

# VITA

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## **CAREER HIGHLIGHTS:**

I have secured more than \$9M in extramural research funding as PI or Co-PI from grants and gifts from federal agencies, industry and internal funding and hold 7 patents. I have authored or co-authored 68 peer reviewed manuscripts, 127 conference abstracts, 4 book chapters and 9 technical or popular press articles. The impact of my research is evidenced by my citation indices, including an h-index of 27, i10-index of 45 and a total of 2,502 citations. Six of my papers have been cited >100 times and 35 papers have 20 or more citations (*Google Scholar*; 8/29/2017). I have delivered 60 invited research presentations in the area of food microbiology and food safety. I instructed 21 courses, 389 students resulting in a total of 550 contact hours. I have chaired or co-chaired 14 graduate committees and served as a member on 23 graduate committees. I have delivered a total of 47 invited lectures to undergraduate and graduate students in the classroom or laboratory sessions. I have served on 4 University committees, 5 College committees and 16 Departmental committees. I have Co-directed and Instructed 19 workshops, including International workshops in Poland, Turkey, Thailand, Afghanistan and the Bahamas. I have served as a scientific advisor for Food Safety Net Services since 2012 and the International Life Sciences Institute North America (ILSI NA) Technical Committee on Food Microbiology since 2013.

## **EDUCATION:**

- 1997 A.S., Seward County Community College (Liberal, KS).
- 1999 B.S., Kansas State University (Manhattan, KS), Animal Sciences & Industry. (*cum laude*).
- 2001 M.S., Kansas State University (Manhattan, KS), Food Science.
- 2005 Ph.D., Cornell University (Ithaca, NY), Food Sciences (*with minors in Epidemiology and Microbiology*).

## **PROFESSIONAL EXPERIENCE:**

- 2005-2006 Post-doctoral Research Associate, Department of Food Science Cornell University.
- 2006 Research Associate, Department of Food Science, Cornell University.
- 2006-2011 Assistant Professor, Department of Animal Science, Colorado State
- 2011-2011 Associate Professor, Department of Animal Science, Colorado State University.

2011-Present	Associate Professor, Department of Animal and Food Sciences, Texas Tech University.
2012-Present	Scientific Advisor, Food Safety Net Services.
2013-Present	Scientific Advisor, International Life Sciences Institute North America, Technical Committee on Food Microbiology.

### **OTHER TRAINING:**

2003	Short course on Advanced Quantitative Methods in Epidemiology and Infectious Disease Research, University of Guelph.
2003	Workshop on Molecular Evolution, Marine Biology Laboratory.
2004	Graduate and Postdoctoral Summer Institute in Preparation for Careers in Microbiology, American Society of Microbiology.
2005	Workshop on Prokaryotic Genome Annotation and Analysis, The Institute for Genomic Research.
2011	Workshop on Comparative Genomics.

### **INTERNATIONAL EXPERIENCE:**

#### *Organization and Instruction of International Workshops:*

Co-Instructor, for a Week-long Workshop on Meat Safety and Implementation of HACCP (Poznan, **Poland**; October, 2002).

Co-instructor for a Two-day Workshop on Introduction to Bioinformatics and DNA and Protein Sequence Analyses (Sanliurfa, **Turkey**; May, 2006).

Director/Instructor for Molecular Methods in Food Microbiology Symposium and Workshop Series (Harran University, Sanliurfa, **Turkey**; April, 2010).

Director/Instructor for Molecular Methods in Food Microbiology Symposium and Workshop Series (Middle East Technical University, Ankara, **Turkey**; May, 2010).

Director/Instructor for Molecular Methods in Food Microbiology Symposium and Workshop Series (Mahidol University, Bangkok, **Thailand**; March, 2009;).

Instructor for a Workshop on Basic Hygiene and Food Safety (Kabul, **Afghanistan**; November, 2012).

Instructor for a Workshop on Good Agricultural Practices, Good Manufacturing Practices, Standard Sanitation Operating Procedure and Hazard Analysis Critical Control Points (Kabul, **Afghanistan**; June, 2012).

Instructor for a Workshop on the Principles of HACCP (Nassau, **Bahamas**; April, 2014).

Instructor for a Workshop on Global Food Security (Nassau, **Bahamas**; March, 2015).

Invited International Talks:

University of Warrick, Department of Biological Sciences (Coventry, **UK**; May, 2006). “Evolution, Ecology and Transmission Dynamics of *Listeria monocytogenes* from Farm to Table”.

National Veterinary Research and Quarantine Institute Food Safety Symposium (Seoul, **Korea**; November, 2009). “*Listeria monocytogenes* in ruminant farms and animal derived foods”.

International Association of Food Protection Asia Pacific Meeting (Seoul, **Korea**; November, 2009). “Molecular ecology, transmission, and persistence of *Listeria* in ready-to-eat food processing plants”.

Society for Applied Microbiology Summer Conference (Brighton, **UK**; July, 2010). “Ecology of *Listeria* in Animal and the Environment”.

Uruguay International Food Safety Symposium (Montevideo, **Uruguay**; April, 2015) “Molecular Diagnostics for Foodborne Pathogens: From Fundamentals to Application”.

Steak Expert Meeting (Anjou, **France**; June, 2015;) “The Rise of Whole Genome Sequencing as a Subtyping Tool for Microbial Source Tracking: From Fundamentals to Applications”.

International Research Collaborations and Meetings:

Attended and presented a poster at the XVII International Symposium on Problems with Listeriosis Meeting (Porto, **Portugal**; May, 2010).

Attended the Workshop on Comparative Genomic (Kesky Crumlov, **Czech Republic**; January 2011).

Collected environmental sponge and beef tissue samples for research (Cancun, **Mexico**; December, 2011).

Invited to France to attend strategic research planning meetings with Pall Gene Disc, Nexidia, BioMerieux and VITAGORA (Rennes, Lyon, Marcy, and Dijon **France**, respectively; April, 2012).

Attended the 6<sup>th</sup> VTEC meeting (**Amsterdam**, Netherlands; May, 2012).

Invited to Scotland to attend the Zoetis *Salmonella* Working Group Meeting (Edinburgh, **Scotland**; May, 2013).

Attended the IS3 *Salmonella* meeting (Saint-Malo, **France**; May, 2013).

Invited to attend strategic research planning meetings at University of Burgundy and ANSES in Paris France (Dijon and Paris, **France**, respectively; November, 2014).

Collected goat fecal samples for research (Nassau, **Bahamas**; March, 2015).

Accreditation Reviews at International Institutions:

King Saud University, Women's Food Science Department accreditation (Riyadh **Saudi Arabia**; November, 2008).

Croatian Higher Education Systems - Faculty of Agriculture accreditation (Zagreb, **Croatia**; April, 2013).

**MEMBERSHIP IN PROFESSIONAL AND HONORARY SOCIETIES:**

Professional:

1. International Association of Food Protection, 2000-Present.
2. American Society of Microbiology, 2003-2011.  
Organized a symposium on "Persistence of foodborne pathogens from farm to fork: integration of epidemiology information with molecular and virulence phenotype characterization" (San Francisco, May, 2010)
3. Institute for Food Technologists, 2004, 2005, 2009, 2015.

Honorary:

1. Gamma Sigma Delta; 2012 to present.

**HONORS AND AWARDS:**

**Honors:**

1. Second Place Developing Scientist Oral Presentation Competition, International Association of Food Protection, 2005.

**Awards:**

1. Presidential Academic Scholarship, Seward County Community College, 1996.
2. Transfer Student Scholarship, Kansas State University, 1997.
3. Ernest C. and Hettie C. Lahr Scholarship, Kansas State University, 1997.
4. Baeten Farms Scholarship, Kansas State University, 1998.
5. Ethel P. & Francis E. Carpenter Scholarship, Kansas State University, 1998.
6. Arthur S. and Leora J. Peck Scholarship, Kansas State University, 1999.
7. Ruth Herzog and Albert Flegenheimer Graduate Award, Cornell University, 2002.
8. Clinton DeWitt Smith Fellowship, Cornell University, 2002.
9. National Dairy Leadership Scholarship, Cornell University, 2002.
10. Duane V. Rath Graduate Research Fellowship, International Association of Food Industry Supplier, 2002 and 2003.
11. Henry and Ruth Herzog Graduate Research Award, Cornell University, 2003.

12. Corporate Activities Graduate Student Travel Award, American Society of Microbiology, 2003.
13. Germain Mochout Dairy Microbiology Award, Cornell University, 2004.
14. Graduate Research Fellowship, Institute of Food Technologists, 2003 and 2004.
15. Travel Award, Borroghs Wellcome Fund, 2005.
16. Larry Beuchat Young Researcher Award, International Association of Food Protection, 2009.

## **AREA OF EXPERTISE:**

## **PATENTS:**

1. Development and implementation of a multiplex single nucleotide polymorphism (SNP) genotyping assay to detect virulence attenuating mutations in the *Listeria monocytogenes* virulence gene, *inlA*. Provisional Patent: US 61/082, 061.
2. Quantification and molecular detection of lactic acid bacteria in a sample. Provisional Patent: US 61/753,191 - Utility: 14/154,824.
3. Lactic Acid and other probiotic bacteria to reduce pathogens in lymph nodes and other lymphatic tissues of livestock animals. Provisional Patent: 61/921,890 - Utility: 14,585,850.
4. Reduction of pathogens in rendered food products using lactic acid bacteria. Provisional Patent: 62/355,416 - PCT: US17/39669.
5. Reduction of foodborne pathogens in pet food utilizing lactic acid bacteria cultures. Provisional Patent: 62/355,379 - PCT: US17/39661.
6. Serotype discrimination biomarkers to distinguish Infantis from Heidelberg and Newport from Hadar. Provisional Patent: 62/140,089 - PCT US16/24990.
7. Molecular Discrimination of Regulated and Non-Regulated *Salmonella* Serotypes. Provisional Patent: 61/970,535 - PCT: US15/022704 - National US: 15/129108.

## **PUBLICATIONS:**

### **Book Chapters:**

1. Windham, K., **K.K. Nightingale**, and M. Wiedmann. 2005. Molecular Evolution and Diversity of Foodborne Pathogens. p. 1259-1291. *In* Food Biotechnology, eds. K. Shetty, A. Pometto, and G. Paliyath. CRC Press, Boca Raton, FL.
2. Carlson B. A., and **K. K. Nightingale**. 2009. Molecular Subtyping to Track and Control Bacterial Foodborne Pathogens along the Food Chain. p. 460-477. *In* Pathogens and Toxins in Foods: Challenges and Interventions, eds. V. K. Juneja and J. N. Sofos ASM Press, Washington, DC.
3. Elder, JE\* and **Nightingale, KK**. "Tracking pathogens via virulence factors: Shiga toxin-producing *Escherichia coli* in cattle" *In* Advances in Microbial Food Safety. Woodhead Publishing. 2013.
4. Chen, JC\* and **Nightingale, KK**. "*Listeria monocytogenes*: An update on epidemiology, ecology and virulence" *In* Advances in Microbial Food Safety. Woodhead Publishing. 2013.

### Peer Reviewed Publications:

1. Lappi VR, Thimothe J, **Nightingale KK**, Gall K, Scott VN, Wiedmann M. 2004. Longitudinal studies on *Listeria* in smoked fish plants: impact of intervention strategies on contamination patterns. *Journal of food protection* 67:2500-2514.
2. **Nightingale K**, Schukken Y, Nightingale C, Fortes E, Ho A, Her Z, Grohn Y, McDonough P, Wiedmann M. 2004. Ecology and transmission of *Listeria monocytogenes* infecting ruminants and in the farm environment. *Applied and environmental microbiology* 70:4458-4467.
3. Thimothe J, **Nightingale KK**, Gall K, Scott VN, Wiedmann M. 2004. Tracking of *Listeria monocytogenes* in smoked fish processing plants. *Journal of food protection* 67:328-341.
4. **Nightingale K**, Windham K, Martin K, Yeung M, Wiedmann M. 2005. Select *Listeria monocytogenes* subtypes commonly found in foods carry distinct nonsense mutations in *inlA*, leading to expression of truncated and secreted internalin A, and are associated with a reduced invasion phenotype for human intestinal epithelial cells. *Applied and environmental microbiology* 71:8764-8772.
5. **Nightingale K**, Windham K, Wiedmann M. 2005. Evolution and molecular phylogeny of *Listeria monocytogenes* isolated from human and animal listeriosis cases and foods. *Journal of bacteriology* 187:5537-5551.
6. **Nightingale KK**, Fortes ED, Ho AJ, Schukken YH, Grohn YT, Wiedmann M. 2005. Evaluation of farm management practices as risk factors for clinical listeriosis and fecal shedding of *Listeria monocytogenes* in ruminants. *Journal of the American Veterinary Medical Association* 227:1808-1814.
7. **Nightingale K**, Lyles K, Ayodele M, Jalan P, Nielsen R, Wiedmann M. 2006. Novel method to identify source-associated phylogenetic clustering shows that *Listeria monocytogenes* includes niche-adapted clonal groups with distinct ecological preferences. *Journal of clinical microbiology* 44:3742-3751.
8. **Nightingale K**, Thippareddi H, Phebus RK, Marsden JL, Nutsch AL. 2006. Validation of a traditional Italian-style salami manufacturing process for control of *Salmonella* and *Listeria monocytogenes*. *Journal of food protection* 69:794-800.
9. Pohl MA, Wiedmann M, **Nightingale KK**. 2006. Associations among *Listeria monocytogenes* genotypes and distinct clinical manifestations of listeriosis in cattle. *American journal of veterinary research* 67:616-626.
10. Roberts A, **Nightingale K**, Jeffers G, Fortes E, Kongo JM, Wiedmann M. 2006. Genetic and phenotypic characterization of *Listeria monocytogenes* lineage III. *Microbiology* 152:685-693.
11. Sauders BD, Durak MZ, Fortes E, Windham K, Schukken Y, Lembo Jr AJ, Akey B, **Nightingale KK**, Wiedmann M. 2006. Molecular characterization of *Listeria monocytogenes* from natural and urban environments. *Journal of food protection* 69:93-105.
12. Tsai Y-HL, Orsi RH, **Nightingale KK**, Wiedmann M. 2006. *Listeria monocytogenes* internalins are highly diverse and evolved by recombination and positive selection. *Infection, Genetics and Evolution* 6:378-389.

13. Bowling M, Belk K, **Nightingale K**, Goodridge L, Scanga J, Sofos J, Tatum J, Smith G. 2007. Central nervous system tissue in meat products: an evaluation of risk, prevention strategies, and testing procedures. *Advances in food and nutrition research* 53:39-64.
14. Ho A, Ivanek R, Gröhn Y, **Nightingale K**, Wiedmann M. 2007. *Listeria monocytogenes* fecal shedding in dairy cattle shows high levels of day-to-day variation and includes outbreaks and sporadic cases of shedding of specific *L. monocytogenes* subtypes. *Preventive veterinary medicine* 80:287-305.
15. Jia Y, **Nightingale KK**, Boor KJ, Ho A, Wiedmann M, McGann P. 2007. Distribution of internalin gene profiles of *Listeria monocytogenes* isolates from different sources associated with phylogenetic lineages. *Foodborne pathogens and disease* 4:222-232.
16. **Nightingale K**, Bovell L, Grajczyk A, Wiedmann M. 2007. Combined sigB allelic typing and multiplex PCR provide improved discriminatory power and reliability for *Listeria monocytogenes* molecular serotyping. *Journal of microbiological methods* 68:52-59.
17. **Nightingale K**, Milillo S, Ivy R, Ho A, Oliver H, Wiedmann M. 2007. *Listeria monocytogenes* F2365 carries several authentic mutations potentially leading to truncated gene products, including *inlB*, and demonstrates atypical phenotypic characteristics. *Journal of food protection* 70:482-488.
18. Orsi R, Ripoll D, Yeung M, **Nightingale K**, Wiedmann M. 2007. Recombination and positive selection contribute to evolution of *Listeria monocytogenes inlA*. *Microbiology* 153:2666-2678.
19. den Bakker HC, Didelot X, Fortes ED, **Nightingale KK**, Wiedmann M. 2008. Lineage specific recombination rates and microevolution in *Listeria monocytogenes*. *BMC evolutionary biology* 8:277.
20. **Nightingale K**, Ivy R, Ho A, Fortes E, Njaa B, Peters R, Wiedmann M. 2008. *inlA* premature stop codons are common among *Listeria monocytogenes* isolates from foods and yield virulence-attenuated strains that confer protection against fully virulent strains. *Applied and Environmental Microbiology* 74:6570-6583.
21. Orsi RH, Maron SB, **Nightingale KK**, Jerome M, Tabor H, Wiedmann M. 2008. Lineage specific recombination and positive selection in coding and intragenic regions contributed to evolution of the main *Listeria monocytogenes* virulence gene cluster. *Infection, Genetics and Evolution* 8:566-576.
22. Van Stelten A, **Nightingale K**. 2008. Development and implementation of a multiplex single-nucleotide polymorphism genotyping assay for detection of virulence-attenuating mutations in the *Listeria monocytogenes* virulence-associated gene *inlA*. *Applied and Environmental Microbiology* 74:7365-7375.
23. Carlson BA, **Nightingale KK**, Mason GL, Ruby JR, Choat WT, Loneragan GH, Smith GC, Sofos JN, Belk KE. 2009. *Escherichia coli* O157: H7 strains that persist in feedlot cattle are genetically related and demonstrate an enhanced ability to adhere to intestinal epithelial cells. *Applied and environmental microbiology* 75:5927-5937.
24. **Nightingale K**, Raengpradub S, Carter M, Wiedmann M. 2009. Special Interest Series: Newly Developed Workshop Series on "Molecular Methods in Food Microbiology". *Food Protection Trends*:80.
25. Roberts A, Williams S, Wiedmann M, **Nightingale K**. 2009. Some *Listeria monocytogenes* outbreak strains demonstrate significantly reduced invasion, *inlA* transcript levels, and swarming motility in vitro. *Applied and environmental microbiology* 75:5647-5658.

26. Wiedmann M, **Nightingale K**. 2009. DNA-based subtyping methods facilitate identification of foodborne pathogens. *Food Technology* 63:44-49.
27. **Nightingale K**. 2010. *Listeria monocytogenes*: knowledge gained through DNA sequence-based subtyping, implications, and future considerations. *Journal of AOAC International* 93:1275-1286.
28. Van Stelten A, Simpson J, Ward T, **Nightingale K**. 2010. Revelation by single-nucleotide polymorphism genotyping that mutations leading to a premature stop codon in *inlA* are common among *Listeria monocytogenes* isolates from ready-to-eat foods but not human listeriosis cases. *Applied and environmental microbiology* 76:2783-2790.
29. Yang H, Byelashov OA, Geornaras I, Goodridge LD, **Nightingale KK**, Belk KE, Smith GC, Sofos JN. 2010. Characterization and transferability of class 1 integrons in commensal bacteria isolated from farm and nonfarm environments. *Foodborne pathogens and disease* 7:1441-1451.
30. Yang H, Byelashov OA, Geornaras I, Goodridge LD, **Nightingale KK**, Belk KE, Smith GC, Sofos JN. 2010. Presence of antibiotic-resistant commensal bacteria in samples from agricultural, city, and national park environments evaluated by standard culture and real-time PCR methods. *Canadian journal of microbiology* 56:761-770.
31. Chen J, Carlson B, Sofos J, Smith G, Belk K, **Nightingale K**. 2011. High-Throughput Small Molecule Screening Reveals Structurally Diverse Compounds That Inhibit the Growth of *Escherichia coli* O157: H7 In Vitro. *Journal of food protection* 74:2148-2156.
32. Chen Y, Ross WH, Whiting RC, Van Stelten A, **Nightingale KK**, Wiedmann M, Scott VN. 2011. Variation in *Listeria monocytogenes* dose responses in relation to subtypes encoding a full-length or truncated internalin A. *Applied and environmental microbiology* 77:1171-1180.
33. Swyers K, Carlson B, **Nightingale K**, Belk K, Archibeque S. 2011. Naturally colonized beef cattle populations fed combinations of yeast culture and an ionophore in finishing diets containing dried distiller's grains with solubles had similar fecal shedding of *Escherichia coli* O157: H7. *Journal of food protection* 74:912-918.
34. Tsai Y-HL, Maron SB, McGann P, **Nightingale KK**, Wiedmann M, Orsi RH. 2011. Recombination and positive selection contributed to the evolution of *Listeria monocytogenes* lineages III and IV, two distinct and well supported uncommon *L. monocytogenes* lineages. *Infection, Genetics and Evolution* 11:1881-1890.
35. Van Stelten A, Simpson J, Chen Y, Scott V, Whiting R, Ross W, **Nightingale K**. 2011. Significant shift in median guinea pig infectious dose shown by an outbreak-associated *Listeria monocytogenes* epidemic clone strain and a strain carrying a premature stop codon mutation in *inlA*. *Applied and environmental microbiology* 77:2479-2487.
36. Van Stelten A, Simpson J, Chen Y, Scott V, Whiting R, Ross W, **Nightingale K**. 2011. An outbreak-associated *Listeria monocytogenes* epidemic clone strain and a strain carrying a premature stop codon mutation in *inlA* show a significant shift in median guinea pig infectious dose. *Applied and Environmental Microbiology*.
37. Wiedmann M, Orsi RH, Furtado MR, **Nightingale KK**. 2011. Next-Generation Sequencing Methods: Revolutionize Food Microbiology. *Food technology* 65.
38. Williams SK, Roof S, Boyle EA, Burson D, Thippareddi H, Geornaras I, Sofos JN, Wiedmann M, **Nightingale K**. 2011. Molecular ecology of *Listeria monocytogenes* and other *Listeria* species in small and very small ready-to-eat meat processing plants. *Journal of food protection* 74:63-77.



39. Fouladkhah A, Geornaras I, Yang H, Belk KE, **Nightingale KK**, Woerner DR, Smith GC, Sofos JN. 2012. Sensitivity of Shiga Toxin–Producing *Escherichia coli*, Multidrug-Resistant *Salmonella*, and Antibiotic-Susceptible *Salmonella* to Lactic Acid on Inoculated Beef Trimmings. *Journal of food protection* 75:1751-1758.
40. Geornaras I, Yang H, Manios S, Andritsos N, Belk KE, **Nightingale KK**, Woerner DR, Smith GC, Sofos JN. 2012. Comparison of Decontamination Efficacy of Antimicrobial Treatments for Beef Trimmings against *Escherichia coli* O157: H7 and 6 Non-O157 Shiga Toxin-Producing *E. coli* Serogroups. *Journal of food science* 77.
41. Geornaras I, Yang H, Moschonas G, Nunnally MC, Belk KE, **Nightingale KK**, Woerner DR, Smith GC, Sofos JN. 2012. Efficacy of chemical interventions against *Escherichia coli* O157: H7 and multidrug-resistant and antibiotic-susceptible *Salmonella* on inoculated beef trimmings. *Journal of food protection* 75:1960-1967.
42. Park S, Szonyi B, Gautam R, **Nightingale K**, Anciso J, Ivanek R. 2012. Monthly Archives: November 2012. *Journal of Food Protection* 75:2055-2081.
43. Park S, Szonyi B, Gautam R, **Nightingale K**, Anciso J, Ivanek R. 2012. Risk factors for microbial contamination in fruits and vegetables at the preharvest level: a systematic review. *Journal of food protection* 75:2055-2081.
44. Pittman C, Geornaras I, Woerner D, **Nightingale K**, Sofos J, Goodridge L, Belk K. 2012. Evaluation of lactic acid as an initial and secondary subprimal intervention for *Escherichia coli* O157: H7, non-O157 Shiga toxin–producing *E. coli*, and a nonpathogenic *E. coli* surrogate for *E. coli* O157: H7. *Journal of food protection* 75:1701-1708.
45. den Bakker HC, Manuel CS, Fortes ED, Wiedmann M, **Nightingale KK**. 2013. Genome sequencing identifies *Listeria fleischmannii* subsp. coloradonensis subsp. nov., isolated from a ranch. *International journal of systematic and evolutionary microbiology* 63:3257-3268.
46. Gragg SE, Loneragan GH, **Nightingale KK**, Brichta-Harhay DM, Ruiz H, Elder JR, Garcia LG, Miller MF, Echeverry A, Porras RGR. 2013. Substantial within-animal diversity of *Salmonella* isolates from lymph nodes, feces, and hides of cattle at slaughter. *Applied and environmental microbiology* 79:4744-4750.
47. Malley TJ, Stasiewicz MJ, Groehn YT, Roof S, Warchocki S, **Nightingale K**, Wiedmann M. 2013. Implementation of statistical tools to support identification and management of persistent *Listeria monocytogenes* contamination in smoked fish processing plants. *Journal of food protection* 76:796-811.
48. Park S, Navratil S, Gregory A, Bauer A, Srinath I, Jun M, Szonyi B, **Nightingale K**, Anciso J, Ivanek R. 2013. Generic *Escherichia coli* contamination of spinach at the preharvest stage: effects of farm management and environmental factors. *Applied and environmental microbiology* 79:4347-4358.
49. Strawn LK, Fortes ED, Bihn EA, **Nightingale KK**, Gröhn YT, Worobo RW, Wiedmann M, Bergholz PW. 2013. Landscape and meteorological factors affecting prevalence of three food-borne pathogens in fruit and vegetable farms. *Applied and environmental microbiology* 79:588-600.
50. Chapin TK, **Nightingale KK**, Worobo RW, Wiedmann M, Strawn LK. 2014. Geographical and meteorological factors associated with isolation of *Listeria* species in New York State produce production and natural environments. *Journal of food protection* 77:1919-1928.

51. den Bakker HC, Warchocki S, Wright EM, Allred AF, Ahlstrom C, Manuel CS, Stasiewicz MJ, Burrell A, Roof S, Strawn LK. 2014. *Listeria floridensis* sp. nov., *Listeria aquatica* sp. nov., *Listeria cornellensis* sp. nov., *Listeria riparia* sp. nov. and *Listeria grandensis* sp. nov., from agricultural and natural environments. International journal of systematic and evolutionary microbiology 64:1882-1889.
52. Johnston LM, Wiedmann M, Orta-Ramirez A, Oliver HF, **Nightingale KK**, Moore CM, Stevenson CD, Jaykus LA. 2014. Identification of core competencies for an undergraduate food safety curriculum using a modified Delphi approach. Journal of Food Science Education 13:12-21.
53. Park S, Navratil S, Gregory A, Bauer A, Srinath I, Szonyi B, **Nightingale K**, Anciso J, Jun M, Han D. 2014. Farm management, environment, and weather factors jointly affect the probability of spinach contamination by generic *Escherichia coli* at the preharvest stage. Applied and environmental microbiology 80:2504-2515.
54. Wiedmann M, Wang S, Post L, **Nightingale K**. 2014. Assessment criteria and approaches for rapid detection methods to be used in the food industry. Journal of food protection 77:670-690.
55. Bugarel M, den Bakker HC, **Nightingale KK**, Brichta-Harhay DM, Edrington TS, Loneragan GH. 2015. Two draft genome sequences of a new serovar of *Salmonella enterica*, serovar Lubbock. Genome announcements 3:e00215-15.
56. Ison SA, Delannoy S, Bugarel M, Nagaraja TG, Renter DG, den Bakker HC, **Nightingale KK**, Fach P, Loneragan GH. 2015. Targeted amplicon sequencing for SNP genotyping of attaching and effacing *Escherichia coli* O26: H11 cattle strains using a high-throughput library preparation technique. Applied and Environmental Microbiology:AEM. 03182-15.
57. Ison SA, Delannoy S, Bugarel M, **Nightingale KK**, Webb HE, Renter DG, Nagaraja TG, Loneragan GH, Fach P. 2015. Genetic diversity and pathogenic potential of attaching and effacing *Escherichia coli* O26: H11 strains recovered from bovine feces in the United States. Applied and environmental microbiology 81:3671-3678.
58. Manuel CS, Van Stelten A, Wiedmann M, **Nightingale KK**, Orsi RH. 2015. Prevalence and Distribution of *Listeria monocytogenes inlA* Alleles Prone to Phase Variation and *inlA* Alleles with Premature Stop Codon Mutations among Human, Food, Animal, and Environmental Isolates. Applied and environmental microbiology 81:8339-8345.
59. Park S, Navratil S, Gregory A, Bauer A, Srinath I, Szonyi B, **Nightingale K**, Anciso J, Jun M, Han D. 2015. Multifactorial *Escherichia coli* effects of ambient temperature, precipitation, farm management, and environmental factors determine the level of generic contamination on preharvested spinach. Applied and environmental microbiology 81:2635-2650.
60. Park S, Navratil S, Gregory A, Bauer A, Srinath I, Szonyi B, **Nightingale K**, Anciso J, Jun M, Han D. 2015. Count of generic *Escherichia coli* on spinach at the preharvest level determined by the multi-factorial effect of ambient temperature, precipitation, farm management and environmental factors. Applied and Environmental Microbiology:AEM. 03793-14.
61. Pleitner AM, Chapin TK, Hammons SR, Stelten AV, **Nightingale KK**, Wiedmann M, Johnston LM, Oliver HF. 2015. Development and Evaluation of a Multi-Institutional Case Studies-Based Course in Food Safety. Journal of Food Science Education 14:76-85.

62. Elder J, Bugarel M, den Bakker H, Loneragan G, **Nightingale K**. 2016. Interrogation of single nucleotide polymorphisms in *gnd* provides a novel method for molecular serogrouping of clinically important Shiga toxin producing *Escherichia coli* (STEC) targeted by regulation in the United States, including the “big six” non-O157 STEC and STEC O157. *Journal of microbiological methods* 129:85-93.
63. Ison SA, Delannoy S, Bugarel M, Nagaraja TG, Renter DG, den Bakker HC, **Nightingale KK**, Fach P, Loneragan GH. 2016. Targeted amplicon sequencing for single-nucleotide-polymorphism genotyping of attaching and effacing *Escherichia coli* O26: H11 cattle strains via a high-throughput library preparation technique. *Applied and environmental microbiology* 82:640-649.
64. Van Stelten A, Roberts A, Manuel C, **Nightingale K**. 2016. *Listeria monocytogenes* Isolates Carrying Virulence-Attenuating Mutations in Internalin A Are Commonly Isolated from Ready-to-Eat Food Processing Plant and Retail Environments. *Journal of food protection* 79:1733-1740.
65. Webb HE, Bugarel M, den Bakker HC, **Nightingale KK**, Granier SA, Scott HM, Loneragan GH. 2016. Carbapenem-resistant bacteria recovered from faeces of dairy cattle in the high plains region of the USA. *PloS one* 11:e0147363.
66. Webb HE, Granier SA, Marault M, Millemann Y, den Bakker HC, **Nightingale KK**, Bugarel M, Ison SA, Scott HM, Loneragan GH. 2016. Dissemination of the *mcr-1* colistin resistance gene. *The Lancet infectious diseases* 16:144-145.
67. Bugarel M, Tudor A, Loneragan G, **Nightingale K**. 2017. Molecular detection assay of five *Salmonella* serotypes of public interest: Typhimurium, Enteritidis, Newport, Heidelberg, and Hadar. *Journal of microbiological methods* 134:14-20.
68. Chaves BD, Brashears MM, **Nightingale KK**. 2017. Applications and Safety Considerations of *Lactobacillus salivarius* as a Probiotic in Animal and Human Health. *Journal of Applied Microbiology*.

#### **In press:**

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  88. Ison, SA, Hanson D, Edrington TS, Brichta-Harhay DM, Brashears MM, **Nightingale KK**, Bugarel M, and Loneragan GH. 2013. Within carcass distribution of *Salmonella* in peripheral lymph nodes. Beef Industry Safety Summit, Dallas, TX
  89. Koon BN, Bugarel M, **Nightingale KK**, Brashears MM, Loneragan GH. 2013. Gene expression of *Salmonella* Montevideo in bovine lymph node and fecal isolates. CRWAD Annual Meeting (Chicago, IL).
  90. Webb HE, Brichta-Harhay DM, Gragg SE, Brashears MM, **Nightingale KK**, Arthur TM, Bosilevac JM, Kalchayanand N, Schmidt JW, Wang R, and Loneragan GH. 2013. *Salmonella* in lymph nodes of cull and fed cattle at harvest. Beef Industry Safety Summit (BIFSCo) (Dallas, Texas).
  91. Webb HE, Granier SA, **Nightingale KK**, Bugarel M, Brisabois A, Lailier R, Brashears MM, Brichta-Harhay DM, Edrington T, Ison S, Chaves BD, and Loneragan GH. 2014. Colistin Resistance in *Salmonella* of bovine-origin. Beef Industry Safety Summit (BIFSCo) (Dallas, Texas).
  92. Pond N, Guillen L, Echeverry A, Brooks JC, Loneragan GH, Brashears M, **Nightingale K**. 2014. Inhibition of *Salmonella* in feces and soil from the feedlot environment treated with *Lactobacillus acidophilus* NP51. International Association of Food Protection Annual Meeting.
  93. Harris M, Bugarel M, Van Stelten A, Loneragan GH, Ballou M, **Nightingale K**. 2014. A comparison between bovine lymph nodes associated isolates and non-bovine lymph node associated isolates: an intracellular growth and survival assay within bovine macrophage cells. International Association of Food Protection Annual Meeting.
  94. Zhang Q, **Nightingale K**, Campos D, Castelli E, Brashears M. 2014. Antilisterial activity of lactic acid bacteria as influenced by temperature, incubation period and culture media. International Association of Food Protection Annual Meeting.
  95. Campos D, Castelli E, Zhang Q, **Nightingale K**, Brashears M. 2014. Lactic acid bacteria as a biocontrol agent to inhibit *Listeria monocytogenes* during sprouting of alfalfa sprouts. International Association of Food Protection Annual Meeting.
  96. Brandt A, Van Stelten A, Harris M, Stewart S, McCarthy R, **Nightingale K**. 2014. Field study demonstrates high concordance between the Roka Bioscience Atlas *Listeria* detection assay on the USDA-FSIS MLG Protocol 8.09. International Association of Food Protection Annual Meeting.
  97. Van Stelten A, Heiden J, Ballou M, Marquis H, Reilly B, **Nightingale K**. Virulence-attenuated *Listeria monocytogenes* strains raise T cell-mediated immunity and confer protection against a subsequent challenge by fully-virulent *L. monocytogenes* strains. 2014. International Association of Food Protection Annual Meeting.
  98. Ayala D, **Nightingale K**, Brashears M. 2014. Pulsed-field gel electrophoresis subtyping for *Salmonella* serotype discrimination. International Association of Food Protection Annual Meeting.
  99. Brandt A, Borjas E, Chen J, Wiedmann M, **Nightingale K**. 2014. Longitudinal tracking of *Listeria monocytogenes* persistence in meat processing facilities before and after

- employee trainings, behavioral changes and facility improvements. International Association of Food Protection Annual Meeting.
100. Oliver H, Soyer Y, **Nightingale K**, McCoy S, Falk M, Santiago K, Bergdoll L, McNamara K. 2014. Food safety education capacity building programs in Afghanistan. International Association of Food Protection Annual Meeting.
  101. Ison, SA, Delannoy S, Bugarel M, **Nightingale KK**, Webb HE, Renter D, Nagaraja TG, Loneragan GH. 2014. Variation in molecular pathotypes of *Escherichia coli* O26 recovered from bovine feces in the United States. Anses Program of Doctoral and Post-doctoral Research (Maisons-Alfort, France).
  102. Ison, SA., Bugarel M, **Nightingale KK**, Delannoy S, Fach P, Webb HE, Chaves BD, Renter D, Nagaraja TG, Loneragan GH. 2014. Variation in molecular pathotypes of *Escherichia coli* O26 recovered from bovine feces in the United States. Beef Industry Safety Summit, Dallas, TX.
  103. Harris M, Brandt A, Den Bakker H, Cook P, Wiedmann M, **Nightingale KK**. Persistent and Transient *Listeria* Strains Show Different Abilities to Form Biomass and Strains Isolated from Harborage Sites Vary in Accumulation of Genetic Changes. In *2015 Annual Meeting (July 25-28, 2015)*. IAFP.
  104. Stewart S, Nobles C, Chaney E, Adams C, Dreyling E, **Nightingale KK**. 2015. Relative Limit of Detection Comparison for Two Rapid Detection Methods to Accurately Detect *Listeria monocytogenes* Analyte in Hot Dog and Deli Turkey Matrices. In *2015 Annual Meeting (July 25-28, 2015)*. IAFP.
  105. Tapp W, Hanlon K, **Nightingale, K**, San Francisco M, Miller M, Brashears M. 2015. Molecular Evaluation of Mold Growth and Aflatoxin Presence on Dry Aged Beef. In *2015 Annual Meeting (July 25-28, 2015)*. IAFP.
  106. Ortega K, Loneragan G, Ortega P, Vipham J, Guillen L, **Nightingale K**, Brashears MM. 2015. Preliminary investigation of *Campylobacter* in ground beef at retail. Annual Meeting of ISVEE Mérida, Yucatán, México.
  107. Ayala D, **Nightingale KK**, Miller M, Echeverry A, Ramirez-Porras R, Ordaz G, Brashears MM. 2015. *Salmonella* Serotype Discrimination of Beef carcasses, lymph nodes and fecal isolates through Pulsed-Field Electrophoresis. International Symposium of Veterinary Epidemiology and Economics (ISVEE) Annual Meeting, Merida, Mexico.
  108. Ayala D, **Nightingale KK**, Brashears MM. 2015. Global Transcriptome Analysis of *Lactobacillus animalis* NP51 exposed at different Temperatures. International Symposium of Veterinary Epidemiology and Economics (ISVEE) Annual Meeting, Merida, Mexico.
  109. Ayala D, **Nightingale KK**, Brashears MM. 2015. Differential Gene Expression of *Lactobacillus animalis* NP51 exposed to different Temperatures. International Association for Food Protection (IAFP) Annual Meeting, Portland, Oregon.
  110. Webb HE, Bugarel M, den Bakker HC, Granier SA, Nightingale KK, Scott HM, and Loneragan GH. 2015. Preliminary exploration of carbapenem resistance in cattle populations in the U.S. Presentation presented by G.H. Loneragan at the 6<sup>th</sup> Symposium on Antimicrobial Resistance in Animals and the Environment (ARAE), June 29-July 1, Tours, France.
  111. Webb HE, Granier SA, **Nightingale KK**, den Bakker HC, Marault M, Bugarel M, and Loneragan GH. 2015 Characterization of colistin resistance mechanisms in *Salmonella* of French origin. Poster presented at the 6<sup>th</sup> Symposium on Antimicrobial

- Resistance in Animals and the Environment (ARAE), June 29-July 1, Tours, France.
112. Bugarel M, Ison SA, Webb HE, **Nightingale KK**, den Bakker HC, and Loneragan GH. 2015. Extended spectrum  $\beta$ -lactamase in *E. coli* isolated from bovine fecal samples in the United States. Poster presented at the 6<sup>th</sup> Symposium on Antimicrobial Resistance in Animals and the Environment (ARAE), June 29-July 1, Tours, France.
  113. Ison, SA, Delannoy S, Bugarel M, **Nightingale KK**, den Bakker HC, Renter D, Nagaraja TG, Loneragan GH, and Fach P. 2015. Genetic diversity and pathogenic potential of attaching and effacing *Escherichia coli* O26:H11 strains recovered from bovine feces.
  114. International Symposium on Shiga Toxin (Verocytotoxin)-producing *Escherichia coli* (VTEC), Boston, MA
  - 115.
  116. Maradiaga M, **Nightingale KK**, den Bakker H, Echeverry A, Brashears MM. 2016. Phenotypic Characterization of Antimicrobial Resistance in *Salmonella enterica* Isolates Associated with Cattle at Harvest in Mexico. International Association of Food Protection Annual Meeting (St. Louis, MO).
  117. Inestroza B, **Nightingale K**, Bugarel M, Miller M, Brashears M. 2016. Organic Acid Treatment of Beef Trim, Combined with Acidified Sodium Chlorite to Reduce *Salmonella* Encased in Lymph Nodes during Grinding. International Association of Food Protection Annual Meeting (St. Louis, MO).
  118. Ayala D, **Nightingale KK**, Brashears MM. 2016. Molecular Characterization of *Salmonella* Isolates from Beef Cattle Lymph Nodes and Feces by Pulsed-Field Electrophoresis. International Association for Food Protection (IAFP) Latin America Symposium. Cancun, Mexico.
  119. Englishbey AK, Marconi CM, Worobo RW, **Nightingale KK**, Anciso JR, Enciso JM, Ivanek R. 2016. Dissemination and the fate of foodborne pathogens and indicators on produce post irrigation with surface water: an intervention trial. NIFSI PD Meeting (July 2016).
  120. Cook PW, den Bakker HC, **Nightingale KK**. 2016. Genotypic and phenotypic characterization of *Listeria monocytogenes* with premature stop codons in Internalin A. Meeting on International Symposium on Problems of Listeriosis (ISOPOL; Paris, France).
  121. Webb, HE, Granier SA, Marault M, Millemann Y, den Bakker HC, **Nightingale KK**, Bugarel M, Ison SA, Scott HM, and Loneragan GH. 2016. *mcr-1* in Serogroups O:4 *Salmonella* recovered from microbiological surveillance of the French Agri-food sector. International Symposium *Salmonella* and Salmonellosis (i3s) in Saint-Malo, France, July 7.
  122. Webb, HE, Brichta-Harhay DM, Brashears MM, **Nightingale KK**, Arthur TM, Bosilevac JM, Kalchayanand N, Schmidt JW, Wang R, Brown TR, Edrington TS, and Loneragan GH. 2016. *Salmonella* in Peripheral Lymph Nodes of Healthy Cattle at Slaughter. International Symposium *Salmonella* and Salmonellosis (i3s) in Saint-Malo, France, July 6.
  123. Fermin K, Stull D, Neuber A, **Nightingale K**, Brashears M. 2017. Reduction of molds and *Listeria monocytogenes* on flour tortilla using targeted directional microwave technology. International Association for Food Protection Annual Meeting (Tampa, FL).
  124. Cook P, den Bakker H, Loneragan GH, **Nightingale KK**. 2017. Whole genome

- sequencing of *Listeria monocytogenes* strains carrying loss of function mutations in *inlA* supports these strains are evolving away from a pathogenic lifestyle. International Association for Food Protection Annual Meeting (Tampa, FL).
125. Ayala D, Brashears M, **Nightingale KK**. 2017. Transcriptional profiling of *Salmonella* Montevideo Exposed to the Probiotic *Lactobacillus animalis* NP51. International Association for Food Protection Annual Meeting (Tampa, FL).
  126. English A, Echeverry A, Sarturi J, **Nightingale K**, Opheim T, Miller M, Brashears MM. 2017. Antimicrobial-resistance patterns of generic *Escherichia coli* isolated from feedlot cattle feces after feeding direct fed microbials in diets with and without Tylosin. International Association for Food Protection Annual Meeting (Tampa, FL).
  127. Ivanek R, Englishbey AK, Marconi CM, Usaga J, Rodriguez A, Serna E, Worobo RW, Nightingale KK, Anciso JR and Enciso JM. 2017. Dissemination and the fate of foodborne pathogens and indicators on produce post irrigation with surface water: an intervention trial, year 2. International Association of Food Protection Conference, (Tampa, Florida).

### **Popular Press Articles:**

1. **Nightingale, K. K.** and M. Wiedmann. 2003. Research answers questions on foodborne pathogens. Northeast Dairy Business: The Manager: December, 2003. pp. 66.

### **Theses and Dissertation:**

1. **Kerr, K. D.** 1999. Evaluation of a home ozonating unit to reduce natural contamination and foodborne pathogens from meat and produce surfaces. Kansas State University, Manhattan, KS. (Undergraduate Honors Thesis).
2. **Nightingale, K. K.** 2001. Evaluation of activated lactoferrin to eliminate *Escherichia coli* O157:H7 from pre-rigor and post-rigor beef surface tissue. Kansas State University, Manhattan, KS. (Masters Thesis).
3. **Nightingale, K. K.** 2005. Ecology, evolution, and transmission of *Listeria monocytogenes* throughout the food chain. Cornell University, Ithaca, NY. (Doctoral Dissertation).

### **PRESENTATIONS AND LECTURES:**

#### **Invited Presentations:**

1. “Tracking and Control of *Listeria monocytogenes* from Farm to Table”. Cornell University College of Agriculture and Life Sciences Planned Giving Luncheon (Ithaca, NY; April, 2002).
2. “Transmission and ecology of *Listeria monocytogenes* in ruminants and the ruminant farm environment”. American Dairy Science Association Annual Meeting Symposium on Control of *Listeria monocytogenes* from Farm to Fork (Phoenix, AZ; July, 2003).
3. “Transmission and Ecology of *Listeria monocytogenes* in Ruminants and the Farm Environment”. Cornell University Infection and Pathobiology Program Annual Retreat. (Canandaigua, NY; April, 2003).
4. “Multilocus sequence typing of *Listeria monocytogenes*: a tale of two lineages”. Symposium on the Value of Molecular Subtyping in Veterinary Medicine Research and

- “Evolution and Molecular Phylogeny of *Listeria monocytogenes* from Defined Hosts and Environments”. Eastern Great Lakes Molecular Evolution Conference (VIII). (Ithaca, NY; April, 2004).
5. “Exploring the foodborne pathogen *Listeria monocytogenes* as a model organism to probe the molecular evolution and population structure of environmental pathogens”. Symposium on Evolution of Gram Positive Bacteria, American Phytopathology Society Annual Meeting (Quebec City, QC; August, 2006).
  6. “Evolution, Ecology and Transmission Dynamics of *Listeria monocytogenes* from Farm to Table”. University of Warrick, Department of Biological Sciences (Coventry, UK; May, 2006).
  7. “Use of Large-scale Ribotyping Databases to Identify Virulence Attenuated *Listeria monocytogenes* with Mutations Leading to Premature Stop Codons in *inlA*”. The 16<sup>th</sup> International Symposium on Problems of Listeriosis (Savannah, GA; March, 2007).
  8. “Ecology and Transmission Dynamics of *Listeria Monocytogenes* in Ruminants and the Farm Environment”. The 3<sup>rd</sup> Colorado State University and Pfizer Animal Health Beef Forum (Fort Collins, CO; April, 2007).
  9. “*Listeria monocytogenes* includes Divergent Genetic Lineages and Virulence Attenuated Subtypes Commonly Found in Food”. Colorado State University Department of Microbiology Immunology and Pathology Faculty Seminar Series (Fort Collins, CO; April, 2007).
  10. “*Listeria monocytogenes* strains carrying virulence attenuating mutations in *inlA* are common in food and confer protection against infection by fully virulent strains”. Cornell University, Department of Food Science Graduate Student Seminar Series (Ithaca, NY; September, 2008).
  11. “Identification of Non-cytotoxic small molecules that control growth of *Escherichia coli* O157:H7”. Colorado State University, Infectious Disease Supercluster Annual Meeting. (Fort Collins, CO; August, 2008).
  12. “Development of a single nucleotide genotyping assay to detect virulence attenuation mutations in the key *Listeria monocytogenes* virulence gene *inlA*”. Colorado State University Research Foundation; MicroRX (Fort Collins, CO; July, 2008).
  13. “*Listeria monocytogenes* evolved to contain two divergent lineages, including a significant subpopulation of strains in foods with attenuated virulence”. Colorado State University, Department of Bioagricultural Sciences and Pest Management Seminar Series (Fort Collins, CO; February, 2008).
  14. “*Listeria monocytogenes* in ruminant farms and animal derived foods”. National Veterinary Research and Quarantine Institute Food Safety Symposium (Seoul, Korea; November, 2009).
  15. “Molecular ecology, transmission, and persistence of *Listeria* in ready-to-eat food processing plants”. International Association of Food Protection Asia Pacific Meeting (Seoul, Korea; November, 2009).
  16. “Molecular epidemiology and microbial source tracking investigations”. Kemin Foods Food Safety Symposium (St. Louis, MO; October, 2009).
  17. “Molecular approaches to food safety: fundamentals and applications”. General Mills Food Safety Training Symposium (Minneapolis, MN; August, 2009).
  18. “*Listeria monocytogenes*: molecular ecology and persistence”. International Association of Food Protection (Grapevine, TX; July, 2009; ILSI Symposium).
  19. “The human foodborne pathogen *Listieria monocytogenes*: epidemiology, ecology and transmission”. International Sprout Growers Association (Chicago, IL; June, 2009).



20. "Molecular methods in food microbiology: from fundamentals to application of molecular subtyping". Institute of Food Technologists Annual Meeting and Food Expo (Anaheim CA; June, 2009).
21. "Identification of novel chemical compounds that control *Escherichia coli* O157:H7 through use of a high-throughput small molecule screening". Beef Safety Summit (San Diego, CA; March, 2009).
22. "Virulence-attenuations in *inlA* confer protection against *Listeria monocytogenes* infection". Colorado State University, Integrated Systems Biology Seminar Series (Fort Collins, CO; February, 2009)
23. "*Listeria monocytogenes* a re-emerging human foodborne pathogen: ecology, epidemiology and transmission dynamics from farm to fork". Northeast Laboratory Conference (Portland, MA; October, 2010).
24. "Next Generation Approaches to Whole Genome Sequencing: from Fundamentals to Considerations and Applications for Epidemiological Investigations". International Association for Food Protection, Late-breaking Symposium on Whole Genome Sequencing as a Tool in Epidemiologic Investigations (Anaheim, CA; July, 2010).
25. "Ecology of *Listeria*, *Salmonella*, *Escherichia coli* O157 and non-O157 Shiga Toxin Encoding *E. coli* in Northern Colorado Agricultural and Wilderness Areas". Specialty Crops Advisory Board Meeting, International Association of Food Protection (Anaheim, CA: July, 2010).
26. "Ecology of *Listeria* in Animal and the Environment". Society for Applied Microbiology Summer Conference (Brighton, UK; July, 2010).
27. "*Escherichia coli* O157 Strains that Persist at the Pre-harvest Level Demonstrate Enhanced Attachment Efficacy and Human Pathogenic Potential". Symposium on Persistence of Foodborne Pathogens from Farm to Fork, American Society for Microbiology (San Diego, CA; May, 2010).
28. "Examining the Hygiene Hypothesis as it Applies to Food Safety: Presence of Naturally Occurring Virulence Attenuated *Listeria monocytogenes* Strains in the Food Supply". Department of Animal Sciences General Seminar Series, Colorado State University (Fort Collins, CO; April, 2010).
29. "Molecular Methods in Food Microbiology: From Fundamentals to Applications of Molecular Subtyping". Biotech Connect Symposium Colorado State University (Fort Collins, CO; April, 2010).
30. "Development and implementation of a single nucleotide polymorphism genotyping assay to screen for virulence-attenuating mutations in *Listeria monocytogenes*". Institute of Food Technologists (New Orleans, LA; June, 2011).
31. "Detection of Shiga Toxin Producing *Escherichia coli* (STEC) in the United States: From the Analytical Methodology to Challenges, Considerations and Implications." AOAC International Meeting. (Las Vegas, NV; October, 2012).
32. "Raw non-intact beef testing dynamics". NAMA Regional Beef Safety Meetings. (Oakland, CA; May, 2015).
33. "Raw non-intact beef testing dynamics". NAMA. Regional Beef Safety Meetings. (College Park, GA; June, 2013).
34. "Careers in food safety: Traveling the path of those before us". International Association of Food Protection. (Charolette, NC; July, 2013).
35. "Highlights from recent Beef Safety Studies at Texas Tech University". Beef Safety Conference (Chicago, IL; September, 2013).
36. NAMA "Rapid testing of beef for Shiga-toxin producing *Escherichia coli* (STEC) and *Salmonella*. Beef Safety Conference (Chicago, IL; September, 2013).

37. "Rapid methods in food microbiology: an overview of past, current and emerging approaches to detect and subtype foodborne pathogens". Molecular Methods in Food Microbiology Workshop. (Lubbock, TX; October, 2013).
38. "Rapid methods in food microbiology". Kraft Corporate Microbiology Working Group. (Chicago, IL; October, 2013).
39. "Quantitative tests to enumerate indicator organisms as a measure of food safety and quality". Food Safety Net Services. (San Antonio, TX; February, 2014).
40. "Biological hazards associated with foods: an overview of bacterial foodborne pathogens". Workshop on Principles of HACCP. (Nassau, Bahamas; April, 2014).
41. "Whole genome sequencing – the basics". International Association of Food Protection (Indianapolis, IN; August, 2014).
42. "Foodborne pathogen persistence: from identification of risk factors to communication of control strategies". Ecolabs East Coast Food Safety Symposium (Charlotte, NC; September, 2014).
43. "Rapid detection and molecular subtyping of food-associated microorganisms". St. Cloud State University. (St. Cloud, MN; September, 2014).
44. "Molecular methods for detection and subtyping of foodborne pathogens". BiFSCO Beef Safety Summit. (Dallas, TX; March, 2014).
45. "Molecular diagnostics for foodborne pathogens: from fundamentals to considerations for application". International Association for Food Industry Protection. (Indianapolis, IN; August, 2014).
46. "Microbiology 101: microbial physiology and growth kinetics and how they affect rapid detection". Food Safety Net Services. (San Antonio, TX; September, 2014).
47. Molecular subtyping of foodborne pathogens: from fundamentals to application. Beef Industry Safety Summit Meeting. (Dallas, TX; March, 2015).  
"Bacterial foodborne intoxication". Food Safety Net Services. (San Antonio, TX; March, 2015).
48. "Introduction to foodborne pathogens and foodborne illness in the United States". Workshop on Global Food Security. (Nassau, Bahamas; March, 2015).
49. "Presence of naturally occurring virulence attenuated *Listeria monocytogenes* strains in the food supply". GMA Science Forum (Washington, D.C.; April, 2015).
50. "Molecular Diagnostics for Foodborne Pathogens: From Fundamentals to Application". Uruguay International Food Safety Symposium (Montevideo, Uruguay; April, 2015).
51. "The Rise of Whole Genome Sequencing as a Subtyping Tool for Microbial Source Tracking: From Fundamentals to Applications". Steak Expert Meeting (Anjou, France; June, 2015).
52. "*Listeria monocytogenes*: molecular ecology and persistence in food processing plant environments" IFT Annual Meeting (Chicago, IL; July, 2015).
53. "*Listeria*, *Listeria monocytogenes* and listeriosis: ecology, transmission dynamics and niche adaptation". Food Safety Net Services. (San Antonio, TX; August, 2015).
54. CSI of foodborne illness: A practical review of cutting edge methods you need to understand to defend your case". Foodborne Illness Litigation Conference. (San Francisco, CA; January, 2016).
55. "An overview of rapid methods in food microbiology". Congressman Larson's Office and the Texas Department of Health and Human Services. (Austin, TX; January, 2016).
56. "*Listeria* taxonomy, genetic diversity and implications for detection in food and environmental samples". Food Safety Net Services. (San Antonio, TX; April, 2016).

57. "Understanding how the Food Safety Modernization Act will affect commercial testing laboratories". Food Safety Net Services. (San Antonio, TX; November, 2016).
58. "Food microbiomes: so we found a sequence ... big deal, now what?". International Association of Food Protection. (St. Louis, MO; July, 2016).
59. "Scientific approach to identifying novel lactic acid bacteria strains for bio-control of foodborne pathogens and promoting animal health". Food Safety Net Services. (San Antonio, TX; March, 2017).
60. "FoodOmics: stop using a steamroller to crack a nut!". International Association of Food Protection. (Tampa, FL; July, 2017).

### **Guest Lectures:**

1. Food 400 (Food Microbiology Laboratory; Cornell University; Fall, 2002).  
"Molecular Subtyping of *Listeria monocytogenes*, other Foodborne Pathogens, and Spoilage Organisms."
2. Food 400 (Food Microbiology Laboratory; Cornell University; Fall, 2002).  
"Application of PCR Detection Methods of Foodborne Pathogens to the Food Industry and Pre-harvest Food Environments."
3. VTMED 741 (Animal Based Foods; Spring, 2003; Cornell University; Spring, 2003)  
"Overview of Beef Slaughter Process and Innovative Carcass Decontamination Strategies".
4. Food 400 (Food Microbiology Laboratory; Fall, 2003). "Molecular Subtyping of *Listeria monocytogenes*, other Foodborne Pathogens, and Spoilage Organisms."
5. Food 400 (Food Microbiology Laboratory; Fall, 2003). "Application of PCR Detection Methods of Foodborne Pathogens to the Food Industry and Pre-harvest Food Environments."
6. VTMED 741 (Animal Based Foods; Cornell University; Spring, 2004) "Overview of Beef Slaughter Process and Innovative Carcass Decontamination Strategies".
7. Food 695 (Advanced Food Microbiology; Cornell University; Spring, 2004).  
"Epidemiological Principles and Quantitative Methods in Food Microbiology Research".
8. Food 400 (Food Microbiology Laboratory; Cornell University; Fall, 2004).  
"Molecular Subtyping of *Listeria monocytogenes*, other Foodborne Pathogens, and Spoilage Organisms."
9. Food 400 (Food Microbiology Laboratory; Cornell University; Fall, 2004).  
"Application of PCR Detection Methods of Foodborne Pathogens to the Food Industry and Pre-harvest Food Environments."
10. VTMED 741 (Animal Based Foods; Cornell University; Spring, 2005) "Overview of Beef Slaughter Process and Innovative Carcass Decontamination Strategies".
11. Food 400 (Food Microbiology Laboratory; Cornell University; Fall, 2005).  
"Molecular Subtyping of *Listeria monocytogenes*, other Foodborne Pathogens, and Spoilage Organisms."
12. Food 400 (Food Microbiology Laboratory; Cornell University; Fall, 2005).  
"Application of PCR Detection Methods of Foodborne Pathogens to the Food Industry and Pre-harvest Food Environments."
13. ANEQ 360 (Introduction to Meat Science; Colorado State University; Fall, 2006).  
"Molecular subtyping to track and control transmission of meat-borne pathogens"

14. ANEQ 360 (Introduction to Meat Science; Colorado State University; Fall, 2006).  
“Investigation of a multistate outbreak of human listeriosis associated with ready-to – eat meat products”
15. FN 696A (Group Study – Food Science; Colorado State University; Fall, 2006).  
“Ecology, Evolution, and Transmission Dynamics of *Listeria monocytogenes* throughout the Human Food Chain”
16. FTEC 572 (Food Biotechnology; Colorado State University; Spring, 2007). “Molecular subtyping: from fundamentals to applications in food safety).
17. FTEC 572 (Food Biotechnology; Colorado State University; Spring, 2007).  
“Investigation of a multistate outbreak of human listeriosis”.
18. MIP 333 (Food Microbiology; Colorado State University; Fall, 2008). “Molecular detection of foodborne pathogens and spoilage organisms”.
19. MIP 333 (Food Microbiology; Colorado State University; Fall, 2008). “*Listeria, L. monocytogenes* and Listeriosis”.
20. MIP 533 (Epidemiology of Infectious Diseases; Colorado State University; Spring, 2008). “Molecular epidemiology”.
21. MIP 533 (Epidemiology of Infectious Diseases; Colorado State University; Spring, 2008). “Foodborne pathogens and foodborne disease in the United States”.
22. MIP 769 (Microbial Pathogenesis; Colorado State University; Fall, 2009). “*Listeria monocytogenes*: a human foodborne pathogen with two lifestyles”
23. MIP 533 (Epidemiology of Infectious Diseases; Colorado State University; Spring, 2009). “Molecular epidemiology”.
24. MIP 533 (Epidemiology of Infectious Diseases; Colorado State University; Spring, 2000). “Foodborne pathogens and foodborne disease in the United States”.
25. ANEQ 360 (Meat Safety; Colorado State University; Fall, 2010). “Molecular subtyping of foodborne pathogens: from fundamentals to applications in meat safety”
26. MIP 533 (Epidemiology of Infectious Diseases; Colorado State University; Spring, 2010). “Molecular epidemiology”.
27. MIP 533 (Epidemiology of Infectious Diseases; Colorado State University; Spring, 2010). “Foodborne pathogens and foodborne disease in the United States”.
28. ANEQ 400 (Food and Animal Agriculture; Colorado State University; Spring, 2011).  
“Societal issues arising around animal agriculture”.
29. MIP 533 (Epidemiology of Infectious Diseases; Colorado State University; Spring, 2011). “Molecular epidemiology”.
30. MIP 533 (Epidemiology of Infectious Diseases; Colorado State University; Spring, 2011). “Foodborne pathogens and foodborne disease surveillance in the US”.
31. FTEC 574 (Current Issues in Food Safety; Colorado State University; Spring, 2011).  
“Detection, monitoring and control of *Listeria* in the ready-to-eat food industry”.
32. FTEC 572 (Food Biotechnology; Colorado State University; Spring, 2011). “Molecular subtyping: from fundamentals to applications in food safety).
33. FTEC 572 (Food Biotechnology; Colorado State University; Spring, 2011).  
“Investigation of a multistate outbreak of human listeriosis”.
34. FDSC 3309/5309 (Food Safety; Texas Tech University; Fall, 2011). “Rapid methods in food microbiology”.
35. FDSC 3301 (Food Microbiology; Texas Tech University; Spring, 2012). “Rapid detection of food-associated microorganisms”.
36. FDSC 3301 (Food Microbiology Laboratory; Texas Tech University; Spring, 2012).  
“Laboratory exercise: PCR amplification to confirm presumptive positive colonies”.

37. FDSC 3301 (Food Microbiology Laboratory; Texas Tech University; Spring, 2012). "Laboratory Exercise: Agarose gel electrophoresis of PCR products"
38. FDSC 3301 (Food Microbiology; Texas Tech University; Spring, 2013). "Rapid detection of food-associated microorganisms".
39. FDSC 3301 (Food Microbiology Laboratory; Texas Tech University; Spring, 2013). "Laboratory exercise: PCR amplification to confirm presumptive positive colonies".
40. FDSC 3301 (Food Microbiology Laboratory; Texas Tech University; Spring, 2013). "Laboratory Exercise: Agarose gel electrophoresis of PCR products"
41. FDSC 3301 (Food Microbiology; Texas Tech University; Spring, 2014). "Molecular diagnostics in food microbiology from fundamentals to application".
42. FDSC 3301 (Food Microbiology; Texas Tech University; Spring 2014). "Molecular subtyping of foodborne pathogens and microbial source tracking".
43. FDSC 3301 (Food Microbiology Laboratory; Texas Tech University; Spring, 2014). "Real-time PCR for screening samples to detect the presence/absence of foodborne pathogens".
44. FDSC 3301 (Food Microbiology Laboratory; Texas Tech University; Spring, 2014). "PCR amplification of DNA to confirm presumptive colonies".
45. FDSC 3301 (Food Microbiology Laboratory; Texas Tech University; Spring, 2014). "16s rDNA sequencing and bioinformatics analyses for identification of unknown microorganisms".
46. FDSC 3301 (Food Microbiology; Texas Tech University; Spring, 2016). "Rapid methods for detection and subtyping of foodborne pathogens".
47. FDSC 3301 (Food Microbiology; Texas Tech University; Spring, 2016). "Detection and isolation of *Listeria* from food and environmental samples".

### **POST-DOCTORAL MENTORING:**

1. Diana Ayala; co-mentored with Dr. Mindy Brashears (January, 2017-present)  
Research: Molecular detection and quantification of viable probiotic strains in food matrices and scientific based approaches for discovery and selection of novel probiotic strains for food safety and animal health.
2. Marie Bugarel; co-mentored with Dr. Guy Loneragan (June, 2012-2015)  
Research: Molecular detection and subtyping of bacterial foodborne pathogens and molecular ecology and transmission of foodborne pathogens  
Promoted to Research Assistant Professor in the Department of Animal and Food Sciences, Texas Tech University (August, 2015).
3. Angela Roberts (October, 2007-August 2008)  
Research: Virulence associated phenotype characterization and genetic characterization of *Listeria monocytogenes* outbreak strains and SNP typing of *L. monocytogenes* isolates from food associated environments.  
Accepted position as Assistant Professor Texas Wesleyan University (August, 2008).

### **GRADUATE STUDENT COMMITTEES:**

**Chaired:**

## **Completed:**

### **M.S.**

1. Anna Van Stelten (Colorado State University). Completed in 2009. "Characterization of Virulence-Attenuated *Listeria monocytogenes* with Unique Mutations in Internalin A".
2. Jessica Corron (Colorado State University). Completed in 2010. "Investigation of niche adaptation in *Listeria monocytogenes* subpopulations and small molecule inhibitors of *Escherichia coli* O157:H7".
3. Shanna Williams (Colorado State University). Completed in 2010. "*Listeria monocytogenes* and other *Listeria* species in small and very small ready-to-eat meat processing plants".
4. Christina Ahlstrom (Colorado State University). Completed in 2011. "Molecular ecology of foodborne pathogens in Colorado wilderness areas".
5. Clyde Manuel (Colorado State University). Completed in 2011. "Prevalence and diversity of three foodborne pathogens in produce farms and grazing pastures in Colorado".
6. Jake Elder (Texas Tech University). Completed in 2012. "Interrogation of single nucleotide polymorphisms in *gnd* provides a novel method for molecular serogrouping of clinically important Shiga toxin producing *Escherichia coli* (STEC) targeted by regulation in the United States, including the "big six" non-O157 STEC and STEC O157".
7. Eva Borjas (Colorado State University). Completed in 2012. "Longitudinal study of *Salmonella enterica*, *Escherichia coli* O157:H7 and *Listeria monocytogenes* in small and very small fresh meat process plant environments".
8. Alexandra Tudor (Texas Tech University). Completed in 2013. Non-thesis student. Co-authored one manuscript. Authored one abstract presented at the International Association for Food Protection.
9. Miles Harris (Texas Tech University). Completed in 2015. Non-thesis student. Authored two abstracts presented at the International Association for Food Protection.

### **Ph.D.**

1. Jessica Corron Chen. (Texas Tech University). Completed 2013. "Genotypic and phenotypic characterization of *Listeria monocytogenes* from outbreaks and from food and food environments".
2. Alex Brandt. (Texas Tech University). Completed 2014. "Foodborne pathogen persistence in the food processing environment".
3. Anna Van Stelten. (Texas Tech University). Completed 2014. "Characterization of virulence-attenuated *Listeria monocytogenes* common among food and food-associated environments but rarely associated with disease".

## **Co-Chaired:**

**Ph.D.**

1. Aliyar Fouladkhar. (Colorado State University). Completed 2013. “Survival and inactivation of *Listeria monocytogenes*, shiga toxin producing *Escherichia coli*, and multidrug-resistant and susceptible *Salmonella* serovars exposed to heat and antimicrobials on food contact surfaces”.
2. Diana Ayala. (Texas Tech University). Completed 2016. “*Lactobacillus animalis* NP51 detection and quantification in cattle feedstuffs by an RNA-method”.

**Committee member of:**

**M.S.**

Jeffrey Callaway  
Juan Anisco  
Lynn Jones  
Diana Ayala  
Adbulla Khodammohammadi  
Josh Ison  
Katelyn Ortega  
Brenda Inestroza

**Ph.D.**

Brandon Carlson  
Oleksandz Byelashov  
Catherine Simpson  
Jeremy Adler  
Shavni Gupta  
Alma Perez  
Amy Parks  
Andy Liao  
Alexandra Calle  
Byron Chaves  
Jessie Vipham  
Sarah Ison  
Nathan Tapp  
Martha Maradiaga  
Devin Hanson

**In progress:**

**Chair:**

**M.S.**

1. Luis Jimenez                      Anticipated completion date \_\_5/2019\_\_

**Ph.D.**

1. Peter Cook                          Anticipated completion date \_\_12/2018\_\_

2. April Englishbey      Anticipated completion date \_\_ 5/2019 \_\_

**Co-Chair:** None current

**Committee member of:**

**M.S.**

Diego Casas  
Kris Sunkara

**Ph.D.**

Matthias Bougreau  
Andrea Kreig  
Martha Seigel  
Katelyn Ortega  
David Campos  
Andrea English  
Keelyn Hanlon  
Alejandra Ramirez

**UNDERGRADUATE ADVISING:**

**Undergraduates Mentored in a Research Capacity:**

1. Shanna Williams, Department of Microbiology, Colorado State University.
2. Anna Van Stelten, Department of Biomedical Sciences, Colorado State University.
3. Ashley Grayczyk, Department of Animal Sciences, Colorado State University. "Fitness of *Listeria monocytogenes* strains with premature stop codons in the key virulence gene *inlA* in non-host environments".
4. Ashley Rosenberg, Department of Animal Sciences, Colorado State University (Honors Student)
5. Julie Simpson, Department of Biomedical Sciences, Colorado State University (Honors Student). "Elucidating the ecological niches of *Listeria monocytogenes* subpopulations".
6. Thomas Grady Harlow, Department of Biomedical Sciences, Colorado State University (Honors Student; non-thesis option).
7. Alexandra Tudor, Department of Chemistry, Colorado State University.
8. Claire Freeman, Department of Biology, Colorado State University.
9. Jessica Heiden, Department of Biology, Texas Tech University (Honors Student; Finalist Undergraduate Student Developing Scientist Poster Competition, International Association of Food Protection, 2014).
10. Natalie Kincey, Department of Agricultural Education, Texas Tech University.
11. Ola Eshow, Texas Tech University (Summer Scholars Program; Summer, 2013).
12. Currey Noble, North Carolina State University (Summer Scholars Program; Summer, 2014).
13. Luis Jimenez, Department of Chemistry, Texas Tech University.
14. Joshua Jenkins, Department of Biology, Texas Tech University.



## **TEACHING EXPERIENCE:**

### **Kansas State University:**

Teaching Assistant, Food Microbiology Laboratory (ASI 607; Fall, 2000)

Teaching Assistant, Rapid Methods and Automation in Microbiology (ASI 677; Summer, 2000)

### **Cornell University:**

Teaching Assistant, Dairy and Food Fermentations (FOOD 406; Fall, 2001)

Teaching Assistant, Explorations in Biological Sciences (BIOSI 101-106; Fall 2001-2004, Spring 2002-2004)

### **Colorado State University:**

Instructor, Molecular Approaches to Food Safety (ANeq 676; Fall, 2007, Spring, 2010 and Spring, 2011).

*Designed a new lecture and laboratory course on molecular subtyping, tracking and control, molecular ecology and evolution of foodborne pathogens, and molecular pathogenesis of foodborne diseases.*

Co-Instructor, HACCP (ANeq 567; Spring, 2011).

Co-Instructor, Meat Systems (ANeq 470; Fall, 2008-2010).

Instructor, Orientation to Agricultural Systems (AGRI 192; Fall, 2007).

Coordinator, Animal Science General Seminar (ANeq 792A; Spring and Fall semesters, 2007-2011).

### **Texas Tech University:**

Co-instructor, Molecular Methods in Food Microbiology Workshop (ANSC 5001; Fall, 2013).

Instructor, Food Safety Case Studies (ANSC 5001, Section 17; Spring, 2012).

*Designed a new case studies course to provide an overview of foodborne pathogens (bacterial and viral), detection/subtyping of foodborne pathogens along with epidemiological approaches to foodborne disease surveillance and outbreak investigation.*

Co-Instructor, Food Safety Seminar (ANSC 5100, Section 03; Spring Semesters 2012-present provided course makes minimum enrollment).

Co-Instructor, Current Readings in Food Safety (ANSC 5001, Section 30; Spring and Fall semesters 2012 – present provided course makes enrollment).

## **GRANTS AND AWARDS:**

**Funded:**

**Texas Tech University:**

Project Title: “Foodborne Pathogen Persistence: From Identification of Risk Factors to Communication of Control Strategies”

Project Role: PI

Funding Agency: USDA

Total Funding Amount: \$500,075

% Contribution: 100%

Project Dates: 11/15/2011-11/14/2015

Project Title: “Integrating Teaching, Research, and Outreach Efforts to Facilitate Industry Application of Molecular Subtyping for Foodborne Pathogens”

Project Role: PI

Funding Agency: USDA

Total Funding Amount: \$3,924

% Contribution: 100%

Project Dates: 11/1/2011-8/31/2013

Project Title: SUPPLEMENT: “Solutions for the Food Safety Threat Posed by *Salmonella*”

Project Role: PI

Co-PI: Guy Loneragan

Funding Agency: National Cattlemen’s Beef Association

Total Funding Amount: \$40,000

% Contribution: 95%

Project Dates: 11/1/2011-5/31/2012

Project Title: “A National Food Safety Education Program: Building a Multidisciplinary Food Safety Training Pipeline from K-12 to Graduate School”

Project Role: PI

Funding Agency: USDA/Cornell University

Total Funding Amount: \$226,629

% Contribution: 100%

Project Dates: 3/15/2012-1/14/2016

Project Title: “Building Laboratory and Intellectual Capacity in Order to Effectively Detect *Salmonella* in Food Supply”

Project Role: Co-PI

Co-PIs: Todd Brashears, Mathew Baker, Guy Loneragan, Mindy Brashears and Mark Miller

Funding Agency: USDA – NIFA

Total Funding Amount: \$693,043

% Contribution: 15%

Project Dates: 9/1/2012-8/31/2016

Project Title: CONTINUATION: “*Salmonella* Research: Evaluation of interventions using a novel transdermal challenge model”

Project Role: Co-PI

Co-PIs: Guy Loneragan and Marie Bugarel

Funding Agency: USDA-ARS

Total Funding Amount: \$135,000

% Contribution: 40%

Project Dates: 9/17/2012-9/16/2017

Project Title: “Characterization and Discrimination of *Salmonella* using Molecular and Novel Challenge-model Approaches”

Project Role: Co-PI

Co-PIs: Guy Loneragan, Mindy Brashears and Marie Bugarel

Funding Agency: Pfizer Inc.

Total Funding Amount: \$200,000

% Contribution: 30%

Project Dates: 12/13/2012-12/12/2015

Project Title: “Food Safety Research Consortium Special Research Grant”

Project Role: PI

Funding Agency: USDA/Cornell University

Total Funding Amount: \$81,463

% Contribution: 100%

Project Dates: 3/15/2012-8/31/2013

Project Title: “Integrating National Resource Information and Food System Signals to Identify Novel Methods for Control of Microbial Contamination in Spinach”

Project Role: PI

Funding Agency: USDA/Texas AgriLife Research

Total Funding Amount: \$37,430

% Contribution: 100%

Project Dates: 2/15/2012-2/14/2013

Project Title: “Mitigation of *Salmonella* in Lymph Nodes using a Pre-harvest Intervention”

Project Role: Co-PI

Co-PIs: Alejandro Echeverry, Chance Brooks, Guy Loneragan and Mark Miller

Funding Agency: American Meat Industry Foundation

Total Funding Amount: \$89,914

% Contribution: 14%

Project Dates: 3/1/2012-2/28/2013

Project Title: “*Salmonella* Research: Evaluation of Interventions using a Novel, Transdermal Challenge”

Project Role: Co-PI

Co-PIs: Guy Loneragan and Marie Bugarel

Funding Agency: USD-ARS

Total Funding Amount: \$97,465

% Contribution: 40%

Project Dates: 9/17/2012-9/16/2014

Project Title: “Development of Molecular Assays to Detect *Salmonella* and *Escherichia coli* O157:H7 in Food Matrices”

Project Role: PI

Funding Agency: Texas Tech University, Commercial Development Grant

Total Funding Amount: \$35,000

% Contribution: 100%

\* *Not in ORS report*

Project Title: “Evaluation of and Factors that Influence the Site and Extent of *Salmonella* in Extra-Intestinal Tissue of Cattle”

Project Role: Co-PI

Co-PIs: Guy Loneragan, Marie Bugarel and Havinder Gill

Funding Agency: National Cattlemen’s Beef Association

Total Funding Amount: \$73,640

% Contribution: 25%

Project Dates: 10/1/2014-5/31/2015

Project Title: “Dissemination and fate of foodborne pathogens and indicators on produce post irrigation with surface water: an intervention trial”

Project Role: PI (TTU)

Funding Agency: USDA/Cornell University

Total Funding Amount: \$193,633

% Contribution: 100%

Project Dates: 11/1/2015-10/31/2018

Project Title: “The Effectiveness of Lactic Acid and Peracetic Acid Treatments on Beef Trim, Combined with Acidified Sodium Chlorite in Reducing Multiple *Salmonella* Serovars During Grinding”

Project Role: Co-PI

Co-PIs: Mindy Brashears and Chance Brooks

Funding Agency: American Meat Institute Foundation

Total Funding Amount: \$115,260

% Contribution: 30%

Project Dates: 4/1/2015-3/31/2016

Project Title: “Pathogen Inhibition: Mechanisms and Environmental Studies”

Project Role: Co-PI

Co-PIs: Mindy Brashears and Lacey Guillen

Funding Agency: NPC

Total Funding Amount: \$122,000

% Contribution: 30%  
Project Dates: 12/1/2014-12/31/2015

Project Title: “Antibiotic Resistance Surveillance in Retail Food Specimens in the Southwestern United States: Texas, Oklahoma, and New Mexico”

Project Role: Co-PI

Co-PIs: Mindy Brashears, Alejandro Echeverry, Mark Mill and Todd Brashears

Funding Agency: US Dept. of Health & Human Services

Total Funding Amount: \$650,000

% Contribution: 20%

Project Dates: 9/1/2016-8/31/2017

Project Title: “Alternatives to Subtherapeutic Antibiotics in Beef Cattle Feeding to Improve Performance and Mitigate Emergence of Antimicrobial Drug Resistance”

Project Role: Co-PI

Co-PIs: Mindy Brashears, Johnes Sarturi, Mark Miller and Alejandro Echeverry

Funding Agency: Texas Beef Council

Total Funding Amount: \$50,000

% Contribution: 20%

*\* Not in ORS report*

Project Title: “Inhibition of *Listeria monocytogenes* on Soft Cheese using Lactic Acid Bacteria as a Biocontrol System Intervention”

Project Role: Co-PI

Co-PIs: Mindy Brashears

Funding Agency: Dairy Management, Inc.

Total Funding Amount: \$64,805

% Contribution: 50%

Project Dates: 3/1/2017-3/1/2018

### **Colorado State University:**

#### **Externally Funded Grants as PI.**

Project Title: “Foodborne Pathogen Persistence: From Identification of Risk Factors to Communication of Control Strategies”

Co-PIs: J. Sofos and M. Wiedmann

Funding Agency (Project No.): USDA-NIFA-National Integrated Food Safety Initiative Program (2010-5110-21076)

Funding Amount: \$600,000

Project Dates: 9/1/10-8/31/13

*Transferred unspent amount to TTU*

Project Title: “Integrating Teaching, Research, and Outreach Efforts to Facilitate Industry Application of Molecular Subtyping for Foodborne Pathogens”

Co-PIs: M. Wiedmann

Funding Agency (Project No.): USDA-CSREES-National Integrated Food Safety Initiative (2008-51110-04333)

Funding Amount: \$579,000

Project Dates: 9/1/10-8/31/11

*Transferred unspent amount to TTU*

Project Title: “Construction of Laboratory Control Strains with Defined Genetic and Phenotypic Markers”

Co-PIs: None

Funding Agency: Silliker, Inc.

Funding Amount: \$15,000

Project Dates: 2/22/10-2/22-11

Project Title: “Identification of Genetic Markers Associated with *Escherichia coli* O157:H7 Attachment Efficiency and Novel Non-cytotoxic Small Molecules that Interrupt *E. coli* O157:H7 Attachment:

Co-PIs: B. A. Carlson, K. E. Belk, G. C. Smith, J. N. Sofos

Funding Agency: National Cattleman’s Beef Association

Funding Amount: \$83,450

Project Dates: 5/1/07-5/31/08

#### **Externally-Funded Projects as CoPI.**

Project Title: “A National Food Safety Education Program: Building a Multidisciplinary Food Safety Training Pipeline from K-12 to Graduate School”

Co-PIs: M. Wiedmann (PI), H. Oliver, L. Jaykus, A. Roberts, S. Ibrahim and M. Verghese

Funding Agency: USDA-NIFA-Agriculture and Food Research Initiative:

Funding Amount: \$2,497,104

Project Dates: 1/15/11-1/14/16

*Transferred unspent amount to TTU*

Project Title: “Food Safety Research Consortium: Development and Application of Molecular Subtyping Data to Support Risk-based Control Strategies for *Salmonella* and *Listeria monocytogenes*”

Co-PIs: M. Wiedmann (PI)

Funding Agency (Project No.): USDA-NIFA-Special Research Program (2010-01527)

Funding Amount: \$644,953

Project Dates: 9/1/10-8/31/13

*Transferred unspent amount to TTU*

Project Title: “Evaluation of Chemical Contamination Treatments for Beef Trimmings against *Escherichia coli* O157:H7 and non-O157 Shiga Toxin Producing *E. coli*.”

Co-PIs: J. Sofos (PI), K. Belk, I. Geornaras, G. Smith, D. Woerner, and H. Yang

Funding Agency: American Meat Institute Foundation

Funding Amount: \$88,000

Project Dates: 6/25/10-7/31/11

Project Title: An Evaluation of Carcass Characteristics, Longissimus Muscle Tenderness, and Prevalence of *Escherichia coli* O157 and *Salmonella*: Impact of Beta-aa and Implant on Behavior and Heat Stress Response

Co-PIs: D. Woerner (PI), S. Archibeque, K. Belk, T. Engle, T. Grandin, G. Smith, J. Tatum, K. Vogel, and J. Wagner

Funding Agency: JBS International

Funding Amount: \$58,412

Project Dates: 5/1/10-12/31/10

Project Title: “Integrating National Resource Information and Food System Signals to Identify Novel Methods for Control of Microbial Contamination in Spinach”

Co-PIs: Renata Ivanek (PI)

Funding Agency (Project No.): USDA-CSREES-Agricultural and Food Research Initiative (2010-750637)

Funding Amount: \$299,874

Project Dates: 2/15/10-2/14/13

Project Title: “Application and Development of the PathogenTracker database for phenotypic and subtyping studies of *Listeria monocytogenes* and *Salmonella*”

Co-PIs: M. Wiedmann (PI)

Funding Agency (Project No.): USDA-CSREES-Special Research Grant (2008-56341-8789)

Funding Amount: \$688,011

Project Dates: 9/1/08-8/31/11

Project Title: “Risk Assessment for Sampling Methods to Evaluate the Microbial Safety of Fresh Produce”

Co-PIs: L. Goodridge (PI), M. Danyluk, M. Griffiths, J. Lejeune, D. Schaffner, and T. Suslow

Funding Agency (Project No.): USDA-CSREES-Specialty Crop Research Initiative (2008-51180-04846)

Funding Amount: \$1,667,678

Project Dates: 9/1/08-8/31/13

Project Title: “Protocol: Product Testing for *Listeria monocytogenes* Control”

Co-PIs: J. Sofos (PI), K. Belk, I. Geornaras and G. Smith

Funding Agency (Project No.): Bar-S Foods

Funding Amount: \$18,000

Project dates: 11/1/09-7/30/11

Project Title: “Interaction of Copper Source, Bile Composition on Microbial Growth, and Cu Protein Homeostasis”

Co-PIs: T. Engle (PI), D. Anderson, S. Archibeque, K. Belk, H. Han, B. Kirch, N. Roman-Muniz, J. Wagner and D. Woerner

Funding Agency: Novus International

Funding Amount: \$21,000

Project Dates: 12/31/09-3/31/11

Project Title: “A Review of Procedures to Extend the Shelf Life of Fresh/Frozen Beef and Pork Muscle Cuts and Variety Meats in Foreign Countries”

Co-PIs: L. Goodridge, R. Murphy, G. Smith, J. Sofos (PI) and J. Tatum

Funding Agency: U.S. Meat Export Federation

Funding Amount: \$48,982

Project Dates: 01/01/09-12/31/09

Project Title: “Evaluation of the Effects of Oxion on the Microbial Ecology of the Rumen *In Vitro* and Subsequent Effects on Digestibility”

Co-PIs: S. Archibeque (PI)

Funding Agency (Project No.): Oxion, Inc.

Funding Amount: \$13,743

Project dates: 6/1/08-1/9/09

Project Title: “Sample Collection for Residue Analysis”

Co-PIs: K. Belk (PI), J. Tatum, J. Sofos, G. Smith, and L. Goodridge

Funding Agency (Project No.): National Cattleman’s Beef Association

Funding Amount: \$16,400

Project dates: 3/17/08-8/1/08

Project Title: “Screening for Antibiotic Resistance Genes and Class I Integrons in Commensal Bacteria in Agriculture and Other Environments”

Co-PIs: H. Yang, G. Smith, L. Goodridge, I Geornaras, K. Belk and J. Sofos (PI)

Funding Agency: National Cattleman’s Beef Association

Funding Amount: \$116,800

Project dates: 6/1/08-5/31/09

Project Title: “The Effect of Lactate on Histamine Release from *Rattus norvegicus* Basophilic Leukemia Cells”

Co-PIs: T. Engle (PI) and W. Wailes

Funding Agency (Project No.): Charles F. Owen

Funding Amount: \$4,325

Project Dates: 9/30/07-0/30/08

Project Title: “Effects of Zinc and Cobalt on Performance and Carcass Characteristics of Finishing Steers”

Co-PIs: T. Engle (PI), J. Wagner, L. Goodridge, H. Han and S. Archibeque

Funding Agency (Project No.): Zinpro

Funding Amount: \$50,702

Project Dates: 12/1/07-8/31/07

### **Internally-Funded Awards as PI.**



Project Title: “Integration of Real-time PCR Applications in Food Safety Cluster Research, Teaching and Outreach Programs”

Co-PIs: L. Goodridge and J. Sofos

Funding Agency: Colorado State University Infectious Diseases Supercluster

Funding Amount: \$22,900

Project Dates: 6/15/08

Project Title: “Identification of Novel Non-cytotoxic Small Molecules that Inhibit *Escherichia coli* O157:H7 Growth”

Co-PIs: L. Goodridge and J. Sofos

Funding Agency: Colorado State University Infectious Diseases Supercluster

Funding Amount: \$42,417

Project Dates: 8/1/07-9/30/08

### **Internally-Funded Awards as Co-PI.**

Project Title: “Developing Flow Cytometric Approaches to Food Safety Cluster Research, Teaching and Outreach”

Co-PIs: L. Goodridge (PI), J. Sofos, and B. Bisha

Funding Agency: Colorado State University Infectious Diseases Supercluster

Funding Amount: \$25,000

Project Dates: 3/5/10

### **Pending:**

Project Title: “Efficacy of Interventions to reduce *Salmonella* on Fresh Pork Products to Improve Food Safety”

Project Role: Co-PI

Funding Agency: National Pork Board

Total Funding Amount: \$77,763

% Contribution: 40%

Project Title: “Development of novel species specific real-time PCR assays to detect *Salmonella* serotype of regulatory importance to rendered animal protein and fat”

Project Role: PI

Funding Agency: Fats & Protein Research Foundation

Total Funding Amount: \$40,000

% Contribution: 70%

Project Title: “Strategic Cattle Movement to Understand Determinants of *Salmonella* Burden”

Project Role: Co-PI

Funding Agency: NCBA

Total Funding Amount: \$210,519

% Contribution: 10%

Project Title: “Development of novel CRISPR-based detection, speciation and subtyping assays for *Campylobacter* from food matrices”

Project Role: Co-PI

Funding Agency: USDA

Total Funding Amount: \$434,374

% Contribution: 10%

Project Title: “Evaluation of Direct-Fed Microbials for the Mitigation of Antimicrobial Drug Resistance in Beef Cattle Production System”

Project Role: Co-PI

Funding Agency: USDA/Oklahoma State University

Total Funding Amount: \$334,760

% Contribution: 25%

### **Cash and Gifts-in-Kind**

#### **Funded:**

1. Unrestricted Research Gift. “Roka BioSciences Research Fund”. Guy Loneragan, Mindy Brashears and **Kendra Nightingale**. \$100,000 (matched with \$50,000 TRIP funds).
2. Unrestricted Research Gift. “Zoetis *Salmonella* Research fund”. Guy Loneragan, Mindy Brashears and **Kendra Nightingale**. \$100,000 (matched with \$50,000 TRIP funds).
3. Unrestricted Gift. “RNA Excellence Fund”. Mindy Brashears and **Kendra Nightingale**. \$100,000 (matched with \$50,000 TRIP funds).
4. Unrestricted Research Gift. “Ranch Road Holding Probiotic Research Support Fund”. Mindy Brashears, Todd Brashears and **Kendra Nightingale**. \$150,000.
5. Unrestricted Research Gift. “Probiotic Excellence Fund for the Advancement of Pet and Food Safety” Mindy Brashears, **Kendra Nightingale** and Nathan Hall. \$150,000.

### **SERVICE TO PROFESSIONAL ORGANIZATIONS:**

#### **National:**

##### **1. International Association of Food Protection**

- a. Member, Committee on Food Safety, Animal Drugs, and Animal Health. Federation of Animal Science Societies (2007-2011).
- b. At Large Committee Member, Biotechnology Division Institute of Food Technologists (2007-2011).
- c. Member of the Journal of Food Protection Editorial Board since 2007.
  - i. 68 reviews (as of 9/1/2017)
- d. Journal of Food Protection Management Committee (2008-2012; re-appointed in 2017).
- e. Served on the committee to select the Larry Beuchat “Young Research Award” (2010-2012).

- f. Convener for Technical Session “Pathogens” (2012).
- g. Convener for Technical Session “Novel Laboratory Methods (2014).
- h. Convener for “A Debate: Current Perspectives in Food Safety” (2017).
- i. Convener for Symposium “Battling Bad Bugs: Biological Approaches to Control Pathogens”.

**Regional:**

None to report.

**State:**

None to report.

**CONSULTING ACTIVITIES:**

1. Scientific advisor to Food Safety Net Services (*paid*)
2. Scientific advisor to International Life Sciences Institute (ILSI) North America Technical Committee on Food Microbiology (*paid*)
3. Expert witness for CMK Carroll, McNulty, Kull LLC. Starbucks v. Wellshire Farms (*paid*)
4. Expert witness for Lenz Law Firm, LLC. Specialty Farms v. Amalgamated Produce Inc. (*paid*)
5. Expert witness for THOMAS|LUCAS. Mission v. Bull Enterprises. (*paid*)
6. Expert witness for PritzkerOlsen. Jones v. Bidart Brothers, Happy Apple Co. (*paid*)
7. Expert witness for PritzkerOlsen. Shockley v. Blue Bell. (*paid*)
8. Expert witness for Vorys, Sater, Seymour and Pease, LLP. DiStefano v. Dole. (*paid*)

**SERVICE TO:**

**UNIVERSITY:**

1. 2012-2013. External Review of Biology Department Graduate Program (TTU).
2. 2013-2015. Technology Transfer Review Committee – Office of Technology Transfer (TTU).
3. 2015. Vice President of Research Faculty Advisory Board (TTU).
4. 2016. Institutional Laboratory Biosafety Committee (TTU).

**OFFICE OF THE VICE PRESIDENT FOR RESEARCH (TTU):**

1. 2012-2014. Young Investigator Forum panel member. Shared experiences in gaining federal funding with researchers new to Texas Tech University.
2. 2017. Conducted case studies of 12 peer and non-peer institutions to determine strategies to increase federal research expenditures, obtain large programmatic or center grants and to manage additional funds at the institutional level.

3. 2017. Participated in initial planning meetings to develop a “Women Researchers and Innovators” group at Texas Tech University to provide resources for female faculty to be successful in research and scholarship.

#### **COLLEGE:**

1. 2009. Information Technologist Specialist/Instructor Search Committee College of Agricultural Sciences (CSU).
2. 2010-2011. Animal Sciences Department Head Search Committee (CSU).
3. 2012. Animal and Food Sciences Department Head Search Committee (TTU).
4. 2012-2013. Chair of the CASNR Laboratory Safety Committee (TTU).
5. 2014-2015. CASNR Laboratory Safety Committee (TTU).

#### **DEPARTMENT:**

1. 2006-2007. Research Facilities and Equipment Committee (CSU).
2. 2007-2011. Coordinated the Annual JBS – Animal Sciences Department Seminar (CSU).
3. 2007-2010. Faculty Mentor for Ram Camp (CSU).
4. 2008. Meat Science Specialist Position Search Committee (CSU).
5. 2008. Environmental Management Position Committee (CSU).
6. 2008. Breeding and Genetics Position Committee (CSU).
7. 2008-2011. Academic Quadrathlon Judge and Moderator (CSU).
8. 2008-2011. Curriculum Committee (CSU).
9. 2008-2011. Graduate Student and Research Committee (CSU).
10. 2012-2014. Animal and Food Sciences Research Strategic Planning Committee (TTU).
11. 2014-2015. Undergraduate Research Committee (TTU).
12. 2014. Equine Position Search Committee (TTU).
13. 2014. Food Security Cluster Biostatistician Position Search Committee (TTU).
14. 2014. Center for Biotechnology and Genomics Cluster Bioinformatics Search Position Committee (two positions) (TTU).
15. 2016. Food Science Position Search Committee (TTU).
16. 2016. Food Science Curriculum – IFT Accreditation Committee (TTU).

#### **COMMUNITY:**

None to report.

#### **INDUSTRY:**

##### **Non-paid Consultation and Scientific Advising to Food Testing Companies and Food Industry:**

*Below is a list of food pathogen testing and food companies that I have collaborated with on research or provided non-paid scientific advice/consultation to:*

1. Amalgamated Produce Inc.

2. Barassica Sprouts
3. Chang Sprout Inc.
4. Life Technologies
5. Bio-Rad
6. Neogen
7. Pall Gene Disc
8. Zoetis (*Salmonella* working group)
9. Roka BioScience
10. NPC
11. BioMerieux
12. Dupont Qualicon
13. 3M
14. Qiagen
15. Harris Ranch Beef
16. Foster Farms
17. Cargill Meat Solutions
18. Kraft
19. JBS
20. McDonalds
21. Duncan Farms
22. Taylor Farms
23. Windsor Foods
24. SugarCreek

## **OTHER:**

### **Manuscript Reviewing:**

Journal of Food Protection Editorial Board (68 reviews; as of 8/29/2017)  
 Ad-hoc review for Zoonosis and Public Health (July, 2007)  
 Ad-hoc review for Foodborne Pathogens and Diseases (January, 2005)  
 Ad-hoc review for Research in Veterinary Science (April, 2008)  
 Ad-hoc review for International Society for Microbial Ecology Journal (April, 2008)  
 Ad-hoc review for BMC Microbiology (May, 2008)  
 Ad-hoc review for Applied and Environmental Microbiology (March, 2009; May, 2009)  
 Ad-hoc review for Applied and Environmental Microbiology (May, 2009)  
 Ad-hoc review for Foodborne Pathogens and Diseases (August, 2009)  
 Ad-hoc review for Applied and Environmental Microbiology (February, 2010)  
 Ad-hoc review for Foodborne Pathogens and Disease (September, 2010)  
 Ad-hoc review for Applied and Environmental Microbiology (September, 2010)  
 Ad-hoc review for Applied and Environmental Microbiology (April, 2012)  
 Ad-hoc review for Applied and Environmental Microbiology (July, 2012)  
 Ad-hoc review for PLoS (October, 2015)

### **Grant Proposal Reviewing:**

1. Alberta Livestock Industry Development Fund (2 proposals, December, 2008).
2. USDA:ARS: Molecular Methods Panel (2 proposals; November, 2010).

### **Food Industry Training Sessions:**

1. In-plant training performed for Continental Sausage management and employees (Denver, CO; March, 2008 and June, 2009). “Controlling *Listeria monocytogenes* in ready-to-eat meat and poultry processing environments”.
2. In-plant training performed for Scanga Meats management, employees, and in-plant and regional USDA:FSIS inspector (Salida, CO; May, 2008). “Controlling *Listeria monocytogenes* in ready-to-eat meat and poultry processing environments”.
3. Web-based seminar training as part of a series of web seminars on controlling *L. monocytogenes* on ready-to-eat (RTE) meat and poultry products and in the RTE processing environment (September, 2008). “*Listeria monocytogenes* detection and selecting an appropriate method for environmental sampling”.
4. Web-based seminar training as part of a series of web seminars on controlling *L. monocytogenes* on ready-to-eat (RTE) meat and poultry products and in the RTE processing environment (October, 2008). “Tracking *Listeria* in the ready-to-eat meat processing plant environment: DNA based methods”.
5. In-plant training performed for Amalgamated Produce Inc. (Bridgeport, CT; February, 2010) “Controlling *Listeria monocytogenes* in sprout growing/processing facilities”.
6. In-plant training performed for Chang Farms (Deerfield, MA; July, 2010) “Controlling *Listeria monocytogenes* in sprout growing/processing facilities”.
7. In-plant training performed for Brassica Sprouts at Specialty Farms (Bridgeport, CT; February, 2010) “Controlling *Listeria monocytogenes* in sprout growing/processing facilities”.
8. In-plant training performed for Brassica Sprouts at Friends Trading Company (Denver, CO; March, 2010) “Controlling *Listeria monocytogenes* in sprout growing/processing facilities”.

### **Workshops:**

1. Co-Instructor, for a half-day Workshop on Meat Safety and HACCP from the U.S. Regulatory Perspective for a Group of Veterinarians from Kazakhstan and Moldova (October, 2001; Ithaca NY).
2. Co-Instructor, for a week-long Workshop on Meat Safety and Implementation of HACCP in Poland (October, 2002; Poznan, Poland).
3. Co-Instructor, for a Week-long Cornell University and Eastern European Collaborative Program Workshop on Food Safety (September, 2003; Ithaca, NY).
4. Teaching Assistant for a three-day Workshop on Epidemiology and Foodborne Illness: How Disease is Detected and How Investigations Proceed (August, 2005; Baltimore, MD).
5. Co-Director – Molecular Methods in Food Microbiology Workshop. Colorado State University (Fort Collins, Colorado; June, 2008).
6. Co-Director – Molecular Methods in Food Microbiology Workshop. Colorado State University (Fort Collins, Colorado; June, 2009).

7. Co-Director – Molecular Methods in Food Microbiology Workshop. Colorado State University (Fort Collins, Colorado; June, 2010).
8. Co-Director – Molecular Methods in Food Microbiology Workshop. Colorado State University (Fort Collins, Colorado; June, 2011).
9. Co-Director - Workshop on Comparative Genomics North America. Colorado State University (Fort Collins, CO; July, 2011).
10. Co-Director - Workshop on Molecular Evolution: Fundamentals and Applications in Genomics, North America (Fort Collins, CO; July, 2011).
11. Instructor for a Workshop on Good Agricultural Practices, Good Manufacturing Practices, Standard Sanitation Operating Procedure and Hazard Analysis Critical Control Points (Kabul, Afghanistan; June, 2012).
12. Instructor for a Workshop on Basic Hygiene and Food Safety (Kabul, Afghanistan; November, 2012).
13. Co-Director – Molecular Methods in Food Microbiology. Texas Tech University (Lubbock, TX; October, 2013).
14. Instructor for a Workshop on the Principles of HACCP (April, 2014; Nassau, Bahamas).
15. Instructor for a Workshop on Global Food Security (March, 2015; Nassau, Bahamas).
16. Instructor - North American Meat Association Regional Producer Workshop (Oakland, CA; May, 2015).
17. Instructor - North American Meat Association Regional Producer Workshop (College Park, GA; June, 2013).
18. Instructor - Diagnostics for Detection of Foodborne Pathogens. International Association of Food Protection Pre-Meeting Workshop (Indianapolis, IN; July, 2014).
19. Co-Director - Next Generation Sequencing – A Tutorial and Hands on Workshop to Help Understand This Emerging Technology. International Association of Food Protection Pre-Meeting Workshop (Saint Louis, MO; July, 2016).

#### **Accreditation Reviews at Other Institutions:**

1. King Saud University, Women's Food Science Department accreditation (Riyadh Saudi Arabia; November, 2008).
2. Croatian Higher Education Systems - Faculty of Agriculture accreditation (Zagreb, Croatia; April, 2013).