

# Science Community Focus

## Hertfordshire Science Partnership boosts life science and agri-tech sectors

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The Hertfordshire Science Partnership (HSP) is a multi-faceted, ambitious initiative designed to boost research and development in the life science and agri-tech sectors in Hertfordshire and its surroundings. Led by the University of Hertfordshire, with generous sponsorship from the Hertfordshire Local Enterprise Partnership (LEP) and European Regional Development Fund (ERDF), the programme focuses on forging long-term, productive collaborations between science and industry. Since the scheme launched in 2017, there have been three major operational strands consisting of:

### Hertfordshire Knowledge Exchange Partnerships

Hertfordshire Knowledge Exchange Partnerships, or 'HKEPs,' are direct collaborations between industry and the University. Small to Medium Enterprises (SMEs) that qualify for the scheme have the opportunity to sponsor and co-supervise a postgraduate researcher, at either Masters or PhD level, alongside a University of Hertfordshire subject expert. Each HKEP works on a unique scientific problem that aligns with each company's unique R&D priorities, therefore, producing both cutting edge research ready for commercial exploitation as well as developing the next generation of scientists.

### Therapy Accelerator

The HSP Therapy Accelerator competition awarded funding of up to £700,000 to three research clusters developing novel therapeutic or diagnostic treatments and/or devices. A new iteration of the competition is due to launch in 2021.

### Research Hotel and Science Concierge

The University of Hertfordshire boasts a state-of-the-art, £50 million Science Building, equipped with specialist equipment and laboratories that are available to hire. Businesses can also hire the services of dedicated research fellows who can be contracted to carry out research on a specific problem or subject area.

### Our labs:



The scheme opens our exceptional research facilities to businesses as well as funding research fellows to undertake commercial work. Those working in the area of analytical science can access, for example, HPLC, LC-MS and NMR equipment, a newly refurbished cell culture laboratory with expert technicians and a world-class bioengineering team who have expertise in microfluidic design and manufacture. In our therapeutic drug delivery and toxicology group, we have a specialist chamber to simulate chemical, biological, radiological and nuclear contamination (CBRN) incidents, which can be used to assess personal protective equipment (PPE) and other decontamination strategies as well expertise in skin studies.

### Spotlight on LC-MS Facility:



Dr Daniel Baker runs our LC-MS facility that delivers analytical testing of pharmaceuticals and other analytes using our recently installed Waters TQ-S Micro and Waters Xevo G2-XS QToF systems. These systems can be used to support a range of projects, covering quantitative analysis of pharmaceuticals and metabolites in simple and complex bioanalytical matrices, formulation testing, and metabolite and unknown ID and monitoring.

Dr Baker specialises in bioanalysis, micro-extraction and microsampling having worked in this area during his PhD in conjunction with industry and subsequent post-doc. Microsampling opens up the potential to use smaller sample volumes (<50µl) to assist in detection of analytes in biological matrices such as blood, plasma, urine and serum. This technology can be used to support a diverse range of applications both within the clinical and preclinical laboratories and has been applied to decentralised clinical trials, pharmacokinetic studies, therapeutic drug monitoring, paediatric diagnostics, and studies which have limited blood draw allowances during preclinical drug development.

The LC-MS facility is currently supporting numerous projects in areas such as bioanalysis of drug molecules in cultured cell models & tissue, elucidation of plant metabolic pathways, pesticide analysis, formulation testing, and bioremediation/contaminant monitoring. Though our focus area is pharmaceutical testing and bioanalysis, any project that requires analytical support can be discussed.

Since HSP launched in 2017, it has supported over 30 businesses across the life sciences including pharmacology, plant science, drug delivery, toxicology, agri-tech, psychology and sports science. Seventeen PhD students are currently enrolled on HKEPs, and four Masters by Research students are due to commence projects in Autumn 2021.

Of the businesses supported by HSP, eight new products have been brought to market, established 15 Research Hotel contracts and launched 25 new research collaborations. In 2020, the scheme was a finalist in the Knowledge Exchange/Technology Transfer Initiative of the Year category at the Times Higher Education Awards.

As the scheme continues into its final two years, there remains a wealth of opportunities for businesses and researchers to harness the University's facilities and expertise.

**For more information, or to put forward an enquiry, please get in touch at [BE@herts.ac.uk](mailto:BE@herts.ac.uk) or visit our website <https://go.herts.ac.uk/hsplab>**