

Hongwei Xin

Charles F. Curtiss Distinguished Professor
Iowa Egg Council Endowed Professor
Director of Egg Industry Center

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Education

Ph.D. Interdepartmental Area of Engineering,
1989

University of Nebraska-Lincoln

M.S. Agricultural Engineering, 1985
University of Nebraska-Lincoln

B.S. Agricultural Engineering, 1982
Shenyang Agricultural University, China

Honors and Awards

The Henry Giese Structures and Environment
Award of the ASABE (2016)

The Distinguished Career Award of the Assoc.
of Overseas Chinese Ag. and Bio. Engineers
(2016)

ISU-CALS Dean's Citation for Extraordinary
Contributions Award (2016)

A founding member of the Global Expert
Group on Avian Influenza and Global
Roundtable for Sustainable Eggs, Int'l Egg
Commission (2015-)

Charles F. Curtiss Distinguished Professor,
Iowa State University (2014)

USPOULTRY Workhorse of the Year Award
(2014)

Appointed by the U.S. Secretary of Agriculture
to the USDA Ag Air Quality Task Force (2008-
2015)

Overseas Chair, Board of Directors of
International Research Center for Animal
Environment and Welfare (2012-2016)

Fellow of the ASABE (2008)

Recent Publications (Xin is corresponding author)

Lao*, F. T.M. Brown-Brandl, J.P. Stinn, K. Liu,
G. Teng, and **H. Xin**. 2016. Automatic
recognition of lactating sow behaviors through
depth image processing. *Computers and
Electronics in Agriculture* 125:56-62.

Long*, H., Y. Zhao, T. Wang, Z. Ning, and **H. Xin**. 2016. Effect of light-emitting diode vs. fluorescent lighting on laying hens in aviary hen houses: Part 1 – Operational characteristics of lights and production traits of hens. *Poultry Sci.* 95(1):1-11.

Zhao*, Y., D. Zhao, H. Ma, K. Liu, A. Atilgan, **H. Xin**. 2016. Environmental assessment of three egg production systems – Part III: airborne bacteria concentrations and emissions. *Poultry Sci.* 1-9.

Ma*, H., **H. Xin**, Y. Zhao, B. Li, T.A. Shepherd, and I. Alvarez. 2015. Assessment of lighting needs by W-36 laying hens via preference test. *Animal* 10(4):671-80

Research, Extension, and Administration

Dr. Xin's research and extension programs focus on a) air quality related to animal feeding operations with emphasis on quantification and mitigation of aerial emissions; b) impacts of housing systems and management practices on animal behavior, well-being, environmental impact, production efficiency, and ultimately sustainability of livestock and poultry operations. As the inaugural director of the Egg Industry Center (EIC), Dr. Xin oversees the operation of EIC that has the mission of adding value to the egg industry by facilitating research and learning for egg producers, processors and consumers through national and international collaborations.



Current Research Projects

Currently Dr. Xin's research group is working on the following projects:

- Assessing behavioral and production performance responses of pullets and hens to lighting conditions
- Assessing behavioral and production performance responses of laying hens to design, management practices and resources (e.g., stocking density, feeder space, perches and scratch pads) in alternative housing systems
- Improving indoor air quality and air emissions of alternative, cage-free laying-hen housing systems
- Investigating alternative means to quickly euthanize poultry (esp. laying hens) during infectious disease outbreak (e.g., highly pathogenic avian influenza) to reduce the risk of further disease spread
- Understanding and mitigating spread of avian influenza disease
- Quantifying behavioral responses of lactating sows and piglets to different designs or layouts of farrowing crates through computer vision analysis
- Developing instrumentation systems for automated monitoring and measurement of animal behaviors

Other Professional Interests

Dr. Xin is an active life-time member of the American Society for Agricultural and Biological Engineers (ASABE) and has contributed to the function of the organization in various roles, such as Associate Editor of Structure & Environment (SE) Division; SE Program Chair, officers of numerous technical committees, and organizing the ASABE International Livestock Environment Symposia. He was inducted to the Grade of ASABE Fellow in 2008.

Dr. Xin serves on a number of scientific advisory committees, board of directors, or taskforce groups for commodity organizations, government agencies, and academic institutions, both domestically and overseas. For instance, he has been serving as the chair of the United Egg Producers Environmental Scientific Panel (ESP) since 2004, member of the USDA Agricultural Air Quality Task Force (AAQTF) appointed by the U.S. Secretary of Agriculture (2008-2015), overseas chair of board of directors for the International Research Center for Animal Environment and Welfare headquartered in Chongqing Academy of Animal Sciences (2012-2016), member of the Scientific Advisory Committee for the State Key Laboratory in Animal Nutrition (SKLAN) at the Chinese Academy of Agricultural Sciences, Beijing, China (2011-2016), and member of the Scientific Advisory Committee for the Science and Information Centre for Sustainable Poultry Industry [Wissenschafts- und Informationszentrum Nachhaltige Geflügelwirtschaft (WING)] located in Raun, Germany (2012-present).

Dr. Xin has been equally active in developing international academic partnerships. He has fruitfully collaborated on research and graduate education with leading scientists and researchers in Belgium, Botswana, Brazil, Canada, China, Denmark, France, Germany, Japan, Korea, Turkey, Switzerland, the Netherlands, and United Kingdom. These collaborations help ensuring that the academic programs and training stay at the forefront of science and technology while meeting today's needs.