

# IOWA STATE UNIVERSITY

Agricultural and Biosystems Engineering

## Kurt A. Rosentrater

### Associate Professor

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### Education

Ph.D. Agricultural Engineering, 2001  
Iowa State University

M.S. Agricultural Engineering, 1996  
Iowa State University

B.S. Agricultural Engineering, 1994  
Iowa State University

### Honors and Awards

ISU, College of Agriculture and Life Sciences, CALS Team Award, 2017.

ASABE, Excellence as an Associate Editor, 2017.

American Association of Cereal Chemists International, Texture Technologies Quality Research Award, Best Paper Award, 2015.

ISU, College of Agriculture and Life Sciences, Mid-Career Achievement in Research, 2015.

ISU, College of Engineering, Superior Engineering Extension Award, 2014.

### Recent Publications

Cheng, M.-H., J. K. Sekhon, K. A. Rosentrater, T. Wang, S. Jung, and L. A. Johnson. 2018. Environmental impact assessment of soybean oil production: extruding-expelling process, hexane extraction and aqueous extraction. *Food and Bioprocesses* 108: 58-68.

Duman, G. M., M. Taskaynatan, E. Kongar, and K. A. Rosentrater. 2018. Integrating environmental and social sustainability into performance evaluation: a balanced scorecard-based grey-DANP approach for the food industry. *Frontiers in Nutrition* 5: 65.

De Souza, A. M., K. Mapoka, M. Mousaviraad, and K. A. Rosentrater. 2018. Kinetic modeling of corn fermentation with *S. cerevisiae* using a variable temperature strategy. *Bioengineering* 5(34): 1-11.

Hanna, M., B. L. Steward, and K. A. Rosentrater. 2018. Evaluating row cover establishment systems for cantaloupe and summer squash. *Applied Engineering in Agriculture* 34(2): 355-364.

Paux, L. and K. A. Rosentrater. 2018. Development of gluten-free egg pasta based on amaranth, maize and sorghum. *Journal of Food Research* 7(6): 16-36.

Sekhon J. K., D. Maurer D, T. Wang, S. Jung, and K. A. Rosentrater. 2018. Ethanol production by soy fiber treatment and simultaneous saccharification and co-fermentation in an integrated corn-soy biorefinery. *Fermentation* 4(35): 1-18.

## Teaching

Dr. Rosentrater teaches courses in the area of Biological and Process Engineering and Technology. In particular, he teaches ABE 469/569, Grain Storage, Handling, Preservation, and Processing, as well as ABE 480/580, Engineering Analysis of Biological Systems.

## Research

Dr. Kurt Rosentrater is an Associate Professor in the Departments of Agricultural and Biosystems Engineering, and Food Science and Human Nutrition at Iowa State University. He is also the Executive Director of the Distillers Grains Technology Council. He is actively pursuing research to improve the sustainability of biofuel, grain, feed, food, and agricultural-based systems. For example, he is developing sustainable, economical co-products and value-added products, such as enhanced feeds, foods, biofuels, bioplastics, biocomposites, industrial intermediates, and ingredients. A key component to these efforts is life cycle assessment and techno-economic analysis in order to understand and improve environmental impacts as well as reduce costs. Prior to his work at Iowa State, he was a Lead Scientist with the United States Department of Agriculture – Agricultural Research Service. Before this, he worked for a design-build engineering contractor, and was responsible for process and equipment design, as well as plant and site layout for agri-industrial manufacturing facilities, including grain elevators, feed mills, flour mills, and pet food processing plants.

## Areas of Expertise and Interest

- Biorefining, Biofuel, & Bioproduct Processing
- Biobased Manufacturing Operations
- Biobased Product & Co-product Development
- Biocomposite Production & Characterization
- Computer Aided Design & Drafting
- Continuous Quality Improvement
- Decision-Based Modeling & Analysis
- Food and Feed Processing
- Gluten-Free Product Development
- Grain Storage, Handling, and Processing
- Life Cycle Assessment
- Manufacturing Equipment & Systems Design
- Manufacturing Facility Design & Layout
- Materials Characterization & Analysis
- Physical, Chemical & Nutritional Property Analysis
- Process Design, Modeling & Simulation
- Process Equipment Design & Layout
- Process Flow Development
- Statistical Design, Analysis & Visualization
- Statistical Process Control
- Systems-Based Modeling & Analysis
- Techno-Economic Analysis & Modeling
- Unit Operations Design, Modeling & Simulation

