STERLING S. THOMPSON, PH.D.

SUMMARY

FOOD MICROBIOLOGIST, FOOD SAFETY PROFESSIONAL

- Consistently managed and led a department of 10 to 19 professionals over a 30-year period; managed budget amounts from \$500,000 to \$1.3 million.
- In 1994, began collaborating with a third party to develop and initiate HACCP training specific to the chocolate industry for the Hershey Company; training initiative continued almost annually through 2014.
- Provided technical information to cocoa farmers in Peru, Nicaragua, Costa Rico, Honduras, and El Salvador in conjunction with cooperatives and other in country organizations and associations.
- Designed the microbiology laboratory for Hershey's new Malaysian manufacturing plant being built to produce products for the Asian market. In the mid-2000s also designed a microbiology laboratory, at Hershey's Monterrey, Mexico plant, which began producing products for the US market, and at the China facility that produced product for that market and other Asian countries. In 1993, designed the new corporate microbiology located at the Hershey Technical Center in Hershey, PA.
- Collaborated with an internal team that researched and recommended a new roasting technology, RevTech roaster, made in France, for the Malaysian plant to dry roast almonds. Collaborated with team members to develop HACCP plans for each production line; interviewed and recommended QA staff for the plant, and established the preliminary steps to develop a comprehensive microbiology environmental monitoring program for pathogens and non-pathogens.
- Experience in creating training/educational programs for corporate and academic environments. Conducted training sessions throughout the Hershey organization on food safety, food microbiology, environmental monitoring, and laboratory testing for technical and non-technical staff.
- Conducted food safety training for suppliers, and contract manufactures located in the US and international. Conducted training sessions and webinar for chocolate, confectionery industry professionals.
- Collaborated with other food industry staff, Almond Board of California (ABC), regulatory agencies and specific Associations, such as GMA, to identify the Direct Verifiable (DV) program for companies processing almonds. Managed the Hershey Company's DV Program at its Hershey, PA and Monterrey, Mexico facilities. Certified by the ABC as the Process Authority for these two Hershey Company almond processing operations.
- In 2015, assumed an Individual Contributor position with a focus on Open Innovation, Food Safety Culture, the Malaysian Project, and expansion of Hershey's global environmental monitoring program.
- Following retirement from The Hershey Company in November 2015, founded B & G Consulting, LLC., in May 2016, a food safety consulting business with a mission of providing insight, strategies and solutions to diverse international and domestic sectors of the food industry and food service.

PROFESSIONAL EXPERIENCE

B & G SAFE FOOD CONSULTING, LLC, PRESIDENT (2016 - PRESENT)

Independent Consultant providing consultation and training to diverse sectors of the food industry, and food service.

THE HERSHEY COMPANY, Hershey, PA

1985-2015

Hershey Fellow, Global Food Safety and Innovation (2015) Global Quality & Regulatory Affairs Department. Assumed position as an Individual Contributor providing technical support to various staff throughout the Company; worked with Contract Manufacturers and Suppliers; identified potential new technologies that may have application in the manufacturing sector, laboratory analysis, product development, cleaning and sanitation, and managed environmental monitoring programs. Developed and executed special projects, and represented the company externally at professional meetings and on select scientific committees.

Hershey Fellow/Senior Manager, Microbiology Research & Services (2005-2014)

Managed and coordinated QA microbiological services to all of Hershey's operations, (Domestic & International). Provided microbiological support to Research & Development projects/activities, and microbiology research projects (internal, external). Managed and coordinated the QA extraneous analysis services provided to suppliers, manufacturing operations, and several other Hershey customers/partners. Conducted an initial evaluation of the potential to produce two therapeutic, nutritious peanut butter products in Ghana to help eliminate malnutrition in children ages 6 – 12 years, which lead to the production of the products in 2015. Approximately 50,000 children benefited the first year. Developed and administered an annual budget and supervised staff (professionals, technicians). Continued to coordinate HACCP training for Hershey employees and initiated the inclusion of suppliers and Contract Manufacturers for the training.

Senior Manager, Microbiology ReS. & Services (1994-2005)

Managed and coordinated QA microbiological services to all of Hershey's operating Divisions, microbiological support to Research & Development projects/activities, and microbiology research projects (internal, external). Managed and coordinated QA extraneous analysis services to suppliers, manufacturing operations, and several other Hershey customers/partners. Developed and administered an annual budget and supervised staff (professionals, technicians). Initiated HACCP training for Hershey staff in 1994 using a third-party organization, NFPA (now known as GMA) to facilitate the training. Through mid-2014 over 700 individuals were trained. As a HACCP trainer, conducted sessions for chocolate confectionery industry staff. One of the founding staff members for Hershey's first Diversity Council.

Manager, Microbiology Research (1991-1994)

Managed the operation and activities of the Corporate Microbiology Research Department in support of Research & Development projects/activities (new products, line extensions, new technologies). In addition, provided technical support to all operating Divisions. Developed and administered an annual budget for a department of seven professionals. I was one of two staff members in Research & Development that established three Centers of Excellence: 1. Food Safety & Quality; 2. Chocolate Flavor; and 3. HACCP.

Group Leader, Microbiology Research (1987-1991)

Responsible for planning, conducting, and supervising research related to food microbiology and food safety. Conducted microbiological studies on cacao bean fermentation. Worked with staff in the Biochemistry Department to correlate flavor development with fermentation practices and drying methods, and selected cacao clones. Coordinated in-house microbiology programs to support corporate activities/projects.

Senior Microbiologist, Microbiology Research (1985-1987)

Evaluated rapid microbiological methods and automated systems. Conducted microbiology research on microflora associated with cacao bean fermentation. Planned and conducted several research projects, i. e. recommended techniques to isolate and identify *Listeria monocytogenes* and prepared an SOP; evaluated the Bactometer system

applications; evaluated *Salmonella* identification kits, and *Campylobacter* methodologies. Provided technical information on optimizing cacao bean fermentation to researchers in Ecuador, Brazil, Belize, Granada, Venezuela, Trinidad, Costa Rica, Malaysia, Indonesia, and the United Kingdom.

MICHIGAN STATE UNIVERSITY

Post-Doctoral Fellow, Michigan State University (1984)

Department of Microbiology & Public Health, Michigan State University, East Lansing, MI Research: Isolation of enzymes involved in the synthesis of fatty acids in *Azotobacter vinelandii*.

Instructor, Food Microbiology (1980-1983)

Department of Food Science & Human Nutrition, Michigan State University, East Lansing, MI Taught food microbiology courses and laboratories, while completing Ph. D. degree, to undergraduate and graduate students. Courses: Food Microbiology, Food Safety and Microbiology, Microbiology of Foods, Food Processing, Food Toxicology. Collaborated with other faculty members on several research projects and supervised graduate students' research projects.

Graduate Teaching/Research Assistant (1973-1980)

Department of Food Science and Human Nutrition, Michigan State University, East Lansing, MI Assisted with laboratory courses and research projects in Food Microbiology, Food Safety, and Sanitation.

OTHER EXPERIENCES

Provided food safety training related to the food service industry to all of Denny's regional and unit store mar	nagers.
Wendy's Restaurant, East Lansing, MI Provided guidelines and recommendations on proper cooking and hot holding of specific food items.	1977 – 1978
Clinical Microbiologist, E.W. Sparrow Hospital, Lansing, MI Isolated and identified microorganisms from a variety of human specimens. Other areas included: antibiotic studies, antibiotic serum assays, counter immunoelectrophoresis techniques, fluorescent microscopic technic anaerobic bacteriology techniques, and laboratory quality control. Used the latest rapid, automated systems microbiological analyses; experience with Bactec and MS-2 microbiology systems. Clinical Microbiology Specialist Henry Ford Hospital, Detroit, MI	ques, for 1968 - 1969
Isolated and identified microorganisms in human specimens using, at the time, the latest procedures and equipment.	
EDUCATION	

EDUCATION

Doctorate in Food Science, Michigan State University, East Lansing, MI. Dissertation: "Isolation, purification and immunological localization of an extracellular protease produced by *Pseudomonas fragi*."

Master of Science in Food Science, Michigan State University, East Lansing, MI. Thesis: "The Survival of *Escherichia coli, Micrococcus flavus*, and *Bacillus subtilis* during spray drying of skim milk and storage of skim milk powder."

Bachelor of Science in Biology, Minor in Chemistry, Tougaloo College, Tougaloo, Mississippi

MILITARY EXPERIENCE

U.S. Army

1969 - 1971

Sergeant – Infantry; stationed in Georgia, Louisiana, Washington State, Germany, and served 11 months in South Vietnam, Honorable Discharge

MANUFACTURERS' TRADE ASSOCIATION AFFILIATIONS

Grocery Manufacturers of America - Microbiology Working Group (1980 – 2005) International Life Science Institute-NF-Microbiology Committee (1988-1997) Grocery Manufacturers of America (formerly National Food Processors Association) - Microbiology Committee 1980 - 2015 American Peanut Council – Member of a Scientific Advisory Committee (2009 – 2015)

COMMITTEES/BOARDS

Biotechnology Advisory Board, Harrisburg University (2006 - 2008) National Advisory Committee on Microbiological Criteria for Foods (1991 - 1996) and 2005 – 2009) African American Chamber of Commerce of Central Pennsylvania (2003- 2009) Vice Chair 2005- 2009 Association of Analytical Chemist (AOAC) Methods Review Committee (1992 - 1997) Food & Nutritional Sciences Advisory Board, Tuskegee University, College of Agricultural Environmental & Natural Sciences (1997 – 1999; a founding member) Dr. T. O Wilson Foundation, Inc. (2005 – 2010) Vice Chairman.

PROFESSIONAL ASSOCIATIONS

Institute of Food Technologists Member-at-large IFT's Food Microbiology Division Executive Committee, 1992 - 1994 Association of Official Analytical Chemist International (AOAC) (Former methods reviewer, member)

AWARDS & RECOGNITION

Inducted into the Tougaloo College Alumni Hall of Fame, 2000, in Tougaloo, MS for achievements in Science.

Recognized by Science Spectrum Magazine, 2005 in Baltimore, Maryland with an Emerald Award for accomplishments in Food Science, Food Microbiology.

PUBLICATIONS

Thompson, S.S., L.G. Harmon and C.M. Stine. 1978. Survival of selected organisms during spray drying of skim milk and storage of nonfat dry milk. J. Food Protection 41:16-19.

Sawyer, C.A., Y.M. Naidu and S.S. Thompson. 1983. Cook/chill food service systems: Microbiological quality and end-point temperature of beef loaf, peas and potatoes after reheating by conduction, convection and microwave radiation. J. Food Protection 46:1036-1043.

Sawyer, C.A., S.A. Biglari and S.S. Thompson. 1984. Internal end temperature and survival of bacteria on meats with and without polyvinylidene chloride wrap during microwave cooking. J. Food Science 49:972.

Muggio, B.N., M.A. Uebersax, G.L. Hosfield and S.S. Thompson. 1985. Characterization and bioconversion of Great Northern Bean blancher effluent. J. Food Science 50:918-921.

Thompson, S. S., Y.M. Naidu and J.J. Pestka. 1985. Ultrastructural localization of an extracellular protease in *Pseudomonas fragi* by using the peroxidase-anti-peroxidase reaction. J. Appl. Environ. Microbial. 50:1038-1042.

Thompson, S.S., Y.M. Naidu and J.J. Pestka. 1985. Relation between extracellular neutral protease production and appearance of bleb-like evaginations in *Pseudomonas fragi*. J. Food Protection 48:1067-1070.

Thompson, S.S. 1994. Cocoa: Post Harvest Practices, Part II. Proceeding of the Forty-Eighth Annual Prod. Conf. Pennsylvania Manuf. Confectioners' Assoc. 124-127.

Okereke, A. and S.S. Thompson. 1996. Induced acid tolerance response confers limited Nisin resistance on *Listeria monocytogenes* Scott A. J. Food Protection 59:1003-1006.

Thompson, S.S., K.M. Miller, A.S. Lopez. 1997. Cocoa and Coffee. In L.R. Beuchat, T. Montville, M. Doyle (ed.), Food Microbiology Fundamentals and Frontiers. American Society for Microbiology.

Thompson, S.S., K.M. Miller, A.S. Lopez. 2001. Cocoa and Coffee. In L.R. Beuchat, T. Montville, M. Doyle (ed.), 2nd Edition, Food Microbiology Fundamentals and Frontiers. American Society for Microbiology.

Thompson, S.S., K.M. Miller, A.S. Lopez. 2007. Cocoa and Coffee. In L.R. Beuchat, T. Montville, M. Doyle (ed), 3rd Edition, Food Microbiology Fundamentals and Frontiers. American Society for Microbiology.

The American Peanut Council Scientific Advisory Committee (member). 2009. Good Manufacturing Practices and Industry Best Practices for Peanut Product Manufacturers. Chapter 7, in Good Manufacturing Practices.

Thompson, S.S. Microbiological Spoilage of High-Sugar Products, 2009. In M. Doyle, W. Sperber (ed). Compendium on Microbiology Spoilage. Springer – Life Sciences, New York.

Thompson, S.S., K. Orben, K.T. Hohenthal, T. Mackie, M. Stauffer, L. Post, A. Bodor. 2010. Best Practices for Safe Chocolate Manufacturing. National Confectioners' Association.

Thompson, S. S., K. Miller, A.S. Lopez, N. Camu. Cocoa and Coffee. 2013. In R. Buchanan, M. Doyle (ed), 4th Edition, Food Microbiology Fundamentals and Frontiers. American Society for Microbiology.

Calhoun, S., L. Post, B. Warren, S. Thompson, A. Rogers. 2013 Prevalence and Concentration of *Salmonella* on Raw Shelled Peanuts in the United States. J. Food Protection. 76: 575 – 579.

Calhoun, S, L. Post, B. Warren, S. Thompson, A. R. Bontempo. Salmonella prevalence and concentration on raw peanuts. (pending submission).

PRESENTATIONS

Food Research Institute Meeting 1990. Challenges Facing the U.S. Food Industry. University Wisconsin, Madison.

IFT Annual Meeting 1996. National Advisory Committee on the Microbiological Criteria for Foods. "The Committee – Global Perspective".

Forty-Eight Annual Meeting – Pennsylvania Manufacturing Confectioners' Association (PMCA). 1993. "Cocoa: Post Harvest Practices". Hershey, PA.

PMCA & National Confectioners' Association (NCA) 2006. Hazard Analysis Critical Control Points (HACCP) Workshop, Chicago.

National Confectionery Association Food Safety Workshop, HACCP & GMPs. 2009. Chicago.

National Confectionery Association Webinar. Hazard Analysis & Critical Control Point. 2010.

American Association of Candy Technologists. 2012. Food Safety Modernization Act, Preventive Controls – Steps required to produce safe finished products.

V. Foro Nacional: La Cadena de Valor de Cocoa y su impacto en el desarrollo rural de Nicaragua, 2012. "Impact of Post-Harvest Practices on Chocolate Flavor", Managua, Nicaragua.

International Association of Food Protection (IAFP). 2013 Annual Meeting. Beans Become Bountiful Treats: Implementing A HACCP Plan in Chocolate Manufacturing.

FOOD SAFETY PREVENTIVE CONTROLS ALLIANCE (FSPCA) CERTIFICATE OF TRAINING

Grocery Manufacturers Association FSPCA Preventive Controls for Human Food Course, June 2016. Qualified Individual