

Exponent®
Engineering & Scientific Consulting

Arthur Miller, Ph.D., CFS, FIFST

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Professional Profile

Dr. Miller is a Certified Food Scientist who specializes in the assessment, prevention, and management of hazards and health risks in a variety of consumer products, including foods, beverages, bottled water, cosmetics, animal food, dietary supplements, and over-the-counter drugs. He uses his scientific expertise, regulatory knowledge, and hazard analysis insight to advise clients on how to best manage risk in a global supply, manufacturing, and distribution chain and everchanging regulatory landscape.

Dr. Miller counsels clients with practical advice across a wide range of industrial sectors, including agriculture, processing, distribution, warehousing, retail, and hospitality. The scope of his consulting activities include:

- Safety evaluations and regulatory submissions for new ingredients, foods, and technologies
- Development and assessment of supply chain and safety management programs
- Managing regulatory and customer driven inspections
- Responding to regulatory warning letters and other enforcement actions
- Advising on emerging public health and regulatory issues
- Responding to potential contamination, recall, or outbreak situations, including conducting root cause analyses and advising on corrective actions
- Conducting due diligence assessments for acquisitions and initial public offerings
- Serving as an expert for litigation and insurance claim investigations

Dr. Miller’s approach draws upon a broad perspective that includes over 18 years of consulting experience plus 30 years with federal food agencies, where he held senior research and executive regulatory positions within both the United States Department of Agriculture (USDA) and the Department of Health and Human Services (HHS). He served at the Food and Drug Administration's Center for Food Safety & Applied Nutrition (FDA-CFSAN), serving as the FDA's Lead Scientist for the National Food Safety Initiative, CFSAN's Lead Scientist for Microbiology and, the Associate Director for the Joint Institute for Food Safety and Applied Nutrition (JIFSAN). Dr. Miller was twice certified by peer-review to the Senior Biomedical Research Service, the highest federal scientific rank and served on FDA's Senior Science Council. Previously, Dr. Miller was Research Leader for Microbial Food Safety, directing USDA's largest food safety research laboratory at the Agriculture Research Service's Eastern Regional Research Center (ARS-ERRC). Dr. Miller started his professional career with the USDA Meat and Poultry Inspection Program.

He received over fifty awards and honors, including election as a Fellow of the Institute of Food Technologists and the Food Safety Award, given by the International Association for Food Protection. He was credentialed and recredentialed as a Certified Food Scientist in 2013, 2018, and 2023. He has published extensively in the area of food protection and lectured on all food producing continents.

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Academic Credentials & Professional Honors

Ph.D., Environmental Science, Drexel University, 1984

M.S., Food Science, Penn State University, 1977

B.S., Biology, Kansas State University, 1972

(Selected from over 50 awards)

FDA Commissioner's Special Citation, Programs to improve safety of food imports, FDA, 2007

Elected Fellow, Institute of Food Technologist, 2006

Food Processors Award Food Safety Award, International Association for Food Protection, 2006

Secretary's Award for Distinguished Service, Leadership counterterrorism programs, 2003

Certificate of Recognition, California Department of Health Services, 2001

International Honor Award, USDA-Foreign Agricultural Service, 1999

Manager of the Year, Philadelphia Federal Executive Board, 1998

Excellence in Technology Transfer Award, Federal Laboratory Consortium, 1998

Certificate of Appreciation, US-Israel Binational Agriculture Research & Development Fund, 1996

Certificate of Appreciation for efforts leading to the adoption of the USDA HACCP/Pathogen Reduction Regulation, 1996

Secretary's Award for Superior Service for Predictive Microbiology, USDA, 1994

Elected Member, Sigma Xi (National Research Honorary), 1984

Elected Member, Environmental Mutagen Society, 1981

Elected Member, Gamma Delta Sigma (National Agricultural Honorary), 1976

Licenses and Certifications

Certified Food Scientist, International Food Science Certification Commission

Senior Biomedical Research Service

Academic Appointments

Instructor, Food Microbiology Short Course, Pennsylvania State University, 2009-2018

Advisory Board member, Department of Food Science, Pennsylvania State University, 2005-2009

Prior Experience

U.S. Food and Drug Administration, Center for Food Safety and Applied Nutrition, 1998-2005

- Retired, July 2005
- Associate Director, Joint Institute for Food Safety and Applied Nutrition, 2001-2005
- Lead Scientist for Microbiology, 2001-2005
- Lead Scientist for the National Food Safety Initiative, 2000-2001
- Senior Scientist, 1998-2000

U.S. Department of Agriculture, 1973-1998

- USDA-Agricultural Research Service, Eastern Regional Research Center
    - Research Leader, 1994-1998
    - Lead Scientist, 1985-1994
    - Research Food Technologist, 1976-1985
- USDA-Meat and Poultry Inspection Program
    - Food Inspector, 1973-1976

Professional Affiliations

Institute of Food Technologists

American Society for Microbiology

American Meat Science Association

International Association for Food Protection

Society for Risk Analysis

Council for Agricultural Science and Technology

Society for Applied Microbiology (UK)

American Chemical Society

Food & Drug Law Institute

Grocery Manufacturer's Association

FDA Alumni Association

International Society for Regulatory Toxicology & Pharmacology

Publications

Book Chapters

Miller, A., B.Murlick, M. Newmann, and E. Rubel. Product Recalls: Regulatory overview, decision making, management, and prevention strategies to reduce product liability risk. In: Product Liability, R. Cantor (ed.). American Bar Association, Chicago, IL. 2010.

Tran N, Rachman N, Miller AJ. Exposure assessment for foodborne pathogens. pp. 113-139. In: Food consumption and disease risk: Consumer-pathogen interaction. Chapter 6. Potter M (ed), Woodhead Publishing, Cambridge England, 2006.

Keller S, Miller AJ. Microbiological food safety of unpasteurized juices. pp. 211-230. In: Microbiology of Fruits and Vegetables. Sapers GM, Gorny JR, and Yoused AE (eds), CRC Press, Boca Raton, FL, 2006.

Miller AJ, Nordenberg T. U.S. Food and Drug Administration. pp. 2593-2599. In: Encyclopedia of Food Science and Nutrition. Academic Press, London, 2003.

Miller AJ, Dennis SB. General considerations for risk assessment. p. 22-34. In: Pathogenic Microorganisms and their Toxins: A Global Perspective of their Risk. United States-Japan Cooperative Program on Development & Utilization of Natural Resources, Yamamoto S and Norred WP (eds), Ministry of Health, Labor, and Welfare, Tokyo, Japan, 2002.

Miller AJ, Smith JL, Buchanan RL. Factors affecting the emergence of new pathogens and research strategies leading to their control. In: Food Safety: The Implications of change from Producerism to Consumerism, Food and Nutrition Press. Sheridan JJ, O'Keeffe M, and Rogers M (eds), Trumbull, CT, 1998.

Miller AJ. Pathogenic microorganisms of concern in minimally processed refrigerated foods. p. 109-128. In: Minimally Processed Refrigerated Foods. Thompson DB (ed), Chicago, IL, 1989.

Fiddler W, Miller AJ, Pensabene JW, Doerr RC. Investigation on the mutagenicity of N-nitrosothiazolidine using the Ames Salmonella test. pp. 95-100. In: Occurrence, biological effects, and Relevance To Human Cancer (IARC scientific publication No. 57). O'Neill IK, Von Borstel RC, Miller CT, Long J, and Bartch H (eds), Lyon, 1984.

Books Edited

Miller AJ, Smith JL, Somkuti GA (eds). Foodborne Listeriosis, Elsevier, Amsterdam, 1990.

Journal and Peer Reviewed Articles

Alexander, D., K. Lowe, A. Miller, C. Cushing. Processed Meat and Colorectal Cancer: A Quantitative Review of Prospective Epidemiologic Studies. European Journal of Cancer Prevention. 19:328-341 2010.

Miller, A., B. Murlick, and M. Neumann. Product recall prevention strategies. The John Liner Review, 23(2): 7-17. 2009.

Jakus L, Dennis S, Bernard D, Claycamp HG, Gallagher D, Miller AJ, Potter ME, Powell M, Schaffner D, Smith MA, Eyck TT. Using risk analysis to inform microbial food safety decisions. Issue Paper 31. Council

on Agricultural Science & Technology, Ames, IA, 2006.

Miller AJ, Hileman CL, Droby S, Paster N. Science and technology based countermeasures for foodborne terrorism: Introduction. J. Food Protect 2005; 68:1253-1255.

Penteado A, Eblen BS, and Miller AJ. Evidence of Salmonella internalization into fresh mangoes during simulated post harvest processing procedures. J. Food Protect 2004; 67:181-184.

Eblen SB, Walderhaug MO, Edelson-Mammel S, DeJesus A, Merker RI, Buchanan, RL, Miller AJ. Potential for internalization, growth and survival of Salmonella spp. and Escherichia coli O157:H7 in juice oranges. J. Food Protect 2004; 67:1578-1584.

Keller SE, Taylor KT, Tan HL, Melvin CD, Chirtel SJ, Merker RI, Miller AJ. Efficacy of sanitation and cleaning methods in a small apple cider mill. J. Food Protect 2002; 65:911-917.

Tan LJ, Lyznicki J, Adock PM, Dunne E, Smith J, Parish E, Miller AJ, Seltzer H, Etzel R. Diagnosis and management of foodborne illnesses. Morbidity and Mortality Weekly Report, January 26, 50 (RR-2), pp. 1-70, 2001.

Miller AJ, Eblen BS, and Bayles DO. Cold shock induction of thermal sensitivity in Listeria monocytogenes. Appl Environ Microbial 2000; 66:4345-4350.

Bolton DJ, Oser AH, Cocoma GJ, Palumbo SA, Miller AJ. Integrating HACCP & TQM reduces pork carcass contamination. Food Technol 1999; 53(4):40-43.

Palumbo SA, Klein P, Capra J, Eblen S, Miller AJ. Comparison of excision and swabbing sampling methods to determine the microbiological quality of swine carcass surfaces. Food Microbiol 1999; 16:459-464.

Miller AJ, Eblen BS, Oser A. Application and evaluation of male-specific bacteriophage as a process integrity or fecal contamination indicator in a pork slaughterhouse environment. J. Appl. Microbiol 1998; 85:898-904.

Miller AJ, Smith JL, Buchanan RL. Factors affecting the emergence of new pathogens and research strategies leading to their control. J. Food Safety 1998; 18: 243-263.

Miller AJ, Call JE, Eblen BS. Growth, injury, and survival potential of Yersinia enterocolitica, Listeria monocytogenes, and Staphylococcus aureus in brine chiller conditions. J Food Protect 1997; 60:1334-1340.

Palumbo SA, Rajkowski KT, Miller AJ. Current approaches for reconditioning process water and its use in food manufacturing operations. Trends in Food Sci. Technol 1997; 8:69-74.

Miller AJ, Whiting RC, Smith JL. Use of risk assessment to reduce listeriosis incidence. Food Technol 1997; 51(4):100-103.

Miller AJ, Brown T, Call JE. Comparison of wooden and polyethylene cutting boards: potential for the attachment and removal of bacteria from ground beef. J. Food Protect 1996; 59:854-858.

Juneja VK, Call JE, Marmer B, Miller AJ. The effect of temperature abuse on Clostridium perfringens in cooked turkey stored under air and vacuum. Food Microbial 1994; 11:187-193.

Miller AJ, Call JE. Inhibitory potential of four-carbon dicarboxylic acids on Clostridium botulinum spores in an uncured turkey product. J. Food Protect 1994; 57:679-683.

Miller AJ, Call JE, Whiting RC. Comparison of organic acids for Clostridium botuliunum control in an

uncured turkey product. J Food Protect 1993; 56:958-962.

Miller AJ. Data collection and capture systems for microbial modeling. J Indust Microbial 1993; 12:291-294.

Miller AJ. Combined water activity and solute effects on the growth and survival of Listeria monocytogenes. J. Food Protect 1992; 55:414-418.

Miller AJ, Menichillo DA. Blood fraction effects on the antibotulinal efficacy of nitrite in model beef sausages. J. Food Science 1991; 56:1158-1160 & 1181.

Okereke A, Beelman RB, Miller AJ, Huhtanen CN. Acid-blanching and EDTA reduces spoilage and toxigenesis of canned mushrooms inoculated with proteolytic C. botulinum spores. J. Food Protect 1990; 53:425-427.

Lijinsky W, Kovatch RM, Keefer LK, Saavedra JE, Hansen TJ, Miller AJ, Fiddler W. Carcinogenesis in rats by cyclic nitrosamines containing sulfur. Food Chem. Toxicol 1988; 26:3-7.

Miller AJ, Pensabene JW, Doerr RC, Fiddler W. Apparent mutagenicity of N-Nitrosothiazolidine caused by a trace contaminant. Mutat. Res 1985; 157:129-134.

Miller AJ. Processing-induced mutagens in muscle foods. Food Technology 1985; 39(2):75-79 and 109-113.

Miller AJ, Buchanan RL. Detection of a mutagen in fried bacon by the Salmonella/mammalian microsome mutagenicity assay. Food Chem. Toxicol 1983; 21:319-323.

Pensabene JW, Miller AJ, Greenfield EL, Fiddler W. Rapid dry column method for determination of N-nitrosopyrrolidiene in fried bacon. J Assoc Off Anal Chem 1982; 65:151-156.

Miller AJ, Ackerman SA, Palumbo SA. Effects of frozen storage on functionality of meat for processing. J. Food Sci 1980; 45:1466-1471.

Proceedings

Miller, A. Food contact enforcement of FDA regulations and compliance issues in the US. Proceedings Global Food Contact. 2011.

Miller, A. The evolving science of food safety and technology. Proceedings Food & Supplement Workshop 2011. American Bar Association Section of Litigation. 2011.

Miller, A.J., N.L. Tran, L.M. Barraj, B.S. Eblen, and S. Larsen. Pork cooking doneness and salmonellosis likelihood: A risk assessment. Proceedings. International Congress of Meat Science & Technology. 54:125-130. 2008.

Miller A.J. Managing the recall. Food Litigation Conference, Defense Research Institute, 2006.

Miller AJ. Potential for internalization into fresh mangos by Salmonella. 37th Meeting of the U.S.-Japan Natural Resources Panel on Toxic Microorganisms, 2002.

Miller AJ, Dennis SB. The Food Safety Initiative and FDA's risk assessment activities. In: Medicine Meets Millennium. World Congress on Medicine and Health, pp. 85-100, 2000.

Miller AJ, Bolton DJ, Oser AH, Cocoma GJ, Palumbo SA. Reduction of fecal contamination and bacterial levels on pork carcasses by on-line visual monitoring. International Congress of Meat Science & Technology 1998; 44:312-313.

Bhaduri S, Cottrell B, Miller AJ. Direct isolation of plasmid-bearing virulent Yersinia enterocolitica from pork samples. International Congress of Meat Science & Technology 1997; 43:718-719.

Miller AJ. Salmonella typhimurium DT104. Beef Safety Symposium. American Meat Science Association, p. 53, 1997.

Juneja VJ, Klein PG, Marmer BS, Miller AJ. Heat resistance of Escherichia coli O157:H7 in ground beef. International Congress of Meat Science & Technology 1997; 43:736-737.

Miller AJ, Eblen BS. Enhanced thermal sensitivity of Listeria monocytogenes by cold shock. International Congress of Meat Science & Technology 1997; 43:748-749.

Palumbo SA, Eblen BS, Miller AJ. Comparison of techniques to evaluate the bacteriological quality of pig carcass surfaces. International Congress of Meat Science & Technology 1996; 42:195-196.

Miller AJ. Current status of interventions with potential for reducing E. coli O157:H7. New Technologies to Improve Food Safety, USDA, Food Safety & Inspection Service, Washington, D.C., 1995.

Miller AJ. Microbiological safety of minimally processed refrigerated foods. International Conference on Controlled/Modified Atmosphere/Vacuum Packaging 1988; 4:185-199.

Trade Press

Dennis SB, Buchanan R, Oliver J, Bolger P, Carson K, Davidson M, Hansen P, Gombas K, Kraemer D, Kvenberg J, Long W, Miliotis M, Miller A, Schwarz P, Spiller P, Troxell T, Whiting R, Williams R. Prioritizing food and safety risk assessments: A new approach. Food Safety Magazine 2003; 18, 20-21.

Dennis SB, Buchanan RL, Miller AJ. Microbial risk assessment: achievements and future challenges. Food Safety Magazine 2001; 7(6):14-17, 60, 63.

Abstracts

Over 125 published abstracts

Selected Invited Presentations

Miller, A.J. “The Food Safety Modernization Act: is it working? Product Recall Seminar & Workshop. Wilson Elser, Miami, FL 2019

Miller, A.J. and R.Goeriz “Cosmetics, pet products and other areas under the FDA spotlight,” Crisis Management Summit. Wilson Elser, Denver, CO 2018

Miller, A.J. and R. Goeriz “Surviving a dairy related foodborne illness outbreak,” Institute of Food Technologists, Webinar presentation 2018

Miller AJ "How to help your company survive a foodborne illness outbreak," Food Microbiology Short Course, The Pennsylvania State University, University, PA 2009-2018

Miller, A.J. “Product contamination risk management – impact of FSMA and a new administration,” Wilson Elser, Miami FL 2017

Miller, A.J. “Outbreak and recall risk management,” Issues Forum: Agricultural Business Council of Kansas City, Kansas City, MO 2016

Miller, A.J. “Food Safety Modernization Act - preventive controls against intentional & unintentional

contaminants, Olam Corporation Annual Food Safety & Quality Meeting, Fresno, CA 2015

Miller, A.J. “Three important trends to pay attention to…traceability, genomics, and substantiation,” Perrin Conference, Chicago, IL 2014

Miller, A.J. Norovirus and bacterial pathogens: Routes of microbial contamination and focus on good agricultural practices. Institute of Food Technologists Annual Meeting. Chicago, IL. 2013.

Miller, A.J. “Communicating complicated science involved in food contamination: hiring the right food safety expert,” Third Annual American Bar Association Section of Litigation Food & Supplements Workshop, Chicago, IL 2013

Miller AJ "How to help your company survive a foodborne illness outbreak," Food Microbiology Short Course, The Pennsylvania State University, College Park, PA 2010, 2012-Present (annual).

Sorini, M. and A.J. Miller “Product recalls in the alcohol beverage industry.” Wine Beer & Spirits Law Conference, CLE International. Austin, TX 2012

Miller, A.J. “Latest food safety technologies: the expert consultant perspective.” American Bar Association Section of Litigation Food & Supplements Workshop, Atlanta, GA 2011

Miller, A.J. “Enforcement of FDA regulations, recalls and compliance issues in the US,” Global Food Contact, Pira International, Frankfort, Germany 2011

Miller AJ "Case studies in food and beverage consumer complaints investigations," Consumer Complaints Conference, Grocery Manufacturers Association, Washington, DC 2010.

Miller AJ "Consumer landscape following the movie, ‘Food, Inc,'" Food Safety Quality Summit - Adopting Best Practices in Safety and Quality for the Food Industry. Next Level Summits. Palm Desert, CA 2009.

Miller AJ "Risk management systems for foodborne microbiological hazards." Ecological Pest Management Conference. 43nd Annual Meeting of the Association of Applied IPM Ecologists. Modesto, CA 2009. Ecological Pest Management Conference. 43nd Annual Meeting of the Association of Applied IPM Ecologists. Modesto, CA 2009.

Miller AJ "Microbial hazard control and verification." Ecological Pest Management Conference. 43nd Annual Meeting of the Association of Applied IPM Ecologists. Modesto, CA 2009. Ecological Pest Management Conference. 43nd Annual Meeting of the Association of Applied IPM Ecologists. Modesto, CA 2009.

Miller AJ "Belly ache or belly bust." Consumer Complaint Management - Current Issues and Effective Procedures. Grocery Manufacturers Association. Washington, DC 2009.

Miller, AJ "Fire, wind and ice: food safety lessons from warehouse failures." Food Industry Microbiology Round Table, Orlando, FL 2008.

Miller, AJ Interagency Risk Assessment Consortium (IRAC) Workshop on "Research Needs Prioritization for Conducting a Quantitative Risk Assessment of E. coli O157:H7 in Leafy Greens," College Park, MD, 2008.

Miller AJ Heterocyclic amines and polycyclic aromatic hydrocarbons in meat products: what is the true health risk? 95th Annual Meeting, International Association for Food Protection, Columbus, OH, 2008.

Miller AJ "Nanotechnology and biosensors," San Francisco Bay Area Nanotechnology Council, Santa Clara, CA 2008.

Miller AJ "Management of microbial hazards," Bloomberg School of Public Health, Johns Hopkins University, Baltimore, MD, 2008.

Miller AJ "Food Product Recalls, Food Laws & Regulations Division Mid-Year Meeting, Institute of Food Technologists, Washington, DC 2008.

Miller AJ. Sourcing foods and ingredients from China, Food Industry Microbiology Roundtable, Chicago, IL, 2007.

Miller AJ. U.S. food safety systems. Ministry of Agriculture and Cooperatives, Royal Thai Embassy, Washington, DC, 2006.

Miller AJ. Managing the recall. RQA Recall Seminar, Chicago, IL, 2006.

Miller AJ. Food safety risk management. Johns Hopkins School of Public Health, Baltimore, MD, 2006.

Miller AJ. Foodborne illness. Food Products Association Consumer Complaints Conference, San Antonio, TX, 2006.

Miller AJ. Microbial risk assessment impact by OMB's proposed risk assessment bulletin. Society for Risk Analysis, Washington, DC, 2006.

Miller AJ. Managing the food product recall. Defense Research Institute, Chicago, IL, 2006.

Miller AJ. Microbial risk analysis to inform food safety decision making. Food Products Association, U.S. House of Representatives staff, USDA, Council on Agricultural Science and Technology, Washington, DC, 2006.

Miller AJ. Health hazard evaluation. Food Product Recall Workshop, RQA Associates, Tampa, FL, 2005.

Miller AJ. Molecular characterization of pathogenic microorganisms to improve public health. FDA Science Forum, Washington, DC, 2005.

Miller AJ. Fieldable microbiological technologies for counterterrorism of foods. 12th International On-Site Analysis Conference, Arlington, VA, 2004.

Miller AJ. Case study: Salmonella in frozen shrimp. Risk Assessment of Frozen Food: Export of Thai Processed Foods, Emerging Problems and Possible Solutions. Ministry of Science and Technology, Bangkok, Thailand, 2004.

Miller AJ. Federal legislation and response to the potential for the deliberate contamination of the food supply. Safeguarding the food supply from farm to table. Society for Industrial Microbiology, Arlington, VA, 2004.

Miller AJ. Packaging influences on the safety and security of fresh produce. International workshop on active and intelligent packaging for fruits and vegetables. Binational Agricultural Research and Development Fund, Shepherdstown, WV, 2004.

Miller AJ. Approaches to security and counterterrorism. Food Safety Workshop. International Soldier Systems Conference, Boston, MA, 2004.

Miller AJ. Regulatory update on Ready-to-Eat Foods. ConAgra Refrigerated Foods Annual Meeting, Chicago, IL, 2003.

Miller AJ. Attributes of a good risk assessment. Workshop on Risk Analysis. Pan American Health Organization, Washington, DC, 2003.

Miller AJ. Science and technology approaches to food counterterrorism. International Association for Food Protection Annual Meeting, New Orleans, LA, 2003.

Miller AJ. Microbiological Risk Analysis in Food, the U.S. Experience. Japanese Society of Veterinary Epidemiology, Tokyo, Japan, 2003.

Miller AJ. FDA Requirements for imports into the United States. Food Safety and Security of Imports into the U.S., THIAFEX/THAIMEX 2002, Bangkok, Thailand, 2002.

Miller AJ. Establishment of international and regional outreach programs for mycotoxin control. International Workshop on Mycotoxins. Food and Drug Administration, College Park, MD, 2002.

Miller AJ. Human pathogens on plant-derived foods: Current problems. Detection and Management of Foodborne Human Pathogens on Fruits and Vegetables, American Phytopathological Society Annual Meeting, Milwaukee, WI, 2002.

Miller AJ. Regulatory environment for applying rapid diagnostics. Rapid Diagnostic Methods in Food Safety, UK Central Science Laboratory/Joint Institute for Food Safety and Applied Nutrition, Annual Meeting, York, United Kingdom, 2002.

Miller AJ. Research needs for cantaloupe safety. International Association for Food Protection, Minneapolis, MN, 2001.

Miller AJ. Risk assessment as a risk management tool. Tuskegee University, Tuskegee, AL, 2001.

Miller AJ. Risk assessment. Critical Thinking in Analytical Laboratory Procedures for Food Microbiologists. Food and Drug Administration training courses, New York and San Francisco, 2001.

Miller AJ. Strengthened science to face the food safety challenge. Food-borne Pathogens 2000: Perspectives and Interventions, Society for Industrial Microbiology, Arlington, VA, 2000.

Miller AJ. Microbiological research on safety of fresh fruits and vegetables. Good Agricultural Practices, Train-the-Trainer Workshop, Santiago, Chile, 2000.

Miller AJ. Foodborne illness tracebacks. International Association for Food Protection, Atlanta, GA, 2000.

Miller AJ. Public health concerns about consumption of fresh fruits and vegetables: a U.S. perspective. Kimron Veterinary Institute, Ministry of Agriculture, Bet Degan, Israel, 1999.

Miller AJ. Microbiological criteria for testing programs. Department of Health, Taipei, Taiwan, 1998.

Miller AJ. Environmental stresses and adaptation of foodborne bacterial pathogens. Society for Risk Analysis, Phoenix, AZ, 1998.

Miller AJ. Low temperature response of Listeria monocytogenes. University of Hawaii, Honolulu, HI, 1997.

Miller AJ. Factors affecting the emergence of new pathogens and research strategies leading to their control. An International Conference on Food Safety: from producerism to consumerism-the implications of change, Dublin, Ireland, 1997.

Miller AJ. Coliphage as a fecal contamination indicator organism. Workshop on Rapid Methods, University of Wisconsin, Rapid Falls, WI, 1996.

Miller AJ. Strategies for the elimination or reduction of fecal contamination of food animals and carcasses. U.S. Animal Health Association, Reno, NV, 1995.

Miller AJ. Water reuse in swine slaughter and processing. U.S.-Australia FoodSafety Workshop, Honolulu, HI, 1994.

Miller AJ. BLT--hold the carcinogens. Michigan State University, East Lansing, MI, 1987.

Miller AJ. Regulatory aspects of biotechnology. Institute of Food Technologists Annual Meeting, Las Vegas, NV, 1987.

Miller AJ. Assessment of potential precursors for IQ-type mutagens in heated muscle systems. International Symposium on the Genetic Toxicology of the Diet, Copenhagen, Denmark, 1985.

Project Experience

Food Processing Equipment and Food Contact Materials

Received FDA letter indicating that an equipment manufacturer's ultra-filtration membrane system complies with food contact substance requirements.

Advised a consumer product manufacturer about microbiological considerations for a new design for food equipment.

Assessed a consumer products company on potential microbiological hazards of a home use juice making and dispensing equipment.

Advised on the potential to develop microbial contamination of commercial ice makers.

Validated a continuous steam pasteurization process to eliminate Salmonella from dried fruit.

Advised a trade association on development of good manufacturing practices for food contact paper products.

Advised a producer of ultrafiltration membranes about regulatory status of polymer raw mateials.

Dietary Supplements/Probiotics

Organized and led an Exponent team that advised a food manufacturer of a new probiotic beverage on FDA safety, efficacy, GMP/HACCP, and labeling requirements.

Advised a dietary supplement company on challenge studies and process validation for a new product intended for infants.

Conducted risk assessments and health hazard evaluations on physical hazards (glass, metal) in foods, beverages, and dietary supplements.

Identified source of *Clostrium difficile* in gelatin used to produce gel caps for dietary supplements.

Assessed the scientific basis alleging adulteration of bee propolis.

Advised a dietary supplement company on the adequacy of their raw materials microbiological specifications.

Conducted a root cause analysis to determine most likely source of Salmonella on imported leaf protein material.

Raw Agricultural Commodities/Produce

Advised an agricultural producer on the development and import of a genetically modified food crop requiring USDA, EPA, FDA approvals or registration.

Advised major ingredient producer on compliance with Food Safety Modernization Act provisions.

Conducted root cause analysis of the source of E. coli O157:H7 involved in 2006 organic spinach outbreak.

Conducted traceback analysis of cantaloupes associated with 2012 Colorado Listeria monocytogenes cantaloupe outbreak.

Advised implicated farm about actions and communication with FDA and CDC during 2018 E. coli 0157:H7 outbreak associated with romaine lettuce.

Served as expert consultant and witness for litigation involving 2018 romaine lettuce outbreaks attributed to Yuma, Arizona and Santa Maria, California.

Advised a foreign producer of enoki mushrooms on steps to mitigate Listeria monocytogenes and obtain removal from an FDA import alert.

Conducted traceback on produce associated with a Cycospora outbreak.

Nuts

Developed a microbial risk assessment and FDA submission on the effect of delivering a 4-log *Salmonella* intervention to almonds on public health protection.

Investigated root cause of recalled *Salmonella* contamination of pistachios.

Investigated and advised on salvage potential of imported pistachios that were exposed to water contamination during sea shipping.

Conducted a root cause analysis of the source of *Salmonella* contaminated pecans.

Tea/Spices/Herbs

Conducted root cause analysis of *Salmonella* contamination of white and black pepper.

Conducted root cause analysis of metal fragments in turmeric.

Advised tea producer on standards for “caffeine free” labeling of herbal infusions.

Conducted a root cause analysis of metal fragments in food service seasoning blend.

Animal Feed

Advised an animal feed manufacturer of FDA requirements on feed additive safety and animal growth performance claims.

Conducted a microbial risk assessment to determine the probability of dogs becoming ill from consuming dry dog food contaminated with Salmonella.

Conducted a health hazard evaluation of the likelihood of dogs becoming ill from consuming canned food contaminated with melamine.

Determined the likelihood of selenium toxicity as the cause of death of piglets.

Conducted a root cause analysis to determine source of Salmonella on dog chews.

Children's Health

Evaluated the potential pediatric allergenicity risk associated with a new ingredient being considered for addition to a formulated food.

Advised a major breakfast cereal company on steps to validate a gluten-free process.

Advised companies on ingredient specifications and good manufacturing practices for products intended for infants to prevent development of peanut allergies.

Advised multiple companies on microbiological specifications and good manufacturing practices for infant formula, toddler, and children’s food.

Advised baby food manufacturer on good manufacturing practices to minimize levels of toxic elements (lead, cadmium, mercury) in raw materials and finished products.

Advised infant formula manufacturers on approaches to minimize Cronobacter occurrence.

Low Acid/Acidified Foods and Food Packaging

Lead a team that evaluated the health hazard potential of aromatic hydrocarbons associated with a package liner used in dry breakfast cereal.

Lead a team that determined source of package failure of shelf-stable pouched children’s foods.

Conducted a root cause analysis to determine the failure that led to recall of an acidified shelf-stable food.

Conducted a health hazard evaluation of glass fragments in jars of tomatoe sauce.

Conducted a health hazard evaluation of metal fragments in canned beans.

Cosmetics and Personal Care Products

Conducted health hazard evaluations of various microbial contaminants in a personal care products.

Developed a microbial risk assessment on *Bacillus cereus* as an eye hazard and presented results to FDA at a public meeting.

Conducted a health hazard evaluation of *Bacillus cereus* in eye shadow.

Advised on recall decision making, conducted a root cause analysis and developed a corrective and preventive action plan for a cosmetic firm linked to a *Burkholderia cepacia* outbreak.

Conducted safety and regulatory evaluations of cosmetic ingredients used in finished products.

Advised on mitigation of Burkholderia cepacian in shampoo.

Ingredients

Assisted flavor manufacturer about compliance with 2010 recall of hydrolyzed vegetable protein.

Evaluated the source of chloramphenicol in an imported enzyme preparation and recommended corrective actions.

Identified the source of metal bristles in an imported spice.

Advised a major food company about the allergenic potential of an ingredient in a formulated product.

Conducted investigation into allegation of metal foreign objects in college dining hall food resulting in illness.

Evaluated federal government’s foodborne illness outbreak investigation of E.coli O157:H7 on a marine training base.

Food Service and Retail Foods

Investigated a norovirus outbreak attributed to a salad bar in a retail establishment.

Conducted a root cause analysis of the source of Clostridium perfringens that resulted in an outbreak at a school open house.

Investigated salvage potential of food in a retail warehouse exposed to power interruption.

Developed a process model to assess cooling rates to minimize bacterial spore germination in sauces.

Conducted multiple good manufacturing practice inspections for airline food commissaries.

Defended multiple restaurants against allegations of E. coli O157:H7 illnesses from eating at those establishments.

Snack Foods, Candies

Conducted a health hazard evaluation of licorice contaminated with lead.

Conducted a health hazard evaluation of arsenic in a snack chip.

Conducted a health hazard evaluation of metal fragments in chocolate.

Conducted a root cause analysis of mold contamination on protein bars.

Meat and Poultry Products

Conducted a root cause analysis to determine the Listeria contamination source of recalled processed poultry product.

Quantitatively assessed microbiological risks associated with a proposed modification to current USDA consumer cooking guidance.

Prepare a policy report for a government agency on the effectiveness of regulatory performance standards to control Salmonella and Campylobacter in poultry and poultry products.

Assessed for a trade association the effectiveness of pre- and post-harvest interventions to control Salmonella in pigs and pork.

Assessed potential source and characteriazed foreign material found in pepperoni.

Evaluated potential root causes of rancidity in frozen turkey.

Dairy Foods

Provided scientific and regulatory guidance on an international recall of a dairy product ingredient.

Assessed and recommended improvements to food safety management program for a Hispanic soft cheese manufacturer.

Determine source of a product contamination in a processed cheese manufacturer.

Determined root cause of Salmonella contamination in a non-fat dried milk product.

Conducted a health hazard evaluation on diary products after a refrigeration ammonia leak.

Warehousing

Determined the safety and salvage value of many ingredients, foods, beverages, drugs, pet foods, and other consumer products held at ambient, refrigerated, or frozen temperatures that were exposed to a variety of adverse conditions, including: fire, ammonia leaks, flooding, and power loss.

Investigated insect and rodent infestation of warehoused pecans.

Offered advice on salvagability of stored products after disasters such as roof leak, storm floods, power loss.

Transportation/Distribution

Identified truck back-hauling as the source of a physical hazard in salt used for cheesemaking.

Determined that the delamination of the expoxy liner in a rail car caused contamination of a food ingredient.

Advised a national food distributor on criteria to minimize food safety and quality for refrigerated foods that are temporarily held at ambient temperature.

Advised a distributor on factors affecting butter rancidity development during ambient temperature transport.

Beer, Wine, Distilled Spirits

Conducted a root cause analysis of the source of trichloroanisole in a distilled spirit.

Conducted risk assessments and health hazard evaluations on physical hazards (glass, metal) in alcohol beverages.

Conducted health hazard evaluation and sampling plan to evaluate intentional ricin contamination of distilled spirits.

Fish and Seafood

Advised on factors affecting saxitoxin in oysters.

Designed studies to evaluate likelihood of Staphylococcus enterotoxin production in fresh tuna fish.

Advised on *Vibrio cholera* in oysters.

Advised on ciguatera toxin in Gulf of Mexico fish.

Developed a risk assessment on potential hazards associated with catfish production and presented findings on behalf of a trade association at a public meeting on implementation of catfish inspections by U.S. Department of Agriculture.

Determined root cause of Listeria monocytogenes contamination in smoked salmon.

Served as litigation expert involving deaths from Vibrio parahaemolyticus and Vibrio vulnificus.

Legal and Insurance Support

Served as insurance and litigation consultant and testifying expert in the following areas:

- Produce
- Meat and poultry
- Fish and seafood
- Dairy products
- Cereal and grains
- Low acid and acidified canned foods
- Microbial source tracking and sub-typing
- Regulatory compliance
- Chemical contaminants
- Foreign objects
- Filth and adulteration
- Escherichia coli O157:H7
- Salmonella
- Listeria monocytogenes
- Clostridium botulinum
- Clostridium perfringens
- Bacillus cereus
- Hepatitis A virus
- Norovirus
- Saxitoxin
- Ciguatera toxin
- Vibrio species

Advisory Appointments

Council member, International Society for Regulatory Toxicology & Pharmacology (2018-Present)

Task force member, Microbial risk analysis in food safety, Council for Agricultural Science and Technology (2004-2005)

Expert reviewer, Control of *Listeria monocytogenes* in foods, International Life Science Institute (2003-2004)

Panel chair, Food Science and Post Harvest Technology, United States-Israel Binational Agricultural Research and Development Fund (2002-2005)

Food and Water Safety Committee member, U.S. Department of Defense (2002-2005)

Working Group member, Joint Institute for Food Safety and Applied Nutrition (2001-2005); Organizing committee member, Central Sciences Laboratory/JIFSAN Annual

Symposium Series (2001-2005); Steering committee member, International Risk Assessment Training, International Life Science Institute (2001-2003)

Senior Science Council member, Food and Drug Administration (2001-2005)

Lead Scientist Council member, Center for Food Safety and Applied Nutrition (2001-2005)

Science Council member, FDA Center for Food Safety and Applied Nutrition (2000-2005)

FDA Science Advisor, Council III, Conference for Food Protection (2000-2005)

U.S.-Japan Natural Resources Panel on Toxic Microorganisms (1997-2005)

Member and Chair (1992) Interagency Botulism Research Coordinating Committee (1991-1998)

Editorships & Editorial Review Boards

Journal of Food Protection, Guest Editor (2005)

FDA Bacteriological Analytical Manual, Editor (2003-2005)

Journal of Muscle Foods, Editorial Board Member (2000-present)

Journal of Food Safety, Co-editor, (1989-1993)

Food and Nutrition Press, Editorial Board Member (1989-1993)

Peer Reviews

Journal of Food Protection, Guest Editor, 2005

FDA Bacteriological Analytical Manual, Editor, 2004-2005

Journal of Muscle Foods, Section Editor, Microbiology; Editorial Board Member, 2000-2010

Journal of Food Safety, Co-editor, 1989-1993

Food and Nutrition Press, Editorial Board Member, 1989-1993

Applied and Environmental Microbiology, reviewer, 1996-2007

Journal of Food Science, reviewer, 1993-2010

Food Microbiology, reviewer, 1996-2006