).

Sharon Harrison-Barker, Secretary and Registrar

Sharon was appointed in January 2020. She was previously the Academic Registrar, Head of the Student Centre and Faculty Registrar for the Business School and has worked in various further and higher education institutions. She achieved an MBA in Higher Education Management from the University of London in 2010.

Sharon is responsible for the management and operation of the Board of Governors and the Academic Board, compliance with University policies, regulations and procedures, legal matters of the University and its wholly owned subsidiaries, health and safety, internal audit, equality, registry, the office of the dean of students, process review and professional staffing.

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Our vision and strategic plan

Our vision reflects the ambition and inspiration that is central to the University. It is built on the belief that whatever your background, wherever you are from, higher education can be a transformational experience. And whoever you are, the application of university research can impact your life. We are committed to having a positive transformational impact on every member of our University community, and to sharing our successes with the community around us.

The development of our strategic plan began with engagement with staff, students and governors at the University – which informed our focus on transforming lives. It reflects the values of ambition and inspiration that are central to the University of Hertfordshire. Our three key themes of opportunity, community and flexibility also grew out of this engagement. They reflect both what is important to the University, but also how we will approach challenges in the coming years.

The 2020-2025 strategy will build on our strengths and embed our focus on employability, enterprise and business partnerships into our plans. It also looks to future challenges. In 2018, we asked a group of students to present the challenges that they anticipated that they would encounter in the future to our Board of Governors.

They focused on new technologies, the changing world of work, and increasing interconnectivity across the globe. They were excited about the future, but they recognised that they needed to be ready for it. The pandemic has changed the way we live, work and study, and the future could look different but we are confident our students will have the skills to face those challenges.

Our strategy will develop graduates who are capable and professional, building on the engagement of employers and professional bodies who contribute to the development of our curriculum. We will encourage students to be creative and enterprising, as one of only 20 University Enterprise Zones. We will build student’s social and global awareness, and increase proportion of international students on campus, and the number of UK students who have international experience. We will be compassionate and inclusive, supporting students in their learning and their living.

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Education and student experience

We deliver high-quality and distinctive education that transforms lives by providing opportunities to develop students’ skills for life, working in partnership with our student community, and delivering flexible education with clear career pathways.

Our country’s education system is highly respected all over the world, and achieving a qualification at a British University is a passport to a rewarding career.

Higher education qualifications in Britain are rigorous and intellectually challenging. They have to be because we’re continuously assessed to make sure we give students the exceptional education they deserve.

We know that coming to university is a major investment of time and money, so we make sure our students graduate with the best possible knowledge, experience, skills and career prospects. Our lecturers have a wealth of experience in their field, not just in an academic setting, but also out in industry – whether that’s in business, law, healthcare, sciences, engineering or the creative sector. They’ve built businesses, developed technologies, saved lives, pushed boundaries and made a real difference. They’re here to help our students do the same.

In 2018, we were awarded the top accolade of gold in the Teaching Excellence Framework (TEF), a system introduced by the government to help students judge teaching quality and the importance of teaching excellence at universities. A gold rating indicates that we have demonstrated the highest quality teaching standards and provide outstanding outcomes for students from all backgrounds, in particular retention and progression. It is a mark of excellence that no Russell Group university hold.

We passionately believe in powering potential; for students this means equipping them with skills for life. We are very proud that our teaching has been recognised as the highest quality found in the UK, having been awarded gold in the Teaching Excellence and Student Outcomes Framework.

Mairi Watson, Pro Vice-Chancellor for Education and Student Experience

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Research

We carry out research that transforms lives, and addresses fundamental global and societal challenges. We do this by offering research opportunities for staff and students, engaging the community in impactful research, and adapting flexibly to research partnerships.

Through their research, UK universities are contributing more than ever to future economic growth and to positive changes in the way we all live, work and learn. At the University of Hertfordshire we are proud to play a significant role in these developments, engaging with other academic institutions, business and industry.

Our research culture, which is defined by a strong spirit of enquiry, innovation and enterprise, also feeds into teaching and learning to enrich our students’ experience. Artificial intelligence and robotics, data innovation, climate change together with toxicology and pharmaceutics, food security and health care are just some areas where we are breaking new ground for societal benefit, and our research has helped keep people safe during the Covid-19 pandemic.

Professor John Senior, Pro Vice-Chancellor for Research and Enterprise

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Enterprise

We deliver transformative benefits for the economy and our communities through outstanding expertise in business, innovation and skills.

To support micro, small and mediumsized businesses in Hertfordshire that are struggling as a result of the pandemic, we launched the Volunteer Business Support Scheme in partnership with Hertfordshire Growth Hub. The scheme, which is funded by Hertfordshire Local Enterprise Partnership, matches businesses with mentors that are highly experienced in managing or coaching at a strategic level. They provide tailored support and point businesses in the right direction of finance and support packages in the county. The scheme has supported over 140 businesses across a range of sectors, including health and retail.

We provide regional firms with access to research expertise to help them translate their ideas into successful products and services, and we contribute to eight ongoing Knowledge Transfer Partnerships – a three-way collaboration between a business, the University and a talented graduate.

The Enterprise Hub on de Havilland Campus significantly enhances and expands the existing support we provide to businesses both big and small, locally and nationally, together with our talented students and graduates that are looking to start their own business.

Our start-up challenge award, flare ignite, offers student entrepreneurs the support, advice and training they need in areas like proposal writing, planning, finance and marketing, and the opportunity to win up to £8,000 to get their business idea off the ground. With more than 100 entrants each year, flare ignite has awarded more than £200,000 to student start-ups since it started in 2005.

It’s vital these businesses have access to the right support, particularly during this challenging period. The Enterprise Hub contributes significantly to the existing support we already provide at Herts and it will allow us to enhance and expand our community of practice, where entrepreneurs, with the support of their peers and like minded professionals, can discuss their challenges in a supportive environment and meet them head-on.

Professor Julie Newlan, Pro Vice-Chancellor for Business and International Development

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Global engagement

We are a globally engaged university, transforming lives by providing international opportunities for staff and students, building a diverse community on our campus, and increasing flexible programme delivery for the overseas market.

The University has a longstanding, successful history of engagement with international partners and we have been praised for our approach towards the extensive and complex range of collaborative partner institutions, by the most recent QAA Review.

With more than 70 international partnerships across five regions, and partnership models including franchise, dual awards, fly-in faculty, academic support, supported distance learning and recognition and articulation agreements, we remain passionate about offering the opportunity to students across the globe to study for a University of Hertfordshire award. This drives our commitment to continue with the development of strategic partnerships worldwide.

The University has been a pioneer in Transnational Education (TNE). In 1995 we became one of the first UK Universities to offer Franchise degree programmes in Malaysia, with college group INTI International University and Colleges.

In 2019 the University launched its latest large scale transnational education partnership with a new institution, Global Academic Foundation. Students will be able to study a University degree in multiple subject areas, including Business, Mass Communications, Pharmaceutical Science and Engineering.

Our strategy supports an international approach to education, and we have forged strong relationships with partners across the globe. This benefits our students by giving them diverse international experiences that prepare them for global careers, and it has helped us to build a vibrant global community and outlook, which also benefits our staff and the wider community.

Professor Julie Newlan, Pro Vice-Chancellor for Business and International Development

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School of Physics, Engineering and Computer Science

Subject areas:

Aerospace Engineering

Astronomy

Automotive Engineering

Civil Engineering

Computer Science

Cybersecurity

Data Science

Electrical and Electronic Engineering

Information Technology

Mechanical Engineering

Mathematics

Physics

Robotics and Artificial Intelligence

Our School provides businesses, industry and the public sector with talented graduates that have the skills and advanced knowledge to work effectively in the modern, high technology, world that drives economies and society. We focus on equipping students with the underpinning knowledge and practical skills to solve the challenges of our ever evolving world, and providing world leading and international excellent research that underpins innovation and enterprise.

The courses we provide are designed to reflect the needs of industry now and in the future, and are taught using facilities and equipment that include flight and driving simulators, additive manufacture and 3D printing, communications, electronics and physics laboratories, materials analysis and testing, microfluidics facilities, cybersecurity and specialist robotics laboratories, whilst our outstanding observatory is located nearby in Bayfordbury.

Students learn from exceptional scientists, engineers, computer scientists and mathematicians at the forefront of their field. Close industry links enable them to put their skills into practice on work placements in the UK and abroad. Our students benefit from the strong links we have with businesses such as Airbus, Apple, Aston Martin, Canon, Ford, Global Invercom, IBM, McLaren, Microsoft and Rolls Royce, to start their career.

Physics, Engineering and Computer Science influence all aspects of our lives and help provide and maintain the modern high technology world that drives economies and society.

Our School focuses on equipping students with the technological and scientific skills to tackle global challenges, and providing outstanding research that is of benefit to business, industry and society.

Dr Rodney Day, Dean of Physics, Engineering and Computer Science

Our experts

Professor James Geach, Professor of Astrophysics

Professor Geach has a diverse, internationally outstanding research profile, with a focus on the evolution of gas in galaxies and the role of the environment in galaxy formation. James realised the potential of applying advanced machine learning algorithms developed for astrophysical use, to data from earth observation satellites. This has enabled him to accurately predict the full spectral response of the Earth’s

surface from Sentinel’s Synthetic Aperture Radar which, contrary to observations in visible or infraredlight, is unaffected by cloud cover. This opens up the prospect of being able to monitor, uninterrupted by, variable weather conditions such as crop health and growth.

Dr Shabnam Kadir, Senior Lecturer

Shabnam is a mathematician with a history of interdisciplinary research in computational neuroscience, theoretical physics, pure mathematics and software engineering. She studied mathematics at Trinity College, Cambridge, followed by a DPhil at the Mathematical Institute, Oxford.

She is actively involved in developing machine learning algorithms for the processing and analysis of very large datasets by experimental neuroscientists. A major challenge involved interpreting recordings of neuronal activity in the brain. When

neurons fire, they produce action potentials or `spikes’ which are detectable on electrodes. Population recordings of tens of thousands of neurons are now feasible thanks to a new generation of large dense probes for electrophysiological recordings. Shabnam spearheaded the development of algorithms and software for spike sorting in the open source software suite, KlustaSuite, now incorporated into

a new software suite, Phy, a tool that is widely used by hundreds of scientists worldwide in daily practice in over 300 laboratories.

Dr Nathan Baddoo, Principal Lecturer, Computer Science

Dr Baddoo’s research focuses on the relationship between developer motivation and software quality, software process improvement and software project performance.

He was involved in a European initiative, with the European Network of Excellence to standardise empirical software engineering research. Nathan balances his highly inspirational teaching that has led to multiple nominations for our Vice-Chancellor’s awards, with his research in the area of software engineering. He is also one of our most experienced admissions tutors.

Scarlett Xiao, Associate Professor

Associate Professor Xiao has created opportunities for our students through her contributions to the School in the areas of learning and teaching in engineering, as well as developing strong networks within the wider higher education community.

Scarlett was awarded a highly commended Vice-Chancellor’s award for enhancing the quality of the student experience and the success of our graduates. Her case studies on re-engineering assessment for engineering education and capturing work experience and enhancing employability for engineering students were published by the Royal Academy of Engineering and the 1st High Education Academy STEM Conference as pioneering exemplars promoted across the higher education sector.

Professor Andreas Chrysanthou, Professor in Materials Engineering

Professor Chrysanthou’s research expertise lies in the processing of materials. His early research established the thermodynamic and kinetic requirements for the production of silicon carbide whiskers from the carbothermic reduction of silicon dioxide. He participated in the FP6-funded Network of Excellence in Knowledge-based Multi-component Materials (KMM-NoE). During the KMM-NoE project, together with Dr Anatolii Babutskyi, they initiated work on the use of electromagnetic fields as a processing step to extend corrosion resistance in metals. This investigation is now progressing as an FP7 Marie Curie project. The KMM-NoE project has also led to further collaborative work with the Polytechnic of Torino and

industry on the development of a new glass-ceramic sealant for solid-oxide fuel cells.

Andreas is a highly sought after academic by companies looking to improve their businesses by enhancing the performance or processing of materials. He is currently working with C4 Carbides on his fourth knowledge transfer project and his second with C4.

Knowledge Transfer Partnerships

Our commitment to supporting business is demonstrated through our dedication to the Knowledge Transfer Partnership programme (KTP). KTPs help businesses improve their competitiveness and productivity through the better use of insight,

technology and skills that reside within the UK knowledge base. KTPs also form part of the Government’s Industrial Strategy.

Manor Pharmacy Group

Artificial Intelligence experts from the University are working to help Manor Pharmacy Group with their health and lifestyle service that analyses each client’s health information and returns highly individualised lifestyle recommendations. Utilising a machine-learning approach to collecting and processing data via a personalised app will allow the service to scale-up whilst reducing costs and improving outcomes for clients.

Our alumni

Samuel Nathan Richards, BSc (Hons) Astrophysics with study abroad year, 2012

Mission Director and Instrument Scientist for NASA/DLR mission: SOFIA

Nathan works for the SOFIA mission, based in Palmdale, California at the Stratospheric Observatory for Infrared Astronomy. He has worked toward this role since completing his degree and a PhD in Astrophysics at the University of Sydney, Australia.

“ I would not be where I am without the opportunities that were available while studying at the University. From extra-curricular projects, to connections with other universities, I’m thankful to the University for its guidance and support that kick-started my career.

The lecturers were worldclass, active astronomers, so each class was dynamic to

the ever-changing knowledge of their respective fields of research. Their willingness to accept keen students for extra-curricular research projects gave me early first-hand experience of the career I was about to launch myself into. Their international connections opened a path for me to do a research year at the University of Sydney, where I would later return to complete a PhD.”

Checca Aird, BSc Computer Science, (Software Engineering), 2015

Business Analyst/Product Owner at Optal

Checca is a Banking Business Analyst and Consultant and her background is in software development and data analytics.

“ While working at PwC I realised that my favourite projects were the ones where

I had the most impact, whether it was on a client’s business goals, their internal processes, or their software solutions. This led me to seek out a role as a banking analyst and ultimately to Capgemini.

Although I didn’t need a technical degree to get a role in the forensics department

at PwC, or later at Capgemini, it has been a fantastic boon. My background in software development has helped me immensely on system delivery projects, and I have built on the software design skills I learnt and use them every day.”

Kennedy Ameh, BEng (Hons) Aerospace Engineering, 2010

Head of Operations Strategy, Collins Aerospace

Since graduating, Kennedy has gone on to work for Collins Aerospace, a subsidiary of United Technologies Corporation. He has held roles of increasing responsibility throughout his career there, and is responsible for creating, developing and executing manufacturing strategies across six global sites in Asia and Europe.

“ During my time at the University, I was exposed to a faculty of experts that drew

from industry experience and transferred this knowledge to the classroom. During my studies, I was challenged to think differently, identifying solutions before problems. I was taught to use my initiative and leverage on teamwork. I want to run an aviation business in the future and I am very conscious of the opportunities emerging in markets like Africa. I hope to be an employer on the continent to enhance, enable and empower young minds like mine to operate globally.”

Research

Our computer science researchers have joined a global consortium in rapid response to Covid-19. Following a wave of reports from patients and clinicians about rapid onset smell loss, health organisations throughout the world have recognised anosmia as a marker for Covid-19, even in the absence of other symptoms. Scientists worldwide have united as the Global Consortium of Chemosensory Researchers (GCCR) to investigate the connection between the chemical senses and Covid-19. Professor Michael Schmuker and Dr Ritesh Kumar from our School

are part of this group of global transdisciplinary scientists, clinicians, and patient advocates.

With more than 500 members in 40 countries, the GCCR will harness their reach to conduct and analyse worldwide evidence-based information to combat the spread of the virus.

Professor Schmuker is a computer scientist dedicated to translating algorithms and processes from biology and the brain into solutions for data science and machine learning. He is a pioneer in neuromorphic computing and is leading a team of researchers to develop eventbased algorithms for neuromorphic olfaction, low-latency detection and identification of chemical signals.

We are working with government and industry partners to develop and optimise new biodetection systems for the military and agriculture sectors that, for the first time, can autonomously detect, collect, process and analyse airborne toxins, bacteria and viruses in real time. These technologies have advanced the UK Government’s overall capability to defend armed forces and civilians against biological attacks. They underpin the design and development of a novel biodetection system, led by an industry consortium, that was signed into service for use by the Royal Air Force to protect British troops overseas, and later adapted into an export product for use in public venues.

Associate Professors Dan McCluskey and Ian Johnston applied the underlying microfluidics principles to food security, resulting in the commercialisation of a unique early warning system that alerts farmers and growers to crop disease outbreaks before symptoms are visible.

A decade of research by Professor Pandelis Kourtessis, leader of our Cognitive Networks Laboratory has resulted in the commercialisation of a patented video streaming technology, co-developed with a leading satellite equipment provider and the BBC. The Broadcast WiFi platform has opened up market opportunities for companies in the satellite communications and wireless technology sectors, as well as benefitting live event operators and the general public. The BBC and Italy’s national broadcaster RAI have both used the technology to offer people an enhanced visitor experience at major arts and culture events, and it has fed into the development process of new global standards for wireless technology services.

Dr Tomasz Lukowski, from the mathematical physics group, has made important advances in computing particle scattering amplitudes in Quantum Field Theory,

working with collaborators at Oxford and Harvard. The work of Dr Lukowski and his student was recently selected by Wolfram Research Inc. to showcase cutting-edge applications of Mathematica. Our astrophysics group continues to have a strong role in international surveys of the radio and optical sky. The latest data release of the LOFAR survey of radio sources in the northern sky, the largest radio survey ever conducted, will be made public at the end of 2020 and is the result of 4 million CPU-hours’ processing on the University’s High Performance Computing facility. We will be following up in 2021 with an optical spectroscopic survey, WEAVELOFAR, led by the School.

Future research

The research we do transforms lives by addressing global technological and societal challenges. Our research is a blend of fundamental and applied research and

development that has direct impact for stakeholders. We will deliver world leading and international excellent research, enterprise and innovation, aligned to the UKRI priorities, as well as global and the industrial strategy grand challenges.

Our research spans a broad range of topics including:

Advanced materials and manufacturing.

Aerospace structures and flight control.

Artificial intelligence, robotics and artificial life.

Atmospheric processes, air quality and climate science.

Cognitive networks and secure digital systems.

Computational neuroscience and neuromorphic computation.

Data science, analytics and data innovation.

Detection for security, biosecurity and agriculture.

Energy and transport.

Innovation in the built environment.

Instrumentation.

Microfluidic biological sample processing.

Observational and numerical astrophysics.

Mathematical and theoretical physics.

Highlights

Our School has an outstanding track record of Knowledge Transfer Partnership projects working in collaboration with industry.

Physics, Astronomy and Mathematics has been awarded Juno Champion status by the Institute of Physics, Engineering and Computer Science have been awarded Athena Swan Bronze recognition, both of which recognise our commitment to improving gender equality and diversity in the School.

Ciara Zelda Brown is a School Community Officer in Physics, Astronomy and Mathematics. She has been awarded one of the most prestigious study awards – a Fulbright Scholarship. The Scholarships are extremely competitive and are awarded on the basis of a student’s achievements and potential, assessed by testing, references and interview. The applicant’s awareness of the social implications of their work is particularly important. Ciara has set up her own company to teach

STEM subjects in after-school classes and was highly commended in the University’s Flare awards. She has been offered a place at the University of Southern California for a Master’s programme.

One of our computer science students won a Worshipful Company of Information

Technologists Silver Award. Students from five Universities (University of Hertfordshire, Imperial College London, University of Lancaster, University

of Cambridge, King’s College London) have been shortlisted for the Worshipful Company of Information Technologists University IT Award 2020. Our very own

computer science student and Peer-Assisted Learning leader Sam Tyson has won the Silver Award.

Discovery of second planet orbiting the star closest to our Solar System

Scientists have discovered what they believe to be a second planet orbiting the star closest to our Solar System, Proxima Centuri, which became famous in 2016 with the discovery of an ‘Earth-like’ planet in orbit, Proxima b. New observations of Proxima Centauri have made it possible to reveal the presence of what is being described as a low-mass candidate planet, approximately half the size of Neptune, orbiting the star. The discovery, published in the Journal of Science Advances, was made by an international team of researchers, including from the University of Hertfordshire, led by National Institute for Astrophysics-Astrophysical Observatory of Turin and University of Crete and the Institute of Astrophysics at FORTH.

“ The proximity of the planet and its orbit at a relatively great distance from its star, means it is one of the best possible chances for direct observations that will enable detailed understanding of another planet. In the future, Proxima c might become a possible target for more direct study by the Breakthrough StarShot project, set to be humankind’s first attempt to travel to another star system.”

Hugh Jones, Professor of Astrophysics

Championing Equality, Diversity and Inclusivity (EDI)

Mrs Carrie Ricketts and Dr Samantha Rolfe have led our campaign to improve EDI in Physics, Astronomy and Mathematics. We celebrated International Women’s Day, Black History Month and LGBTSTEM Day and organised bullying and harassment awareness training. Carrie and Samantha have supported female staff and students to attend leadership programmes, and in conjunction with the University’s Strategic Plan have been working to improve the awarding gap for the recruitment and internal promotion of minority groups. This work led to an Athena SWAN Silver award and

Juno Champion status in Physics, recognising our commitment to advancing gender equality.

The School has partnered with the Women’s Engineering Society (WES), to advance the careers of women in science, technology and engineering. This work, to support EDI amongst research students, staff and students, led by Dr Martina Doolan and Mrs Susan Murray, secured an Athena SWAN Bronze award for Engineering and Computer Science.

“ The Women’s Engineering Society is delighted that we are partnering with the University of Hertfordshire. The University is committed to gender equality, as recognised by its Athena Swan Bronze award and Silver status for two of its Schools. It also has a growing reputation for its engineering degree courses, and WES is proud that a University alumna is a member of the WES Council. We are looking forward to supporting female engineering students at Hertfordshire and to working with the University to encourage more women to study engineering.” Elizabeth Donnelly, Chief Executive Officer for the Women’s Engineering Society

Leading the way on international PhD opportunities

University Alliance and their partners invited applications for a scheme that will support international researchers to gain doctoral fellowships at some of the country’s leading technical and professional universities.

The University is one of eight institutions who are part of the groundbreaking COFUND Doctoral Fellowship programme. The DTA3/ COFUND builds on the Doctoral Training Alliance, which is the largest nationwide multi-partner initiative

of its kind. Run by University Alliance, it builds on the research strengths and industry-focus of its members to produce independent, highly-employable researchers with knowledge, expertise and skills in strategically important areas.

This is the third year the scheme has run, which so far has enabled over 50 students to study in the UK. The programme is supported by a €6.5 million grant from the Marie Skłodowska-Curie COFUND Doctoral Fellowship programme.

The School is growing our doctoral student programme and has numerous opportunities across most areas of our research, for UK, EU and international students to study for a PhD.

“ This programme enables the University to develop talented researchers in the

field of Energy research to be able to respond to the fastchanging needs of industry

and society at large in this important sector.”

Rodney Day, Dean of the School of Physics, Engineering and Computer Science

Future aspirations

We are committed to having a positive transformational impact on our community and will:

Support the development of research and innovation that is accessible, transparent,

cooperative and easily transferable to business and enterprise.

Work closely in partnership with businesses and our international academic collaborators on research and innovation projects.

Establish Industrial Supported Doctoral Training Centres to fund solutions focused on Doctoral research that provides industry with new science and technology that has impact.

Provide access to outstanding laboratory equipment and instrumentation, as well as

modelling and simulation facilities and staff expertise.

Maximise the potential of local and regional technology businesses and industry by providing highly qualified graduates to support and drive organisations.

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Contact us

School of Physics, Engineering and Computer Science

University of Hertfordshire

Hatfield, UK

AL10 9AB

+44 (0)1707 284394Web herts.ac.uk

Facebook /uniofherts

Twitter @UniofHerts

Instagram /universityofhertfordshire