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Arthur J. Miller, Ph.D.
Principal Scientist

Professional Profile

Dr. Arthur J. Miller is a Principal Scientist in Exponent's Health Sciences Center for Chemical Regulation and Food Safety. Dr. Miller is internationally recognized for applying experimental and risk assessment approaches to the understanding of the behavior and control of foodborne hazards. His proven ability to integrate scientific and regulatory expertise has influenced the U.S. government's programs and policies and food industry practices since the 1980's.

Prior to joining Exponent in 2005, Dr. Miller completed over 30 years of distinguished federal service, holding 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 was with the Food and Drug Administration's Center for Food Safety & Applied Nutrition (FDA-CFSAN) from 1998 to 2005, 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 began his career with the USDA Meat and Poultry Inspection Program.

Dr. Miller 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 has published extensively in the area of food protection and lectured on all food producing continents. Dr. Miller advises clients on agriculture, food, and consumer product safety. His expertise spans pre- and post- market scientific and regulatory matters, food safety research and risk assessments, and emergency and consequence management.

Academic Credentials and Professional Honors (selected from 50 total)

Ph.D., Environmental Science, Drexel University, 1984
M.S., Food Science, Pennsylvania State University, 1977
B.S., Biology, Kansas State University, 1972

FDA Commissioner's Special Citation, Programs to improve safety of food imports, FDA, 2007
Elected Fellow, Institute of Food Technologist, 2006
FPA 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

Secret Security Clearance
Senior Biomedical Research Service (credentialed, 1998; re-credentialed, 2003)

Publications (selected from ~100)

Book Chapters

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 Youssed 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

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

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

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. 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.

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

Selected Project Experience

Premarket

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

Managed an Exponent science and regulatory team to advise an agricultural producer on the development and import of a genetically modified food crop requiring USDA, EPA, FDA approvals or registration.

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

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

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

Research and Risk Assessment

Managed a multidisciplinary team, including an Exponent biostatistician, microbiologists and risk assessor, to quantitatively assess risks associated with a proposed modification to current USDA consumer cooking guidance.

Analyzed data and drafted portions of a federal food risk assessment.

Designed and managed microbiological food surveys and research projects for food industry clients.

Post Market

Led an Exponent team to assess the airway obstruction hazard potential of a food product, and, after conducting laboratory studies, provided guidance to the manufacturer on a reformulation to reduce risk to young children. Expertise included: medicine, human factors, biomechanics and engineering, and food science.

Advised a major food cooperative of the efficacy of their current antimicrobial preservation system and provided guidance to strengthen their microbiological criteria.

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

Consequence Management

Health Hazard Evaluation, Recalls, Root Cause Analysis

Led a multidisciplinary Exponent team (physician, nurse, microbiologist, risk assessor) to conduct a health hazard evaluation of a microbial contaminant in a personal care product.

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

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

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

Assessed the safety of warehoused foods and drugs after being flooded.

Legal and Insurance Support

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

- Produce
- Meat and poultry
- Seafood
- Microbial source tracking and sub-typing
- Regulatory compliance
- Foreign objects
- Filth and adulteration
- Sampling plans
- *Escherichia coli* O157:H7
- *Salmonella*
- *Listeria monocytogenes*
- *Clostridium botulinum*
- *Viruses and parasites*

Science Advisory Boards/Panels

- 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, Peer Reviewer
- 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)
- Applied and Environmental Microbiology, Ad hoc reviewer
- Journal of Food Science, Ad hoc reviewer
- Food Microbiology, Ad hoc reviewer
- USDA, CSREES, grant reviewer
- USDA and HHS SBIR grant reviewer

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
- Association of Food and Drug Officials
- Society for Applied Microbiology (UK)
- American Chemical Society
- Conference for Food Protection
- Food & Drug Law Institute
- Grocery Manufacturer’s Association

Current Academic Appointments

- Advisory Board member, Department of Food Science, Pennsylvania State University
- Agriculture Council, College of Agricultural Sciences, Pennsylvania State University