



# Oct 2024 start Animal Production PhD Opportunities jointly between NTU School of Animal Rural and Environmental Sciences and UoN Nutritional Biochemistry Dept

Prof Emily Burton



# Project 1: Optimisation of protease feed additives for poultry to increase protein utilisation efficiency from locally produced sources

- 4 year, fully funded poultry nutrition PhD studentship funded as a BBSRC DTP CASE studentship supported by industry partner KEMIN
- Student registered at NTU, based at Brackenhurst Campus but also partly working at UoN Sutton Bonington campus
- Firstly, using an in vitro model to assess the activity of candidate proteases against a range of UK protein crops.
- Subsequent trials will assess the efficacy of protease enzymes on digestive efficiency in growing meat chickens via feeding trials and finally may explore their application to emerging animal feed materials such as algae and single cell proteins grown via fermentation processes.



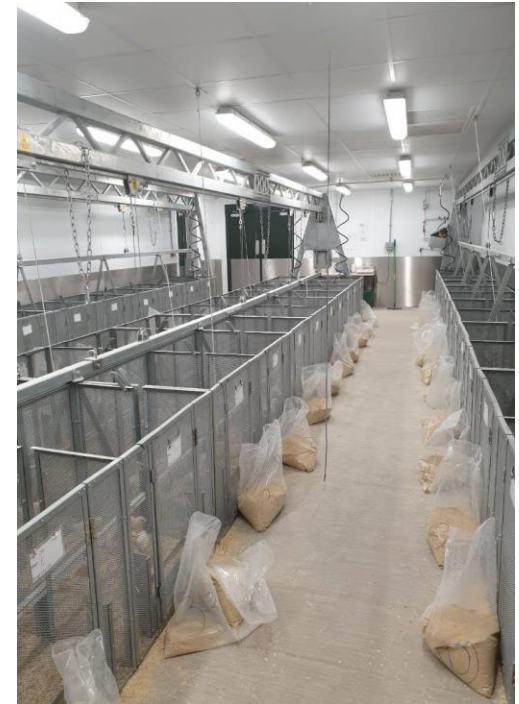
**KEMIN**<sup>®</sup>

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- Main supervisor:

Emily.burton@ntu.ac.uk

# Project 2: The plasticity of insects' microbiome and the impact of feeding to chickens

- 4 year, fully funded poultry nutrition PhD studentship funded as a BBSRC DTP CASE studentship supported by industry partner AB VISTA
- Student registered at UoN, mainly based at UoN Sutton Bonington campus but also partly working at NTU Brackenhurst Campus to run bird trials
- In this project we will seek to determine whether the microbiome of insects could be manipulated in a positive way, which could then be used in a probiotic approach, in addition to their nutritional value for animal production.
- Main supervisor:  
[John.Brameld@nottingham.ac.uk](mailto:John.Brameld@nottingham.ac.uk)



# Project 3: Modelling early life skeletal bone and egg production parameters in laying hens to predict bone health and egg quality in later life

- 3 year, fully funded poultry nutrition PhD studentship funded as a Vice Chancellor's Bursary studentship supported by industry partner NOBLE FOODS
- As demand for egg products has increased over the past two decades the egg industry has had to evolve to meet this demand. However, with the push for an extended laying period this may create more welfare concerns for laying hens, but the skeletal problems are likely to vary between production systems.
- We hold a very large dataset of parameters that study the skeletal development of laying hens from rearing to end of life. The main goal of this PhD project is to produce a tool kit which allows farmers to identify whether their birds are within a healthy range and on a trajectory to remain within this range throughout lay.



main supervisor:  
[ashraf.alkhtib@ntu.ac.uk](mailto:ashraf.alkhtib@ntu.ac.uk)

# Project 4: Use of local plant materials to reduce greenhouse gas production from small ruminants in sub-Saharan Africa



- 3 year, fully funded poultry nutrition PhD studentship funded as a Vice Chancellor's Bursary studentship supported by research partner ICARDA
- The overarching aim of this project is to determine the potential of endogenous grasses and trees in Africa to decrease ammonia (NH<sub>3</sub>) and methane (CH<sub>4</sub>) emissions from small ruminants without compromising meat production and quality.
- Some endogenous grasses and trees are rich in phytochemicals (like tannins and essential oils) which might reduce NH<sub>3</sub> and CH<sub>4</sub> emissions with minimum effect on growth. However, the livestock production sector in East Africa do not optimally utilise endogenous grass and trees for this purpose due to a lack of systematic investigation into efficacy.
- The project is part of a collaboration between NTU and ICARDA (International Centre of Agricultural Research in Dry Areas), a CGIAR carrying out extensive research to improve sustainable sheep and goat productivity in dry areas of developing countries.

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# Application links

- Project 1: Optimisation of protease feed additives for poultry to increase protein utilisation efficiency from locally produced sources <https://www.nottingham.ac.uk/bbdtp/industry-linked-studentships/optimisation-of-protease-feed-additives-for-poultry-to-increase-protein-utilisation-efficiency-from-locally-produced-sources.aspx>
- Project 2: The plasticity of insects' microbiome and the impact of feeding to chickens <https://www.nottingham.ac.uk/bbdtp/industry-linked-studentships/the-plasticity-of-insects'-microbiome-and-the-impact-of-feeding-to-chickens.aspx>
- Project 3: Modelling early life skeletal bone and egg production parameters in laying hens to predict bone health and egg quality in later life <https://www.ntu.ac.uk/study-and-courses/postgraduate/phd/phd-opportunities/studentships/animal,-rural-and-environmental-sciences-studentships/modelling-early-life-skeletal-bone-and-egg-production-parameters-in-laying-hens-to-predict-bone-health-and-egg-quality-in-later-life>
- Project 4: Use of local plant materials to reduce greenhouse gas production from small ruminants in sub-Saharan Africa <https://www.ntu.ac.uk/study-and-courses/postgraduate/phd/phd-opportunities/studentships/animal,-rural-and-environmental-sciences-studentships/use-of-local-plant-materials-to-reduce-greenhouse-gas-production-from-small-ruminants-in-sub-saharan-africa>