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# 3ʳᵈ International
# Veterinary Congress

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### Chickens on camera: Precision technology to enhance poultry production and welfare

There are potential conflicts between efficient poultry production and animal welfare that can often be resolved or at least reduced by explicitly showing the financial benefits of improved animal welfare such as reduced mortality, improved animal and human health, improved product quality, improved disease resistance, reduced medication and ability to command higher process from consumers and use of precision technology to improve flock management. An automated system that monitors the behavior of chicken flocks using optical flow will be described. This aims to improve both animal welfare and flock management efficiency using statistical analysis of flock movements. The system consists of small cameras positioned inside chicken houses linked to a computer that processes the data in real time and delivers a 'verdict' on the state of the flock every 15 minutes. Information stored is thus secure as video records do not need to be kept. A graphical output onto a computer or tablet enables the producer to see how a given flock is behaving in comparison to other flocks of known health and welfare status. The system provides early warning of key health and welfare indicators such as high levels of final mortality, hock burn, pododermatitis and poor gaits. It can detect potential problems when the birds are only a few days old, before they show obvious symptoms and when interventions are still possible. Optical flow has higher predictive value as a flock management tool than other variables used in flock monitoring such as water use, but can potentially be combined with this and other flock information to give even higher levels of prediction. Furthermore, by monitoring the behavior of the flocks, it is possible to detect flocks carrying *Campylobacter* in birds as young as 7 days, far earlier than is possible with conventional sampling methods. Precision technology combined with better use of the data already collected by the poultry industry has the potential to improve both the welfare and efficiency of poultry production.

### Biography

Marian Stamp Dawkins is a Professor of Animal Behavior at the University of Oxford and has been involved in research on farm animal welfare, particularly that of poultry, for many years. She has a particular interest in how to improve welfare in practice and works extensively with commercial poultry producers in the UK, France and the US. Her most recent book is "*Why Animals Matter: Animal Consciousness, Animal Welfare and Human Well-being*" (2012). In 2014 she was awarded a CBE for services to animal welfare science.

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**Notes:**

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