

Dr. Elsa A. Murano



I. EDUCATION

<u>Degree</u>	<u>Institution</u>	<u>Year</u>
Ph.D. Food Science & Technology	Virginia Tech Blacksburg, VA	1990
M.S. Anaerobic Microbiology	Virginia Tech Blacksburg, VA	1987
B.S. Biological Sciences	Florida International University, Miami, FL	1981

II. PROFESSIONAL AND ACADEMIC EXPERIENCE

- 2016-present** *Vice Chair of the Board of Directors*, International Livestock Research Institute, Nairobi, Kenya
- Part of the Consortium of International Agriculture Research Centers (CGIAR), a system of international research institutes funded by G7 countries to reduce poverty and hunger, improve human health and nutrition, and enhance ecosystem resilience. ILRI specifically focuses on building sustainable livestock.
- 2012-present** *Director*, Norman E. Borlaug Institute for International Agriculture, Texas A&M University
- Direct the operations and programs of the only such organization in the state of Texas. Responsible for the development and management of project portfolio in excess of **\$38million**, with projects conducted in Asia, Sub-Saharan Africa, North Africa and the Middle East, and Latin America and the Caribbean, as well as international professional training programs such as the national Cochran fellowships and Borlaug Fellows, sponsored by the USDA.
- 2009-present:** *Professor and President Emerita*, Department of Nutrition and Food Science, Texas A&M University.
- 60% research, 40% teaching appointment. Conduct fundamental and applied research in food safety, teach food law and policy at the undergraduate level, and mechanisms of foodborne illness at the graduate level.
 - Serve as technical advisor to NASA on safety of foods for interplanetary travel.

- 2006-present:** *Member of the Board of Directors*, Hormel Foods Inc., Austin, Minnesota
- Member of Governance Committee and Contingency Committee. Former member of Audit Committee.
 - Food manufacturer of fresh and processed protein food products (pork, beef, turkey, peanut butter, other), with **\$9 billion** in sales worldwide.
- 2009-2012:** *Presidential Appointee*, Board for International Food, Agriculture, and Development (BIFAD), advisory to the Administrator of USAID within the State Department.
- Served as Chair of the Haiti Reconstruction Task Force, and as member of the Human and Institutional Capacity Building Committee.
- 2008-2009:** *President*, Texas A&M University.
- Served as Chief Executive Officer, over the 6th largest university in the nation, responsible for administering its total academic, as well as research and service programs, with a total **budget of \$1.2billion**. The academic program features over 120 undergraduate and 240 graduate degree programs. There are over **50,000 students** enrolled, including ~2,000 in the largest uniformed cadet program in the nation. The university has over **2,800 faculty**, and a robust research program that generates **\$700million in research contracts and grants** annually. The university has two branch campuses: in Galveston, Texas and in Doha, Qatar.
- 2005-2008:** *Vice Chancellor and Dean of Agriculture*, Texas A&M University System.
- Led the largest such program in the nation, responsible for four state agencies and the College of Agriculture & Life Sciences at Texas A&M University, connecting teaching, research, and extension in direct fulfillment of the **land-grant mission** of Texas A&M.
 - Oversaw the operations and programs of the following four state agencies:
 - Texas A&M AgriLife Research, with a research portfolio of **~\$200million** conducted on the campus at Texas A&M University and in 13 research centers located across the state, and an operating budget of **\$188million**.
 - Texas A&M AgriLife Extension, with a presence in all 254 counties in the state, and a budget of **\$113million**.
 - Texas Forest Service, with 67 locations across the state, and a budget of **\$65million**.

- Texas Veterinary Medical Diagnostic Laboratory, with 4 laboratories protecting the state's \$11.4billion livestock industry, with a budget of **\$16million**.
- Oversaw 26 academic programs in the 14 academic departments within the College of Agriculture & Life sciences at Texas A&M University-College Station, with a student body in the college of **6,700 students** (5,500 undergraduate and 1,200 M.S. and Ph.D) and over **200** faculty.

2005-2007:

Director of the Texas Agricultural Experiment Station

- Directed all research programs in agriculture at Texas A&M University-College Station, with **579 faculty** and **2,500 staff** located at 14 on-campus departments, 14 on-campus centers and institutes, and 13 off-campus research and extension centers. Total agency budget is **\$155million** annually, with research contracts and grants totalling **\$100million** annually.

2001-2004:

Undersecretary for Food Safety, U.S. Department of Agriculture.

- Appointed by President George W. Bush, confirmed by U.S. Senate, to serve as highest ranking food safety official in U.S. government, reporting directly to the Secretary of Agriculture (Hon. Ann Veneman).
- Developed food safety policy for the USDA, oversaw its implementation through the Food Safety Inspection Service, and led and represented U.S. government regarding food safety issues nationally and internationally.

2001-2009:

Professor, Department of Animal Science, Texas A&M University

- **Holder**, Sadie Hatfield Professorship in Agriculture (2000-2001)

1995-2001:

Associate Professor, Department of Animal Science, Texas A&M University

- **Director**, Center for Food Safety, Institute of Food Science & Engineering, Texas A&M University (1997-2001)

1990-1995:

Assistant Professor, Department of Microbiology, Immunology, and Preventive Medicine, Iowa State University, Ames, Iowa

- **Professor-in-charge of Research Programs**, Linear Accelerator Facility, Iowa State University, Ames, Iowa (1992-1995)

1981-1990:

Research/Teaching Assistant

- **Research/Teaching Assistant**, Department of Food Science & Technology, Virginia Polytechnic Institute & State University (1987-1990)

- **Research/Teaching Assistant**, Department of Anaerobic Microbiology, Virginia Polytechnic Institute & State University (1984-1987)
- **Research Laboratory Technician**, Department of Biology, Florida International University (1981-1983)

III. NOTABLE ACCOMPLISHMENTS

DIRECTOR OF THE BORLAUG INSTITUTE FOR INTERNATIONAL AGRICULTURE (June 2012-present)

- Established a new system of participatory program development to increase efficiency of proposal submission, with more than 100 faculty, submission of 35 proposals, all resulting in competitive contracts and grants in excess of **\$27million** (a 23% increase in revenue in one year), becoming the leading unit within the Texas A&M Agriculture program in generation of indirect costs.
- Developed a Strategic Workplan to define the vision, mission, core values, objectives, action steps, and “big picture” metrics for measuring progress on a quarterly basis, involving all personnel.
- Restructured the Institute into distinct divisions to reflect activities in Program Development, Program Implementation, International Training, Operations, and External Relations.
- Established a 17-member Internal Advisory Board, and significantly improved operations as related to accountability and productivity.

PRESIDENT OF TEXAS A&M UNIVERSITY (Jan. 2008-June 2009)

- Launched an action plan to fulfill key objectives of the University’s Vision 2020 plan (drafted in 2002), which had not yet been adequately addressed. The essence of the plan was illustrated in the acronym A-G-G-I-E:
 - **A**cademic excellence:
 - Began development of a comprehensive **Academic Master Plan**, with roadmaps for research, teaching, and engagement, to serve as the strategic plan for the university.
 - Successfully filled five important administrative positions: Provost, Vice President for Operations, Vice President for Research, Vice President for Diversity, Dean of Faculties, with two of the five consisting of minority candidates (African American woman and Hispanic male). Also filled four new dean positions, with three of the four consisting of minority candidates (two women and one Hispanic male).
 - Conducted first-ever Deans’ retreat in April, 2008, which resulted in the development of ideas that became the basis for the special items and initiatives requested in the 81st Legislative Session. Efforts culminated in increased additional funding from the State to hire superstar faculty, totaling **\$16million**.
 - Established a new Commencement Convocation ceremony to serve as the primary vehicle for delivery of keynote speeches to all our graduates at commencement. Secured **President George W. Bush** as the first

Commencement Convocation speaker, signaling the first time that a sitting president of the United States has spoken at Texas A&M during commencement. Second speaker was the new Administrator of NASA, Dr. Chuck Bolden.

- **G**reat value:
 - Established the **Aggie Assurance program**, to cover the cost of tuition for students who come from families with income levels <\$60,000. This program has now been duplicated by other universities within the Texas A&M System. Increase in 4-yr graduation rate from **47% in 2007 to 51% in 2009** has been attributed to this program.
 - Developed and began implementation of the “**Do You Wonder?**” recruiting marketing campaign, consisting of social media and development of materials, as well as the purchase and deployment of a traveling bus, designed to visit specific high schools as an outreach effort to recruit underrepresented minorities to Texas A&M University, resulting in an **increase of 23%** in Hispanic and **17%** African American students during my presidency, the largest increase in Texas A&M history.
- **G**lobalization:
 - Created the new position of **Vice President for Global Initiatives** to lead our efforts in elevating the profile of, and to transform our International Programs Office to better provide opportunities for faculty in international engagement, as well as to provide international experiences to our students through a revamping of our Study Abroad program. Successfully hired Ambassador Eric Bost, former Ambassador to South Africa and an African American, for the position.
 - Established a new University center in Costa Rica, with land and new facilities donated to the University by Mr. Bill Soltis '55, valued at **\$20million**, with a focus on natural resources and conservation, the environment, and wildlife biology.
- **I**nfrastructure:
 - Established process to begin the renovation of the Memorial Student Center, the largest renovation project in campus history funded by student fees, totaling **\$100million**, and completed in 2012.
 - Successfully obtained **\$4million** from Mr. Dan Hughes '51, to renovate Military Walk.
 - Began plans for building new university dormitories, and directed a deferred maintenance study to plan for legislative requests to address building renovation needs.
- **E**nlightened governance:
 - Established a new Task Force on Enlightened and Shared Governance to help better define these concepts and strategize on how to more effectively implement this philosophy so it permeates the university decision-making from the department level all the way to upper administration.
 - Created the University Staff Council to serve as the primary advisory and communications vehicle between University staff and the administration.

- During my tenure as president, state appropriations increased from **\$488.3million to \$530.1million** (an increase of 8.5%). In addition, Texas A&M University rose in the national rankings by U.S. News & World Reports from 24th (in 2007) to 21st (in 2009) among public universities.

VICE CHANCELLOR AND DEAN OF AGRICULTURE, AND DIRECTOR OF THE TEXAS AGRICULTURAL EXPERIMENT STATION (Jan 2005-Dec. 2007)

- Through a college-wide and agency-wide strategic planning initiative involving department heads and center directors, developed a teaching roadmap, a science roadmap, and an extension roadmap, outlining goals and objectives for each, with metrics to measure activities towards attaining these for the next two years.
- Conducted strategic planning sessions with upper administrative team, and with middle management team, resulting in development of 4 imperatives to be pursued by Texas A&M Agriculture in the next 5 years.
- Increased the funding for agriculture from the state of Texas during my tenure, **from \$288.2million to \$362.8million**, a 26% increase:
 - New recurring funds to support infrastructure outside Brazos County \$5.6million/biennium.
 - New recurring funds for bioenergy research, \$4million/biennium.
 - New funding for salary increases for agency employees.
- Secured funds for bioenergy research from Monsanto, General Atomics, and Chevron, totaling **\$31million**.
- Secured funds from the State of Texas Emerging Technology Fund in the form of \$5 million for research superiority grant, and **\$4.5 million** for biodiesel research on algae.
- Established formal process and guidelines for scientists and unit heads to develop federal initiatives, using roadmaps as focus.
- Conducted formal and comprehensive on-site reviews of all 17 on-campus centers and institutes to determine program direction, return-on-investment, resulting in new policies to guide support and dissolution decisions.
- Conducted formal and comprehensive on-site reviews of all 13 off-campus research and extension centers to determine program direction, return-on-investment, resulting in new policies to guide program direction and resource allocation.
- Conducted comprehensive study to determine space needs for Agriculture Program, culminating in proposal to build new headquarters building. Successfully secured **\$50 million** in funds from the University and the System. First phase of the building to be completed Spring 2011.
- Conducted strategic planning session with all the deans of the 5 partner institutions with agriculture programs (TAMU-Kingsville, Tarleton State University, Prairie View A&M, WTAMU, and TAMU-Commerce) to strengthen collaboration in academic, research, and extension programs.
- Developed strategic positioning initiative to enhance recognition for the agencies, and to enhance image of the college for recruiting purposes, obtaining approval by Board of Regents to change the names of the agencies to the Texas AgriLIFE Research and Texas AgriLIFE Extension agencies.

UNDERSECRETARY FOR FOOD SAFETY AT US DEPARTMENT OF AGRICULTURE, WASHINGTON, DC (Sept. 2001-Dec. 2004)

- Provided oversight and direction for the management of the Food Safety and Inspection Service, consisting of **10,000** employees and an annual budget of **\$905 Million**. Developed vision for food safety for the Agency, with specific goals and objectives. Reorganized FSIS, replacing key positions and establishing new internal review staff, new office of biosecurity and emergency preparedness, new technologies review office, and new international office. Created new team culture within Agency headquarters. Improved accountability and program effectiveness throughout the Agency.
- Oversaw and developed food safety policies through the Office of the Undersecretary for Food Safety. Coordinated all activities in food safety for USDA, and for the U.S. government through partnership with FDA and through oversight of the U.S. Codex Office, including leading the intergovernmental Policy Committee on international issues in food safety. Led USDA efforts in biosecurity, and participated in U.S. government-wide activities, including development of vulnerability assessments, simulation exercises, and production of biosecurity guidelines for various industry sectors and consumers.
- Developed new food safety regulations, and enhance implementation of existing ones. Developed new science-based risk management strategies to minimize major foodborne hazards, resulting in significant reductions in the prevalence of *E. coli* O157:H7 (**62%**), *Salmonella* (**28%**), and *Listeria monocytogenes* (**43%**) through science-based regulations and improvements in implementation and enforcement, and significant reductions in number and volume of meat and poultry recalls. Guided the development of risk assessments as basis for development of regulations. Oversaw establishment of internal review system for all FSIS program areas. Enhanced in-depth reviews of state and import inspection programs.
- Developed new strategies to enhance food safety of meat, poultry, and egg products. Modernized training of inspectors, to include accountability systems. Established new annual baseline surveillance project and research agenda. Engaged in aggressive nationwide food safety education campaign, including creation of Food Safety Mobile, and celebrity-led media campaign in food safety. Initiated pilot projects on risk-based inspection and enforcement.

IV. AWARDS, HONORS AND RECOGNITION (1985-present)

- Named a member of the **Corporate Elite** by Hispanic Business Magazine, October 2013.
- Inducted into the **Texas Woman of the Year Hall of Fame**, 2008.
- Named one of 15 **Elite Women** by Hispanic Business Magazine, April 2008.
- **American By Choice Award**, given by the U.S. Citizenship and Immigration Services of the Department of Homeland Security, February 2008.
- American Meat Institute's Industry Advancement Award, October 2005.
- Inducted into the **National Hispanic Scholarship Hall of Fame**, September 2005.
- Named one of the **100 Most Influential Hispanics** by Hispanic Business Magazine, October 2002.
- Sadie Hatfield Endowed Professorship in Agriculture, Texas A&M University, 2000-2001.

- ISU Foundation Award on Early Achievement (nominated from MIPM), Iowa State University, 1994.
- Institute of Food Technologists Certificate of Merit for Outstanding Scholarship, 1989.
- National Hispanic Fellowship for Scholarship, 1988.
- American Society for Microbiology National Pre-Doctoral Minority Fellowship for Outstanding Research and Scholarship, 1987.

VI. LIFETIME RESEARCH GRANTS AND CONTRACTS AS PROFESSOR OF FOOD MICROBIOLOGY

- “Role Of Surface Factors On Contamination And Survival Of Pathogens In Fresh Produce Grown In Texas And Mexico”, USDA-NIFSI, Elsa Murano, Luis Cisneros, Alejandro Castillo, Matthew Taylor, with University of Arizona and CIAD-Mexico, **\$1,000,000**, 2010-2013.
- “Effect of low-dose irradiation on the sensory, objective and microbial quality of fresh whole peaches”, Elsa Murano, Peter Murano, and Alejandro Castillo, ScanTech Sciences \$73,787 and USDA-APHIS \$10,000 for a total of **\$83,787**, 2010.
- “Improving the safety of fruits and vegetables: a tristate consortium”, USDA-IFAFS, Elsa Murano, Gary Acuff, Suresh Pillai, Luis Cisneros, and Peggy VanLaanen, with University of Florida and University of California-Davis, **\$4,100,000**, 2000-2004.
- “Good agricultural practices to improve the safety of fruits and vegetables in Honduras and Nicaragua”, USDA-Hurricane Mitch Relief Program, Elsa Murano through the COALS International Agriculture Program, **\$300,422**, 1999-2000.
- “Improving the Safety of Produce in Central America”, Inter-American Institute for Cooperation on Agriculture, Elsa Murano, with University of Florida, **\$50,000**, 1999-2000.
- “Factors contributing to the presence of *E. coli* O157:H7 in feedlots and feedlot cattle”, National Alliance for Food Safety-ARS Partnership Program, Elsa Murano and Gary Acuff, with Iowa State University and Virginia Tech, **\$115,000**, 1999-2001.
- “Role of production practices on microbial contamination of cabbage and cantaloupes”, Texas Advanced Technology Program, Elsa Murano and Gary Acuff, with University of Texas-Pan American, **\$234,000**, 1998-2000.
- “Risk of *Salmonella* and *Campylobacter* contamination of cattle during transport to slaughter”, Texas Advanced Technology Program, Gary Acuff and Elsa Murano, **\$206,284**, 1998-2000.
- “Optimization of processing parameters for elimination of *Listeria monocytogenes* in frankfurters by irradiation”, Sara Lee Food Safety Research Program, Elsa Murano and Peter Murano, **\$63,243**, 1998-1999.
- “Contamination of Domestic and Imported Cabbage and Cantaloupe”, USDA CSREES, Elsa Murano and Gary Acuff, **\$263,920**, 1998-2001.
- “Effect of chlorine dioxide packaging film on microbial, objective, and sensory quality of whole beef cuts during refrigerated storage”, National Cattleman’s Beef Association, Elsa Murano and Peter Murano, **\$49,751**, 1998-1999.
- “Evaluation of HACCP effectiveness in reducing foodborne illness”, USDA FSIS subcontract from RTI, Elsa Murano, Gary Acuff, Neal Hooker, **\$365,000**, 1997-1999.
- “Evaluation of isolation method for *Arcobacter* in pork”, National Pork Producers Council, Elsa Murano, **\$39,095**, 1997-1998.

- “Evaluation of high barrier non-foil films for MRE packaging applications”, Department of Defense, Elena Perez-Castell, Dale Whittaker, Elsa Murano, and Peter Murano, **\$499,115**, 1997-1999.
- “Small producer/packer needs assessment food safety study”, USDA FSIS subcontract from Tuskegee University, Elsa Murano, **\$40,000**, 1997-1999.
- “Influence of sodium lactate in ‘no-fat’ meat batter systems”, Purac, Inc., Jimmy T. Keeton, and Elsa A. Murano, **\$38,396**, 1997-1999.
- “Evaluation of interventions designed to decontaminate carcasses”, Meat Research Corporation (Australian government), Elsa A. Murano and Gary R. Acuff, **\$160,000**, 1997-1999.
- “Use of high hydrostatic pressure to produce safe and long-lasting fresh pork sausage”, National Pork Producers Council, Elsa Murano, Rosana G. Moreira, and Peter S. Murano, **\$17,000**, 1996-1997.
- “Characterization of growth potential of *Escherichia coli* O157:H7 in irradiated beef patties during storage, and effect of packaging material on quality of the product”, National Cattleman’s Beef Association, Elsa Murano, James S. Dickson, Gary R. Acuff, and Peter S. Murano, **\$49,974**, 1996-1997.
- "Improving the quality of combat rations", Department of Defense, Dennis G. Olson, Elsa A. Murano, and Peter S. Murano, **\$565,620**, to 1994-1997.
- "Shelf-life extension and safety of fresh pork treated with high hydrostatic pressure", National Pork Producers Council, Elsa Murano, **\$16,225**, 1994-1995.
- "Use of hydromechanically-induced cavitation to eliminate/reduce bacterial contaminants in water", Elsa A. Murano and Charles Oulman, **\$7,980** 1994-1995.
- "Operation of food irradiator", CSRS Special Research Grants, D.G. Olson and E.A. Murano, **\$223,772**, 1994-1995.
- "Effect of heat shock and oxidative stress on survival of *Yersinia enterocolitica* and *Escherichia coli* serotype O157:H7 to heat and irradiation", USDA. Food Safety Consortium Special Grant, Elsa A. Murano, **\$65,500** 1991-1994.
- "Effect of sanitizer treatment on attachment and injury of *Listeria monocytogenes* in fresh pork", USDA. Food Safety Consortium Special Grant, Elsa A. Murano, **\$38,500** 1992-1994.
- "Inhibition of *Listeria monocytogenes* by Bacteriocin Produced by *Pediococcus acidilactici* in Fresh Pork Chops", U.S.D.A. Food Safety Consortium Special Grant, Elsa A. Murano, **\$35,300**, 1992-1994.
- "Effect of Irradiation on *Listeria monocytogenes* in Fresh Pork", USDA. Food Safety Consortium Special Grant, Elsa Murano, **\$40,100**, 1992-1994.
- "Surveillance in Retail Pork and study on heat and irradiation resistance of *Arcobacter* spp. and *Campylobacter jejuni*", ", Iowa Pork Producers AssoC., Elsa Murano, **\$17,500**, 1993-1994.
- "Survey on presence of *Arcobacter* spp. in fresh chicken skins", Southeastern Poultry & Egg Association, Elsa A. Murano, **\$12,000**, 1993-1994.
- "Operation of Food Irradiator", CSRS Special Research Grants, Elsa Murano and Dennis G. Olson, December 15, 1992, **\$224,335**, 1993-1994.
- "Microbiological Safety of Pork Products Prepared in Institutional Operations", U.S.D.A. Food Safety Consortium Special Grant, Nancy E. Brown, Elsa Murano, George Beran, and Lynn Knipe, December 11, 1991, **\$29,000**, 1992-1993.
- "Effect of Irradiation on Survival of *Salmonella enteritidis* in Whole Eggs and Liquid Whole Eggs", Iowa Egg Council, Elsa Murano, 1992-1993.

- "Shelf-life Study of Loins and Chops from Pork Carcasses Treated with Organic Acid Rinses as a Potential HACCP Process", National Livestock and Meat Board, Joseph G. Sebranek and Elsa Murano, **\$29,673**, 1992-1993.
- "Operation of Food Irradiator", USDA. CSRS Special Research Grants Program, Dennis G. Olson and Elsa Murano, **\$224,490**, 1992-1993.
- "Improving the Quality of Combat Rations", U.S. Army Natick Research & Development Center, Dennis G. Olson, Elsa Murano, Joseph Sebranek, and Peter S. Murano, **\$313,669**, 1992-1993.
- "Effect of Brifisol K Dips on Survival and Injury of *Listeria monocytogenes* in Fresh Pork Chops", BK Ladenburg Corporation, Elsa Murano, **\$25,752**, 1992-1993.
- "Control of Pathogenic Microorganisms in Processed Pork Products by Irradiation", National Livestock and Meat Board, Joseph G. Sebranek and Elsa Murano, **\$27,800**, 1992-1993.
- "Effect of low-dose irradiation and vacuum packaging on fate of spoilage microorganisms and on physical, chemical, and sensory characteristics of fresh pork", Iowa Pork Producers Association, Elsa Murano, Joseph G. Sebranek, Frederick C. Parrish, and Dennis G. Olson, **\$15,000**, 1991-1992.
- "Studies on the effect of heat shock on the ability of *Escherichia coli* 0157:H7 to survive a heat treatment in ground beef", Iowa Beef Industry Council, Elsa Murano, **\$16,600**, 1991-1992.
- "Studies on the effect of heat shock on the ability of *Listeria monocytogenes* to survive a subsequent processing treatment in chicken", Southeastern Poultry and Egg Association, Elsa Murano, **\$20,000**, 1991-1992.

Total: **\$9,648,803**
Subtotals: \$7,674,987 (at Texas A&M University)
 \$1,973,816 (at Iowa State University)

VII. PEER-REVIEWED RESEARCH PUBLICATIONS

- Ananth, V., J.S. Dickson, D.G. Olson, and **E.A. Murano**. 1998. Shelf-life extension, safety, and quality of fresh pork loin treated with high hydrostatic pressure. *J. Food Prot.* 61:1649-1656.
- Andrews, L.S., M. Ahmedna, R.M. Grodner, J.A. Liuzzo, P.S. Murano, **E.A. Murano**, R.M. Rao, S. Shane, and P.W. Wilson. 1998. Food preservation using ionizing radiation. *Rev. Environ. Contam. Toxicol.* 154:1-53.
- Beach, J.C., **E.A. Murano**, and G.R. Acuff. 2002. Prevalence of *Salmonella* and *Campylobacter* in beef cattle from transport to slaughter. *J. Food Prot.* 65:1687-1693.
- Beach, J.C., **E.A. Murano**, and G.R. Acuff. 2002. Serotyping and antibiotic resistance profiling of *Salmonella* in feedlot and nonfeedlot beef cattle. *J. Food Prot.* 65:1694-1699.
- Brown, N.E., **E.A. Murano**, and S. Kotinek Marsh. 1996. Evaluation of microbial hazards of pork products in institutional foodservice settings. - Part I. *Dairy Food Environ. San.* 16:14-21.
- Brown, N.E., **E.A. Murano**, and S. Kotinek Marsh. 1996. Evaluation of microbial hazards of pork products in institutional foodservice settings. - Part II. *Dairy Food Environ. San.* 16:22-27.
- Castillo, A., I. Mercado, L.M. Lucia, Y. Martinez-Ruiz, J. Ponce de Leon, E.A. Murano, and G.R. Acuff. 2004. *Salmonella* contamination during production of cantaloupe: a binational study. *J. Food Prot.* 67(4):713-720.

- Cole, C., L.M. Dooley, J.R. Sandlin, and **E.A. Murano**. 2017. Women in international public leadership: impacting foreign direct investment by reducing corruption and increasing investments in healthcare. *Adv. Women Lead.* 37:48-55.
- Collins, C.I., I.V. Wesley, and **E.A. Murano**. 1996. Detection of *Arcobacter* spp. in ground pork by modified plating methods. *J. Food Prot.* 59:448-452.
- Collins, C.I., **E.A. Murano**, and I.V. Wesley. 1996. Survival of *Arcobacter butzleri* and *Campylobacter jejuni* after irradiation treatment in vacuum-packaged ground pork. *J. Food Prot.* 59:1164-1166.
- Crawford, Y.J., **E.A. Murano**, D.G. Olson, and K. Shenoy 1996. Use of high hydrostatic pressure and irradiation to eliminate *Clostridium sporogenes* spores in chicken breast. *J. Food Prot.* 59:711-715.
- Fu, A.-H., J.G. Sebranek, and **E.A. Murano**. 1995. Survival of *Listeria monocytogenes* and *Salmonella typhimurium* and quality attributes of cooked pork chops and cured ham after irradiation. *J. Food Sci.* 60(5):1001-1005, 1008.
- Fu, A.-H., J.G. Sebranek, and **E.A. Murano**. 1995. Survival of *Listeria monocytogenes*, *Yersinia enterocolitica*, and *Escherichia coli* O157:H7 and quality changes after irradiation of beef steaks and ground beef. *J. Food Sci.* 60(5):972-977.
- Fu, A.-H., J.G. Sebranek, and **E.A. Murano**. 1994. Microbial quality characteristics of pork cuts from carcasses treated with sanitizing sprays. *J. Food Sci.* 59:306-309.
- Golla, S.C., **E.A. Murano**, L.G. Johnson, Norlyn C. Tipton, Erin A. Cureington, and J.W. Savell. 2002. Determination of the occurrence of *Arcobacter butzleri* in beef and dairy cattle from Texas using two isolation methods. *J. Food Prot.* (accepted).
- Hooker, N.H. and **E.A. Murano**. 2000. Interdisciplinary approaches to food safety research: opportunities for partnership. *J. Food Dist. Res.* 31(1):39-46.
- Huang, M., R.G. Moreira, and **E.A. Murano**. 1999. Use of hydrostatic pressure to produce high quality and safe fresh pork sausage. *J. Food Proc. Pres.* 23:265-284.
- Johnson, L.G., and **E.A. Murano**. 2002. Lack of cytolethal distending toxin among *Arcobacter* isolates from various sources. *J. Food Prot.* 65:1789-1795.
- Johnson, L.G., and **E.A. Murano**. 1999. Development of a new medium for the isolation of *Arcobacter* spp. *J. Food Prot.* 62:456-462.
- Johnson, L.G., and **E.A. Murano**. 1999. Comparison of three protocols for the isolation of *Arcobacter* from poultry. *J. Food Prot.* 62:610-614.
- Khojasteh, A., and **E.A. Murano**. 1996. Inability of heat stress to affect sensitivity of *Listeria monocytogenes* to pediocin in pork. *J. Food Saf.* 16:201-208.
- Kim, K.T., **Murano, E.A.**, and D.G. Olson. 1993. Development of an enzyme-linked immunosorbent assay (ELISA) for analysis of listeriolysin O produced by *Listeria monocytogenes*. *J. Rap. Meth. Autom.* 2:189-201.
- Kim, K.T., **E.A. Murano**, and D.G. Olson. 1994. Effect of heat shock on production of listeriolysin O by *Listeria monocytogenes*. *J. Food Saf.* 14:273-279.
- Kim, K.T., **E.A. Murano**, and D.G. Olson. 1994. Optimization of listeriolysin O production by *Listeria monocytogenes*. *J. Food Saf.* 14:281-288.
- Kim, K.T., **E.A. Murano**, and D.G. Olson. 1994. Heating and storage conditions affect survival and recovery of *Listeria monocytogenes* in ground pork. *J. Food Sci.* 59:30-32, 59.
- López-González, V., P.S. Murano, R.E. Brennan, and **E.A. Murano**. 1999. Influence of various commercial packaging conditions on survival of *E. coli* O157:H7 to irradiation by electron beam vs. gamma rays. *J. Food Prot.* 62:10-15.

- López-González, V., P.S. Murano, R.E. Brennan, and **E.A. Murano**. 2000. Sensory evaluation of ground beef patties irradiated by gamma rays versus electron beam under various packaging conditions. *J. Food Qual.* 23:195-204.
- Lyon, W.J., D. G. Olson, and **E.A. Murano**. 1995. Isolation and purification of Enterocin EL1, a bacteriocin produced by a strain of *Enterococcus faecium*. *J. Food Prot.* 58:890-898.
- Markarian, V., Hooker, N.H. **Murano, E.A.**, Acuff, G.R., and Carroll, S. 2001. Comparative costs of pathogen reduction strategies for Australian beef slaughter plants. In: "Interdisciplinary Food Safety Research". CRC Press, Boca Raton, FL., pp. 25-42.
- Murano, E.A.** 2000. Food Safety in the 21st Century. *J. Food Distr. Res.* 31(1): 64-67.
- Murano, E.A.**, P.S. Murano, R.E. Brennan, K. Shenoy, and R.G. Moreira. 1999. Application of high hydrostatic pressure to eliminate *Listeria monocytogenes* from fresh pork sausage. *J. Food Prot.* 62:480-483.
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- Murano, E.A.**, and Z. DeFreitas. 1993. Podrá la irradiación hacer los alimentos más seguros? (Can irradiation make food safer?). *Ind. Alim.* October, 1993.
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- Murano, P.S., **E.A. Murano**, and D.G. Olson. 1998. Irradiated ground beef: sensory and quality changes during storage under various packaging conditions. *J. Food Sci.* 63:548-551.
- Ohlendorf, D.W. and **E.A. Murano**. 2002. Prevalence of *Arcobacter* spp. in raw ground pork from several geographical regions according to various isolation methods. *J. Food Prot.* 65:1700-1705.
- Ohlendorf, D.W. and **E.A. Murano**. 2002. Sensitivity of three methods used in isolation of *Arcobacter* spp. in ground pork. *J. Food Prot.* 65:1784-1788.
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- Radomysky, T., **E.A. Murano**, D.G. Olson, and P.S. Murano. 1993. Elimination of pathogens of significance in food by low-dose irradiation: a review. *J. Food Prot.* 57:73-86.
- Saide-Albornoz, J., C.L. Knipe, **E.A. Murano**, and G.W. Beran. 1995. Contamination of pork carcasses during slaughter, fabrication and chilled storage. *J. Food Prot.* 58:993-997.

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- Shenoy, K., and **E.A. Murano**. 1998. Survival of heat shocked *Yersinia enterocolitica* after irradiation in ground pork. *Int. J. Food Microbiol.* 39(1-2):133-137.
- Shenoy, K., and **E.A. Murano**. 1996. Effect of heat shock on the thermotolerance and protein composition of *Yersinia enterocolitica* in Brain Heart Infusion broth and ground pork. *J. Food Prot.* 59:360-364.
- Shenoy, K., and **E.A. Murano**. 1996. Effect of storage conditions on growth of heat-stressed *Yersinia enterocolitica* in ground pork. *J. Food Prot.* 59:365-369.
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VIII. PUBLISHED BOOKS, BOOK CHAPTERS, and MONOGRAPHS

- Murano, E.A.** 2017. Principles of Food Law: A Food Science Perspective. Sentia Publishing, Austin, TX.
- Murano, E.A.**, and D. K. Waggoner. 2013. Overview of federal and international food safety issues affecting farmers and ranchers. *Agricultural Law.* 5:1-4. Texas Bar CLE.
- Hooker, N.H. and **E.A. Murano**, eds. 2001. Interdisciplinary food safety research. CRC Press, Boca Raton, FL.
- Murano, E.A.** 2000. Microbial resistance and food irradiation. In: Proceedings of the Symposium Series on Food Microbiology. *Int. Life Sci. Inst. (ILSI)*, August 1-4, 1999.
- Murano, P.S., and **Murano, E.A.** 2000. Instructor's Manual for Jay's *Modern Food Microbiology*, 6th Ed. Aspen Publishers, Gaithersburg, MD.
- Murano, E.A.** 1999. Heat Treatment of Foods: Synergy between treatments. In: *Encyclopedia of Food Microbiology*. Academic Press, U.K.
- Murano, E.A.** and J.A. Hudnall. Media and reagents. 2001. In: *Compendium of Methods for the Microbiological Examination of Foods*, 4th ed. American Public Health Association.
- Murano, E.A.** 1995. Microbiological aspects of food irradiation. In: *Food Irradiation: A Sourcebook for the Industry*, **Murano, E.A.**, Ed. Iowa State Press, Ames, IA.
- Palumbo, S., C. Abeyta, G. Stelma, I.V. Wesley, C.I. Wei, J.A. Koberger, S. Franklin, L. Schroeder-Tucker, and **E.A. Murano**. 2001. Aeromonas, Arcobacter, and Plesiomonas. In: *Compendium of Methods for the Microbiological Examination of Foods*, 4th Ed. American Public Health Association.

IX. PUBLISHED ABSTRACTS

- Ananth, V., **E.A. Murano**, and J. Dickson. 1995. Shelf-life extension and safety of fresh pork treated with high hydrostatic pressure. *Abstr. Ann. Meet. IAMFES*, Pittsburgh, PA.

- Collins, C.I., I.V. Wesley, and **E.A. Murano**. 1994. Presence of *Arcobacter* spp. in fresh pork. Abstr. Ann. Meet. IAMFES, San Antonio, TX.
- Collins, C.I., and **E.A. Murano**. 1993. Effect of heating rate and meat composition on survival of *Escherichia coli* O157:H7 to a processing treatment. Abstr. Ann. Meet. Inst. Food Technol, Chicago, IL.
- Crawford, Y., and **E.A. Murano**. 1994. Effect of hydrostatic pressure, in combination with heat and/or irradiation, on the survival of *Clostridium sporogenes* in chicken. Abst. Ann. Meet. IAMFES, San Antonio, TX.
- DeFreitas, Z., R. Molins, D.G. Olson, and **E.A. Murano**. 1992. Shelf-life extension of beef clods by surface freezing. Abstr. Ann. Meet. Inst. Food Technol. New Orleans, LA.
- Fu, A.H., J.G. Sebranek, and **E.A. Murano**. 1994. Reduction of selected pathogens by irradiation at low and medium doses in beef steaks. Abst. Ann. Meet. Inst. Food Technol., Atlanta, GA.
- Fu, A.H., J.G. Sebranek, and **E.A. Murano**. 1993. Shelf-life study of loins and chops from pork carcasses treated with organic acid rinses as a potential HACCP process. Abstr. Ann. Meet. Inst. Food Technol., Chicago, IL.
- Johnson, L.G., and **E.A. Murano**. 2000. Surveillance for *Arcobacter*. Abstr. Ann. Meet. Int. Assoc. Food Prot., Atlanta, GA.
- Johnson, L.G., and **E.A. Murano**. 2000. The examination of *Arcobacter* spp. isolates from clinical and food sources for a cytolethal distending toxin using PCR. Abstr. Society for Applied Microbiology Summer Conference on *Campylobacter*, *Helicobacter* and *Arcobacter*, Glasgow, Scotland, UK.
- Johnson, L.G., and **E.A. Murano**. 1999. Isolation of *Arcobacter* from various food and environmental sources. Abstr. Ann. Meet. Nat. All. Food Saf., Georgetown, DC.
- Johnson, L.G., and **E.A. Murano**. 1999. Comparison of three protocols for the isolation of *Arcobacter* from poultry. Abstr. Ann. Meet. Inst. Food Technol., Chicago, IL.
- Johnson, L.G., and **E.A. Murano**. 1997. Development of an optimal isolation medium for *Arcobacter* spp. Abstr. Ann. Meet. Amer. Soc. Microbiol., Miami Beach, FL.
- Knight, T.D., P.S. Murano, and **E.A. Murano**. 2001. Effect of chlorine-dioxide-releasing packaging film on the objective, microbial, and sensory quality of beef. Abst. Ann. Meet. IFT, New Orleans, LA.
- Loaiza, J.G., **E.A. Murano**, and L. Cisneros-Zevallos. 2001. Analysis of raisin extracts to determine phenolic content and antimicrobial activity. Abst. Ann. Meet. IFT, New Orleans, LA.
- López-González, V., and **E.A. Murano**. 1997. Effect of packaging material and atmosphere on survival of *Escherichia coli* O157:H7 to irradiation in ground beef. Abstr. Ann. Meet. Amer. Soc. Microbiol., Miami Beach, FL.
- Lyon, W., and **E.A. Murano**, and D.G. Olson. 1994. Isolation and characterization of enterocin EL1, a bacteriocin produced by a strain of *Enterococcus faecium*. Abst. Ann. Meet. IAMFES, San Antonio, TX.
- McKean, J., P. Fedorka-Cray, I. Wesley, J. Dickson, P. Holden, and **E.A. Murano**. 1996. Segregated early weaning - control of food safety organisms. Abstr. Intl. Pig Vet. Soc. Cong., Bologna, Italy.
- Murano, E.A.**, V. Lopez-Gonzalez, P.S. Murano, and R.E. Brennan. Influence of various commercial packaging conditions on survival of *Escherichia coli* O157:H7, and on sensory

quality of product irradiated by electron beam v. gamma rays. Abstr. Ann. Meet. Inst. Food Technol., Chicago, IL.

Murano, E.A., P.S. Murano, R.E. Brennan, K. Shenoy, and R.G. Moreira. Application of high hydrostatic pressure to eliminate *Listeria monocytogenes* from fresh pork sausage. Abstr. Ann. Meet. Inst. Food Technol., Chicago, IL.

Murano, E.A. and M.D. Pierson. 1990. Effect of heat-shock on the heat resistance of *Escherichia coli* O157:H7. Abstr. Ann. Meet. Amer. Soc. Microbiol., Anaheim, CA.

Murano, E.A. and C.S. Cummins. 1986. Inactivation of tumor cells by *Propionibacterium acnes*. Abstr. Ann. Meet. Amer. Soc. Microbiol., Washington, DC.

Murano, P.S., **E.A. Murano**, and D.G. Olson. 1995. Quality characteristics and sensory evaluation of meat irradiated under various packaging conditions. Abst. Ann. Meet. Recip. Meat Conf., San Antonio, TX.

Ohlendorf, D., and **E.A. Murano**. 1999. Comparison of various protocols for determining the presence of *Arcobacter* in ground pork. Abstr. Ann. Meet. Nat. All. Food Saf., Georgetown, DC.

Ohlendorf, D.S., and **E.A. Murano**. 2000. Comparison of three methods for the isolation of *Arcobacter* in ground pork. Society for Applied Microbiology Summer Conference on *Campylobacter*, *Helicobacter* and *Arcobacter*, Glasgow, Scotland, UK.

Pickett, E.L., and **E.A. Murano**. 1993. Effect of heat-shock and chemical-shock on survival of *Listeria monocytogenes* to sanitizer treatment. Abstr. Ann. Meet. Inst. Food Technol., Chicago, IL.

Saide-Albornoz, J., G. Beran, **E.A. Murano**, and C.L. Knipe. 1992. Prevalence of bacterial pathogens in pork carcasses from three Iowa pig slaughter plants. Abstr. Ann. Meet. Inst. Food Technol., New Orleans, LA.

Serrano, L., and **E.A. Murano**. 1994. Effect of irradiation on survival of *Salmonella enteritidis* in whole eggs and liquid eggs. Abst. Ann. Meet. IAMFES, San Antonio, TX.

Shenoy, K., and **E.A. Murano**. 1995. Effect of irradiation on heat-shocked *Yersinia enterocolitica* in ground pork. Abst. Ann. Meet. Amer. Soc. Microbiol., Washington, DC.

Szepeswol, J., J. Fletcher, E. Casales (**Murano**) and G.L. Murison. 1983. Experimentally produced synovial sarcoma in mice. Fed. Proc. 42:1022.

Szepeswol, J., J. Fletcher, and E.A. Casales (**Murano**). 1982. Adrenal cortical tumorigenesis in delta-tetrahydrocannabinol-treated mice. Fed. Proc. 41:928.

Villareal-Silva, M., J.R. Anciso, L. Cisneros-Zevallos, G. Kakani, E.A. Murano, M.T. Taylor, K.L. Perez-Lewis, and A. Castillo. 2015. Bacterial populations present on various leafy greens and their antagonistic activity against enteric pathogens. IAFP Annual Meeting, Portland, OR.

Villareal-Silva, M., J.R. Anciso, L. Cisneros-Zevallos, G. Kakani, E.A. Murano, M.T. Taylor, K.L. Perez-Lewis, and A. Castillo. 2015. Efecto de las bacterias epifitas sobre el crecimiento de *Salmonella Saintpaul* en epidermis de melon cantaloupe. 17th Congreso Internacional de Inocuidad de Alimentos y 32nd Reunion Nacional de Microbiologia, Higiene y Toxicologia de Alimentos, Puerto Vallarta, MX.

X. ACADEMIC SERVICE ACTIVITIES AS PROFESSOR (1985-present)

Membership in professional societies

American Society for Microbiology

American Society for Testing Materials

Association of Meat Science
Institute of Food Technologists
International Association of Milk, Food and Environmental Sanitarians
Poultry Science Association

Professional Service

A. *Reviewing and Editing*

- Chaired USDA ARS NP 108 panel 11 on Cattle Production and Processing (2016)
- Journal of Food Science (1992-2001)
- Journal of Food Protection (1991-2001)
- Journal of Food Quality (1993-2001)
- USDA National Research Initiatives program ad-hoc reviewer (1993-2001)
- USDA National Research Initiatives Program Committee, Review Panel member (1995, 1997)
- USDA Agricultural Research Service ad-hoc reviewer (1993-2001)
- USDA Small Business Development Grants program ad-hoc reviewer (1993-2001)
- USDA CSREES Special Research Program, Review Panel member (1999)

B. *Committee Service*

- National Advisory Committee for Meat and Poultry Inspection, appointed member, 2001.
- National Alliance for Food Safety Operations Committee Chair, 2000-2001.
- National Alliance for Food Safety Operations Committee, elected member, 1998-2001.
- National Pork Producers Post Harvest Food Safety Technical Advisory Group, member, February, 1997-2001.
- Generic HACCP Model Committee, Irradiation Processing, Chair, June, 1996.
- American Society for Microbiology Minority Recruitment Committee 1994-2001
- Institute of Food Technologists Basic Symposium Committee 1993-1995
- Institute of Food Technologists James Ordal Graduate Student Paper Competition Judge, 1993-2001
- American Society for Testing Materials, Subcommittee E10 on Dosimetry for Radiation Processing, 1993-2001
- American Society for Testing Materials, Subcommittee F10 on Food Irradiation Processing, 1993-2001
- American Society for Microbiology North Central Branch, Treasurer 1992-1993

C. *University Service*

- Department of Animal Science Research Advisory Committee, 2000-2001
- Food Safety Response Team, Texas Agriculture Extension Service 2000-2001
- LINK Equine Research Program Advisory Committee, 1999-2001

- Food Safety State Initiative Committee, Chair, Texas Agriculture Experiment Station, 1999-2001

D. *National, International, and Other*

- United Nations' Sustainable Development Solutions Network, Thematic Group 2, member, 2013-present.
- NASA Advisory Committee on Microbiology of Space Foods
- 2011-present.
- USAID Advisory Board for International Food and Agriculture Development (BIFAD), Board member, 2008-present.
- Hispanic Association of Colleges and Universities (HACU) Board of Directors, member, 2008-present.
- Grocery Manufacturers of America Foundation Board, member, 2006-present.
- Hormel Foods Corporation, Board of Directors, member, 2006-present.
- IICA-Georgetown University CERES Executive Leadership in Food Safety, Mentor, 2001

XI. ACADEMIC PRESENTATIONS AND WORKSHOPS

International

Third Annual GEAR-UP Conference, "Food safety and biotechnology", National Chung Hsing University, Taichung, Taiwan, November 20, 2016.

Second Annual GEAR-UP Conference, "International development and resilience", National Chung Hsing University, Taichung, Taiwan, November 20, 2015.

Invited lecture for the agriculture industry of El Salvador, "La seguridad e inocuidad de alimentos", San Salvador, El Salvador, August 27, 2015.

First Annual GEAR-UP Conference, "Carrying forward the legacy of Dr. Norman Borlaug", National Chung Hsing University, Taichung, Taiwan, November 20, 2014.

International Food Safety Conference and National Meeting on Food Microbiology, Hygiene, and Toxicology, "Predicting food safety trends through an international crystal ball", Keynote Address, Puerto Vallarta, Mexico, November 10, 2012.

Institute of Food Technologists' Latin America and Caribbean Food Science & Innovation Conference, "The global status of food and food safety", Keynote Address, Jalisco, Mexico, February 27 to 29, 2012.

IICA-Organization of American States, Food Security Conference, served as organizer and moderator for panel on "National Food Security Plans: Some Considerations". October 1, 2009, Washington, DC.

US Agency for International Development, Investing in Agriculture Partnerships to Combat Hunger, hosted by Administrator Henrietta Fore and attended by President George W. Bush, "The role of land-grant universities like Texas A&M". September 23, 2008, New York, NY.

China-U.S. Relations Conference, presentation. "The strategic role of U.S. Land-grant institutions: The Texas A&M Agriculture experience". October 22nd to 25th, 2007, Washington, DC.

International Association of Marketing and Agribusiness, Food Safety from an International Perspective, June 26th, 2007, Parma, Italy.

International Livestock Congress, Beef Program Food Safety Session Participant, February 22nd, 2001, Houston, Texas.

USDA-Hurricane Mitch Reconstruction Project, Good Agricultural Practices “Producer” workshops presented to fruit and vegetable producers, February 4th to 10th, 2001, in Choluteca and Comayagua, Honduras.

USDA-Hurricane Mitch Reconstruction Project, Good Agricultural Practices “Train-the-Trainer” workshops presented to government and industry, January 10th to 17th, 2001, Tegucigalpa, Honduras and Managua, Nicaragua.

International Livestock Congress, Beef Program Workshop Participant, February 24-26, 1999, Houston, Texas.

15th Annual Meeting of Food Microbiology, Hygiene and Toxicology, Guadalajara, Mexico, presentation: “Development of Antibiotic Resistance by Foodborne Pathogens”, Guadalajara, Mexico, November 6-7, 1998.

Pan American Health Organization, Introduction to HACCP workshop (in Spanish), October 2-6, 1998, Tegucigalpa, Honduras, Lead Instructor.

Interamerican Institute for Cooperation on Agriculture (IICA) Symposium on Food Safety and International Agricultural Trade, lecture: “Application of HACCP to improve food safety”, Mexico City, Mexico, September 29-30, 1998.

Texas Beef Council, lecture: “Food Safety of Meats”, conducted in Spanish to food industry professionals from Mexico, San Antonio, TX, April 29, 1998.

1st Annual Meeting of Food Microbiology and Safety, presentations: “Emerging pathogens”, and “Novel processing methods to improve food safety”, Barranquilla, Colombia, March 1998.

International Meat and Poultry HACCP Alliance and National Food Processors Institute, “Train-the-Trainer” HACCP workshop presented to international participants from Argentina, Mexico, and Nicaragua (taught in Spanish), San Antonio, TX, January 7-9, 1998, Co-Instructor.

14th Annual Meeting of Food Microbiology, Hygiene and Toxicology, Guadalajara, Mexico, November 1997, presentations: “Microbial testing in a HACCP system”, and “Chronic illnesses transmitted by foodborne pathogens”.

IDEXX Corp. and TAMU Institute of Food Science & Engineering, Introduction to HACCP workshop (in Spanish), May 28-30, 1997, Mexico City, Mexico, Lead Instructor.

Pan American Health Organization, Introduction to HACCP workshop (in Spanish), April 28-30, 1997, Washington, DC, Lead Instructor.

CITECA (Argentina Center of Food Research and Technology) and International Meat and Poultry HACCP Alliance, Introduction to HACCP workshop (in Spanish), December 9-11, 1996, Buenos Aires, Argentina, Lead Instructor.

TAMU Office of Latin American Studies and Food Safety and Inspection Service, via Trans-Texas Video Network (TTVN), lectures on HACCP system for improving food safety, presented to officials of Mexican government, December 2-3, 1996, TAMUS Center in Mexico City, Mexico, Co-Instructor.

Australian Meat Research Symposium, “Intervention strategies used in the decontamination of animal carcasses and meats”, November 22, 1996, Sydney, Australia.

International Meat and Poultry HACCP Alliance and National Food Processors Institute, “Train-the-Trainer” HACCP workshop presented to officials of Argentina government (first such course taught in Spanish), College Station, TX, November 12-14, 1996, Co-Instructor.

SENASA (Dept. of Sanitation and Agriculture), Government of Argentina, and INPPAZ (Panamerican Institute for Food Protection and Zoonoses), Buenos Aires, Argentina, August 1996, lecture: "The seven principles of HACCP".

University of Querétaro, Querétaro, México, July 1996, lectures: "Hazard analysis and critical control points system".

SENASA (Dept. of Sanitation and Agriculture), Government of Argentina, Buenos Aires, Argentina, April 1996, lecture: "Update on HACCP regulations and microbiological testing".

12th Annual Meeting of Food Microbiology, Hygiene and Toxicology, Guadalajara, Mexico, November 1995, presentations: "Irradiation to increase the safety of fresh meats", and "Arcobacter: a new foodborne pathogen".

International Meeting on Radiation Processing, Istanbul, Turkey, September 1994, presentation: "Elimination/reduction of various pathogens after irradiation in meats".

International Workshop on the Use of Irradiation and Refrigeration to Ensure Hygienic Quality of Food, International Atomic Energy Agency, Iowa State University Campus, August, 1992, lectures: "Role of *Salmonella* and *Campylobacter* in Food Infection", and "Role of *Listeria* in Food Infection".

National

Beef Industry Safety Summit, Presentation, "Enhancing Food Safety: Perspective from a Former Public Servant", February 28, 2017, Houston, TX.

Association of Agricultural Educators Annual Meeting, Knapp Lecture, "Addressing food security, our moral imperative", May 20, 2015, San Antonio, TX.

North American Meat Association, Opening Session, Meat Irradiation, February 11, 2013, Las Vegas, NV.

APLU (Association of Public and Land Grant Universities), International Agriculture Session on Indonesia Opportunities, November 12, 2012, Denver, CO.

APLU (Association of Public and Land Grant Universities), International Agriculture Session on Feed the Future: Opportunities for U.S. universities, land-grant university response, November 13, 2011, San Francisco, CA.

National Farmers Union Convention, "Safety of Biotechnology Foods", March 14, 2011, San Antonio, TX.

APLU (Association of Public and Land Grant Universities), International Agriculture Session on BIFAD 2011 and Beyond: The Role of Universities, "A New Paradigm for Reconstruction of Haiti's Food and Agriculture Sectors", November 15, 2010, Dallas, TX.

Business and Professional Women's Leadership Summit, "Preparing for global competitiveness: Educational Excellence and Student Achievement", April 30, 2008, Washington, DC.

International Association for Food Protection, "The Good and Bad of Food Safety", July 10, 2007, Orlando, Florida.

National Association of State Universities and Land-Grant Colleges Academic Summit, June 11, 2007, College Station, Texas.

National Conservations Systems Cotton & Rice Conference, "Keeping America Competitive", January 29th, 2007, Houston, Texas.

National Association of State Universities and Land-Grant Colleges National Meeting, "CFERR Science: Keeping America Competitive" Plenary Session, November 12, 2006, Houston, TX.

National Association of State Universities and Land Grant Colleges National Meeting, "Academic Programs Section – Business Meeting and Workshop on Changes in Agriculture", November 13, 2006, Houston, Tx.

Institute of Food Technologists Food Safety and Quality Conference and Expo, "Food safety of fruits and vegetables in Latin America", November 15, 2000, Orlando, FL.

American Dietetic Association Annual Meeting, "Basics of food irradiation", October 19, 2000, Denver, CO.

Institute of Food Technologists General Meeting, Food Irradiation Session presenter: "Microbiological effectiveness of radiation pasteurization", June 12, 2000, Dallas, TX.

American Society for Microbiology General Meeting, symposium co-convenor: "Food microbiology in the 21st century: a look ahead", May 22, 2000, Los Angeles, CA.

National Pork Producers Council Board Meeting, presentation: "Comparison of three protocols for isolation of *Arcobacter* species in pork", January 20, 2000, College Station, TX.

Worldwide Food Expo, special industry symposium sponsored by Meat & Poultry Magazine, presentation: "Food irradiation: selecting a source", October 28, 1999, Chicago, IL.

Food Distribution Research Society Annual Meeting, presentation: "Food safety in the 21st century", October 19, 1999, San Antonio, TX.

International Life Sciences Institute Symposium "Microbial resistance to processing treatments", lecture: "Microbial resistance and food irradiation", August 3, 1999, Detroit, MI.

Institute of Food Technologists Annual Meeting, presentation: "Effect of various packaging conditions on survival of *Escherichia coli* O157:H7 to irradiation by gamma vs. electron beam in ground beef", July 27, 1999, Chicago, IL.

Minnesota Department of Health conference "Food irradiation: Minnesota steps forward", lecture: "Technical aspects of bringing irradiated foods to the market", June 20, 1999, Minneapolis, MN.

Risk and Insurance Management Society Annual Conference & Exhibition, lecture: "Basics of food irradiation", April 12, 1999, Dallas, TX.

Pfizer, Inc. symposium "Food Safety", Mystic, CN, February 4, 1999, presentation: "Novel intervention strategies".

USDA/FDA National Food Safety Research Conference, Washington, DC, November 11-13, 1998, presentation: "New Technologies to Improve Food Safety: Recommendations for Research".

Western Pennsylvania Chapter of the Health Physics Society and the University of Pittsburgh School of Medicine conference "Food irradiation: benefits and risks for public health", Pittsburgh, PA, May 8, 1998, presentation: "Benefits of food irradiation".

The Science and Public Policy Institute conference "Food irradiation: the next step in food safety", George Washington University, Washington, D.C., April 1998, presentation: "Research update on effect of packaging material on survival of *E. coli* O157:H7 in irradiated beef".

National Meat Association Annual Meeting Special Forum, San Francisco, CA, February 14, 1998, lecture: "Finding *E. coli* O157:H7 positives".

NASA and NJ-NSCORT Conference on "Nutrition & Food Concerns of Long Term Space Travel", Houston, TX, October 20-21, 1997, Food Technology Challenges Panel Member.

Institute of Food Technologists Special Forum "Irradiation and HACCP", Orlando, FL, June 16, 1997, lecture: "Irradiation as a CCP in HACCP".

Intertech Conference "Food Preservation: Methods and Markets", Arlington, Virginia, May 12-14, 1997, lecture: "Irradiation of meats: present and future".

Southwest Meat Association and Institute of Food Science & Engineering Workshop "Developing and Implementing HACCP Plans in Meat Plants", College Station, Texas, January 7-9, 1997, Co-Instructor.

Southwest Meat Association and Institute of Food Science & Engineering Workshop "Developing and Implementing HACCP Plans in Meat Plants", Spanish Version, San Antonio, Texas, October 15-17, 1996, Lead Instructor.

Southwest Meat Association and Institute of Food Science & Engineering Workshop "Developing and Implementing HACCP Plans in Meat Plants", Arlington, Texas, September 10-12, 1996, Lead Instructor.

Food Irradiation...It works, it's safe and it's time, Austin, TX, June 3-4, 1996, lecture: "Technology of food irradiation".

Research & Development Associates Annual Meeting, San Antonio, TX, May 15, 1996, lecture: "Studies on microbial aspects of food irradiation".

Keystone Foods Corporation and Institute of Food Science & Engineering Workshop "Developing and Implementing HACCP Plans", Pine Mountain, GA, January 31-February 1, 1996, presentations: "and "Identification and Control of Microbiological Hazards", and "Critical Limits, Monitoring, and Corrective Action".

Southwest Meat Association and Institute of Food Science & Engineering Workshop "Developing and Implementing HACCP Plans in Meat Plants", Oklahoma City, OK, January 9-11, 1996, presentations: "Review of Good Manufacturing Practices and the Importance of Standard Operating Procedures", and "Identification and Control of Microbiological Hazards".

Southwest Meat Association and Institute of Food Science & Engineering Workshop "Developing and Implementing HACCP Plans in Meat Plants", Oklahoma City, OK, November 1-3, 1995, presentations: "Review of Good Manufacturing Practices and the Importance of Standard Operating Procedures", "Identification and Control of Microbiological Hazards", "Hazard Analysis Critical Control Points: Principles 1 through 5".

Texas Agriculture Extension Service Satellite Videoconference "Food Technologies for the Future: Health and Safety Concerns", College Station, TX, October 24, 1995, presentation: "Introduction to Irradiation".

Institute of Food Technologists Workshop "Practical Aspects of Food Irradiation", Tampa, FL, October 16-18, 1995, lecture: "Red Meat Irradiation".

International Association of Milk, Food and Environmental Sanitarians Annual Meeting Symposium on Alternative Processing Strategies for Pasteurization of Foods, Pittsburgh, PA, August 2, 1995, lecture: "High Pressure Processing as an Intervention Strategy for Food Safety".

American Society for Microbiology Annual Meeting, Symposium on Update on Foodborne Pathogens in Domestic Animals, Washington, DC, May 25, 1995, lecture: "*Listeria* and *Yersinia* in Domestic Animals".

Food Safety Education, Indianapolis, Indiana, May 2, 1994, lecture: "Food Cooperative Extension Service Workshop on Expanding Team Strategies in irradiation".

Cooperative Extension Service Workshop on Expanding Team Strategies in Food Safety Education, Denver, Colorado, May 13, 1994, lecture: "Introduction to food irradiation".

North Central Region Animal Science Extension Specialist Development Workshop, Columbia, Missouri, May 23, 1994, lecture: "Irradiation of food to eliminate or reduce pathogens".
World Pork Expo, lecture to visiting Legislative Aides, June 12, 1993, lecture: "Food Irradiation: Can it make food safer?".
Society for the Advancement of Food Service Research, Bloomingdale, Illinois, March 27, 1993, lecture: "Food irradiation: can it make food safer?".
Nebraska Poultry Industries Convention, Columbus, Nebraska, March 10, 1993, lecture: "Irradiation and food safety".
Animal Source Food Safety Workshop 'FOOD SAFETY -- WHO IS RESPONSIBLE', Washington, D.C., September 9, 1992, lecture: "Irradiation: Will It Make Food Safer?".

State

King Ranch Shareholders Meeting, "Bioenergy", Kingsville, Texas, June 6, 2007.
Texas and Southwestern Cattle Raisers Board Meeting, "Bioenergy", Ft. Worth, Texas, March 24, 2007.
Texas Farm, Ranch, and Wildlife Expo, "Keeping America Competitive", Abilene, Texas, February 21, 2007
Texas Department of Health workshop "Improving Food Safety in Texas", San Antonio, Texas, February 8-9, 2000, lecture: "Safety of Fruits and Vegetables".
Texas Animal Health Commission Annual Meeting, College Station, Texas, December 8-9, 1999, lecture: "Food Safety Initiative".
Department of the Army Academy of Health Sciences, Ft. Sam Houston, Texas, June 1, 1998. Lecture: "Food Irradiation".
TAMU-Southwest Meat Association Second Annual Beef Brief. Lecture: "Meat microbiology and safety", April 28-30, 1998.
Texas Panhandle Chapter of Health Physicists, Amarillo, Texas, October 1, 1996, lecture: "Basics of food irradiation".
Texas Environmental Health Association, Plano, Texas, March 30, 1996, lecture: "Food irradiation to improve food safety".
Texas Agricultural and Natural Resources Summit II: Food Safety, Health and Nutrition, Dallas, Texas, December 7-8, 1995, lecture: "Factors influencing food safety: bacterial vs. chemical vs. physical hazards".
Iowa State University Public Policy Education In-service, Fort Dodge, Iowa, September 9, 1993, lecture: "Food Irradiation".
Iowa State Biotechnology Workshop, Ames, Iowa, Summer and Fall, 1993, lectures: "Detection of foodborne pathogens with biotechnology".
Cured Meats Workshop, American Meat Institute, Iowa State University, April, 1993, lecture: "Microbiology of Cured Meats".
Inservice for High School Agriculture Teachers, Department of Agricultural Education Studies, Iowa State University, Ames, Iowa, April 9, 1992, lecture: "Food Irradiation and How It Affects Us".
Annual Sausage and Processed Meats Short Course, Department of Animal Science, Iowa State University, Summer 1991 and 1992, lecture: "Meat Microbiology and Food Safety".
Cursillo Teorico/Practico de Tecnologia Carnica (Spanish version of Annual Sausage and Processed Meats Short Course), Summer 1991 and 1992, lecture: "Microbiologia de Productos Carnicos".

Invited speaker on Food Safety Call-in Programs, KASI Radio, Spring and Fall 1991.
Iowa State University College of Family and Consumer Sciences and Des Moines Public Schools Home Economics Department Workshop on Current Topics in Foods and Nutrition, Ames, Iowa, June 13, 1994, lecture: "What is Food Irradiation?".
Iowa Poultry Symposium, Scheman Bldng., Ames, Iowa, April 7, 1993, lecture: "Update on Linear Accelerator Research Program".
Iowa Home Economics Association Annual Meeting, Des Moines, Iowa, April 2, 1993, lecture: "Food Irradiation".
Iowa Poultry Fall Festival, Amana Colonies, Iowa, September 3, 1992, lecture: "Mission and Goals of the ISU Linear Accelerator".
Iowa Poultry Symposium, Scheman Bldng., Ames, Iowa, April 9, 1992, lecture: "Future Use of Irradiation With Poultry Food Products".

Local

Mays Business Fellows Program of the Mays Business School at Texas A&M University, "Leadership in Higher Education", March 29, 2017, College Station, TX.
Texas A&M Corps of Cadets, Second Annual Intentional Leadership Conference, "Ethical Decision-Making", February 25, 2017, College Station, TX.
Student Conference on Latino Affairs (SCOLA), "The Joy of Being First", keynote opening speech, March 4, 2016, College Station, TX.
Texas A&M College of Architecture invited lecture, "Continuing the Borlaug Legacy", March 1, 2016, College Station, TX.
Texas A&M AgriLife Administrative Services Conference, "The Borlaug Institute for International Agriculture", February 3, 2016, College Station, TX.
Texas A&M Club Aggie Muster Speaker, April 21, 2015, Yoakum TX.
Texas A&M Employee and Organizational Development Coffee Conversation Series, "Addressing food security, our moral imperative", April 10, 2015, College Station, TX.
Norman Borlaug Institute for International Agriculture Lecture Series, "Haiti Reconstruction: Challenges and Opportunities", April 1, 2011, College Station, TX.
Institute of International Education, Department of State, International Visitors' Program, Texas A&M University, College Station, Texas, April 26, 2001, presentation on "International Projects in Food Safety at TAMU".
Texas A&M University System Beef Research Group, Texas A&M University Agriculture Research and Extension Center, Overton, Texas, June 8, 2000, lecture: "Beef safety".
Faculty of Food Science Spring Seminar, Texas A&M University, College Station, Texas, February 18, 2000, lecture: "Food safety issues".
Agriculture Program Conference, Texas A&M University System, College Station, Texas, January 12, 2000, lecture: "Food safety in the 21st century".
Rosenthal Lecture Series, Texas A&M University, College Station, Texas, October 10, 1997, lecture: "Microbial Testing".
Danish Meat Board Visit, Iowa State University, Ames, Iowa, May 3, 1994, lecture: "Update on high pressure processing research at Iowa State University".
Value Added Ag and Food Processing Seminar, Ames, Iowa, May 3, 1994, lecture: "Understanding food irradiation".
Rotary Club of Fort Dodge, Fort Dodge, Iowa, March 28, 1994, lecture: "Food Irradiation".

XII. COURSES TAUGHT

At Iowa State University (1990-1995)

- a. Advanced Food Microbiology lecture, MIPM 420
- b. Advanced Food Microbiology lab, MIPM 421, guest lecturer

At Texas A&M University

2010-present

- c. Fundamentals of Food Law, FSTC 444
- d. Disease Mechanisms of Foodborne Pathogens, FSTC 689
- e. Critical Issues in Animal Production, ANSC 689, co-instructor
- f. Senior Seminar, FSTC 481

1995-2001

- g. Food Microbiology lecture, FSTC 606
- h. Microbial Quality Assurance lecture, FSTC 489
- i. Senior Seminar, FSTC 481
- j. FSIS Education Program for food inspectors, "Food Irradiation"

XIII. PERSONAL DATA

DOB/POB: 8/14/59, Havana, Cuba (U.S. Citizen).
Hobbies: Astronomy, playing guitar and conga drums.
Languages: Fluent in English and Spanish (speaking & writing).
Other: Married to Dr. Peter S. Murano, no children.
Bible study for young adults, teacher