

WILLIS M. FEDIO

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Employment history

- 2001-present **Director**, Food Safety Laboratory, New Mexico State University, Las Cruces, New Mexico
- Established Food Microbiology Laboratory for pathogen detection in foods
 - Manage Biosafety Level 2 Laboratory
 - Manage laboratory staff: 4 analysts and two students
 - Work with clients to develop experimental protocols for evaluation or method development
 - Conduct conventional analyses for microorganisms in foods
Escherichia coli O157:H7; *Salmonella* spp.; *Listeria monocytogenes*; *Vibrio* spp.,
Shigella spp., *Escherichia coli*, coliforms and *Staphylococcus aureus*; aerobic plate count; yeasts and molds.
 - Conduct validation studies for rapid methods including: PCR for *Shigella* spp., Real-Time PCR for *Vibrio* spp., *Escherichia coli* O157:H7, *Listeria monocytogenes* and *Salmonella* spp.; Immunoassays for *Salmonella* spp. and *Listeria monocytogenes*; Immunomagnetic Separation techniques (Pathatrix, BeadRetriever) for *E. coli* O157:H7
 - Write reports and work with laboratory staff to prepare final reports
 - Review processing procedures for New Mexico food products
 - Provide technical and analytical support for food processors
 - Conduct training programs including Food Emergency Response Network Trainings, Better Process Control Schools, and Cheese making Workshops.
 - Established NMSU Food Safety Laboratory as a Food Emergency Response Network laboratory and secured Microbiology Cooperative Agreement Program funding.
 - Established NMSU FSL as a FDA CFSAN GenomeTrakr Laboratory, secured a Research Collaboration Agreement with CFSAN which provided a DNA Sequencer and consumables for the lab.
- 1999-2001 **Food Technology Specialist/Assistant Professor**, Department of Extension Home Economics, New Mexico State University, Las Cruces, New Mexico
- Direct state-wide extension food technology program in New Mexico
 - Provide nutrition labelling service to food processors
 - Review processing procedures for New Mexico food products
 - Provide technical and analytical support for food processors
 - Established testing procedures for product evaluation
 - Food safety video production
 - Conduct food technology training programs including Hazard Analysis and Critical Control Points (HACCP) workshops and Better Process Control Schools
- 1996-1998 **Assistant Professor of Food Microbiology**, Department of Applied Microbiology and Food Science, University of Saskatchewan, Saskatoon, Saskatchewan, Canada
- Courses taught: Food Products and Processing, Food Microbiology, Special Topics in Food Microbiology, Fluid Food Products, Quality Assurance for the Food Industry
- 1991- 1996 **Postdoctoral Fellow**, Alberta Dairy Association Research Unit Department of Agricultural, Food & Nutritional Science, University of Alberta, Edmonton, Alberta, Canada
- Effects of lactic acid bacteria on *Helicobacter pylori*
 - Antimutagenic effects of milk proteins

- Shelf-life extension of dairy products
- Modified atmosphere packaging studies
- Chemical analysis of dairy products
- Microbiological analysis of dairy products and ingredients

Education

- 1991 **Ph.D., Food Microbiology**, Department of Food Science, University of Alberta, Edmonton, Alberta, Canada
Thesis: Studies on the incidence and origins of *Listeria monocytogenes* in raw milk and factors affecting its thermal resistance.
- 1986 **M.Sc., Food Microbiology**, Department of Food Science, University of Alberta, Edmonton, Alberta, Canada
Thesis: Fate of *Salmonella typhimurium* at suboptimal growth temperatures.
- 1980 **B.Sc., Specialization in Genetics**, Department of Genetics, University of Alberta, Edmonton, Alberta, Canada

Short Courses

- QIAGEN QIAcube training, NMSU Food Safety Laboratory, May, 2015
- Joint Institute of Food Safety and Applied Nutrition—Whole Genome Sequencing, March, 2015, University of Maryland, Bethesda, MD.
- Illumina MiSeq training, NMSU Food Safety Laboratory, Jan., 2015
- Food Emergency Response Network LB501 Screening Methodologies for *Bacillus anthracis*, 2013, FDA Forensic Chemistry Center - Cincinnati, OH
- Food Emergency Response Network LB504 Food Virology Training Course, 2011, San Francisco District Laboratory, Alameda, CA
- Food Emergency Response Network Microbiological Cooperative Agreement Program Vendor Training – ABI 7500 Fast Real Time PCR (Applied Biosystems) & DiversiLab (BioMerieux), Las Cruces, NM, 2010
- Real-Time PCR Workshop Advanced, Cepheid, Sunnyvale, California, 2006
- Food Emergency Response Network LB506 Validation of Real-Time PCR for the Detection of Foodborne Pathogens, FDA, Irvine, California, 2005
- Introduction to PCR—Theory and Practices, FDA, Denver, Colorado, 2004
- Rapid Methods for Food Microbiology, York University, 2002
- Basic Food Microbiology: Aerobic Plate Count, *E. coli*, Coliforms, *S. aureus*, Enterohemorrhagic *E. coli*, *Salmonella* and *Listeria* species, FDA Denver, 2002
- Better Process Control School, Louisiana State University, 1999
- NMSU Environmental Health & Safety Training: Employee Safety and Hazard Communication (2002); Laboratory Standard (2005); Biosafety (Lab Biosafety) Training (2005); Hazardous Waste Management (2002); Bloodborne Pathogens (2002).
- NMSU Food Safety Laboratory Training
Magnetic Particle Concentration for DNA template preparation with the MagMax 96 DW training (Life Technologies, 2012); Real Time PCR Training on BAX Q7 System for Detection of Pathogens (DuPont, Qualicon), 2011; Immunomagnetic Separation Techniques for Foodborne Pathogens (Matrix Scientific), 2010; MagNA Pure DNA Extraction Procedures (Roche), 2009; DiversiLab and VIDAS Equipment Training (BioMerieux), 2009; VITEK Equipment Training (BioMerieux), 2009; Real Time PCR for Foodborne Pathogen Detection Training, (Food Emergency Response Network LB 309) 2007; Immunomagnetic Separation Techniques for Foodborne Pathogens (Matrix Scientific), 2005; Real-Time PCR Techniques-Smart Cycler (Cepheid), 2004; PCR Technique-BAX System for Detection of Pathogens (DuPont Qualicon), 2003; VIDAS System for Enzyme Immuno-fluorescent Detection of Pathogens (BioMerieux), 2002.
- Radiation Safety Certificate, University of Alberta, 1988.

Publications

- Yoshitomi, K. J., K.C. Jinneman, P.A. Orlandi, S.D. Weagant, R. Zapata, and W.M. Fedio. 2015. Evaluation of rapid screening techniques for detection of *Salmonella* spp. from produce samples after pre-enrichment according to FDA BAM and a short secondary enrichment. *Lett. Appl. Microbiol.* 61:7-12.
- R. Zapata, P. Browning, C. Garcia., D. Lucero, and W.M. Fedio. 2012. Inactivation of *Salmonella* species on New Mexico green chile peppers by flame roasting. *J. Agric. Sci. and Technol. A.* 2:851-855
- J.A. Beall, R. Zapata, N.C. Flores, and W.M. Fedio. 2012. Comparison of 3M™ Petrifilm™ Aerobic Count Plates with pour plates for determination of aerobic plate counts in fermented chile mash. *J. Agric. Sci. and Technol. A.* 2:1024-1028.
- K.J. Yoshitomi, K.C. Jinneman, R. Zapata, S.D. Weagant, and W.M. Fedio. 2012. Detection and isolation of low levels of *E. coli* O157:H7 in cilantro by real-time PCR, immunomagnetic separation and cultural methods with and without an acid treatment. *J. Food Sci.* 77:M481-M489.
- Yoshitomi, K.J., R. Zapata, K. C. Jinneman, S. D. Weagant, and W. Fedio. 2012. Recovery of *E. coli* O157 strains after exposure to acidification at pH 2. *Lett. Appl. Microbiol.* 56:499-503.
- Beall, J.A., J.A. Gonzalez-Simental, S. Soto-Navarro, N. Flores and W.M. Fedio. 2012. The effect of calcium chloride on the microbiological characteristics of fermented chile pepper (*Capsicum annum cv. Mesilla Cayenne*) mash. *J. Agric. Sci. and Technol. A.* 2:1113-1118.
- Fedio, W.M., K.C. Jinneman, K.J. Yoshitomi, R. Zapata, and S.D. Weagant. 2012. Efficacy of a post enrichment acid treatment for isolation of *Escherichia coli* O157:H7 from alfalfa sprouts. *Food Microbiol.* 30:83-90.
- Weagant, S.D., K.C. Jinneman, K.J. Yoshitomi, R. Zapata and W.M. Fedio. 2011. Optimization and evaluation of a modified enrichment procedure combined with immunomagnetic separation for detection of *E. coli* O157:H7 from artificially contaminated alfalfa sprouts. *Int. J. Food Microbiol.* 147:87-92.
- Fedio, W.M., K.C. Jinneman, K.J. Yoshitomi, R. Zapata, C.N. Wendakoon, P. Browning and S.D. Weagant. 2011. Detection of *E. coli* O157:H7 in raw ground beef by Pathatrix™ immunomagnetic-separation, real-time PCR and cultural methods. *Int. J. Food Microbiol.* 147:87-92.
- Fedio, W.M., C.N. Wendakoon, R. Zapata, C. Carrillo, and P. Browning. 2008. Comparison of Petrifilm™ Staph Express Count System with the BAM direct plating method for enumeration of *Staphylococcus aureus* in artificially contaminated hard cheese. *Journal of AOAC International* 91:1138-1141.
- Fedio, W.M., G.M. Blackstone, L. Kikuta-Oshima, C. Wendakoon, T.H. McGrath and A. DePaola. 2007 Rapid detection of the *Vibrio cholerae ctx* gene in food enrichments using real time PCR. *Journal of AOAC International* 90:1278-1283.
- Fedio, W.M. 2006. Expanding the Use of Validated Rapid Microbiological Methods to New Food Matrices. Proceedings of the Institute of Food Technologists First Annual Food Protection and Defense Research Conference. <http://www.ift.org/fooddefense/28-Fedio.pdf>
- Wendakoon C.N., W. Fedio, A. MacLeod and L. Ozimek. 1998. *In vitro* inhibition of *Helicobacter pylori* by dairy starter cultures. *Milchwissenschaft* 53: 499-502.
- MacLeod, A., W.M. Fedio L. Chu and L. Ozimek. 1996. Binding of retinoic acid to Beta-lactoglobulin variants A and B: Effect of peptic and tryptic digestion on the protein-ligand complex. *Milchwissenschaft* 51:3-7.
- MacLeod, A., W. Fedio and L. Ozimek. 1995. Aggregation of β -lactoglobulin as a function of pH and temperature. *Milchwissenschaft* 50:666-669.
- D. MacLeod, A. Janowska-Wieczorek, W. M. Fedio, L. Ozimek and J.J. Kennelly. 1995. Separation and purification of bovine polymorphonuclear leukocytes with Ficoll-Paque. *Milchwissenschaft* 50:547-548.
- MacLeod, A., W. Fedio and L. Ozimek. 1995. Separation of β -lactoglobulin variants A and B from cheese whey by subunit exchange bioaffinity chromatography. *Milchwissenschaft* 50:440-444.
- Fedio, W.M., A. MacLeod and L. Ozimek. 1994. The effect of modified atmosphere packaging on the growth of microorganisms in cottage cheese. *Milchwissenschaft* 49:622-629.
- Fedio, W.M., L. Ozimek and F.H. Wolfe. 1994. Gas production during the storage of Swiss cheese. *Milchwissenschaft* 49:3-8.
- Fedio, W.M. and H. Jackson. 1992. On the origin of *Listeria monocytogenes* in raw milk. *International Dairy Journal* 2:197-208.
- Fedio, W.M. and H. Jackson. 1990. Incidence of *Listeria monocytogenes* in raw bulk milk in Alberta. *Canadian*

Institute of Food Science and Technology Journal 23:236-238.

Fedio, W.M., M. Schoonderwoerd, R.H. Shute and H. Jackson. 1990. A case of bovine mastitis caused by *Listeria monocytogenes*. Canadian Veterinary Journal 31:773-775.

Fedio, W.M. and H. Jackson. 1989. Effect of tempering on the heat resistance of *Listeria monocytogenes*. Letters in Applied Microbiology 9:157-160.

Conference Proceedings

Molina, J., J.W. White and W.M. Fedio. 2017. Monitoring the Behavior of *Listeria monocytogenes* During Green Chile Processing. New Mexico Chile Conference, Las Cruces, N.M.

W. M. Fedio, 2016. Food Safety Modernization Act: Educate then Regulate. New Mexico Chile Conference, Las Cruces, N.M.

Randhawa, R.S., R. Zapata, P. Browning, L.R. White, J. Olea and W.M. Fedio, 2015. Evaluation of methods for detection of *Listeria monocytogenes* in fresh green chile peppers. New Mexico Chile Conference, Las Cruces, N.M.

Fedio, W. M., R. Zapata, P. Browning, L. White, J. Olea, and R. Pamboukian. 2014. Single laboratory validation of two *Vibrio* TaqMan qPCR assays for identification of *Vibrio* isolates. International Union of Microbiological Congresses, XIVth International Congress of Bacteriology and Applied Microbiology. Montreal, QC.

Browning, P., L. White, J. Olea, R. Pamboukian, R. Zapata and W.M. Fedio. 2014. Single laboratory validation of a *Vibrio* TaqMan qPCR assay for identification of *Vibrio* isolates. International Association for Food Protection Annual Meeting, Indianapolis, IN.

Fedio, W. 2013. Development and validation of rapid methods for the detection of bacterial pathogens in foods. Food Emergency Response Network Microbiology Cooperative Agreement annual meeting, Charlotte, NC.

Zapata, R., P. Browning, K.J. Yoshitomi, K.C. Jinneman, L.R. White, R. Pamboukian, S.D. Weagant and W.M. Fedio. 2013. Evaluation of lateral flow devices for detection of *E. coli* O157:H7 in raw milk and produce. International Association for Food Protection Annual Meeting, Charlotte, NC.

W.M. Fedio, J. L. Jones, P. E. Browning, L. R. White, J. F. Olea, R. Pamboukian and A. DePaola. 2013. Comparison of gel electrophoresis and microfluidic separation of PCR Products for identification of pathogenic *Vibrio* spp. International Association for Food Protection Annual Meeting, Charlotte, NC.

Pamboukian, R., W.M. Fedio, J. L. Jones, P. E. Browning, J.C Bowers, FERN Laboratory Cadre, and A. DePaola. 2013. Multi-laboratory evaluation of the BAX qPCR *Vibrio* assay for identification of *Vibrio* isolates. International Association for Food Protection Annual Meeting, Charlotte, NC

Fedio, W.M. R. Zapata, P.E. Browning, L. White, K. J. Yoshitomi, K.C. Jinneman, R. Pamboukian and S.D. Weagant. 2013. Effect of sample preparation methods on sensitivity of detection and isolation of *E. coli* O157:H7 from artificially contaminated raw milk. Institute of Food Technologists, Annual Meeting, Chicago, IL.

Beall, J. A., R. Zapata, and W.M. Fedio. 2013. Chile pepper juice supports the growth of *Salmonella* Typhimurium, *Escherichia coli* O157:H7 and *Listeria monocytogenes*. Institute of Food Technologists Annual Meeting, Chicago, IL.

Fedio, W.M., P.E. Browning, and R. Zapata. 2012. Real-time PCR detection of Shiga Toxin Producing *Escherichia coli* (STEC) in dried red chile. 21st International Pepper Conference, Naples, FL.

Beall, J.A., N.C. Flores and W.M. Fedio. 2012. Enumeration, isolation and characterization of lactic acid bacteria from fermented chile pepper (*Capsicum annuum* cv Mesilla Cayenne) mash. 21st International Pepper Conference, Naples, FL. 21st International Pepper Conference, Naples, FL.

Browning, P., R. Zapata, J. Beall, D. Lucero and W. M. Fedio. 2012. Microbiological safety of flame roasted New Mexico green chile peppers.

Beall, J.A., R. Zapata, and W.M. Fedio. 2012. Chile pepper juice supports the growth of *Salmonella* Typhimurium and *Escherichia coli* O157:H7. 21st International Pepper Conference, Naples, FL. 21st International Pepper Conference, Naples, FL

Fedio, W.M., J.L. Jones, R. Zapata, P. Browning, C. Garcia, Ruiqing Pamboukian and A. DePaola. 2012. Single laboratory validation of the BAX qPCR *Vibrio* assay for identification of *Vibrio* isolates. International Association for Food Protection Annual Meeting, Providence, RI.

- Kase, J.A., A. Maounounen-Laasri, T. Lusk, I. Son, W.M. Fedio, and T.S. Hammack. 2012. Comparison of different agars for the recovery and isolation of Non-O157 STECs from baby spinach and raw milk cheese. International Association for Food Protection Annual Meeting, Providence, RI.
- Fedio, W.M. 2012. Rapid methods for detection of bacterial pathogens in foods. American Society for Microbiology Rio Grande Branch annual meeting, Las Cruces, NM
- Beall, J.A., N.C. Flores, and W.M. Fedio. 2012. Enumeration, isolation and characterization of lactic acid bacteria from fermented chile pepper (*Capsicum annuum* cv. Mesilla Cayenne) mash. American Society for Microbiology Rio Grande Branch annual meeting, Las Cruces, NM
- Zapata, R., P.E. Browning, and W.M. Fedio. 2012.. Real-time PCR for detection of Shiga Toxin-Producing *Escherichia coli* (STEC) in dried red chile. New Mexico Chile Conference, Las Cruces, New Mexico.
- Yoshitomi, K.J., K.C. Jinneman and W.M. Fedio. 2012. Effect of sample preparation in the detection and isolation of *E. coli* O157:H7 from artificially contaminated produce. Human Pathogens on Plants Workshop. Hyattsville, MD.
- Jinneman, K.C., K. J. Yoshitomi, P.A. Orlandi, S.D. Weagant, R. Zapata, C.M. Garcia, and W.M. Fedio . 2012. Evaluation of rapid screening techniques for detection of *Salmonella* spp. from artificially contaminated produce after pre-enrichment according to FDA BAM and a 7h secondary enrichment. Human Pathogens on Plants Workshop. Hyattsville, MD.
- Jinneman, K.C., K. J. Yoshitomi, P.A. Orlandi, S.D. Weagant, R. Zapata, C.M. Garcia, and W.M. Fedio. 2011. Accelerated procedures for detection and isolation of *Listeria* spp. from food samples. J. Food Protection 74 (Suppl. A) 164.
- Jinneman, K.C., K. J. Yoshitomi, P.A. Orlandi, S.D. Weagant, R. Zapata, P. Browning, and W.M. Fedio. 2011. DNA extraction procedures for Real-time PCR detection of *Listeria monocytogenes* and *Listeria* spp. from artificially contaminated food samples. J. Food Protection 74 (Suppl. A) 139.
- Yoshitomi, K.J., K. Pukalo, K.C. Jinneman, J. Waite-Cusic, and W.M. Fedio. 2011. Application of an optimized, automated nucleic acid extraction procedure for qPCR detection of *E. coli* O157:H7 in artificially contaminated Napa cabbage, green onions, and zucchini. J. Food Protection 74 (Suppl. A) 112
- Browning, P., R. Zapata, C. Garcia V. Beauchemin, M. Townsend, D. Lucero, and W.M. Fedio. 2011. Inactivation of *Salmonella* spp. on New Mexico green chile peppers by flame roasting. Institute of Food Technologists Annual Meeting, New Orleans, LA.
- Aguayo, Cristal, Ruby Aguayo, Aldemar Madrid, Amanda Estrada and Willis M. Fedio. 2011. An examination of the microflora of dried chile peppers. New Mexico Chile Conference, Las Cruces, New Mexico.
- Beall, J.A., R. Zapata, C.M. Garcia, E.A. Strietelmeier, N.C. Flores and W.M. Fedio. 2010. Comparison of Petrifilm Aerobic Count Plates with pour plates for determination of aerobic plate counts in fermented chile mash. International Association for Food Protection Annual Meeting, Anaheim, CA.
- Yoshitomi, K. J., K.C. Jinneman, P.A. Orlandi, S.D. Weagant, R. Zapata, C.M. Garcia, B.A. Strietelmeier and W.M. Fedio. 2010. Accelerated *Salmonella* procedures for detection and isolation *Salmonella* spp. from produce samples. International Association for Food Protection Annual Meeting, Anaheim, CA.
- Jinneman, K.C., K.J. Yoshitomi and W.M. Fedio. 2010. Effect of sample preparation in the detection and isolation of *E. coli* O157:H7 from artificially contaminated produce. International Association for Food Protection Annual Meeting, Anaheim, CA.
- Zapata, Ruben, George M. Blackstone, Chorng-Ming Cheng, Cecelia Garcia, and Willis M. Fedio. 2010. Real-time PCR for detection of *Salmonella* spp. from dried red chile powder. Institute of Food Technologists Annual Meeting, Chicago, IL.
- Beall, Jorge A., Jorge A. Gonzalez-Simental, Sergio Soto-Navarro, Willis M. Fedio, and Nancy C. Flores. 2010. The effect of calcium chloride on the microbiological characteristics of fermented chile pepper (*Capsicum annuum* cv. Mesilla Cayenne) mash. Institute of Food Technologists Annual Meeting, Chicago, IL.
- Gonzalez-Simental, Jorge A., Jorge A. Beall, Sergio Soto-Navarro, Willis M. Fedio, and Nancy C. Flores. 2010. The effect of calcium chloride on the physical characteristics of fermentation of chile pepper (*Capsicum annuum* cv. Mesilla Cayenne) mash. Institute of Food Technologists Annual Meeting, Chicago, IL.
- Jinneman, K.C., K.J. Yoshitomi, and W.M. Fedio. 2010. Effect of sample preparation in the detection and isolation of *E. coli* O157:H7 from artificially contaminated produce. Food Emergency Response Network Annual Meeting
Minneapolis, MN.

- Weagant, Stephen D., Ken J. Yoshitomi, Karen C. Jinneman, Chornng-Ming Cheng, Ruben Zapata, Paul Browning, and Willis M. Fedio. 2010. Compositing produce rinse samples for increased throughput for Real-time PCR detection and recovery of *Salmonella* and *E. coli* O157:H7 in artificially contaminated produce. Food Emergency Response Network Annual Meeting, Minneapolis, MN.
- Fedio, W.M., K.J. Yoshitomi, and K. C. Jinneman. 2010. Real-time PCR detection and isolation of *E. coli* O157:H7 from artificially contaminated produce. Food Emergency Response Network Annual Meeting, Minneapolis, MN.
- Fedio, Willis M., Ruben Zapata, Ken J. Yoshitomi, Karen C. Jinneman, Cecelia M. Garcia, and Stephen D. Weagant. 2010. Evaluation of rapid test kits for detection of *Salmonella* spp. and *E. coli* O157:H7 in alfalfa sprouts, iceberg lettuce and grape tomatoes. Food Emergency Response Network Annual Meeting, Minneapolis, MN.
- Yoshitomi, K.J., J. H. Wetherington, K. T. Nabe, W.M. Fedio and K. C. Jinneman. 2010. Detection and recovery of *E. coli* O157:H7 from a variety of produce matrices using a soak sample preparation procedure. American Society for Microbiology Annual Meeting, San Diego.
- Fedio, Willis M., Cecelia Garcia and Ruben Zapata. 2010. Comparison of two real-time PCR procedures for the detection of *Salmonella* spp. in dried red chile powder. New Mexico Chile Conference, Las Cruces, NM.
- Zapata, R., C.M. Garcia, B.A. Strietelmeier and W. M. Fedio. 2010. Chile peppers support the growth of *Salmonella* spp. New Mexico Chile Conference, Las Cruces, NM.
- Zapata, R., K.C. Jinneman, K.J. Yoshitomi, S.D. Weagant, P. Browning and W.M. Fedio. 2009. Detection of *E. coli* O157:H7 in alfalfa sprouts by real-time PCR combined with immunomagnetic separation with and without an acid treatment. International Association for Food Protection Annual Meeting, Grapevine, TX.
- Weagant, S.D., K.J. Yoshitomi, K.C. Jinneman, C.-M. Cheng, R. Zapata, P. Browning and W.M. Fedio. 2009. Compositing produce rinse samples for increased throughput for real-time PCR detection and recovery of *Salmonella* and *E. coli* O157:H7 in artificially contaminated produce. International Association for Food Protection Annual Meeting, Grapevine, TX.
- Fedio, W.M., K.J. Yoshitomi, R. Zapata, K. C. Jinneman, C. Wendakoon, C. Carrillo, P. Browning and S. D. Weagant. 2009. Real-time PCR and cultural methods for detection of *E. coli* O157:H7 in Artificially Contaminated Onions. Food Emergency Response Network Annual Meeting, Dallas, TX.
- Yoshitomi, K.J., R. Zapata, B.A. Strietelmeier, K.C. Jinneman, S.D. Weagant, and W.M. Fedio. 2009. Acid resistance of *E. coli* O157:H7 as determined by exposure to pH 2. Food Emergency Response Network Annual Meeting, Dallas, TX.
- Yoshitomi, K.J., S. D. Weagant, C. Wendakoon, C. Carrillo, K. C. Jinneman, R. Zapata, P. Browning, and W. M. Fedio. 2009. Inclusivity of three immunomagnetic beads for forty strains of *E. coli* O157. Food Emergency Response Network Annual Meeting, Dallas, TX.
- Jinneman, K.C., K.J. Yoshitomi, S.D. Weagant, R. Zapata, P. Browning, and W.M. Fedio. 2009. Detection of *E. coli* O157:H7 in alfalfa sprouts by real-time PCR combined with immunomagnetic separation-Isolation on selective agars is improved by acid treating IMS beads and broths. Food Emergency Response Network Annual Meeting, Dallas, TX.
- Fedio, W.M. R. Zapata, K.J. Yoshitomi, K.C. Jinneman, C.A. Sotelo, and S.D. Weagant. 2009. Detection of low levels of *E. coli* O157:H7 in cilantro by immunomagnetic separation, real time PCR and cultural methods. Food Emergency Response Network Annual Meeting, Dallas, TX.
- Fedio, W.M., R. Zapata, K.J. Yoshitomi, K.C. Jinneman, C.A. Sotelo and S.D. Weagant. 2009. Detection of low levels of *E. coli* O157:H7 in cilantro by immunomagnetic separation, real-time PCR and cultural methods. Institute of Food Technologists Annual Meeting, Anaheim, CA.
- Jinneman, K.C., K.J. Yoshitomi, S.D. Weagant, R. Zapata, P. Browning, and W.M. Fedio. 2009. Evaluation of a rapid procedure for detection of *E. coli* O157:H7 in alfalfa sprouts using real-time PCR combined with immunomagnetic separation. Institute of Food Technologists Annual Meeting, Anaheim, CA.
- Zamora, A.R., N.C. Flores, R. Zapata, C.A. Sotelo, and W.M. Fedio. 2009. Rapid detection and isolation of *Salmonella* spp. from dried red chile powder. Institute of Food Technologists Annual Meeting, Anaheim, CA.
- Yoshitomi, K.J., R. Zapata, B.A. Strietelmeier, K.C. Jinneman, S.D. Weagant, and W.M. Fedio. 2009. Acid Resistance of *E. coli* O157:H7 as Determined by Exposure to pH 2. American Society for Microbiology Annual Meeting, Philadelphia, PA.
- Fedio, W.M. 2009. Ensuring the Microbiological Safety of Chile and Chile Products. New Mexico Chile Conference, Las Cruces, New Mexico.

- Zamora, A., N.C. Flores, R. Zapata, C.A. Sotelo, and W. M Fedio. 2009. Detection and isolation of *Salmonella* spp. from dried red chile powder. New Mexico Chile Conference, Las Cruces, New Mexico.
- Yoshitomi, K. J., Weagant, S. D., Wendakoon, C. N., Carrillo, C., Jinneman, K. C., Zapata, R., Browning, P. and W.M. Fedio. 2008. Inclusivity of three immunomagnetic beads for forty strains of *E. coli* O157. International Association for Food Protection Annual Meeting, Columbus, OH.
- Weagant, S. D. Yoshitomi, K. J., Jinneman, K, C. Zapata, R., Wendakoon, C.N., Paul Browning and Willis M. Fedio. 2008. Detection and recovery of *E. coli* O157:H7 in artificially contaminated alfalfa sprouts by Pathatrix Immunomagnetic separation, Real-time PCR and cultural Methods. International Association for Food Protection Annual Meeting, Columbus, OH.
- Fedio, W.M., Yoshitomi, K.J., Zapata, R., Jinneman, K.C, Wendakoon, C.N., Carrillo, C., Browning, P. and Weagant, S. D. 2008. Detection of *E. coli* O157:H7 in cilantro by Pathatrix immunomagnetic-capture, real time PCR and cultural methods. Institute of Food Technologists Annual Meeting, New Orleans, LA.
- Fedio, W.M., Yoshitomi, K.J., Zapata, R., Jinneman, K.C, Wendakoon, C.N., Carrillo, C., Browning, P. and Weagant, S. D. 2008. Detection of *E. coli* O157:H7 in artificially contaminated onions by real-time PCR and cultural methods. Institute of Food Technologists Annual Meeting, New Orleans, LA.
- Wendakoon, C., S. Weagant, C. Carrillo, K. Yoshitomi, K. Jinneman, R. Zapata, P. Browning and W.M. Fedio. 2008. Optimization of a rapid method for detection of *E. coli* O157:H7 in alfalfa sprouts using real time PCR combined with immunomagnetic separation. American Society for Microbiology Annual Meeting, Boston.
- Dictson, B. and W.M. Fedio. 2008. Community Emergency Response and Food Safety. Southwest Indian Livestock Field Days. Pinetop, AZ.
- Sanogo, Soum, R. Zapata, P. Browning, W.M. Fedio, L. Leiss and M. Clary. 2008. Characterization of bacterial leaf spot of chile pepper in New Mexico. New Mexico Chile Conference, Las Cruces, NM.
- Jayawardena, D. and W.M. Fedio. 2008. Determination of the heat level of selected chile crops and New Mexican chile products by high performance liquid chromatography. New Mexico Chile Conference, Las Cruces, N.M.
- Fedio, W.M., 2007. Imported and Smuggled Cheese in America: The raw, the illegal and the dangerous Oregon Dairy Industry's Annual Meeting, Eugene, OR. April 10, 2007
- Weagant, S.D., K. J. Yoshitomi C. Carrillo, R. Zapata, C. Wendakoon, P. Browning, K. C. Jinneman, and W.M. Fedio. 2007. Detection of *E. coli* O157:H7 in Artificially Contaminated Spinach by Pathatrix Immunomagnetic-capture, Real Time PCR and cultural methods. International Association of Food Protection Annual Meeting, Lake Buena Vista, FL.
- Fedio, W.M., K.C. Jinneman, C. Carrillo, K.J. Yoshitomi, R. Zapata, C. Wendakoon, P. Browning and S.D. Weagant. 2007. Detection of *E. coli* O157:H7 in Ground Beef by Pathatrix Immunomagnetic-capture, Real Time PCR and cultural Methods. American Society for Microbiology Annual Meeting, Toronto, Canada.
- Fedio W.M. 2006. Pathatrix ImmunoCapture System for the detection of STEC/*E. coli* O157:H7 in raw ground beef. Pathatrix Users Group Meeting, Canadian Food Inspection Agency, Calgary, Alberta, Canada. August 17, 2006.
- Fedio, W.M., G.M. Blackstone, L. Kikuta-Oshima, C. Wendakoon, T.H. McGrath and A. DePaola. 2006. Rapid detection of the *Vibrio cholerae ctx* gene in food enrichments using real-time PCR International Association of Food Protection Annual Meeting, Calgary, Canada.
- Wendakoon, C.N., and W. M. Fedio. 2006. Antibacterial activity of heat treated garlic extract against enteric bacteria. American Society for Microbiology Annual Meeting, Orlando, Florida.
- Fedio, W.M. 2006. Safety of southwestern foods. Safe Food 2010 Conference. Phoenix, Arizona.
- Wendakoon, C.N., R. Zapata, P. Browning, C. Carrillo, and W. M. Fedio. 2006. Rapid Detection of *Salmonella* spp. in Produce by the VIDAS® ICS/SLM method. Institute of Food Technologists Annual Meeting, Orlando, Florida.
- Fedio, W.M., C.N. Wendakoon, R. Zapata, C. Carrillo and P. Browning. 2005. Comparison of the Petrifilm™ Staph Express Count System with the BAM Direct Plating method for enumeration of *Staphylococcus aureus* in artificially contaminated hard cheese. FDA Science Forum, Washington, D.C.
- Zapata, R., C.N. Wendakoon, C. Carrillo, P. Browning. And W.M. Fedio. 2006. Evaluation of the VIDAS® Immuno-concentration Salmonella (ICS) and VIDAS® Salmonella Immunosaasy (SLM) for rapid detection of *Salmonella* spp. in selected foods. FDA Science Forum, Washington, D.C.

- Wendakoon, C.N., R. Zapata and W.M. Fedio. 2006. Detection of *Shigella* spp. by selective plating and PCR after aerobic enrichment in *Shigella* broth. FDA Science Forum, Washington, D.C.
- Fedio, W.M. 2005. Expanding the use of validated rapid microbiological methods to new food matrices. IFT First Annual Food Protection and Defense Research Conference, Atlanta, Georgia.
- Carrillo, C., P. Browning, R. Zapata, C.N. Wendakoon and W.M. Fedio. 2005. Evaluation of the Petrifilm™ *E. coli*/Coliform count plate method for rapid enumeration of *Escherichia coli* and coliforms in artificially contaminated cheese. Fifth Annual URC Research and Creative Activities Fair, New Mexico State University, Las Cruces, NM.
- Wendakoon, C.N., R. Zapata, P. Browning, C. Carrillio and W. Fedio. 2005. Immunoconcentration and enzyme-linked immunoassay for rapid detection of *Salmonella* in foods. Fifth Annual URC Research and Creative Activities Fair, New Mexico State University, Las Cruces, NM.
- Zapata, R., C.N. Wendakoon, W.M. Fedio and L.C. Kikuta-Oshima. 2005. Aerobic enrichment for detection of low levels of *Shigella* spp. in foods. Fifth Annual URC Research and Creative Activities Fair, New Mexico State University, Las Cruces, NM.
- Kikuta-Oshima L. C., R. Zapata, C. N. Wendakoon and W.M. Fedio. 2005. Detection of *Shigella* spp. by selective plating and PCR methods after aerobic enrichment in shigella broth. International Association of Food Protection Annual Meeting, Baltimore, MD.
- Fedio, W.M., L.C. Kikuta-Oshima, C.N. Wendakoon and R. Zapata. 2004. Substrate supporting disk method (ColiComplete®) for the rapid enumeration of coliforms and *Escherichia coli* in artificially contaminated cheese and produce. Institute of Food Technologists Annual Meeting, Las Vegas, Nevada.
- Fedio, W.M., L.C. Kikuta-Oshima, C.N. Wendakoon and R. Zapata. 2004. Evaluation of the Petrifilm™ *E. coli*/Coliform Count Plate Method for enumeration of coliforms and *Escherichia coli* in artificially contaminated cheese and produce. Institute of Food Technologists Annual Meeting, Las Vegas, Nevada.
- Fedio, W.M. 2004. Expanding the intended use of validated rapid microbiological methods to new food matrices. 18th Annual SE AOAC Meeting. Atlanta, Georgia.
- Fedio, W.M. 2003. Rapid methods for the detection of pathogens in foods. 31st Annual Rocky Mountain Food Safety Conference. Boulder, Colorado.
- Fedio, W.M. 2003. Bioterrorism and the food supply. New Mexico Association of Family and Consumer Sciences Annual Meeting. Las Cruces, New Mexico.
- Fedio, W.M. 2003. Bioterrorist threats to the food supply. New Mexico Department of Health Annual Meeting. Las Cruces, New Mexico.
- Fedio, W.M. 2003. HACCP for chile processors. Chile Pepper Institute International Chile Conference, Las Cruces, New Mexico.
- Fedio, W.M. 2002. Pathogens in produce: finding what you can't see. Chile Pepper Institute International Chile Conference, Las Cruces, New Mexico.
- Fedio, W.M. and C. Garcia-Whitehead. 2001. Food safety education for diverse audiences in New Mexico. Institute of Food Technologists Annual Meeting, New Orleans, Louisiana.
- Fedio, W.M. 2000. Restaurant HACCP-Why Bother? New Mexico Environmental Health Conference, Albuquerque, New Mexico.
- Fedio, W.M. 2000. Non thermal processing principles practices and advise for regulators, inspectors and restaurants. Arizona Environmental Health Association Conference 2000, Tucson, Arizona.
- Fedio, W.M. 2000. Training low literacy food service workers. Arizona Environmental Health Association Conference 2000, Tucson, Arizona.
- Fedio, W.M. 2000. *Listeria*: hotdog, cheese, and deli safety. Safe Food 2000 Conference. Phoenix, Arizona.
- Fedio, W.M. 1999. Nonthermal food processing technologies. New Mexico Environmental Health Conference. Albuquerque, New Mexico.
- Fedio, W.M., L. Ozimek and R.D. Mehta. 1996. Effects of milk protein products on the mutagenic activity of 2-aminofluorine. American Dairy Science Association Annual Meeting, Corvallis, Oregon.
- Fedio, W.M., L. Ozimek and F.H. Wolfe. 1996. Inhibition of *Helicobacter pylori* by dairy starter bacteria: *Lactobacillus casei*. American Dairy Science Association Annual Meeting, Corvallis, Oregon.
- MacLeod, A., L. Chu, W. Fedio and L. Ozimek. 1995. Dairy products as potential neutraceuticals: β -lacto globulin reduced whey protein concentrates. First International Conference on East-West Perspectives on Functional Foods, Singapore.
- Fedio, W.M., L. Ozimek and H. Jackson. 1995. Cellular changes associated with acquired thermotolerance in

- Listeria monocytogenes* and *Staphylococcus aureus*. Institute of Food Technologists Annual Meeting, Anaheim, California.
- Fedio, W.M., L. Ozimek and A. MacLeod. 1995. Effect of modified atmosphere packaging on the microbiological stability of yoghurt. Institute of Food Technologists Annual Meeting, Anaheim, California.
- MacLeod, A., W.M. Fedio and L. Ozimek. 1995. Subunit exchange affinity chromatography as a method for selectively extracting β -lactoglobulin from whey. Institute of Food Technologists Annual Meeting, Anaheim, California.
- Ozimek, L., B. Arnold, W.M. Fedio, R. Segado and B. Connolly. 1994. Denaturation and enzymatic digestion of β -lactoglobulin B at constant pressure of 1700 atmospheres as a function of time. 24th International Dairy Congress, Melbourne, Australia.
- Fedio, W.M., A. MacLeod and L. Ozimek. 1994. Modified atmosphere packaging of cottage cheese. 24th International Dairy Congress, Melbourne, Australia.
- MacLeod, D., A. Janowska-Wieczorek, W. Fedio and L. Ozimek. 1994. Distribution of polymorphonuclear leukocytes in the blood of a dairy cow. 24th International Dairy Congress, Melbourne, Australia.
- Fedio, W.M. and H. Jackson. 1994. Ribosomal modification associated with acquired thermotolerance in *Listeria monocytogenes* and *Staphylococcus aureus*. 24th International Dairy Congress, Melbourne, Australia.
- Fedio, W.M., A. MacLeod and L. Ozimek. 1994. Modified atmosphere packaging of cottage cheese. 37th Annual Canadian Institute of Food Science and Technology Conference, Vancouver, British Columbia.
- Fedio, W.M. and H. Jackson. 1992. Studies on *Listeria monocytogenes* in raw milk. 71st Annual Breeder's Day, Edmonton, Alberta.
- Fedio, W.M. and H. Jackson. 1990. Listeriosis: a dairy farm perspective from Alberta. 2nd Annual Zoonotic Disease Meeting, Edmonton, Alberta.
- Fedio, W.M. and H. Jackson. 1990. Incidence and origins of *Listeria monocytogenes* in raw milk. 23rd International Dairy Congress, Montreal, Quebec.
- Fedio, W.M., and M.E. Stiles. 1986. Fate of *Salmonella typhimurium* at and below marginal growth temperatures. 29th Annual Canadian Institute of Food Science and Technology Conference, Calgary, Alberta.

Grants and Contracts

- Fedio, W.M. Food Emergency Response Network Microbiology Cooperative Agreement Program. \$1,199,991. FDA FERN, 2015-2020.
- Fedio, W.M. Microbiological Analysis of Pet Foods for *Salmonella enterica*, *Listeria monocytogenes* and *E. coli* O157:H7. \$42,032. New Mexico Department of Agriculture, 2015-2016.
- Fedio, W.M. Evaluation of a Bacterial Surrogate for *Salmonella* for Red Chile Drying. \$28,968. New Mexico Department of Agriculture, 2014-2015.
- Fedio, W.M and R. Zapata. Prevalence of *Listeria monocytogenes* in New Mexico green chile and molecular characterization of isolates. \$135,093. New Mexico Chile Pepper Association. 2014-2017.
- Fedio, W.M. Food Emergency Response Network Microbiology Cooperative Agreement Program. \$1,453,056. FDA FERN, 2009-2015.
- Silver, R., R. Byford, T. Schaub and W.M. Fedio. Development and Evaluation of methods for microbiological and chemical analysis. \$8,307,941.34. FDA, 2005-2014.
- Fedio, W.M., "Inactivation of *Salmonella* spp. on flame roasted green chile peppers", \$11,500, New Mexico Department of Agriculture, 2009.
- Fedio, W.M. "Fate of *Salmonella* spp. during the processing of green chile" \$11,500, New Mexico Chile Pepper Association, 2008.
- Fedio, W.M. "Rapid methods for the detection of *Salmonella* spp. in dried red chile" \$11,500, New Mexico Chile Pepper Association, 2008.
- Fedio, W.M. "Microbiology of flame roasted green chile peppers", \$5000, New Mexico Department of Agriculture, 2006.
- Fedio, W.M. and C.N. Wendakoon, "Testing Phytocillin for Antimicrobial Activity", \$1,829, Herbs Etc., Santa Fe, NM. 2005.
- O'Connell, M., C. Wendakoon, W. Fedio, S. Vadhanasin and S. Pojjanapmol, "Planning Collaborative Food Safety Project Using Thai Plants", \$15,000, USDA Scientific Cooperation Research Program, 2005-2006.

- Fedio W.M., "Evaluation of the J & D Foods, Inc. Beef Jerky Process for Reduction of *Salmonella* in Artificially Contaminated Meat", \$6,000, New Mexico Department of Agriculture, 2005.
- Gleason, J. W.M. Fedio, and J. Hollyer, \$ 290,000, "Good Agricultural Practices for Minority Farmers" USDA CSREES-IREE, 2003-2005.
- Archuleta, M. and W. Fedio, "HACCP training for Albuquerque Area Restaurants", \$30,000, USDA, 1999-2000.
- Fedio, W.M. "HACCP Education for very small meat processors", \$30,000, USDA, 1999-2000.
- Archuleta, M, M. Sancho and W. Fedio, "Low literacy Food Safety Education for Food Service/Food Processing Employees", \$75,000, USDA, 1999-2000.
- Fedio, W.M. "Control of Microbial Contaminants in Dried Pea Products and Incidence of *Escherichia coli* O157:H7 in Raw Meat and the Processing Plant Environment", \$10,000, College of Agriculture, University of Saskatchewan, 1997-1998.
- Fedio, W.M. "Control of Microbial Contaminants in Dried Pea Products", \$3,250, Parrheim Foods, Saskatoon, SK, 1997-1998.
- Ozimek, L., W.M. Fedio and F.H. Wolfe, "Effect of lactic acid bacteria and antimicrobial peptides on the growth and pathogenicity of *Helicobacter pylori*". \$48,000, Dairy Farmers of Canada, 1996.
- Ozimek, L., W.M. Fedio and F.H. Wolfe, "Effect of lactic acid bacteria and antimicrobial peptides on the growth and pathogenicity of *Helicobacter pylori*". \$20,000, Alberta Agricultural Research Institute, 1995-1997.
- Ozimek, L., W.M. Fedio and F.H. Wolfe, "Effect of lactic acid bacteria and antimicrobial peptides on the growth and pathogenicity of *Helicobacter pylori*", \$20,000, Dairy Farmers of Canada, 1995.

Videos

Participated in development of food safety videos and associated teaching materials with NMSU College of Agriculture and Home Economics faculty and staff (Agricultural Communications, Extension Home Economics) and with Northern New Mexico Community College faculty (Script development, filming, technical content and acting).

- Closing the Gaps: Utilizing Good Agricultural Practices, 2005
- Carne Seca Safely, 2003 (English/Spanish)
- Preparing Safe Mexican Foods: The Case of the Malicious Microbe, 2003 (English/Spanish)
- The BAC Files, 2004 (English/Spanish/Navajo)
- The Story of BAC, 2003 (English/Spanish/Navajo)

Academic Involvement

NMSU Graduate Faculty

- Department of Family and Consumer Science, College of Agriculture and Home Economics

NMSU Institutional Biosafety Committee, Member (2002-present)

- meet quarterly to review research proposals and laboratory activities at NMSU for compliance with NMSU Environmental Health and Safety guidelines.

Post-Graduate Supervisory Committee Member, University of Saskatchewan

Library Committee Member, University of Saskatchewan

Past President, University of Alberta Department of Food Science Graduate Student Organization

University of Alberta Graduate Student Association Representative

Memberships in Professional Societies

- Institute of Food Technologists
- International Association for Food Protection
- American Society for Microbiology
- Society for Applied Bacteriology