

IOWA STATE UNIVERSITY

Agricultural and Biosystems Engineering

Gretchen A. Mosher

Associate Professor Student Services Coordinator

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Education

Ph.D Industrial & Agricultural Technology,
2011, Iowa State University

M.S. Family & Consumer Sciences Education
and Studies, 2002, Iowa State University

B.S. Food Science, 1996, Iowa State
University

Honors and Awards

Faculty Excellence Award, ATMAE, (2018)

ASABE Blue Ribbon Award for Electronic
Delivery of "Training on prevention of grain
dust explosions" (2017)

The Andersons Cereals and Oilseeds Early-in-
Career Award of Excellence (2016)

ASABE Superior Paper Award (2015)

Miller Faculty Fellow, Iowa State University,
2015-2016 and 2013-2014

Recent Selected Publications

Davoudi Kahki, F., S.A. Freeman, and G.A.
Mosher. 2019. Evaluating machine learning
performance in predicting injury severity in
agribusiness industries. *Safety Science*, 177,
257-262.

Judge, J.L. P., G.A. Mosher, and S.A.
Simpson. 2019. Use of exploratory factor
analysis to identify factors influencing safety
climate in two work environments. *Journal of
Technology, Management, and Applied
Engineering*. 35,(2), 2-15.

Davoudi Kahki, F., S.A. Freeman, and G.A.
Mosher. 2018. Analyzing large workers'
compensation claims using generalized linear
models and Monte Carlo simulation. *Safety*,
57(4), 1-11.

Mosher. G.A. 2018. Professional advisers in
engineering and technology undergraduate
programs: Opportunities and challenges.
Journal of Technology Studies, 43(1), 26-35.

Ramaswamy, S.K. and G.A. Mosher. 2018.
Using workers' compensation claims data to
characterize occupational injuries in the
biofuels industry. *Safety Science*, 103
(March), 252-360.

Ryan, S.J., C.V. Schwab, and G.A. Mosher.
2017. Agricultural workers injury comparative
risk assessment methodology: Assessing

Teaching

Dr. Mosher teaches TSM 415 and 416, the
Technology Capstone series for senior level
students, and TSM 310, Total Quality
Improvement. She has also taught in the
areas of injury prevention, occupational
safety management, grain quality,
curriculum development, and human
nutrition.

Dr. Mosher also supervises ABE's academic
advisors and coordinates undergraduate
student services in ABE.

Research

Dr. Mosher's research agenda addresses themes of risk analysis, process
improvement, and human elements of grain and feed systems, including:

- The development, risk analysis, traceability, segregation, and evaluation of systems that support food safety, in bulk commodity crops, and feed with emphasis on human elements and evaluation and validation processes
- Examination of benefits observed in non-quality operating system components (such as occupational safety, legal compliance, financial, and human resources) when improvements are made in quality and process management.
- Factors influencing learners' understanding and adaption to new and complex material in science, engineering, and technology concepts

The research examines existing systems for quality, functionality, efficiency, and effectiveness. Other approaches include the use of data to predict how systems and people behave and perform.

Other Professional Interests

Dr. Mosher has been active professionally in the American Society for Engineering Education, International Society for Agricultural Safety and Health, the Association of Technology, Management, and Applied Engineering, and the Grain Elevator and Processing Society. She chairs the Technology Curriculum Committee in ABE and serves as the departmental representative to the College of Agriculture and Life Sciences Curriculum Committee.

Additionally, Dr. Mosher serves the profession by chairing the Board of Directors for the Journal of Technology, Management, and Applied Engineering. She serves as the institutional representative to the multi-state North Central 213 Grain Quality Consortium committee and co-chairs the Professional Improvement Committee for the International Society for Agricultural Safety and Health. She provides service to the grain industry as a member of the Educational Programming Committee of the Grain Elevator and Processing Society (GEAPS).

