

OBITUARY

Kevin John Shingfield (1968–2016)

First published online 30 January 2017



Kevin with Finnish Ayrshire dairy cows in the fields of Minkiö research barn of Luke, Finland, 2010. Photograph used with kind permission of Veikko Somerpuro - archives of Luke.

Kevin Shingfield was born in 1968 in Watton, a small market town in the district of Breckland in the English county of Norfolk, England. His father was a construction worker and his mother a housewife. Kevin went to school in Watton, thereafter going on to do his B.Sc. at the University of Nottingham. It was at Nottingham, with Phil Garnsworthy, that his deep interest in lipid metabolism and lactation began. His next port of call was the Rowett Institute in Aberdeen, where he was keen to learn more about metabolism and microorganisms in the rumen, another topic that would fascinate him throughout his professional career. Unfortunately, his year in Aberdeen 1989–90 was marred by poor health in the form of myalgic encephalomyelitis, which took Kevin a long time to shake off. Subsequently, Kevin went to the Scottish Agricultural College at Auchincruive near Ayr in Scotland to do his Ph.D. with Nick Offer. He received a PhD degree at the University of Glasgow in 1996. The title of his thesis was 'Renal and mammary PD excretion in Holstein/Friesian dairy cows: its potential as a non-invasive index of protein metabolism'.

In 1996, the animal nutrition research group at the Agricultural Research Centre (MTT; now the Natural Resources Institute Finland, Luke) in Jokioinen, Finland, was searching for a new project researcher. Colleagues in the UK gave excellent recommendations for Kevin as a young post-doctoral researcher. He arrived at Jokioinen 20 years ago on a beautiful September evening. After wandering a while in Helsinki

during rush hour in his car with the steering wheel on the wrong side, he eventually found the road towards Jokioinen.

Important consequences flowed from Kevin's early results in Jokioinen. He discovered that supplementation of local forages with domestic rapeseed meal in diets for dairy cows was more effective than soybean meal. Mostly based on these results, the use of imported soybean meal in ruminant feeding has almost disappeared in Finland. But it was Kevin's forensic analysis of the >200 fatty acids present in milk and the influence of diet on milk composition, particularly fatty acids, that gave an important impetus for his career. He was technically very gifted, which helped in the development of fatty acid analysis. He was widely acknowledged to be the most accomplished analyst globally in this respect. Kevin applied recently developed omasal digesta sampling technique which combined with digesta markers provided a step change in methodologies to measure the flow of nutrients from the rumen, creating new possibilities to understand in more detail ruminal and mammary fatty acid metabolism. Kevin emerged as one of the world's most able researchers in ruminant fat metabolism, and he received many invitations as a speaker to the most significant congresses in the field.

The merits and ability of Kevin were also recognised in the UK and he undertook a three-year post-doctoral fellowship at the world renowned Centre for Dairy Research (CEDAR) at the University of Reading 2001–2003. Whilst at Reading, working with David Beever, he continued his focus on milk fatty acids, including developing new data on the rather unusual conjugated fatty acids, including *cis*-9,*trans*-11 18:2 (conjugated linoleic acid; CLA). These fatty acids have important implications for human health, and Kevin's results provoked widespread commercial as well as academic interest, particularly from the food industry. Another conjugated fatty acid *trans*-10,*cis*-12 18:2 had been shown to influence adipose tissue oxidation in small animals, so he went on to investigate the effect of dietary supplements of this conjugated fatty acid on energy balance in dairy cows, another nutritional issue with high industrial interest. This was probably one of very few such studies ever done. Also while at Reading, Kevin became involved in several European Commission-funded projects. These proved to be a tremendous platform for Kevin to interact with like-minded scientists across Europe and indeed North America.

In 2003 Kevin received an offer to return to MTT but he was initially undecided. His decision to return to MTT or stay at

Reading changed on a daily basis for some time! After much discussion and advice-seeking he wisely decided to return to Finland in 2004 as a Principal Research Scientist to continue his successful career. He developed his expertise constantly and across disciplines and the European collaborations continued. One of the projects, LIPGENE, enabled him to maintain his links with Reading and to resume his collaboration with John Wallace and his colleagues in Aberdeen. The Reading collaboration involved producing milk of different fatty acid composition to test in humans with the metabolic syndrome. At the Rowett, Kevin's analytical skills and knowledge of mass spectrometry enabled the precise molecular mechanisms of CLA formation and further metabolism to be elucidated. The Rowett team in return provided Kevin with some of his hoped-for information about the detailed microbiology of ruminal biohydrogenation. However, the combined complexity of feed composition, the multitude of different fatty acids and the hundreds of species of ruminal microorganisms, most of them uncultured, enabled only an outline picture to be developed – no fault of Kevin's!

During the BIOCLA and LIPGENE projects, Kevin interacted deeply across a number of years with scientists at INRA Theix, who appreciated highly his scientific and technological expertise, as well as his kindness, openness and friendship in many occasions. This was pursued by a bilateral collaboration on the 'goat model' and its peculiarities for the regulation of mammary lipogenesis and CLA metabolism. The scientific and methodological input of Kevin was decisive in that work, and the collaboration continued later in another project (TRUEFOOD) where Kevin welcomed and trained a French PhD student to unravel in part the CLnA (conjugated linolenic acid) metabolism in dairy cows. For more than 10 years Kevin has left an indelible imprint on the INRA team.

Most recently, Kevin's interest was particularly focused on the possibilities of combining animal nutrition and genetics. As a result, nutrigenomics research area was established at MTT, and the building of an infrastructure and resources for the research were started. In 2009 he was appointed as Professor of Nutritional Physiology. The research was expanded to cover greenhouse gas emissions and energy metabolism of dairy cows, once again collaborating with colleagues across Europe in Framework 7 projects. Kevin was instrumental in the successful project application RuminOmics, and continued as a senior manager in this large multinational project until it finished in December 2015. The achievements of RuminOmics, yet to be published in full, owe much to Kevin's management skills, patience, charm and diplomacy.

In 2013, Kevin returned once again to the UK, this time to Wales, where he was appointed Professor of Nutritional Physiology at Aberystwyth University. Within Aberystwyth University he provided a catalyst bringing together expertise in rumen microbiology, ruminant genomics, bioinformatics, greenhouse gas research and of course lipid and fatty acid metabolism. He established a world class lipidomic facility based on advanced mass spectrometry to further expand his and our understanding of lipid metabolism in ruminants. He developed a truly systems biology approach to explore the interaction of nutrition with genomics on animal productivity

and product quality expanding his collaborations within Europe and worldwide most notably with colleagues in Brazil.

Kevin was actively involved with *Animal* since it was established in 2006, firstly as Editor in section on Product Quality, and then in 2013 became the Section Editor in Nutrition - Ruminants. In early 2016, he was appointed to the Animal Management Board as a representative from the British Society of Animal Science. He was absolutely passionate about *Animal* and the strategic development of the journal. As Section Editor he devoted much effort to ensure excellence in science, open communication with authors, and clear responsibilities for editors. As a leader of a team of editors, he was both very trustful and always available for advice, offering each one his sharp and solid analysis of a paper and his clear and constructive suggestions when asked for help.

A major part of Kevin's work was training the next generation of students to work in agriculture whether in science, industry, education or policy fronts. Kevin instilled the key principles of conducting scientifically excellent research, which is relevant to big challenges in our society to his many students. This was a very important aspect of his work. In October 2016, the British Society of Animal Science established a Postgraduate award in his memory 'Kevin Shingfield Postgraduate Award'.

The achievements of Professor Kevin Shingfield as a researcher are unique in all aspects taking into account his age. At what would normally be considered to be only half-way in an academic career, he had achieved more than most professors by their retirement. One example of this is the recognition from Thomson Reuters in 2011 for achieving the highest percent increase in total citations in the field of Agricultural Sciences. At his death, his h-index was 30 and total citations of his work numbered 3048. We can only imagine what he would have still been able to achieve.

Kevin was well-liked in the work community – he had a boyish twinkle in his eyes and a wicked sense of humour, he was sociable and always delighted to help others. When moving from Finland to Reading he listed at his farewell party the 10 best and 10 worst things in Finland. The number one was the same in both lists: Finnish woman; sauna was ranked as the second best and the second worst was mämmi (Finnish Easter pudding). Watching rugby, listening to music and motorcycling were favourite spare time activities. Some of his colleagues noted that his visits from Finland to the UK remarkably often seemed to coincide with events on the rugby fields of England, Scotland, Wales and Ireland! If he had a weakness, it was perhaps the fact that he demanded too much from himself. As a dutiful person, he often put other people's needs ahead of his own. The sudden death of Professor Kevin Shingfield leaves a large gap in our research community. We are proud and immensely grateful that we had an opportunity to work with Professor Shingfield as his mentor, colleague or student. We have lost a respected colleague and many of us also a good friend.

Professor Pekka Huhtanen, Professor Nigel Scollan, Professor Jamie Newbold, Professor Ian Givens, Doctor Heidi Leskinen, Professor Johanna Vilkki, Doctor Yves Chilliard and Emeritus Professor John Wallace