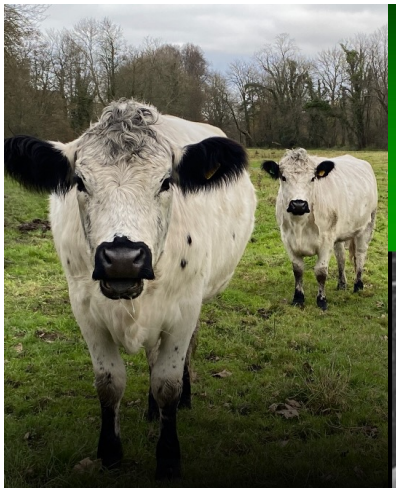
An academic perspective – how research has already delivered benefits to industry

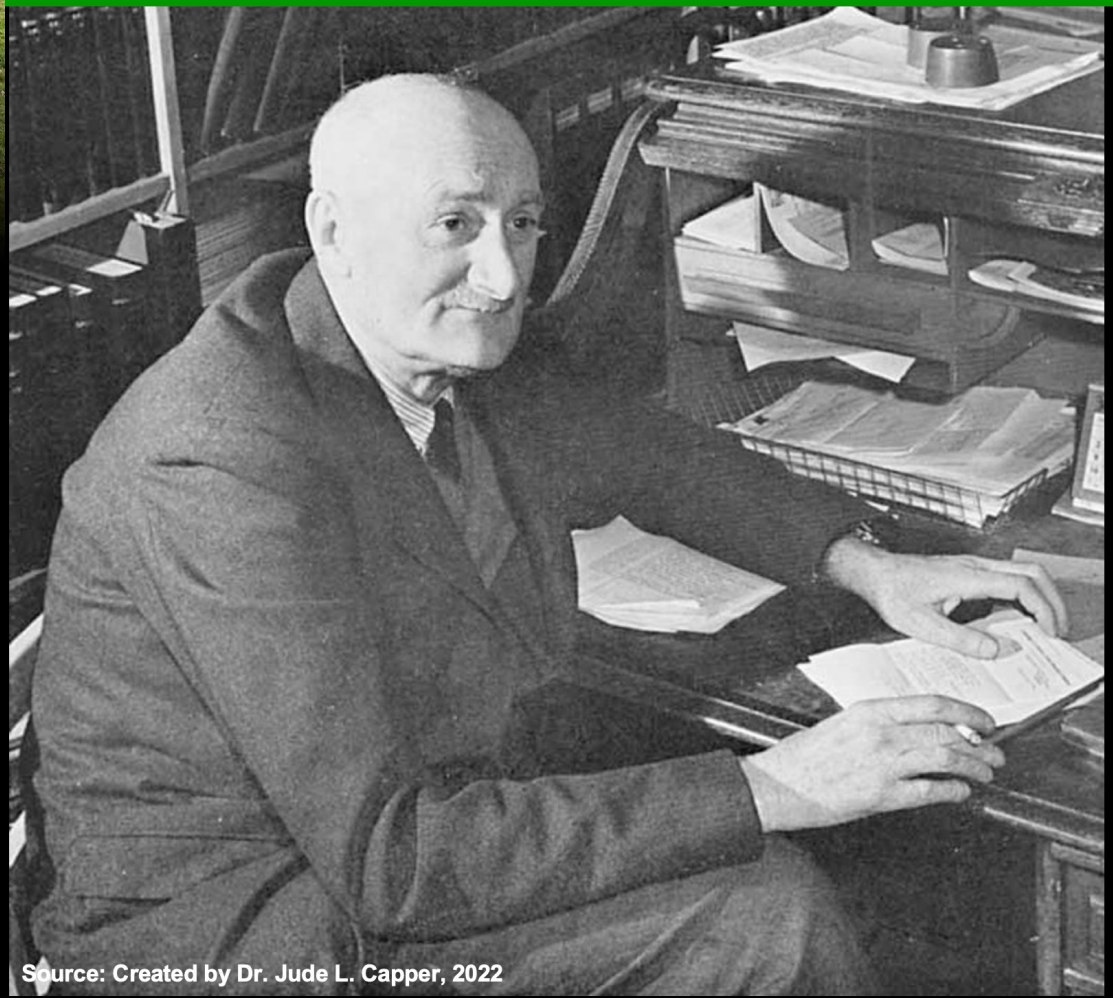
Professor Jude L. Capper

ABP Chair of Sustainable Beef & Sheep | Harper Adams University



B

Sir John Hammond CBE, FRS PhD
Physiologist, veterinarian and pioneer of AI



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Father of modern animal physiology.

Classic studies in embryo survival.

Author of first authoritative text on AI.

Founded BCBC.

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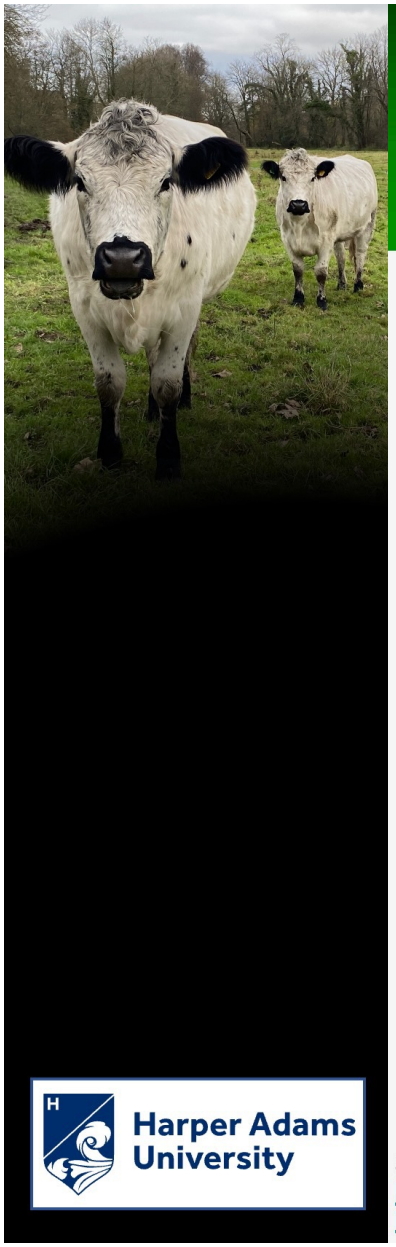


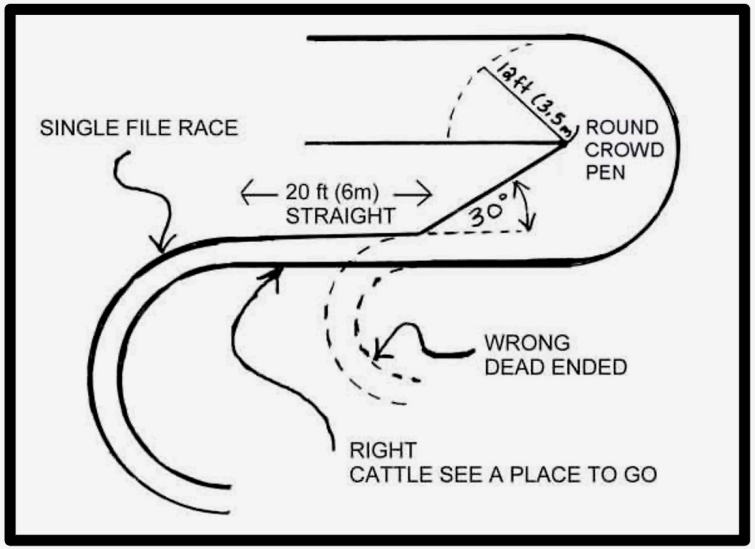
COM

Professor Temple Grandin has revolutionised global meat handling practices

Livestock Handling at the Abattoir: Effects on Welfare and Meat Quality

Temple Grandin*

Colorado State University, Department of Animal Science, Fort Collins, CO, USA
*Corresponding author. Email: cheryl.miller@colostate.edu (Temple Grandin)



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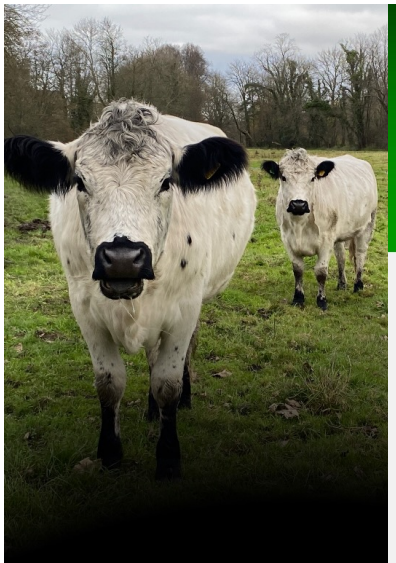

BSAS 2023 demonstrates the benefits of academia to industry

Abstract Presentations:

F. T. Baker | Creating a generalisable equation to predict enteric methane emissions from dairy cattle

L. Rayment | Effects of fresh or spent hops (Humulus lupulus) on enteric methane production in vitro

O. Cristobal-Carballo | Seasonal greenhouse and ammonia gas emissions in a naturally-ventilated dairy housing system

O. Cristobal-Carballo | AFBI's 30-years research on quantification and mitigation of methane emissions in cattle and sheep

L. Twomey | Investigating chlorate in water as a cause of chlorate in milk

A. Cushnahan | Human edible feed efficiency within contrasting milk production systems

G. M. Chapman | Effect of a molasses based liquid feed on diet digestibility, volatile fatty acid production and methane emissions in lactating dairy cows

D. Baran | Analysing the pattern of methane emissions from the nostrils and mouth of dairy cows

K. Barnes | Dose response effects of Himanthalia elongata, Chondrus crispus, Alaria esculenta and Fucus vesiculosus macroalgae on in-vitro rumen fermentation and methane production compared against Asparagopsis taxiformis

A. L. Craig | An investigation into factors influencing nitrogen use efficiency on commercial dairy farms

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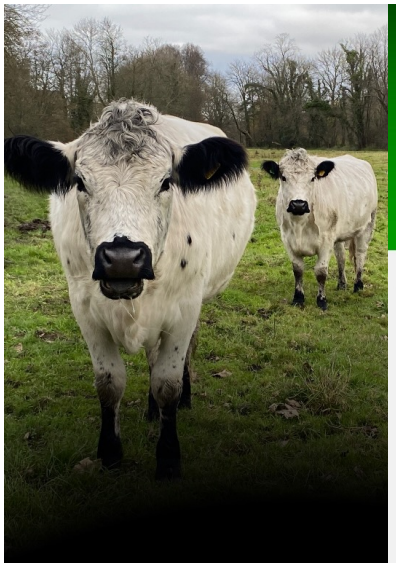

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Abstract Presentations:

P. B. Burrows | Impacts on the chicken faecal microbiome as the result of various early life management treatments post-hatch

M. Naeem | Impact of low crude protein diets diluted with wheat differing in particle size on gizzard histology of growing broilers

S. B. Mackintosh | The use of field peas to substitute soya in broiler finishing diets

G. Bone | Differential sensitivity to processed Mezquite from two areas of Mexico on broiler chicken performance

A. T. Ijaiya | Growth and egg production performance of japanese quails (Coturnix coturnix japonica) fed diets containing graded levels of ginger waste meal (Zingiber officinale) as a partial replacement for maize

S. O. Olufeko | Carcass quality of broiler chicken fed varying dietary walnut (Plukenetia conophoraMULL. ARG) and melon (Citrulluscolocynthus (L.) SCHRAD. seed meal

. U. Kareem | Assessing the growth performance of broiler chickens fed diets containing varying levels of date by-roducts as a partial replacement for maize

Abdulrashid | Effect of tannia cocoyam corm based diet supplemented with selenium on physical performance roiler finisher chickens

AK

ni | Sustainable broiler production with increasing phytase dose and reducing the use of reduced phosphorus and nitrogen excretion

an | Co-supplementation effects of β-galacto- cture, and musculoskeletal

F. T.

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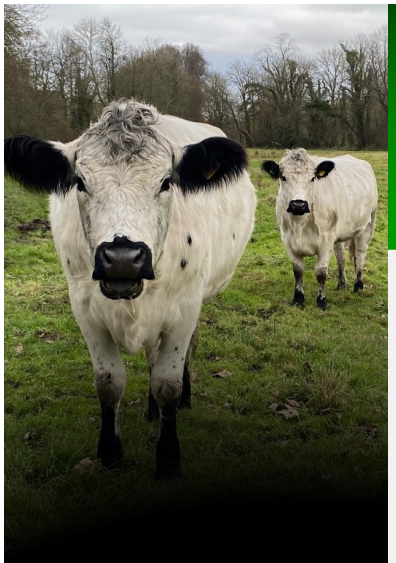

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E. McGowan | A validation approach for
models for Suffolk and Charollais sheep with insufficient

A. Anagnostopoulos | Association between a genetic index for digital dermatitis resistance
foot lesions in Holstein cows

A. Smith | Investigating the Impact of CuCl2 and ZnCl2 on the microbiota of the ovine interdigital space

B.E. Griffiths | The association of serum biomarkers for fat mobilisation and hormonal profiles with sole u
dairy cows.

Break

L. P. Jackson | Survival of Streptococcus dysgalactiae on different bedding materials found on UK she
calcium oxide (lime powder) as an effective disinfectant

ormance
japonica) fed diets
placement for maize
walnut (Plukenetia conophoraMULL. ARG) and

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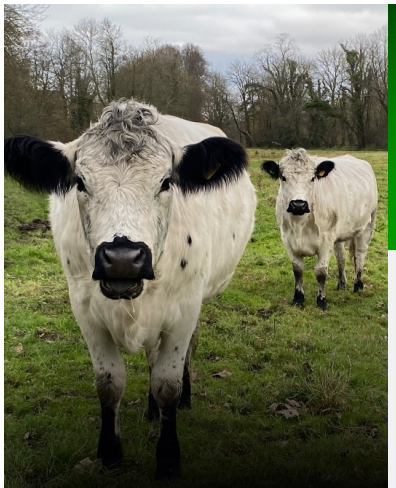

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J. Thompson | In vitro study of the effects of condensed tannins in Willow on the digestive process and methane emissions in cattle

A. Zeleke | Impact of dietary crude protein concentration in dairy cow diets on nitrogen use efficiency and relationships with residual feed intake

Catherine McPartland | An Investigation into the Differential Effects of Conventional Crate and PigSAFE Postnatal Environments on Telomere Length in Piglets (Sus scrofa domesticus)

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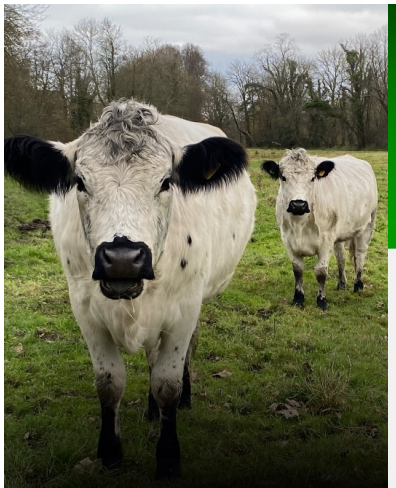

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Sustainable broiler production with increasing phytase dose

reduced phosphorus and nitrogen excretion

Co-supplementation effects of β-galacto

J. Schillings | Stakeholders' perceptions of the use of Digital Livestock Technologies (DL

welfare assessments

H. J. Ferguson | Use of existing precision livestock farming tools to identify positi

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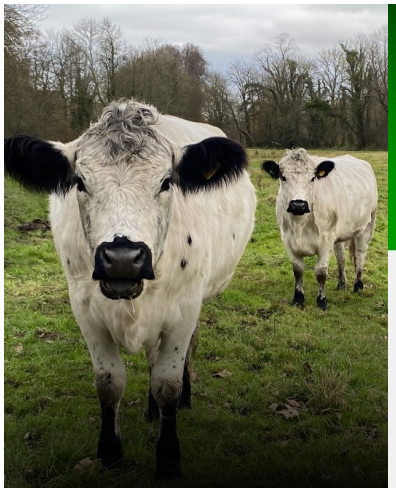

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B. Riley | Bovine respiratory disease changes feeding behaviours in pre-weaned artificially reared calves

S. J. Hendriks | The potential for milk markers as indicators of health disorders in transition dairy cows

G. E. Valergakis | Association of rumen fill and motility with subclinical ketosis in post-partum Holstein cows

A. Umar | Steaming up Bunaji Cattle using Maize and Wheat Bran concentrates

R. Smalley | How UK livestock farmers manage their workloads and the demands of farm assurance

F. Mata | People standings on existing farm animal welfare legislation in major countries and economic blocks around the world

E. McGowan | A validation approach for

Suffolk and Charollais sheep with insufficient

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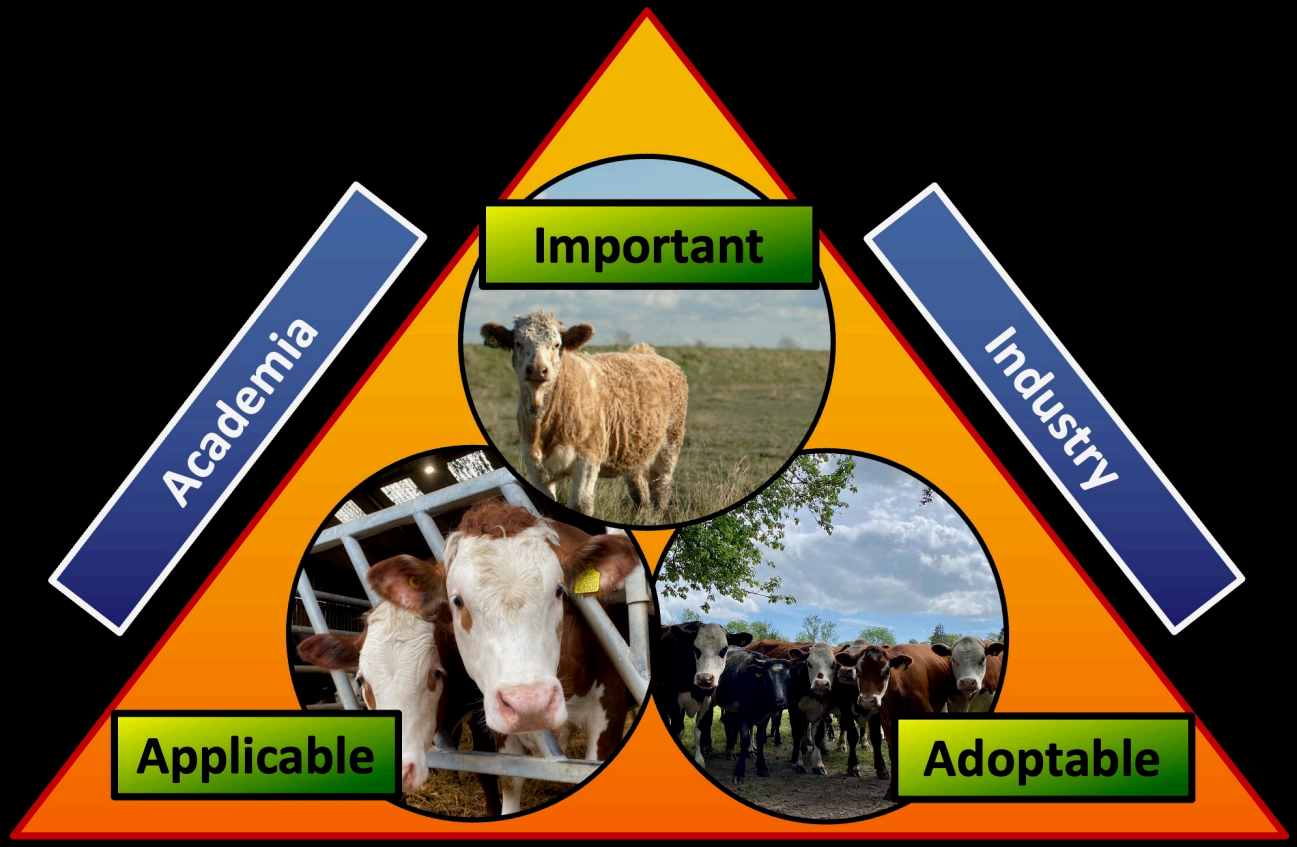
Ivory towers don't fit the modern model



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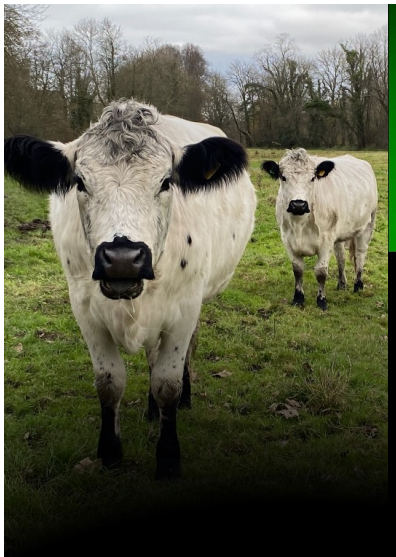

B

Research must be communicated from small academic base to millions of producers

Academia

Industry

Producers

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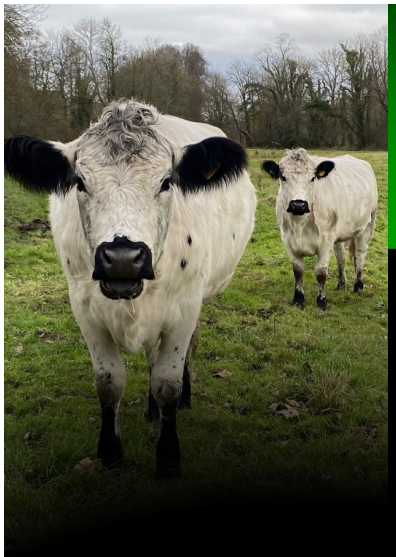

B

Research must be effectively translated and communicated

animal
The international journal of animal biosciences

Published papers

Knowledge transfer

Behavioural change

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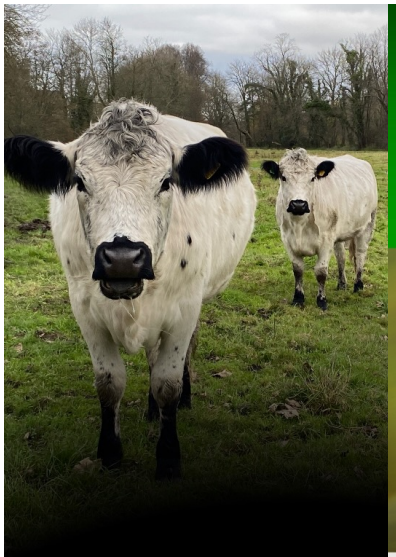

HAU

ABP PRISM 2030 – academia/dual industry partnership

PRISM 2030

Our data driven initiative to improve the sustainability of red meat within the decade.

WHAT WILL WE DO?

350 farmers

We'll be collaborating with a cross section of our beef and lamb supplier farmers, across all different sized farms.

Data driven

We'll start with carbon footprinting across all farms and then progress to soil health, animal health, carbon, water and biodiversity with smaller interest groups, over a period of 2-3 years.

Analysis

We'll then work with our research partners at The Anderson Centre and Harper Adams University (HAU) to compile, analyse and interpret the data.

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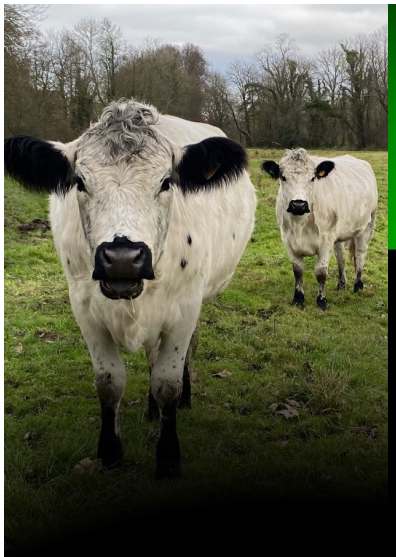

B

Competing priorities may render the chain incomplete

Published papers

Knowledge transfer

Behavioural change

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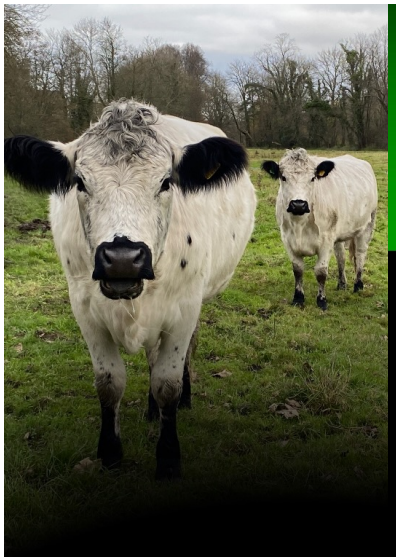

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Competing priorities may render the chain incomplete

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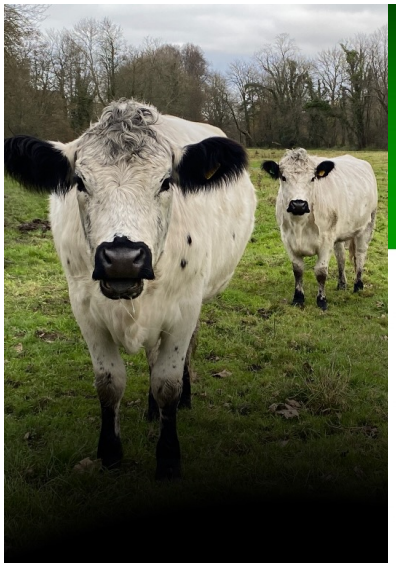

COM

Industry/NGO/Academia alliances help foster connections

CIEL at a glance

The front door to a collaborative network of expertise and innovation

CIEL
Centre for Innovation Excellence in Livestock

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

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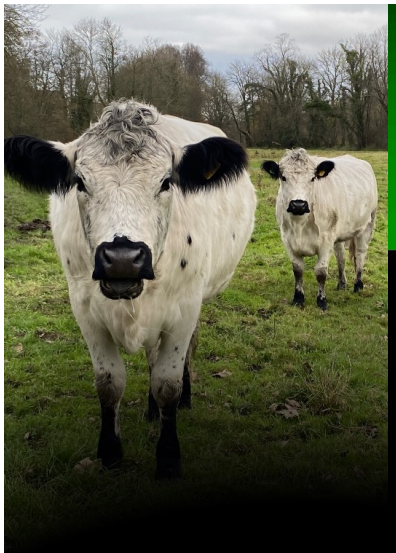

B

Academic-industry collaboration comes with challenges

- Full economic costs
- Timelines
- Lack of readily-available researchers
- Grant deadlines
- Perceived bias

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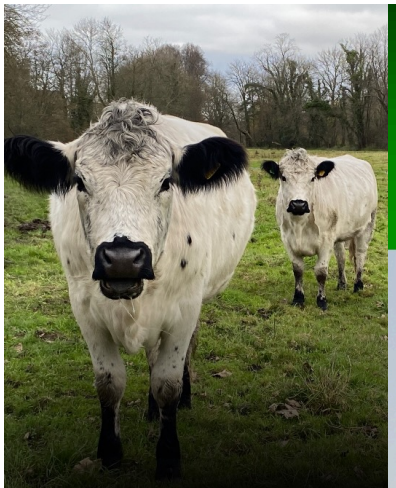
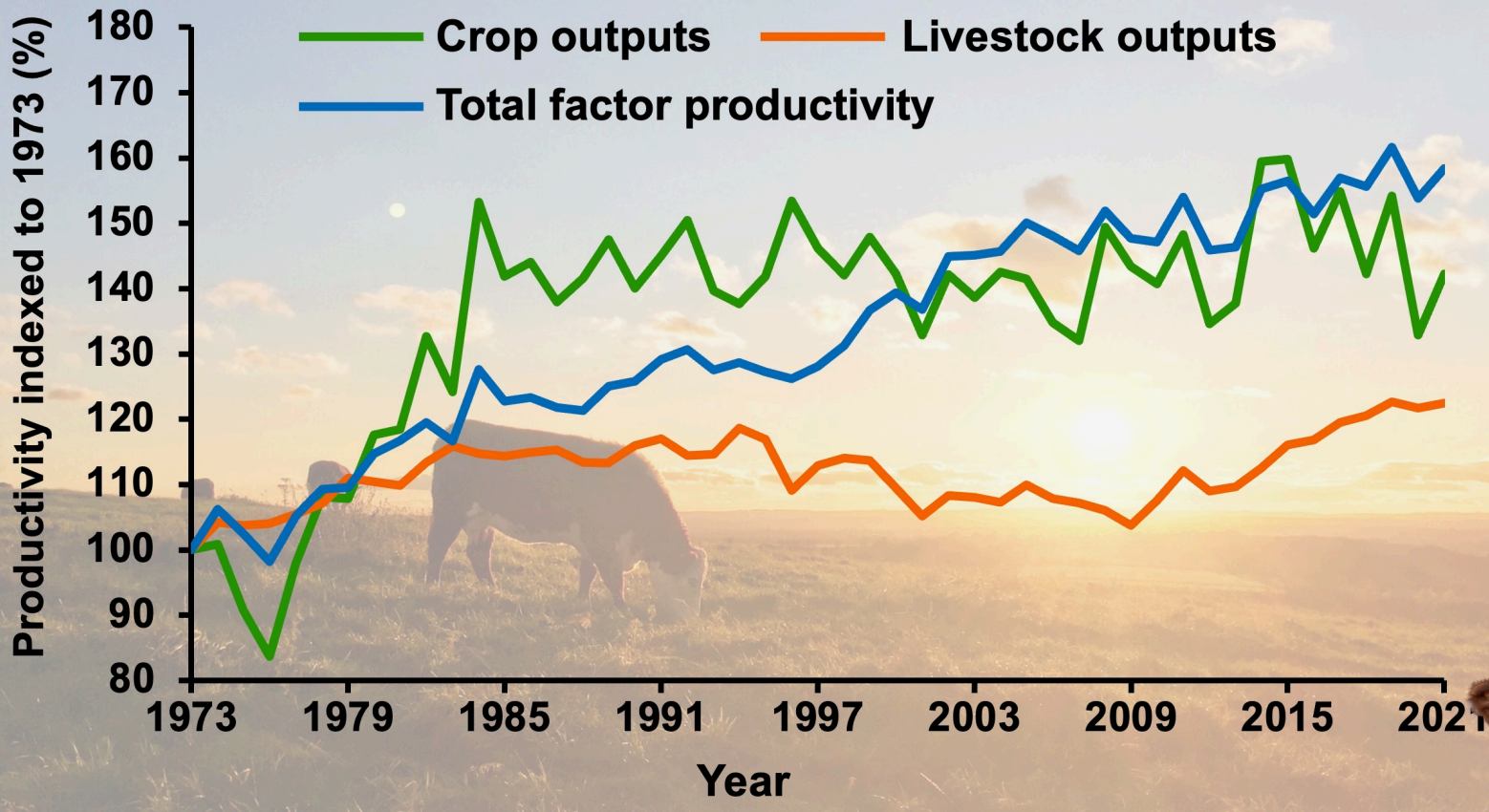


S

Future increases in UK agricultural productivity depend on effective research



Source: Created by Jude L. Capper, 2023. Data from: UK Government. Total Factor Productivity of the United Kingdom agricultural industry in 2021. Available at: https://www.gov.uk/government/statistics/total-factor-productivity-of-the-agricultural-industry/total-factor-productivity-of-the-united-kingdom-agricultural-industry-provisional-estimate-2021

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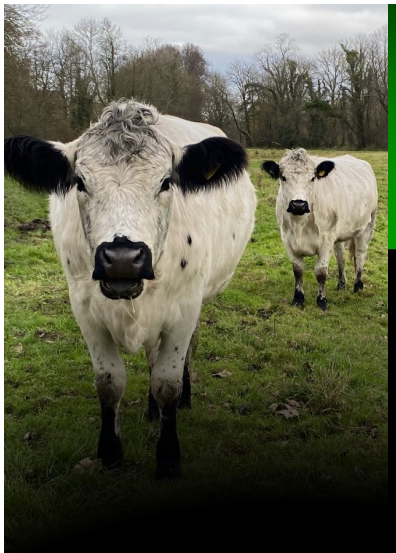

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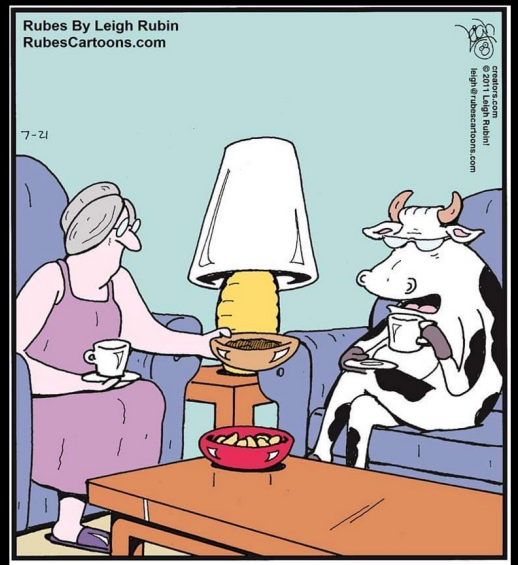
Thank you!

JCapper@Harper-Adams.ac.uk



"No more bean dip for me, dear. I'm trying to reduce my carbon footprint."

Questions?

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