PERSONAL INFORMATION

Andreas Foskolos

JOB APPLIED FOR
POSITION
PREFERRED JOB
STUDIES APPLIED FOR
PERSONAL STATEMENT

Visiting Professor, Department of Veterinary Science, University of Parma

WORK EXPERIENCE

12/2015 – Today

Research Fellow in Ruminant Livestock Modelling

Aberystwyth University, United Kingdom

- ***Description:***
  The position forms part of the National Research Network for Low Carbon Energy and Environment (NRN-LCEE), funded jointly by the European Commission and the Welsh government. The Network supports collaborative and interdisciplinary research in Wales with emphasis on environmental, bioscience and energy fields. Currently, there are funded eight different clusters, among which the "Cleaner Cows". As a research fellow of the Cleaner Cows project, my responsibilities have two main dimensions: research conduct and research funding. The overall project aims to apply consequential life cycle assessment (CLCA) combined with animal, environmental and economic modelling to capture wider effects of consolidation and intensification pathways of dairy and beef production and to evaluate from environmental and economic point of view several feeding and management practices. To achieve these goals, the cluster combines expertise from animal (Aberystwyth University), environmental (Bangor University) and economic (Cardiff University) modelling. In this direction, my principal responsibility is to provide ruminant livestock modelling expertise and cattle nutrition and management knowledge. I selected to introduce and incorporate the Cornell Net Carbohydrate and Protein System (CNCPS) with current crop and environmental models to provide accurate inputs and outputs of both productive and environmental interest. Moreover, more specialized models are under development. For example, a lifetime nitrogen efficiency model was developed to include the overall resource efficiency on our analysis.
  A NRN-LCEE research fellow is expected to submit at least one research proposal (> 200.000 £) per year to be funded either by the research council (UK) or the European Commission. In this direction, the first European Commission funded proposal was submitted already (Call: Horizon2020-MSCA-Research and Innovation Staff Exchange-2016) with an overall budget of 1,110,250.00 €. The objective of the proposed research is to use mathematical models in several European farms, representing the diversity of systems and feeding practices, to increase nitrogen use efficiency. We are planning to upgrade and use two models: The Cornell Net Carbohydrate and Protein System (a cow based model) and the Lifetime Nitrogen Efficiency (a herd based model). This project provides an optimal opportunity to establish new and enhance current relationships between participating institutions not only by jointly conducting research but also through staff exchange. The main strength of the project is that includes four non-academic partners that consult on hundreds of European dairy farms and six European and American academic institutions, Cornell University being among them.
- ***Responsibilities:***
  1. Develop and combine animal and farm based models to describe and analyze the complexity of livestock systems with emphasis on environmental issues and profitability.
  2. Write research proposals for main European and regional resources
- ***Initiatives:***
  1. Extend group relations with other research groups around the world
  2. Develop relationships and establish initiatives with British and European feed and dairy industries.

Business or sector University – Academia

02/2013 – 10/2015

Postodoctoral Associate

Cornell University, Ithaca, New York, USA

▪ ***Description:***
The position in the group of Prof. Van Amburgh was mainly a research-teaching position. The group's research is focused on the Cornell Net Carbohydrate and Protein System (CNCPS) with the objective to further develop the program through incorporation of new research into mathematical equations. The group is currently developing new concepts of nutrient degradation and utilization, conducting animal experiments to verify the approach and then incorporating the information into the model. The group is very diverse, having students around the world: currently, includes 3 PhD students (from Italy, Ireland and USA) and two MSc students (from Colombia and USA). Several post-graduate students from European Universities are visiting for a certain period of time performing their own experiments or participating in those that are currently being conducted. Further, several undergraduate students participate in existing experiments and in many cases conduct their own undergraduate honors thesis for their graduation. My role, in this situation, was to guide and supervise postgraduate and undergraduate students in collaboration with Dr. Van Amburgh. In a research perspective, supervision of hypothesis formation, experimental design and conduct of the experiment, analysis of data and interpretation of results were the main tasks. Overall, I participated in the formation of the students presented in Table 1. Moreover, I was expected to develop new concepts and hypotheses, collaborate in research funding either by writing research proposals for the industry or by preparing grant proposals. From a teaching perspective, the supervision of students working in the group was the main task.

▪ ***Responsibilities:***
1. Update and evaluate the CNCPS
2. Develop new models that can be incorporated into the CNCPS
3. Write research proposals for the industry or other funding resources
4. Coordinate experiments conducted by postgraduate students of the group
5. Teach new and established techniques
6. Conduct experiments

▪ ***Initiatives:***
1. Develop an online course on nutritional biology and diet formulation using the CNCPS
2. Extend group relations with other research groups around the world

Business or sector University – Academia

EDUCATION AND TRAINING

2008-2012

Doctor of Philosophy in Animal Science

PhD

Universidad Autonoma de Barcelona, Spain

2009 - 2012

Master of Science in History of Science

MSc

Universidad Autonoma de Barcelona, Spain

▪ Specialization: Animal Nutrition

2004 - 2006

Master of Science in Animal Science and Aquaculture

MSc

Wageningen University, The Netherlands

▪ Specialization: Animal Nutrition

1997 - 2002

Bachelor Degree in Animal Production

BSc

Higher Technological Educational Institute of Larisa, Greece

PERSONAL SKILLS

Mother tongue(s): Greek

Other language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C2	C2	C2	C2	C2
	Replace with name of language certificate. Enter level if known.				
Spanish	B2	B2	B2	B2	B2
	Replace with name of language certificate. Enter level if known.				

Levels: A1/A2: Basic user - B1/B2: Independent user - C1/C2 Proficient user
Common European Framework of Reference for Languages

ADDITIONAL INFORMATION

Publications
Presentations
Conferences
Seminars

Published manuscripts

Fodor, N., Foskolos, A., Topp, C.F.E., Moorby, J.M., Pásztor, L., and Foyer, C.H. (2018) Spatially explicit estimation of heat stress-related impacts of climate change on the milk production of dairy cows in the United Kingdom Submitted: Plos One; Accepted

Styles, D., Gonzalez-Mejia, A., Moorby, J., Foskolos, A., Gibbons, J. (2018). Climate mitigation by dairy intensification depends on intensive use of spared grassland. Global Change Biology, 24: 681-693

Righi, F., M. Simoni, A. Foskolos, V. Beretti, A. Sabbioni, and A. Quarantelli. 2017. In vitro ruminal dry matter and neutral detergent fibre digestibility of common feedstuffs as affected by the addition of essential oils and their active compounds. J. Anim. Feed Sci. 26(3):204-212.

Fessenden, S.W., Hackmann, T.J., Ross, D.A., Foskolos, A., and Van Amburgh, M.E. (2017). Ruminal bacteria and protozoa composition, digestibility and amino acid profile determined by multiple hydrolysis times. Journal of Dairy Science, 100 (9): 7211-7226

Foskolos, A., Cavini, S., Ferret, A., Calsamiglia, S. 2016. Effects of essential oil compounds addition on ryegrass silage protein degradation. Canadian Journal of Animal Science, 96 (2): 100-103

Ehrhardt, R.A., Foskolos, A., Giesy, S.L., Thorn, S.R., Butler, W.R., Quirk, S.L., Waldron, M.R., and Boisclair, Y.R. 2016. Increased plasma leptin attenuates adaptive metabolism in early lactating dairy cow. Journal of Endocrinology, 229 (2): 145-157

Foskolos, A., Ehrhardt, R.A., Hileman, S.H., Gertler, A. and Boisclair, Y.R. 2015. Insensitivity of well-conditioned mature sheep to short-term reduction of central leptin signaling. Animal, 9(11): 1852-1858

Van Amburgh, M.E., Collao-Saenz, E.A., Higgs, R.J., Ross, D.A., Recktenwald, E.B., Raffrenato, E., Chase, L.E., Overton, T.R., and Foskolos, A. 2015. The Cornell Net Carbohydrate and Protein System: Updates to the model and evaluation of version 6.5. Journal of Dairy Science, 98:6361-6380

Foskolos, A., A. Siurana, Rodriquez-Prado, M., Ferret, A., Bravo, D., and Calsamiglia, S. 2015. The effects of a garlic oil chemical compound, propyl-propane thiosulphonate (PTSO), on ruminal fermentation and fatty acid outflow in a dual flow continuous culture system. Journal of Dairy Science, 98:5482-5491

Foskolos, A., Calsamiglia, S., Chrenkova, M., Weisbjerg, M.R., Albanell, E. 2015 Prediction of rumen degradability parameters of a wide range of forages and non-forages by near infrared reflectance spectroscopy. Animal, 9(7):1163-1171

Cavini,S., Iraira, S., Siurana, A., Foskolos, A., Ferret, A., and Calsamiglia, S. 2015. Effect of sodium butyrate administered in the concentrate on rumen development and productive performance of lambs in intensive production system during the suckling and the fattening periods. Small Ruminat Research, 123:212-217

Publications
Presentations
Conferences
Seminars

Submitted manuscripts

Foskolos, A., Siurana, A., Ferret, A., Castillejos, L., Bravo, D., and Calsamiglia, S. The effect of the addition of essential oils on digestion, rumen fermentation, milk production and milk composition in dairy cows. Submitted: Animal Feed Science and Technology

Foskolos, A., and Moorby JM. Cattle nitrogen use efficiency: Model description and sensitivity analysis. Submitted: Plos One; under 3rd review

Soteriades, A., Gonzalez-Mejia, A.M, styles, d., Foskolos, a., Moorby, J.M, and Gibbons, J.M. Effects of high-sugar grasses and improved manure management on the environmental footprint of milk production. Submitted: Journal of Cleaner Production; under 2nd review

Conference papers

Foskolos, A. (2017). Mejora de la eficiencia del uso del nitrógeno de la leche a través del manejo acelerado de la nutrición del ganado lechero. (Improvement of milk nitrogen use efficiency through accelerated nutrition management of dairy cattle). III Jornada FEDNA - ANEMBE sobre nutrición de ruminates: 55-61, Madrid, Spain, (oral)

Foskolos, A., and Morby, J.M. (2016) Lifetime nitrogen efficiency of dairy cattle: Model description and sensitivity analysis. Advances in Animal Biosciences, 7 (3): 256-258. LiveM 2016: Modelling Grassland-Livestock Systems Under Climate Change. Potsdam, Germany

Van Amburgh, M.E., Foskolos, A., and R.J. Higgs. 2015. Balancing diets with CNCPS v6.5: What changed and implications for use. 77th Cornell Nutrition Conference for Feed Manufacturers. Cornell University, Syracuse, NY

Zontini, A. M., A. Foskolos, D.A., Ross, J. Metcalf, P.H. Doane and M. E. Van Amburgh. 2015. Research update: Formulating diets for lactating cattle using multiple pools of NDF digestibility. 77th Cornell Nutrition Conference for Feed Manufacturers. Cornell University, Syracuse, NY

Van Amburgh, M.E., Grant, R.J., Cotanch, K.W., Zontini, A., Ross, D.A. and Foskolos, A. 2015. NDF: Making something old new again. Herd Health & Nutrition Conferences, March 17, 2015 – Holiday Inn, Liverpool/Syracuse, NY/ March 19, 2015 – Essex Resort and Spa, Essex Junction, VT

Van Amburgh, M. E., R. J. Higgs, A. Foskolos, D. A. Ross, and L. E. Chase. 2015. Updates to the CNCPS v6.5 and a perspective on the future. Mid-South Ruminant Nutrition Conference, Grapevine, Texas, USA 20-21 August 2015

Gutierrez-Botero, M., A. Foskolos, D. A. Ross, and M. E. Van Amburgh. 2014. The effect of protein intestinal digestibility on nitrogen efficiency and performance in high producing dairy cattle. 76th Cornell Nutrition Conference For Feed Manufacturers. Cornell University, Syracuse, NY

Foskolos, A., Higgs, R., Collao Saenz, E., Ross, D.A., Van Amburgh, M.E. Changes in the Cornell Net Carbohydrate and Protein Model: How low we can drive crude protein in the ration? Pacific Northwest Animal Nutrition Conference, Vancouver, British Columbia, 8-9 October 2014

Van Amburgh, M.E., Higgs, R.J., Foskolos, A., Collao-Saenz, E.A. and Ross, D.A. (2014). Making an old model new again: Updates to the CNCPS and a perspective on the future. Southwest Nutrition and Management Conference, Tempe, Arizona, USA 20-21 February 2014.

Van Amburgh, M.E., Foskolos, A., Collao-Saenz, E.A, Higgs, R.J. and Ross, D.A. (2013). Updating the CNCPS feed library with new feed amino acid profiles and efficiencies of use: Evaluation of model predictions, version 6.5. Cornell Nutrition Conference, Syracuse, NY, USA 22-24 October 2013.

Conference Abstracts

Foskolos, A., Pierotti, S., Simoni, M., Righi, F., Moorby, J.M. (2018). The addition of non-fibre carbohydrates with different rumen degradation rates in high forage diets. EAAP 69th Annual meeting, Dubrovnik, Croatia, 27 – 31 August 2018

Foskolos, A., Morgan, Z.C., Holt, M.D., Moorby, J.M. (2018). In vitro assessment of the use of formate salts to enhance rumen digestibility of roughage. EAAP 69th Annual meeting, Dubrovnik, Croatia, 27 – 31 August 2018

Campbell, M., Foskolos, A., Theodoridou, K. (2018). Feed from the sea: A move towards sustainable ruminant livestock production using brown seaweed. EAAP 69th Annual meeting, Dubrovnik, Croatia, 27 – 31 August 2018

Simoni M., Righi F., Foskolos A., Quarantelli A. (2018). Relationship between TMR particle size distribution and digestibility of hay-based diets. EAAP 69th Annual meeting, Dubrovnik, Croatia, 27 – 31 August 2018

Foskolos, A., and Morby, J.M. (2017). The use of high sugar grasses as a strategy to improve nitrogen utilization efficiency: A meta-analysis. British Society of Animal Science Annual Conference, Chester, UK, 26-27 April 2017

Foskolos, F., Gibbons, J., Gonzalez-Mejia, A., Moorby, J.M, and Styles, D. (2017). A life cycle assessment of high sugar grasses on pasture-based dairy farms. EAAP 68th Annual meeting, Tallinn, Estonia, 26 August – 1 September 2017

Foskolos,A., Topp, C.F.E., Moorby, J.M., Foyer, CH, and Fodor, N. (2017). Climate change related heat stress impact on milk yield of dairy cattle in the United Kingdom. EAAP 68th Annual meeting, Tallinn, Estonia, 26 August – 1 September 2017

Fessenden, S.W., Foskolos, A., Block, E., and Van Amburgh, M.E.. Effects of feeding Fermenten® or urea on milk production, rumen nitrogen metabolism and microbial nitrogen content in lactating dairy cattle. ADSA-ASAS joint meeting, Orlando, FL, USA, 12-16 July 2015. (oral)
Collao Saenz, E., Foskolos, A., Higgs, R., Ross, D.A., Van Amburgh, M.E. Meta-analysis of the intake and productivity response to fresh sugarcane inclusion in lactating cows diets. ADSA-ASAS joint meeting, Orlando, FL, USA, 12-16 July 2015. (poster)
Zontini, A. M., Foskolos, A., Ross, D. A. and Van Amburgh, M.E. Undegradable aNDFom in non-forage feeds ADSA-ASAS joint meeting, Orlando, FL, USA, 12-16 July 2015. (poster)
Zontini, A. M., Foskolos, A., Ross, D. A. and Van Amburgh, M.E. aNDFom degradation behavior in non-forage feeds ADSA-ASAS joint meeting, Orlando, FL, USA, 12-16 July 2015. (poster)
Ross, D.A., Foskolos, A., Gutierrez-Botero, M., and Van Amburgh M.E., Improving feed fractionation of nitrogen within Cornell Net Carbohydrate and Protein System: Moving from the acid detergent insoluble nitrogen system to unavailable nitrogen as defined in vitro. Joint ISNH/ISRP International Conference, Canberra, Australia, 8-12 September 2014 (poster)
Foskolos, A., Collao-Saenz, E.A, Higgs, R.J., Ross, D.A., Recktenwald, E.B. and Van Amburgh, M.E. The New Version of The Cornell Net Carbohydrate and Protein System: Updates and Evaluation. Modelling Nutrient Digestion and Utilization in Farm Animals, 8th International Workshop, Cairns, Australia, 15-17 September 2014 (oral by Andreas Foskolos)
Collao-Saenz, E.A, Foskolos, A., Higgs, Pereira, M.N., and Van Amburgh, M.E. Evaluation of the CNCPS v6.5 for predicting metabolizable energy and protein allowable milk in sugarcane based diets. ADSA-ASAS joint meeting, Kansas City, USA, 20-24 July 2014. (poster)
Foskolos, A., Collao-Saenz, E.A, Higgs, R.J., Ross, D.A., Recktenwald, E.B. and Van Amburgh, M.E. Evaluation of the updated version of CNCPS (v6.5). ADSA-ASAS joint meeting, Kansas City, USA, 20-24 July 2014. (poster)
Foskolos A, A. Siurana, A. Ferret, L. Castillejos, D. Bravo, S. Calsamiglia (2013). The effects of propyl-propylthiosulphonate and capsicum addition on ruminal fermentation and animal performance of lactating dairy cows. ADSA-ASAS joint meeting, Indianapolis, USA, 8-12 July 2013. (poster)
Foskolos A., S. Cavini, A. Ferret and S. Calsamiglia (2012). The use of antibodies in order to alter bacterial population in the rumen. 63rd Annual Meeting of the European Federation of Animal Science, Book of abstracts No 18, Bratislava, Slovakia, 27-31 August 2012. (oral)
Foskolos A, E. Albanell, M. Chrenkova, S. Calsamiglia and M.R. Weisbjerg (2012) Group separation of feedstuffs improves prediction of degradability parameters by NIRS. 63rd Annual Meeting of the European Federation of Animal Science, Book of abstracts No 18, Bratislava, Slovakia, 27-31 August 2012. (oral)
Foskolos A., S. Cavini, A. Ferret and S. Calsamiglia (2012). The use of antibodies in order to alter bacterial population in the rumen. Novus 20 years Innovation with Integrity Symposium, Reus, Spain, 18-19 October 2012 (poster)
Foskolos A., S.H. Hileman, A. Getler, R.A. Ehrhardt and Y.V. Boisclair (2011). The role of central leptin signalling in regulating peripheral metabolic adaptations in the sheep. International Oskar Kellner Symposium, Warnemunde, Germany, 9-11 September 2011 (oral)
Foskolos, A. F. De Souza, M. Rodriguez-Prado, A. Ferret, D. Bravo, and S. Calsamiglia (2011). Dose response effects of a garlic oil chemical compound propyl-propyl thiosulfate (PTSO) on rumen microbial fermentation. ADSA-ASAS joint meeting, New Orleans, USA, 10-14 July 2011. (poster)
Foskolos A, E. Albanell, M. Chrenkova, S. Calsamiglia and M.R. Weisbjerg (2010). Prediction of degradability parameters by near infrared reflectance spectroscopy (NIRS). 3rd EAAP International symposium on energy and protein metabolism and nutrition Parma, Italy, 6-10 September 2010. (oral)
Cavini,S., M. Rodriguez-Prado, S. Calsamiglia, A. Foskolos and M. A. Gomez (2010). Feeding glucogenic precursors to dairy goats carrying twins around kidding. ADSA-ASAS joint meeting, Denver, Colorado, Canada, 11-15 July 2010 (poster)
Foskolos A., S. Cavini, M. Rodriquez-Prado, A. Ferret and S. Calsamiglia (2010). A screening test of the use of essential oils compounds on ryegrass silage for preventing nitrogen losses in sustainable dairy production systems. 3rd EAAP International symposium on energy and protein metabolism and nutrition Parma, Italy, 6-10 September 2010 (poster)

Teaching experience

List of Taught Modules

1. BRM0300: Livestock Nutrition; Academic years: 2017-2018; MSc Level
2. BRM0320: Livestock Nutrition (advanced); Academic years: 2017-2018, and 2016-2017; MSc Level
3. BRM5420: Livestock Production Science; Academic years: 2017-2018, and 2016-2017; MSc Level
4. BR23420_ABO: Research Methods; Academic years: 2017-2018, and 2016-2017; BSc Level
5. BR32330_ABO: Dissertation; Academic years: 2017-2018, BSc Level
6. BRM6420_ABO: Research Methods in the Biosciences; Academic years: 2017-2018, MSc Level
7. BDM3520: Dissertation; Academic years: 2017-2018, MSc Level

Module Description and Role

The first module (BRM0300) is an MSc level module that aims to provide a knowledge of broad feeding principles (for example energy, protein and mineral metabolism and requirements, feed analysis etc.) through lectures and discussion of recent relevant scientific papers which illustrate key principles in nutrition. I provided lectures on Feed Evaluation and organized a one-day workshop in Diet Formulation Systems.

The BRM0320 is an advanced module on livestock nutrition dedicated to MSc students. Lectures focus specifically on current research topics in livestock nutrition, drawing on the ongoing research in animal nutrition in IBERS. I gave lectures on the Cornell Net Carbohydrate and Protein System, a diet formulation model for cattle. Further, based on my expertise on environmental issues related with cattle farming, I provided lectures on the correct use of the Cornell Net Carbohydrate and Protein System to better balance diets of dairy cattle reducing the environmental impact of dairy farming.

Livestock Production Science (BRM5420) is an MSc level module that explores the way in which research is used to develop more efficient animal production systems. Lectures and seminars cover a range of topical subjects selected from the growth and development of livestock, reproductive technologies, feed efficiency, mitigating the effects of the intensification of animal production, and food chains. My lectures were focused on Life Cycle Assessment, a modelling tool to assess the environmental impact of livestock production.

The dissertation at BSc level includes two modules: (i) BR23420_ABO (Research Methods), and (ii) BR32330_ABO: (Dissertation). The first module aims to transfer knowledge on research development that leads to the development of students' research proposal for their dissertation. In this module, I supervised the following students:

2016-2017:

1. Nia Davies, Ketosis of pasture based dairy cattle
2. Alex Kristi Davies, Consequential life cycle assessment of environmental and economic effects of dairy and beef consolidation and intensification pathways.
3. Marita Bjornvik Overmo, The evaluation of equations to predict nitrogen excretion of dairy cattle on pasture

2017-2018:

1. Jones Isabelle, The current farm nitrogen use efficiency status of Welsh dairy farms: Emphasis on heifer growth efficiency.
2. Gholami Ehsan, The current farm nitrogen use efficiency status of Welsh dairy farms: Emphasis on dairy cattle efficiency.
3. Fitch Rhiannon, The environmental impact of consolidated and intensive dairy cattle farming under pasture vs indoor conditions.

The second module (BR32330_ABO) provides students the opportunity to perform in-depth research on a topic that is relevant to their degree. Many projects are based on laboratory experiments or fieldwork exercises; others comprise a computer modelling exercise based on secondary data sources or the development of a detailed business plan. Others again involve a critical review of published literature. In this module, I supervised the following students:

1. Nia Davies. Ketosis of pasture based dairy cattle
2. Zoe Morgan, In vitro assessment of the addition of formate salts as enhancers of rumen digestibility of roughage.

The development of research dissertation at the MSc level incudes two modules depending on the type of MSc. The BRM6420_ABO (Research Methods in the Biosciences) module is dedicated to full time MSc students. In this module essential research skills are developed. These include: (i) experimental design, data handling and statistical analysis, and (ii) an awareness of advances in technology and of how of cutting-edge analytical techniques have transformed bioscience research. In this module, I supervised the following students:

1. Mikenzie England Hanlon, Effects of nutritionally improved straw (NIS) in dairy cow diets at two starch concentrations

Moreover, the BDM3520 module (Dissertation) is dedicated to long distance learning MSc students. This work based research module offers the opportunity for student to focus in depth on a topic of personal interest to them within a professional, work based context. The module will allow them scope to address a research question of applied relevance, employing appropriate research methodology to do so. The project may be discipline specific or multidisciplinary - in a work based, applied context this is quite likely. The professional context itself must have a clear connection with the agri-food industry. In this module, I supervised the following students:

1. Brian Evans, Total mixed ration fibre characteristic changes from feed sorting by dairy cows during feed out period.

Honours and awards

2004-2006 Award of the State Scholarships Foundation Institute of Greece for MSc studies in the field of animal science (IKY; www.iky.gr)
2018 Award of the Journal of Dairy Science for the most cited paper (Van Amburgh et al., 2015) in the Nutrition, Feeding, and Calves section.

Reviewer of Manuscripts

Animal Feed Science and Technology
Animal Production Science
Italian Journal of Animal science
Journal of Dairy Science
Livestock Science
Plos One

April 26, 2018
I authorize treatment of personal data.

Dr Andreas Foskolos