



Tackling Grand Challenges for the Livestock Sector

Monogastric Research Capability





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CIEL



Introduction

The front door to a collaborative network of expertise

CIEL is a world-leading farm animal research alliance, helping to bring new technologies and processes to livestock food production within the UK and worldwide. We:

- + **Provide leadership** – joining up distinct pockets of excellence to form a world-class hub of expertise, tackling the issues that no one part of the sector can address alone
- + **Act as the broker** for one of the world's largest livestock science hubs, working with world-leading researchers and industry partners across the supply chain to identify challenges, potential solutions and routes to R&D funding
- + **Facilitate access** to £70 million of capital investment in new R&D capability across all livestock sectors, developing agri-tech to directly benefit UK farming and the wider agrifood industry.

Access the research capability you need

In partnership with twelve of the UK's leading research institutions and Innovate UK, the UK's innovation agency, CIEL has made strategic investments to improve the UK's capacity for livestock science research.

This brochure is your guide to some of the key capability we have helped to develop to support the pig and poultry sectors. Research capability is readily accessible to any business operating within the food supply chain and we can bring you together with the research expertise and facilities you need.

[[CONTACT US](#)]



The wider CIEL network

Over and above working alongside our research partners, CIEL brings together an active network of Industry Members spanning the food supply chain, including producers, processors, retailers, veterinary health, feed companies and SME innovators, all with an interest in R&D and improving UK food systems.

CIEL's reach also extends across government, providing a voice to ensure important industry issues are addressed, championing new ideas, and providing our Members with unparalleled opportunities to partner in projects.

[SUPPORT FOR YOUR PROJECT]

Together, the CIEL network of collaborative expertise is:

- **Tackling grand challenges for livestock production**
- **Finding new ways to feed an ever-growing population**
 - Using less resources
 - Maximising productivity
 - Minimising impact on the environment
- **Supporting the production of affordable, safe, nutritious, high quality food**
- **Helping those who produce food to do so profitably and sustainably.**



The UK Agri-Tech Centres

CIEL is one of 4 Centres of Agricultural Innovation, established as a unique collaboration between government, academia and industry to drive greater efficiency, resilience and wealth across the agrifood sector. Each Centre has its own unique focus, offering capabilities that can lead the world in delivering sustainable food and farming solutions. [www.agritechcentres.com]





CIEL at a glance

The front door to a collaborative network of expertise and innovation



12

ACADEMIC PARTNERS

Nationwide network of leading livestock research institutions



≈800

RESEARCHERS

Collaborative network tackling the grand challenges facing the livestock industry



≈70

INDUSTRY MEMBERS

Covering all aspects of the livestock supply chain from pre-farmgate, processors and retailers to animal health and SME innovators



MULTI-DEPARTMENTAL GOVERNMENT PARTNERS

Working across UK Government including BEIS, UKRI, Innovate UK, Defra, DHSC, DIT and devolved administrations



£70M

INVESTMENT

Greatest joint investment in livestock research capability in a generation



26

FACILITIES

Capital investment in new or enhanced research facilities nationwide, spanning all livestock species



>30,000

LIVESTOCK

Multiple research populations – adult, youngstock, breeders, sucklers, grower/finishers, layers/broilers



£££Ms

PROJECTS

Projects managed and in the pipeline



Research Capability: Pigs

Challenges facing the pig sector include disease prevention, requiring novel antibiotic replacements and stringent biosecurity measures, market volatility, compliance with regulations and improving the environmental footprint – whilst producing pork efficiently and meeting consumer expectations. All these factors are critically important to improve farm profitability and position pork as a nutritious and safe product.

- + Productivity
- + Nutrition
- + Health & Welfare
- + Behaviour
- + Reproduction

Expertise includes

- Nutrition, immunology, gut physiology & metabolism, reproductive physiology
- Experimental design and data analysis
- Animal behaviour and welfare
- Precision farming
- Intensive and extensive production systems.

Additional expertise and facilities to support the pig sector are also available through the following CIEL academic partners: Harper Adams University; Queen's University Belfast; Newcastle University; University of Bristol; and University of Nottingham.





National Pig Centre

In partnership with  UNIVERSITY OF LEEDS

The UK's largest and most advanced facility for research into pig nutrition, behaviour, welfare & health, and production systems.

Overview

The National Pig Centre is unique in the UK, housing both indoor and outdoor research pig herds on a commercial scale. This allows for comparisons across both production systems to support all UK pig production. Both indoor and outdoor herds are reared to the highest health and welfare standards.

Start-of-the-art instrumentation allows monitoring of individual feed intake, feed efficiency, and physiological, environmental, health, behaviour and welfare parameters.

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Key research expertise

Research staff and technicians are experienced in designing and conducting high quality research projects in pig science. The Centre has been designed to perform:

- Nutrition trials from farrow to finish, with capabilities to provide specific diets both for replicate pens of pigs and for individual pigs within a group
- Evaluation of different housing and management systems, including:
 - Indoor vs outdoor production systems
 - Farrowing systems: Conventional crates vs loose farrowing systems
 - Flexi-penning for flexibility with trial design
- Water preference or water-based treatment trials.

Additional features include:

- CCTV throughout the whole facility for 24/7 pig behaviour, welfare and farrowing assessments
- Dissection facilities for tissue collection and a laboratory for sample processing
- Ultrasound scanner for collection of in utero measurements
- Conference facilities.

[[DOWNLOAD TECHNICAL SPECIFICATION](#)]

[[VIRTUAL TOUR](#)]

Impact

- Maximising animal welfare, productivity and profitability
- Precision management of pigs
- Greater efficiency through improved sow reproduction, higher piglet survival, better feed efficiency, improved health and enhanced social behaviour.

Grand Challenge Focus

- + **Climate Smart Food Systems**
- + **Resource Efficiency & Precision Nutrition**
- + **Health & Welfare Management**

In Action

Assessing the resilience of the UK pig industry

PigSustain is using a multi-disciplinary, integrated systems approach to model and assess the resilience of the UK pig industry to ensure any future intensification is balanced with improved animal health & welfare.

[[READ FULL CASE STUDY](#)]

Smart system approaches for climate resilient livestock production

ClimatePig is integrating local weather information and precision farming technology to improve on-farm climate services and technology integration, ensuring future outdoor pig production is sustainable and resilient to climate variability and change.

[[READ FULL CASE STUDY](#)]



For enquiries and further information please [click here](#)



AFBI Pig Production Research

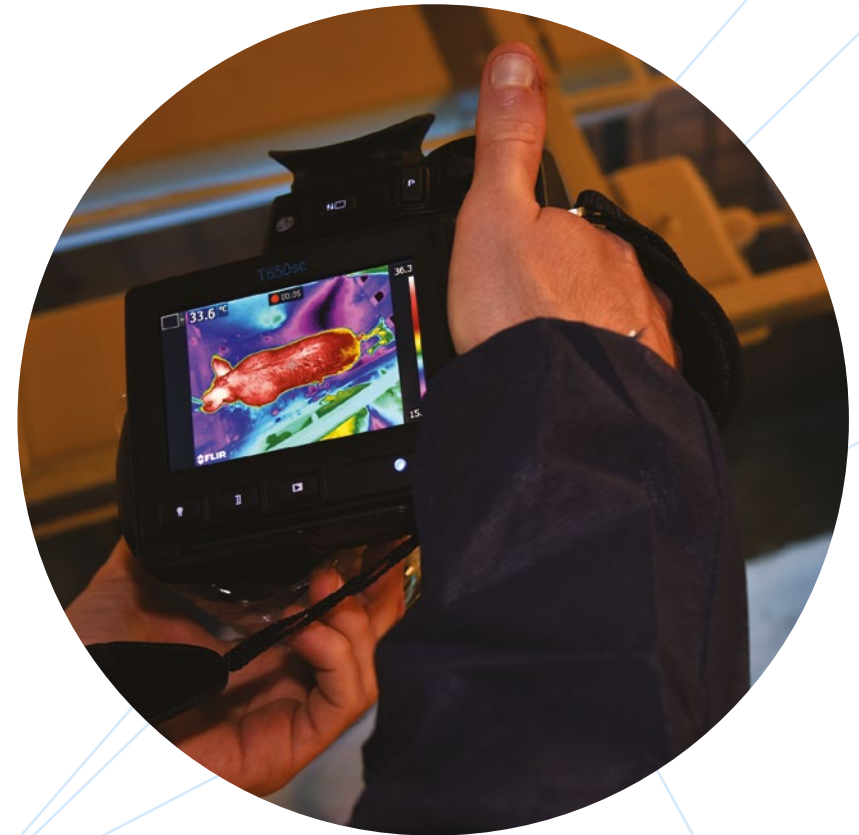
In partnership with **afbi** AGRI-FOOD & BIOSCIENCES INSTITUTE

The AFBI Hillsborough pig unit offers specialist research capability designed to conduct detailed scientific investigations in the areas of production, nutrition, welfare and meat quality.

Overview

The 150 sow herd based at AFBI Hillsborough is managed as a commercial herd. The research facility offers the capability to enable sows and pigs to be individually fed whilst group housed. Specialist equipment also allows for the digestibility of nutrients to be measured from growing and finishing pigs, as well as gaseous emissions via a specialised animal metabolism unit. Flexible pen sizes can be adapted for both growing and finishing pigs.

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Key research expertise

- Nutrition and feeding management to improve performance efficiency and meat quality
- Investigating the nutritive value of 'new' and traditional raw materials in pig feed
- Reducing the environmental footprint of pig production
- Reducing the variability in growth rate among pigs
- Maximizing performance output of small piglets from large litters
- Enhancing sow longevity and performance outputs
- Animal welfare, including tail biting, enrichment, transport and stress; pre-empting and advising on the effect of proposed welfare legislation.

Specialist equipment includes:

- Spotmix kitchen delivering 20 diets to individual pens
- MLP feeder stations for individual animal feed intakes and weights
- Mobile DEXA scanner assessing carcass quality and bone density
- High resolution Infrared Thermography Camera to assess pig welfare, health and environment conditions.

Impact

- Advancing the development of new feed products
- Increasing the efficiency of meat production
- Optimising animal production and welfare.

In Action

Low birthweight pigs within pig production

AFBI researchers have shown that the careful management of sow feeding during lactation can markedly increase feed intake and facilitate greater milk yields. Improved sow lactation nutrition can significantly reduce preweaning mortality of low birthweight animals. This, in turn, will greatly increase the number of animals weaned, improving output and profitability at farm level.

[[READ FULL CASE STUDY](#)]

Grand Challenge Focus

- + Climate Smart Food Systems
- + Resource Efficiency & Precision Nutrition
- + Health & Welfare Management



For enquiries and further information please [click here](#)



SRUC Pig Research Centre



SRUC has two farrow-to-finish pig units, specialising in high quality animal health and welfare research, knowledge transfer and education.

Overview

The high health, high welfare Easter Howgate pig unit offers commercial buildings that can host experiments as well as dedicated research facilities offering greater flexibility and control in terms of feeding, housing, group sizes, temperature, ventilation and flooring.

The SRUC Oatridge pig unit is a conventional farm offering the potential for focused trial work under commercial settings.

Off-site and mobile facilities include a Veterinary Investigation Unit, Analytical Services Department (specialising in feed analysis), a Biomarkers Laboratory, a mobile CT scanner, as well as mobile Thermography capabilities.

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Key research expertise

The skills and experience of SRUC research staff cover a wide range of animal husbandry and research methodologies across:

- Behaviour and welfare to include welfare measurement, behavioural observations and analysis, cognitive tests and social network analysis, pain and stress assessment, positive welfare assessment, building design and environmental enrichment
- Nutrition and gut health to include growth and performance, microbiome, including AMR profiling, challenge models, feed intake and growth rate, environmental impact and genetics
- Sensors and technology to include IR Thermal and CT imaging, 3D cameras and EID, DNA tagging, facial recognition, behavioural event logging, activity and accelerometry.

Specialist CIEL capability includes:

PigSAFE free farrowing houses

This facility is ideal for studying sow and piglet behaviour and performance. Two buildings house 12 sows each. The units are fully instrumented for behaviour and climate monitoring. These high welfare sow units are designed to promote natural behaviours in the sow that enhance mothering ability, reduce levels of piglet mortality and help combat aggression. They provide a dynamic environment to improve early life experiences for piglets which can improve health and growth.

Flexible Flooring Pig Unit

Two research buildings provide flexible flooring and adjustable penning to allow different configurations of floor-type and pen sizes & configurations, accommodating a range of trial needs including discrete behavioural tests. Instrumented for behaviour and climate monitoring.

Impact

- Focused research tackling industry-relevant needs such as finding solutions to tail biting, tail docking, freedom around farrowing, meeting legislative requirements, codes and recommendations to provide manipulable materials.

Grand Challenge Focus

- + Health & Welfare Management
- + Resource Efficiency & Precision Nutrition

For enquiries and further information please [click here](#)





Research Capability: Poultry

Poultry is the largest animal protein sector and is recognised as innovative. Key challenges which will require further research are bird welfare, novel and sustainable feeds, environmental emissions and litter management, as well as reducing avian diseases.

- + Productivity
- + Nutrition
- + Health & Welfare
- + Behaviour

Expertise includes

- Fundamental research of bird behaviour, health and welfare
- Improving bird health and welfare through applied on farm research
- Improving productivity and reducing environmental impact through studies of interactions between health, environment, genotype and nutrition, from fertilisation through to product.



Additional expertise and facilities to support the poultry sector are also available through the following CIEL academic partners: Agri-Food and Biosciences Institute (AFBI); Harper Adams University; Queen's University Belfast; University of Edinburgh Roslin Institute; University of Nottingham.



Allermuir Avian Innovation and Skills Centre (AISC)

In partnership with  SRUC

The UK's largest facility to improve avian nutrition, health and welfare.

Overview

The Allermuir Avian Innovation and Skills Centre (AISC) is the only poultry research facility in the UK that can accommodate scientifically-sound replicated trials all the way from small-scale pilots through to testing ideas under near commercial conditions.

The AISC builds on decades of strategic and applied poultry research, learning and consultancy activities. It encompasses all aspects of poultry science, including nutrition, behaviour and welfare, product quality and safety, and gut & skeletal health. This unrivalled research and delivery capability includes a near-commercial scale brooder facility, complemented by an additional multi-purpose poultry house comprising multiple small-scale animal rooms, Home Office approved raised-floor units, enriched housing layer facility and large floor pen facilities.

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Key research expertise

SRUC designs, manages, and delivers major research projects in poultry science to an internationally recognised high standard, from concept through to robust demonstration of application. Particular areas of expertise include:

- Poultry production
- Nutrition (all aspects)
- Behaviour and welfare
- Sub-clinical challenge models
- Product quality (including zoonotic load)
- Regulatory studies with EFSA compliant reporting.

[[DOWNLOAD TECHNICAL SPECIFICATION](#)]

[[VIRTUAL TOUR](#)]

Impact

- Rapid testing and validation of products within commercially comparable conditions
- Comparisons of genetic lines or treatments based on nutrition and health.

In Action

Novel non-antibiotic treatment of multi-drug resistant organisms in poultry

CIEL is supporting a UK-China consortium to develop a new non-antibiotic antimicrobial treatment that could control the spread and development of antibiotic resistant pathogens in poultry. Success could lead to a reduction in antibiotic usage across the sector and better access to treatment options, offering clear veterinary & human health benefits, improved food security & integrity and supply chain resilience.

[[READ FULL CASE STUDY](#)]

Grand Challenge Focus

- + Resource Efficiency & Precision Nutrition
- + Health & Welfare Management
- + Food Safety, Quality & Integrity



For enquiries and further information please [click here](#)

Bristol Poultry Research Farm

In partnership with  University of BRISTOL

Supporting sustainable productivity and driving consumer confidence by improving bird welfare.

Overview

The Bristol Poultry Research Farm offers many possibilities for small-scale trials aimed at improving bird health, welfare and productivity. Expertise is matched by the facility's flexibility in configuration to accommodate a broad scope of studies.

This facility bridges the gap between commercial systems and small experimental units, combining industry standard housing with state-of-the-art poultry monitoring, at flock and individual level.

It features eight individually controlled experimental rooms, housing up to 300 birds in each. There are also two isolated hatching facilities, available for research into both laying hen and broiler health, welfare and behaviour. Home Office compliant suites of four rooms, for 20 adult hens per room, are also available.

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Key research expertise

The £1M state-of-the-art poultry facility offers specialist, industry-focused research for both laying hens and broilers. Active research areas include:

For Layers

- Attitudes to welfare and welfare assessment tools
- Feather loss and beak trimming alternatives
- Housing design
- Keel bone fractures
- Nutrition
- Farmer-led innovation.

For Broilers

- Consumer and breeder attitudes to welfare
- Welfare assessment tools
- Humane stunning and slaughter techniques
- Campylobacter and Salmonella zoonoses
- Nutrition.

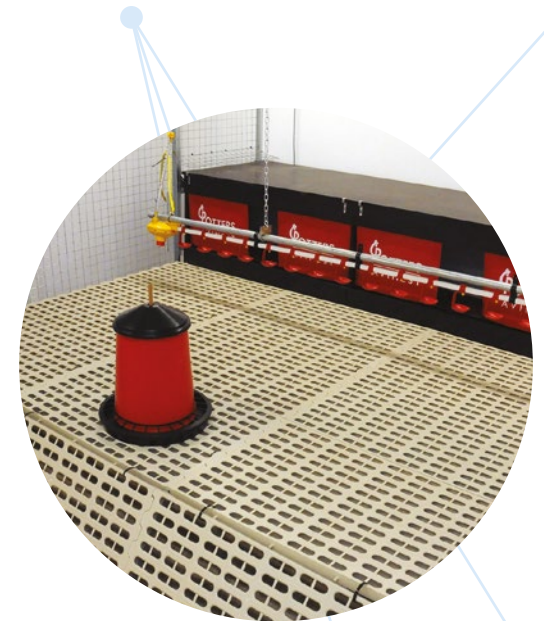
[[DOWNLOAD TECHNICAL SPECIFICATION](#)]

[[VIRTUAL TOUR](#)]

Impact

- Improved efficiency & productivity alongside enhanced welfare for both egg and meat production
- Novel monitoring systems for bird productivity and welfare.

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In Action

Insect farming to support sustainable poultry production

Numerous research studies offer significant evidence that insects have an enormous potential as a feed item for poultry. University of Bristol Vet School is leading an Innovate UK-funded project to examine the feasibility of on-farm production of insect larvae from food waste to be used as a feed component for poultry, and to assess nutritional, health and welfare outcomes in chickens.

[[READ FULL CASE STUDY](#)]

Grand Challenge Focus

- + Health & Welfare Management
- + Resource Efficiency & Precision Nutrition
- + Food Safety, Quality & Integrity



For enquiries and further information please [click here](#)



Research Capability: Multi-sector

Across the livestock sector, CIEL-supported research capability is finding new ways to feed an ever-growing population. It is supporting the production of affordable, safe, nutritious, high quality food, produced to the highest welfare standards, with the least possible impact on the environment, and helping those who produce and supply food to do so profitably and sustainably.

- + Health & Welfare
- + Genetics
- + Behaviour
- + Reproduction
- + Food Integrity

Expertise includes

- Informatics and clinical genome sequencing
- Adopting cutting-edge human health science to develop novel, targeted innovations for the livestock and food sectors
- Characterising nutritional value, food quality, and investigating food fraud.



Centre for Digital Innovation Applied to Livestock (C-DIAL)

In partnership with  Newcastle University

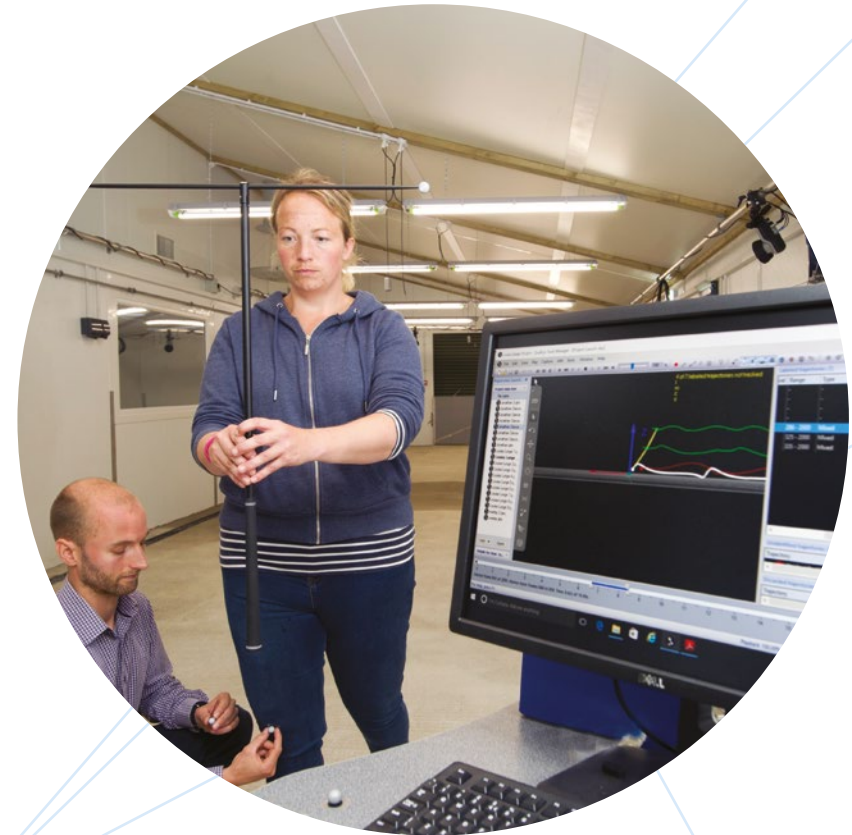
Dedicated to the development and use of the latest sensor-based and automated technologies to support precision livestock farming and enhance the performance, health and welfare of livestock.

Overview

C-DIAL capability enables the automated measurement of animal performance and detection of certain animal behaviours that are early signs of health or welfare compromise. By identifying the probability of disease, animals that require treatment can be targeted for treatment. This can result in more efficient use of antibiotics and faster recovery.

Digital imaging enables remote visualisation of behaviour and physiology, requiring minimal physical interaction with the animals. Automation enables tailor-made management and continuous monitoring of performance.

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Key research expertise

C-DIAL boasts wide-reaching technical expertise from an interdisciplinary team comprising livestock scientists, veterinarians, computer scientists, mathematicians and engineers to address health and welfare management challenges.

- A farming systems approach to enhancing animal health and welfare
- Development of practical on-farm monitoring and assessment of livestock
- Refining husbandry and housing practices to improve health and welfare
- Application of cutting-edge video and computing techniques for livestock monitoring.

Specialist research capability includes:

- High definition networked digital cameras and depth perception cameras for behaviour observations
- State-of-the-art, 18m length gait analysis laboratory and associated equipment for tracking movement of any point on the body in 3D & high definition
- Farmex BarnReport® remote monitoring system to monitor and record environmental conditions
- Advanced thermal and hyperspectral imaging and flexibility to accommodate a wide range of sensors
- A Bluetooth weighing system and Nedap feeders to monitor individual animal performance.

[[DOWNLOAD TECHNICAL SPECIFICATION](#)]

[[VIRTUAL TOUR](#)]

Impact

- Automated and accurate determination of the welfare status of individual animals
- Early diagnosis and intervention of health or behaviour issues, aiding quicker recovery and reduced need for antibiotics
- Enhanced animal health & welfare to support profitable production and superior product quality.

Grand Challenge Focus

+ **Health & Welfare Management**



For enquiries and further information please [click here](#)



Large Animal Research and Imaging Facility (LARIF)

In partnership with  THE UNIVERSITY OF EDINBURGH
The Royal (Dick) School of Veterinary Studies 

Enabling unprecedented insights into the health and well-being of livestock and the prevention of human diseases – a One Health approach.

Overview

Research within the LARIF supports the One Health framework, recognising the link between human, animal and environmental health. It offers exceptional specialist facilities for in-depth studies of all major farmed livestock, including: containment areas for work involving infectious pathogens; facilities for advanced gene technologies; environmentally controlled units suitable for behaviour and welfare studies; imaging, surgical and critical care facilities for large animal models of disease; and development of medical technology that will benefit both humans and animals.

>>





Key research expertise

The LARIF allows users to benefit from a wide range of expertise in farm animal production, health and welfare including:

- Infectious diseases and zoonoses
- Vaccines
- Genetics and genome editing
- Imaging
- Radiology
- Medicine
- Surgery and critical care.

A Culture of Care is central to the function of the LARIF and animal welfare is of utmost priority. All work is undertaken in line with UK Home Office Guidelines and licencing requirements, and is overseen by a team of dedicated Named Veterinary Surgeons who are independent from the work carried out within the facility. Behaviour and welfare studies are supported by environmentally-controlled units with CCTV and can take advantage of the imaging and surgical facilities as required.

[[DOWNLOAD TECHNICAL SPECIFICATION](#)]

Impact

- Linking One Health initiatives with farm animal health and disease epidemiology
- Advancing study of the physiological state of animals and gene expression
- Supporting research in animal health & veterinary therapies
- Enabling advances in immunology and host defence, neuroscience and developmental biology across multiple livestock species.

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Grand Challenge Focus

- + Endemic Disease Reduction
- + Climate Smart Food Systems
- + Health & Welfare Management





In Action

Engineering PRRS Resistant Pigs

Researchers at the University of Edinburgh Roslin Institute have produced pigs that are resistant to the PRRS virus, applying their expertise in gene editing techniques to modify the pig's genome at a single point. This work will benefit pig breeders, farmers and the entire chain of pig product users. It will improve the sustainability of the pig industry, while lowering costs of pig products. Engineering resistance will additionally greatly increase the welfare of the pigs and piglets. From a scientific point of view, this work and the fundamental techniques underlying it pave the way for targeting other diseases affecting large animals.

[[READ FULL CASE STUDY](#)]

Understanding how Salmonella bacteria colonise farm animals and causes disease

The use of novel sequencing-based approaches to determine the function of thousands of Salmonella genes during infection has provided valuable insights into how Salmonella colonises the intestines of farm animals and produces disease. Enhancing our knowledge and understanding of Salmonella significantly increases the chance to successfully mitigate the health and economic impacts of this important zoonotic disease.

[[READ FULL CASE STUDY](#)]



For enquiries and further information please [click here](#)

CIEL

Mobile CT Scanner

In partnership with  SRUC

Portable, high-resolution assessment of animal carcass or live animal body composition.

Overview

The SRUC Animal & Veterinary Science Research Group provide CT (computer tomography) scanning services to livestock breeders, to other research organisations and for veterinary diagnosis. In addition to a modern CT scanning unit and a team of specialist staff based in Edinburgh, CIEL investment has enabled the provision of a mobile service, for use in a wide range of applications by farmers, researchers and external organisations across the UK.

Key research expertise

- Growth
- Productivity
- Genetic improvement
- Animal health
- Meat quality.

How can CT measure meat quality?

Carcass traits in live pigs can be measured and utilised in breeding programmes. Changes in muscle and fat depots can be measured in the growing pig across time. This has been used at SRUC in trial work examining optimum protein levels in the diet to maximise performance and reduce environmental impacts.

Impact

- Helping to improve the efficiency of production systems and product quality
- Increased precision of assessment and introduction of novel traits to genetic improvement programmes
- Faster genetic gain, better breeding objectives.

[[DISCOVER MORE](#)]

Grand Challenge Focus

- + Climate Smart Food Systems
- + Food Safety, Quality & Integrity

For enquiries and further information please [click here](#)





Mobile Sensory (Product Quality) Laboratory

In partnership with 

Enabling large volume product quality assessments, wherever needed.

Overview

Thought to be the first mobile unit of its kind, this portable facility brings the latest imaging and meat quality testing technologies direct to where it's needed, supporting research, animal breeding programmes and ensuring consumer preferences are at the heart of the innovation process.

The sensory lab, equipped with state-of-the-art imaging and product quality technologies uniquely housed within an articulated lorry, can travel around the UK. It enables companies to capture very large amounts of consumer data concerned with sensory aspects (organoleptic traits) related to product quality. The mobile lab is versatile in its applications, able to deliver trained/semi-trained or consumer sensory data collection. Standardising the testing platform in a mobile facility enables geographical and demographical studies with consumers to be easily applied.

Throughput of the mobile lab is dependent upon the questionnaires presented to participants and the nature of the product being tested (e.g. cooked/uncooked). Capacity of more than 500 participants per day (6 hours) can be realised.

[[DOWNLOAD TECHNICAL SPECIFICATION](#)]

Impact

- Assessment of product quality can be used to provide signals to producers and breeders that reward excellence
- Data can be used to inform breeding programmes for sheep, cattle, pigs or poultry to ensure breeding objectives combine productivity, efficiency and product quality.

[[VIRTUAL TOUR](#)]

Grand Challenge Focus

- + Climate Smart Food Systems
- + Food Safety, Quality & Integrity

For enquiries and further information please [click here](#)





Centre for Plasma in Agrifood (AgriPlas)

In partnership with  QUEEN'S UNIVERSITY BELFAST

New plasma research facility focusing on potential uses of the antimicrobial properties of cold plasma for livestock healthcare & biosecurity, food hygiene and shelf-life extension.

Overview

AgriPlas is a dedicated research facility within the Institute for Global Food Security (IGFS), Queen's University Belfast.

It builds on existing expertise in plasma knowledge at the IGFS and involves a multidisciplinary team of physicists, pharmacists, animal health experts, feed and food safety experts and analytical chemists.

Cold plasma research, particularly in the agrifood space, is still a relatively young field and is being increasingly seen as a potentially revolutionary 'wonder technology'. AgriPlas is believed to be the first of its kind, dedicated to focused research on agrifood, agriculture and veterinary scenarios.

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Applications of cold plasma for the food industry

Because of their potential to reduce, or in some scenarios even supplant, the use of antibiotics, plasmas could be key in the fight against antimicrobial resistance (AMR).

It also makes them ideally suited to applications in farm animal healthcare and biosecurity, feed safety, and food shelf-life extension. Scaled-down plasma technology could be available for use outside of laboratories by food producers and processors within a few years.

It is anticipated that, by leading to reduced use of chemicals and antibiotics in food-production systems, the technology should ultimately enhance the sustainability and global marketability of the UK agrifood industry.

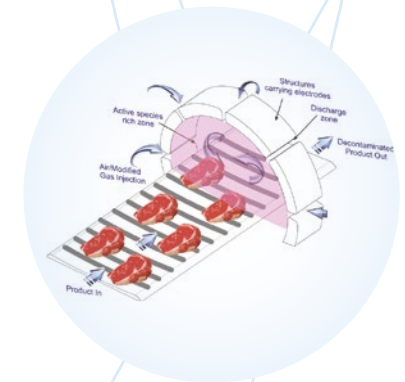
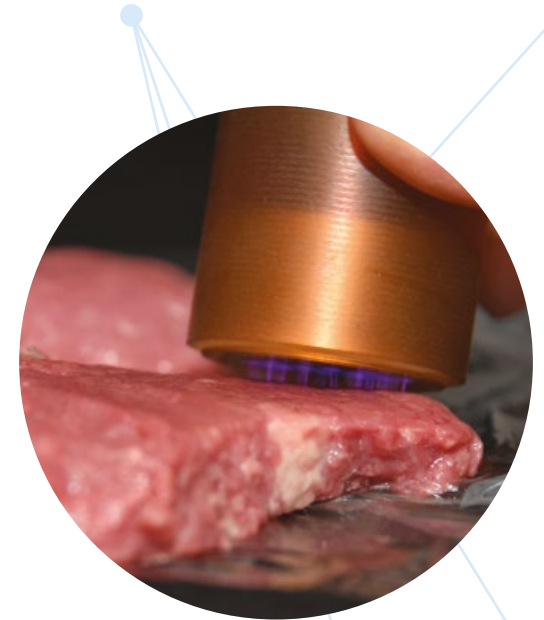
Impact

- Cutting-edge technology offering the potential to transform commercial food production – reducing harmful chemicals and antibiotics in the food chain and lessening the threat of antimicrobial resistance (AMR).

[[WATCH VIDEO](#)]

Grand Challenge Focus

+ Food Safety, Quality & Integrity



For enquiries and further information please [click here](#)



Advanced ASSET Technology Centre

In partnership with  QUEEN'S UNIVERSITY BELFAST

State-of-the-art scientific platforms to facilitate increasingly rapid and powerful identification of feed and food contamination.

Overview

The ASSET ('Assured, Safe and Traceable') Centre is a linchpin of the Institute for Global Food Security (IGFS), Queen's University Belfast. In July 2020 it was listed as a 'Centre of Expertise' by the Food Authenticity Network – a Defra initiative.

ASSET provides leading platforms to facilitate increasingly rapid identification of feed and food contamination and adulteration.

The mass spectrometry element features a range of hyphenated MS instruments. Various LC-MS/MS and GC-MS are available for tailored measurements of predetermined analytes such as toxins, pesticides or targeted metabolomics. Also available are high resolution accurate mass instruments (QToF) coupled to UPLC for non-targeted metabolomic analysis or equipped with an Ambient ionisation source such as REIMS, DESI or DART.

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Equipment includes:

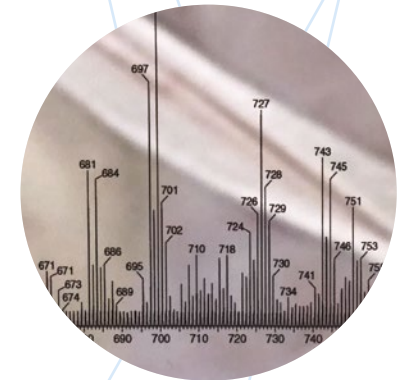
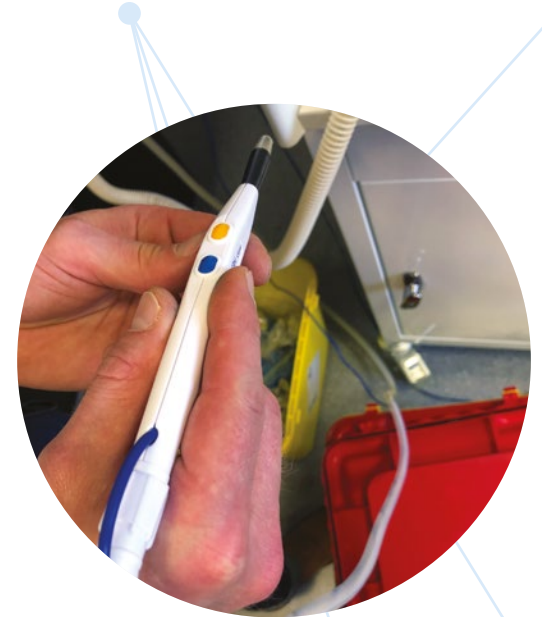
- Mass spectrometry REIMS research system, incorporating 'iKnife'
- DART (Direct Analysis in Real Time) ionisation couple to single quadrupole detector
- UPLC-QToF With associated processing software workflow suite
- Spectroscopy instrumentation FTIR (Fourier Transform Infra-red)
- NIR (Near Infrared) in benchtop and portable format
- Raman

Impact

- Promoting global food integrity and enhancing the sustainability and global marketability of UK agrifood products.

Grand Challenge Focus

+ Food Safety, Quality & Integrity



For enquiries and further information please click here

Working with CIEL

Helping to streamline and simplify your research & innovation process

CIEL brings together all the necessary elements for conducting research – simplifying the process and speeding up translation of ideas into new products and services to increase business competitiveness and profitability.

CIEL can help you:

- + Connect with new UK research capability and insight
- + Engage in innovation to stimulate new ideas and business opportunities
- + Access additional skills and resource
- + Meet potential partners and build the best project consortia
- + Identify and secure R&D funding
- + Deliver ideas, projects, and help commercialise and market new products and services
- + Address important industry issues
- + Champion new ideas to our network.





Membership

CIEL is a membership organisation, working with businesses to help identify and develop their livestock research needs, and then building relevant collaborations to deliver new technologies and processes for livestock food production.

We have a network of Industry Members encompassing all aspects of the livestock supply chain.

As a CIEL Member you'll have access to tailored support to meet your R&D requirements and facilitated access to representatives across the CIEL network. We connect people for mutual benefit, helping you build productive working relationships; we remain independent, becoming a trusted source of knowledge and guidance.

Support for research

Understanding the different types and sources of R&D funding available is important in maximising the chances of securing either grant or commercial funding.

For grant funding CIEL supports Members by providing a free grant notification service via monthly newsletters, as well as targeted one-to-one searches for specific project needs across regional, national and international funding sources.

Once funding is identified, a dedicated CIEL team member will work with the lead project partner to form a consortium of relevant partners and capability, and jointly prepare a comprehensive application for funding, managing the submission process throughout.

For commercial funding, whether private funding or precompetitive collaborative funding, CIEL will support in developing proposals and pitches for industry and linking organisations together to deliver programmes of work that will deliver mutual benefit. As with all funding opportunities, CIEL is ideally setup to deliver a project management service, ensuring all elements of the work are delivered on time and within budget.

Leveraging CIEL staff enables businesses to rapidly speed up the time required to find and write a funding proposal and improves the chances of success by opening doors to collaborate with major routes-to-market and innovators across the livestock and agrifood sectors.



“ CIEL is an important facilitator in bringing industry together to discuss key issues the sector needs to address and identify ways to overcome them. CIEL is a good support network. The team actively works on our behalf and we certainly recognise the value membership brings to our business.”

Paul Billings, Germinal GB



Project Management

All R&D projects are risky, but most funding bodies have little tolerance for poor project management. Increasingly, projects will involve partners to specifically help manage projects and exploit results. This is a central marking criterion for new funding sources.

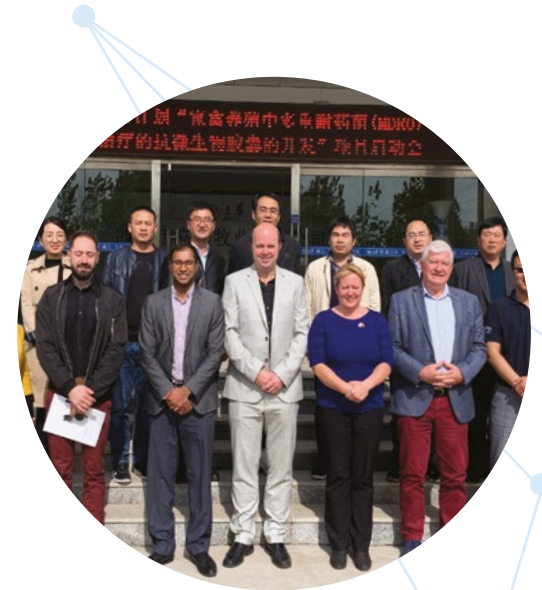
CIEL provides a cost-effective solution, combining project management expertise and knowledge exchange via our CIEL Member WebPortal, in-house R&D events, and a growing network of agrifood businesses across the livestock supply chain. We have built streamlined reporting channels with full governance and compliance with funding bodies to ensure admin costs are reduced and technical staff time can be maximised.

£1.1m win to tackle multi-drug resistant organisms in poultry

CIEL successfully supported a UK-China consortium secure vital funding to develop a new non-antibiotic antimicrobial treatment that could control the spread and development of antibiotic resistant pathogens in poultry.

UK company GAMA Healthcare, best known for their infection control products in hospitals, are partnering with CIEL, Scotland's Rural College (SRUC); and Shanghai Veterinary Research Institute to customise and trial innovative patented technology for use in poultry.

The project is funded by the UK Department of Health and Social Care's AMR fund, managed through Innovate UK, and China's Ministry of Science and Technology. The funding is enabling the project team to develop and test effectiveness of the novel technology in poultry.





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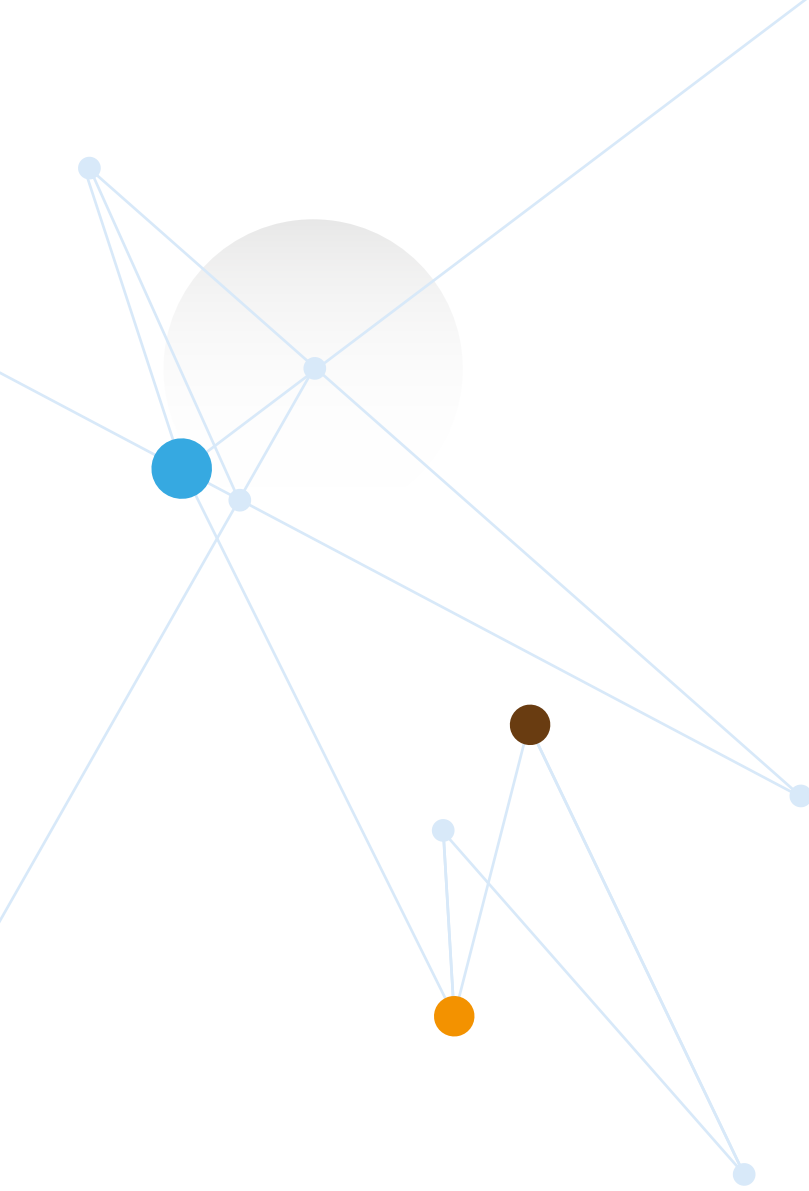


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