ANIMAL BEHAVIOR AND WELL-BEING SYMPOSIUM: Novel and multidisciplinary approaches to animal welfare¹

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The Animal Behavior and Well-Being Symposium titled “Novel and multidisciplinary approaches to animal welfare” was held at the American Dairy Science Association–American Society of Animal Science Joint Annual Meeting on Monday, July 13, 2015, in Orlando, FL. The purpose of the symposium was to highlight new and innovative research in animal welfare, with a focus on stress-related disease, immune function, and behavioral development.

The symposium began with a presentation from Dr. Peter Krawczel (University of Tennessee, Knoxville) on the “Opportunities and challenges of interdisciplinary approaches to quantifying welfare.” Dr. Krawczel first reviewed the traditional approaches to studying animal welfare, including measuring behavior and production outcomes (Krawczel, 2015). He followed with examples of novel approaches to studying welfare, including research on sleep, immune function, reproduction, and social science. Dr. Krawczel ended his presentation by encouraging animal welfare researchers to collaborate with biologists, engineers, social scientists, and others to take a multidisciplinary approach to resolving complex animal welfare problems.

The second presentation was given by Dr. Amy Stanton (University of Wisconsin, Madison), titled “Animal welfare as a source of confounding and variation in science.” Dr. Stanton suggested that the housing and management of farm animals used for research could have important impacts on research results (Stanton, 2015). Dr. Stanton drew from studies of rodents (mice) that specifically identified barren floors and rough handling as sources of stress that confounded study outcomes. Dr. Stanton cautioned against using barren, isolated environments and negative handling techniques to collect physiological samples when conducting research with farm animals.

The third speaker was Dr. Jaap Koolhaas (University Groningen, The Netherlands) on the “Interaction between coping style/perso- nality, social stress, and welfare: Interaction between coping style/personality, social stress, and disease risk.” Koolhaas and Van Reenen (2016) proposed that animal welfare researchers should consider the individual variation in animal behavior and physiology rather than focusing on group averages alone. Dr. Koolhaas began his discussion of the functional significance of these differences in nature, followed by the consequences of these differences for domesticated farm animals. Specifically, Koolhaas and Van Reenen suggested that individual responses to stressors may explain some of the variation in stress-related disease risk in farm animals. Certain animals may not cope with stressors as well as others, putting them at greater risk of becoming ill. The authors encouraged researchers to study how these individual differences in behavior can be used to selectively breed more adaptable farm animals that are able to cope with stressors commonly experienced on the farm.

The final presentation of the symposium was given by Dr. Bas Rodenburg (Wageningen University, The Netherlands) titled “Of nature and nurture: The role of genetics and environment in behavioral development.” Dr. Rodenburg discussed the importance of the physical and social environment of young farm animals, alongside genetics, on behavioral development into adulthood (Rodenburg, 2015). Using examples from his own research with hens, Dr. Rodenburg argued that stressors in early life can lead to long-lasting changes in gene expression and hormonal responses.