

Rebecca Furbeck

Curriculum vitae

CURRENT RESEARCH EMPHASIS

SUMMER 2018 - CURRENT

Meat and Muscle Biology

University of Nebraska - Lincoln

Ph.D. candidate with research emphasis regarding spoilage dynamics and microbial ecology of processed turkey throughout shelf life. Studies include utilization of high throughput 16S rRNA sequencing and traditional plate methods to investigate impact of product formulation, processing steps, packaging, and manufacturing location on microbial ecology. Data will provide insight on bacteria responsible for spoilage, and potential methods of inhibition for shelf life extension.

Other projects include both industry and interdepartmental collaboration in the following areas: Natural ingredient utilization, sous-vide, swine diet impact on pork quality, sensory evaluation of meats, bison product development, microbial ecology of dry-aged beef, process optimization, and microbial process lethality.

INDUSTRY EXPERIENCE

SUMMER 2017

Research and Development Intern

Hormel Foods

Conducted high-pressure processing (HPP) efficacy challenge study on reconstructed deli-meats, and applied study results to make suggestions for formula optimization. Formulated cost-reducing spice blends for dry sausage application. Assisted product development scientists and thermal processing authorities on line-trials of both meat and grocery products in production facilities.

SUMMER 2016

Research and Development Intern

West Liberty Foods

Researched USDA Organic compliance and developed reconstructed deli meat formulas. Resolved formula issues regarding protein extraction, cook loss, and antimicrobial application. Conducted sensory panels and statistical analysis of collected data. Gathered nutritional specifications to update Nutrition Facts panel.

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EDUCATION

Meat Science, Graduate Research Assistant

University of Nebraska - Lincoln, Ph.D.

Anticipated Graduation Summer 2022

Advisor - Dr. Gary Sullivan

GPA 3.818/4.00

B.S. Food Science and Technology

Iowa State University, May 2018

Minor: Applied Statistics

GPA 3.59/4.00

ORGANIZATION MEMBERSHIP

2018-2020 **Animal Science Graduate Student Association**
Vice President

2018-2020 **UNL Meat Science Club**
President

2017-2020 **American Meat Science Association**
Graduate Student Member

2014-2019 **Institute of Food Technologists**
Iowa and Student Sections

TEACHING EXPERIENCE

SPRING 2019

Graduate Teaching Assistant

AN SCI 410 - Processed Meats

Facilitated lecture and laboratory portions of course to enhance student understanding of meats processing, and assisted their utilization of this knowledge through product development projects. Lecture focuses include: fermentation, microbial safety, and spoilage.

SPRING 2018

Undergraduate Teaching Assistant

Food Microbiology Laboratory

Developed laboratory handout teaching materials to teach students statistical analysis methods for microbial enumeration studies.

EXTENSION ACTIVITIES

Meat Lab Production - Spring 2020

NAMP Short Course

Assisted in producing injected/enhanced products (pressed bacon, marinated poultry, papain tenderized beef chuck) to inform the Nebraska Association of Meat Processor's members on current value-addition methodology and ingredients.

Laboratory Management and Catering - Spring 2019

U.S. Meat Export Federation Short Course

Pre-prepared samples and demonstrated production of frankfurters, smoked sausage, bacon, reconstructed hams, pulled pork, injected pork loin, and strip loin roasts under USDA inspection. Provided technical information regarding product formulation and manufacturing techniques currently utilized in the U.S. for international industry personnel.

Event Assistant - Spring 2019 and Spring 2020

Nebraska Youth Beef Leadership Symposium

Provided laboratory/kitchen assistance for students during culinary development portion of the conference. Enhanced student understanding of beef merchandising, cookery, safe food handling, and recipe development.

Videographer - Spring 2018

Iowa State University Bacon Expo

Created "Makin' Bacon at ISU" video in conjunction with ISU Meat Extension and Meat Laboratory staff to educate Iowa State Bacon Expo attendees about bacon processing and ingredient roles in formulation.

SOFTWARE SKILLS

APPLIED	R (DADA2), PICRUST, STAMP Bioinformatics, QIIME
GENERAL	LaTeX, Genesis for Research and Development, SAS, JMP, Infor Optiva, Exponent (Stable Microsystems), RedJade

CERTIFICATIONS

2020 **HACCP Certification**

2017 **FSMA Preventative Controls
Qualified Individual**

LEADERSHIP EXPERIENCE

FALL 2018 - CURRENT

University of Nebraska-Lincoln

Meat Science Club, President

Created UNL Meat Science Club, an East Campus registered student organization, operating to enhance student opportunity and involvement within meat science research and industry. Developed club constitution, arranged industry speakers for club presentations, and promoted club events.

SPRING 2016 - SPRING 2018

ISU Food Science Club

Public Relations Representative

Educated underclassmen about career options in the food industry by conducting interviews and writing articles on student's summer internship experiences. Helped organize "Fields of Opportunities" food science networking event with industry professionals.

PUBLICATIONS AND PRESENTATIONS

Furbeck RA, Fernando SC, Sullivan GA. 2020. **Effect of processing parameters and storage time on the spoilage microbiome of turkey products.** Poster presented at: 66th International Congress of Meat Science and Technology and 73rd Reciprocal Meat Conference (ICoMST/RMC); 2020 Aug 3-6, virtual meeting.

Watson SC, Furbeck RA, Chaves BD, Sullivan GA. **Spoilage *Pseudomonas* survive thermal processing and grow during vacuum packaged storage in an emulsified beef system.** Poster presented at: 66th International Congress of Meat Science and Technology and 73rd Reciprocal Meat Conference (ICoMST/RMC); 2020 Aug 3-6, virtual meeting.

Furbeck RA, Knapp JP, Trenhaile-Grannemann MD, Burkey TE, Fernando SC, Sullivan GA, Miller PS. **Effect of Green Grass supplementation of swine diet on pork quality characteristics.** University of Nebraska-Lincoln. Poster presented at: Midwest American Society of Animal Science Conference; 2020 Mar 2; Omaha, NE.

Furbeck RA and Sullivan GA. **"From Bellies to Bacon."** Nebraska Pork Talk, July 2018.

References available upon request.