IOWA STATE UNIVERSITY
Agricultural and Biosystems Engineering

Kurt A. Rosentrater

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

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

Superior Engineering Extension Award, College of Engineering, ISU (2014)

Phi Tau Sigma, The Honor Society of Food Science and Technology (2014)

Recent Publications
Ayadi, F., K. Muthukumarappan, **K. A. Rosentrater**, and *S. Kannadhason*. 2016. Effects of amylose-to-amylopectin ratios on binding capacity of DDGS/soy-based aquafeed blends. *Journal of Food Research* 5(5): 43-56

Fallahi, P., K. Muthukumarappan and **K. A. Rosentrater**. 2016. Functional and structural properties of corn, potato, and cassava starches as affected by a single-screw extruder. *International Journal of Food Properties* 19:4, 768-788

Fallahi, P., K. Muthukumarappan and **K. A. Rosentrater**. 2016. Functional and biochemical alterations of fish meal, soybean meal, and distillers dried grains with solubles as affected by a single-screw extruder. *Food and Bioprocess Technology* (online 13 May 2016). DOI 10.1007/s11947-016-1738-6

Garcia, R. A., C. M. Nieman, *R. A. Haylock*, **K. A. Rosentrater,** and G. J. Piazza. 2016. The effect of chicken blood and its compoonents on wastewater characteristics and sewage surcharges. *Poultry Science* 95: 1950-1956

Hilbrands, A. M., **K. A. Rosentrater**, G. C. Shurson, and L. J. Johnston. 2016. Influence of storage bin design and feed characteristics on flowability of pig diets containing maize distillers dried grains with solubles. *Applied Engineering in Agriculture* 32(2): 273-280

Teaching
Dr. Rosentrater teaches courses in the area of Biological and Process Engineering and Technology.

Research
Currently Dr. Rosentrater's research focuses on utilization of biofuel co-products, development of foods and feeds, value-added products and processes, grain storage, handling, and processing, sustainability of biorenewable resources, improvements in processing efficiencies, techno-economic modeling, and life cycle assessment. His expertise is in value-added product development, alternative recycling and reprocessing strategies, modeling and simulation of processing systems, plant layout and process design. Prior to his work at Iowa State, he was a Lead Scientist with the United States Department of Agriculture – Agricultural Research Service. Previously, he was an assistant professor at Northern Illinois University in the Department of Engineering and Industrial Technology. Before this, he worked for a design-build firm and was responsible for process and equipment design, and plant layout for agri-industrial processing and storage facilities.

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 Modeling & Simulation
- Unit Operations Design, Modeling & Simulation
- Value-Added Coproduct Development