

Gary A. Sullivan

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A213 Animal Science
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Education:

Iowa State University, Ames, Iowa
Doctor of Philosophy: August 2011
Majors: Meat Science and Food Science and Technology
Major Professors: Drs. Joseph Sebranek and Ken Prusa
Dissertation: Naturally Cured Meats: Quality, Safety, and Chemistry

University of Nebraska-Lincoln, Lincoln, Nebraska
Masters of Science: December 2007
Major: Animal Science
Major Professor: Dr. Chris Calkins
Thesis: Application of exogenous enzymes to high and low connective tissue beef muscles

Iowa State University, Ames, Iowa
Bachelor of Science with Distinction: May 2005
Majors: Animal Science and International Agriculture, Minor: Economics

Research and Meat Industry Work Experiences:

Associate Professor of Meat Processing
University of Nebraska- Lincoln
July 2018 to present

Assistant Professor of Meat Processing
University of Nebraska- Lincoln
June 2011 to June 2018

Research Assistant Iowa State University
January 2008 to May 2011

Research Assistant University of Nebraska-Lincoln
August 2005 to December 2007

Research and Development Intern
Burke Corporation, Nevada, IA
December 2003 to June 2005

Research Intern International Livestock Research Institute, Addis Ababa, Ethiopia
June to July, 2001

Honors and Awards:

Reciprocal Meat Conference Chair, 2025
Director, American Meat Science Association, 2023-2026
Outstanding Service Award, Institute of Food Technologists Muscle Foods Division, 2021
Achievement Award, American Meat Science Association, 2020
Parent's Recognition Award, UNL Parents Association, 2020
Outstanding Service to Beef Education – NYBLS Team – Kentucky Cattlemen, 2020
Excellence in Animal Science Programming – NYBLS Team – Nebraska 4-H, 2019
Editor's Choice Article – The Professional Animal Scientist, Oct. 2017 Issue
Research Excellence Award, Iowa State University, 2011
Centennial Fellow, University of Nebraska, 2005-2007
Academic Achievement Award, American Meat Science Association, 2005
L.N. Hazel University Service Award, Iowa State University, 2004
American FFA Degree, 2003

Ahmanson International Intern Award, World Food Prize, 2002

Professional Memberships

American Meat Science Association
Institute of Food Technologists
American Society of Animal Science
American Association of Meat Processors

Research:

Improving the quality, safety, and shelf life of value added and processed meats through ingredients, processing techniques, and packaging.

Peer-Reviewed Manuscripts: (most recent first)

*Graduate Students I advised or co-advised

** Undergraduate students conducting research in my group

† Served on M.S. or Ph.D. examining committee

#Publications where I am the corresponding author

Watson, S.C.*, Neujaahr, A.C., Chaves, B.D., Fernando, S.C., **Sullivan, G.A.**[#]. Environmental monitoring of Nebraska ready-to-eat meat processing establishments resulted in the isolation of *Listeria* alongside *Pseudomonas* highly resistant to quaternary ammonia sanitizer. *Journal of Food Protection* – Accepted 10-23-2024.

Batt., M.C., Venzor, L.G.*, Gardner, K., Reith, R.R., Roberts, K.A., Herrera, N.J.*, Fuller, A.M., **Sullivan, G.A.**, Mulliniks, J.T., Spangler, M.L., Valberg, S.J., Seffen, D.J., Petersen, J.L. 2024. An autosomal recessive mutation in PYGM causes myophosphorylase deficiency in Red Angus cross cattle. *BMC Genomics* 25:417. <https://doi.org/10.1186/s12864-024-10330-1>

Ribeiro, F.A.[†], Lau, S.K., Furbeck, R.A.*, Herrera, N.J.*., Henriott, M.L. [†], Bland, N.A. [†], Fernando, S.C., Subbiah, J., Pflanzler, S.B., **Sullivan, G.A.**, Calkins, C.R.. 2024. Effects of relative humidity on dry-aged beef quality. *Meat Science*, July 2024:109498.

Nakimera, E. [†], Cancio, L. P. L. [†], **Sullivan, G. A.**, Sabat, R. [†], Chaves, B. D. 2024. Antimicrobial efficacy of a citric acid/hydrochloric acid blend, peroxyacetic acid, and sulfuric acid against *Salmonella* and background microbiota on chicken hearts and livers. *Journal of Food Science*. 1-10. <https://doi.org/10.1111/1750-3841.17037>

Watson, S. C.*., Karr, L. K. Sullivan, G. A. **Sullivan, G.A.**[#]. 2024. Implementation of a group quiz format in an introductory meat science course. *NACTA Journal*. 67(1). <https://doi.org/10.56103/nactaj.v67i1.120>

Cano, Carmen[†], **Sullivan, Gary A.**, Chaves, Byron D. 2023. Immersion in Ozonated Water has the Potential to Reduce *Salmonella* and Indicator Organisms in Raw Poultry Parts. *Food Protection Trends*. 44:36-40.

Cancio, L. P. [†], B. Chaves, B.D, Danao, M-G, **Sullivan. G.A.** 2023. Evaluation of peroxyacetic acid, liquid buffered vinegar, and cultured dextrose fermentate as potential antimicrobial interventions for raw chicken livers. *Journal of Food Safety*. 43(4):e13054.

Watson, S.C.*., Furbeck, R.A*, Chaves, B.D., **Sullivan, G.A.**[#]. 2023. Spoilage *Pseudomonas* survive thermal processing and grow during vacuum packaged storage in an emulsified meat system. *Journal of Food Science*. 88(5):2162-2167..

Denzer, M., Furbeck, R.*, **Sullivan, G.**, Danao, M.-G., Mafi, G. Ramanathan, R. 2023. Sarcoplasmic model to study the effects of high-pressure processing on beef color. *Meat Science*. 199:109127.

Reesman, C. [†], **Sullivan, G.**, Danao, M-G, Mafi, G.G., Pfeiffer, M., and Ramanathan, R. 2023. Effects of high-pressure processing on cooked color and eating qualities of dark cutting beef. *Applied Food Research*. 3(1):100260.

Reesman, C. †, **Sullivan, G.**, Danao, M-G, Pfeiffer, M., More, S., Mafi, G.G., Ramanathan, R. 2023. Use of High-Pressure Processing to Improve the Redness of Dark-Cutting Beef. *Meat and Muscle Biology*. 7(1): 15716, 1-12.

Hunt. H.B**, Watson. S.C.*, Chaves, B.D., **Sullivan, G.A.**#. 2023. Inactivation of *Salmonella* in non-intact beef during low-temperature sous vide cooking. *Journal of Food Protection*. 86(1): 100010.

Furbeck, R.A*, Bower, C.G.*, Fernando, S.C., **Sullivan, G.A.**#. 2022. Evaluation of the spoilage microbiota associated with different brands of pre-sliced, packaged deli-style ham. *Meat and Muscle Biology*. 6:1-11. DOI:10.22175/mmb.15446

Furbeck, R.A*, Stanley, R.E.*, Bower, C.G.*, Fernando, S.C., **Sullivan, G.A.**#. 2022. Longitudinal effects of salt and ingoing nitrite concentration and source on the quality characteristics and microbial communities of deli-style ham. *LWT-Food Science and Technology*. 162:113391.

Hunt. H.B**, Watson. S.C.*, Chaves, B.D., Cavender, G.A., **Sullivan, G.A.**#. 2021. Fate of generic *E. coli* in nonintact beef steaks during sous vide cooking at different holding time and temperature combinations. *Food Protection Trends*. 41(6):569-573.

Ribeiro, F.A. †, Lau, S.K., Furbeck, R.A.*, Herrera, N.J*, Henriott, M.J., Bland, N.A., Fernando, S.C., Subbiah, J., **Sullivan, G.A.**, Calkins, C.R. 2021. Ultimate pH effects on dry-aged beef quality, *Meat Science*. 172: 108365.

Sun, S. †, Rasumussen, F.*, Cavender, G., **Sullivan, G.**# 2019. Texture, color, and sensory evaluation of beef steak treated with high pressure processing prior to sous vide cooking. *LWT- Food Science and Technology*. 103:169-177.

Posthuma, J.**, Rasmussen, F.*, **Sullivan, G.**# 2018. Effects of nitrite source, reducing agents, and holding time on color development in a cured meat model system. *LWT – Food Science and Technology*. 95:47-50.

Gupta, J., Bower, C. G.*, **Sullivan, G.**, Cavender, G. 2018. Effect of Differing Ingredients and Packaging Technologies on the Color of High Pressure Processed Ground Beef. *Journal of Food Quality*. Volume 2018:Article ID 4590143,

Gupta, J., Bower, C*, Cavender, G., **Sullivan, G.**# 2018. Effect of different myoglobin states on color changes in high pressure processed raw ground beef. *LWT – Food Science and Technology*. 93:32-35.

Bower, C.G.*, Stanley, R.E.*, Fernando, S.C., **Sullivan, G.A.**# 2018. The effect of salt reduction on the microbial community structure and quality characteristics of sliced roast beef and turkey breast. *LWT- Food Science and Technology*. 90:583-591.

Cleveland, B.D.*, Buntyn, J.O., Redfield, A.L.*, MacDonald, J.C, **Sullivan, G.A.**#. 2017. Effect of feeding distillers grains during different phases of production and addition of postmortem antioxidants on shelf life of ground beef. *The Professional Animal Scientist*. 33:555-566.

Sun, S. †, **Sullivan, G.**, Stratton, J. Bower, C.*, Cavender, G. 2017. Effect of HPP treatment on the safety and quality of beef steak intended for sous vide cooking. *LWT – Food Science and Technology*. 86:185-192.

Stanley, R.E.*, Bower, C.G.*, **Sullivan, G.A.**# 2017. Influence of salt reduction and replacement with potassium chloride based salts on the quality, sensory characteristics, and shelf life of pork sausage. *Meat Science*. 133:36-42.

Dierks, N.T.**, Cleveland, B.D.*, Varnold, K.A., Erickson, G.E., **Sullivan, G.A.**# 2017. Effects of feeding wet distillers grains to cattle during different times of production on cooked beef patties characteristics during storage. *The Professional Animal Scientist*. 33:54-62.

Redfield, A. L.* and **Sullivan, G.A.#** 2015. Effects of conventional and alternative curing methods on processed turkey quality traits. *Poultry Science*. 94(12):3005-3014.

Sullivan, G.A.# and Sebranek, J.G. 2012. Nitrosylation of myoglobin and nitrosation of cysteine by nitrite in a model system simulating meat curing. *Journal of Agricultural and Food Chemistry*. 60:1748-1754.

Sullivan, G.A.#, Jackson-Davis, A.L., Schrader, K.D., Xi, Y., Sebranek, J.G., and Dickson, J.S. 2012. Survey of naturally and conventionally cured commercial frankfurters, ham, and bacon for physio-chemical characteristics that affect bacterial growth. *Meat Science*. 92:808-815.

Sullivan, G.A.#, Jackson-Davis, A.L., Neibuhr, S.E., Xi, Y., Schrader, K.D., Sebranek, J.G., and Dickson, J.S. 2012. Inhibition of *Listeria monocytogenes* using natural antimicrobials in no-nitrate-or-nitrite-added ham. *Journal of Food Protection*. 75:1071-1076.

Xi, Y., **Sullivan, G.A.**, Jackson, A.L., Zhou, G.H., and Sebranek, J.G. 2012. Effects of natural antimicrobials on inhibition of *Listeria monocytogenes* and on chemical, physical and sensory attributes of naturally-cured frankfurters. *Meat Science*. 90:130-138.

McClure, B.N., Sebranek, J.G., Kim, Y.H., and **Sullivan, G.A.** 2011. The effects of lactate on nitrosylmyoglobin formation from nitrite and metmyoglobin in a cured meat system. *Food Chemistry*. 129:1072-1079.

Xi, Y., **Sullivan, G.A.**, Jackson, A.L., Zhou, G.H., and Sebranek, J.G. 2011. Use of natural antimicrobials to improve the control of *Listeria monocytogenes* in a cured cooked meat model system. *Meat Science*. 88:503-511.

Sullivan, G.A. and Calkins, C.R. 2011. Ranking beef muscles for Warner-Bratzler shear force and trained sensory panel rating. *Journal of Food Quality*. 34:195-203.

Jackson, A.L., **Sullivan, G.A.**, Kulchaiyawat, C., Sebranek, J.G., and Dickson, J.S. 2011. Survival and growth of *Clostridium perfringens* in commercial no-nitrate-or-nitrite added (natural and organic) frankfurters, hams and bacon. *Journal of Food Protection*. 74:410-416.

Jackson, A.L., Kulchaiyawat, C., **Sullivan, G.A.**, Sebranek, J.G., and Dickson, J.S. 2011. Use of natural ingredients to control growth of *Clostridium perfringens* in naturally cured frankfurters and hams. *Journal of Food Protection*. 74:417-424.

Sullivan, G.A. and Calkins, C.R. 2010. Application of exogenous enzymes to beef muscle of high and low-connective tissue. *Meat Science*. 85:730-734.

Peer Reviewed Manuscripts Submitted or in Revisions:

Watson, S.C.*, Aluthge, N.D., Furbeck, R.A*, Fernando, S.C., Chaves, B.D., **Sullivan, G.A.#**. Impact of organic acid treatment on the microbial community composition of raw beef during extended refrigerated storage. In Revision for *Food Microbiology*.

Role: Corresponding author

Peer-Reviewed Book Chapters:

Sullivan, G.A., Venzor, L.G.*, Mandigo, R.W. 2024. Emulsions and Batters: Theory and Practice. Book Chapter in the *Encyclopedia of Meat Science*, 3rd. Ed.

Mandigo, R.W., **Sullivan, G.A.** 2014. Chemistry and physics of comminuted products: Emulsions and batters. In: *Encyclopedia of Meat Science*. 2nd ed. pp. 283-288.

Student Theses and Dissertations:

Graduate Students Advised: (Does not include students in progress)

Ashley Hahn, Using High-Pressure Processing to Improve the Quality of Dark-Cutting Beef, M.S. Thesis. University of Nebraska-Lincoln, Animal Science, 2024,

Samuel Watson, Examination of the Prevalence and Behaviors of Pathogenic and Spoilage Bacteria at Multiple Stages in the Meat Processing Chain. Ph.D. Dissertation. University of Nebraska-Lincoln, Animal Science, 2023

Nicolas Herrera, Dry-Aged Beef Flavor Development, and the Effect of High Levels of Vitamin E on Beef Color Stability. Ph.D. Dissertation. University of Nebraska-Lincoln, Animal Science, 2023.

Furbeck, Rebecca. The Invisible Meat Microcosmos - Investigations of Processed Meats' Specific Spoilage Organisms. Ph.D. Dissertation. University of Nebraska-Lincoln, Animal Science, 2022.

Bower, Chad. Evaluation of microbial community dynamics impacting the shelf-life of processed meats. Ph.D. Dissertation. University of Nebraska-Lincoln, Animal Science, 2019.

Rasmussen, Faith. Comparison of traditional and alternative ingredients on meat curing reactions using a model system. M.S. Thesis. University of Nebraska-Lincoln, Animal Science, 2018.

Bower, Chad. Impacts of sodium reduction on quality and microbial characteristics of processed meat. MS. Thesis. University of Nebraska-Lincoln, Animal Science, 2016.

Stanley, Regan. Effect of salt and nitrite concentration on the quality and shelf life of deli ham. MS. Thesis. University of Nebraska-Lincoln, Animal Science, 2016.

Cleveland, Brandy. Effects of feeding distillers grains throughout different phases of production on the shelf life ground beef. MS. Thesis. University of Nebraska-Lincoln, Animal Science, 2015.

Redfield, Amy. Effects of conventional and alternative curing methods on processed turkey quality traits. MS. Thesis. University of Nebraska-Lincoln, Animal Science, 2014.

Undergraduate Student Honors/Distinction Thesis Advised:

Reiling, Laura, Evaluation of the effects of high-pressure processing and lactic acid treatments on the quality characteristics of ground pork throughout retail display. B.S. Thesis, Distinction, University of Nebraska-Lincoln, Animal Science, 2017.

Posthuma, Jennifer. Effects of nitrite source, reducing agents, and holding time on color development in a cured meat model system. B.S. Honors Thesis, University of Nebraska-Lincoln, Animal Science, 2017.

Miller, Eric. The effect of source and amount of nitrite on quality characteristics of all beef frankfurters. B.S. Honors Thesis, University of Nebraska-Lincoln, Animal Science and Agribusiness, 2014.

Conference Proceedings Papers:

Sullivan, G. Payne, T. 2016. Meat science education survey: What did we learn? Reciprocal Meat Conference, San Angelo, TX. June 19-22, 2016.

Sullivan, G. 2012, Alternative nitrite delivery systems and labeling. 25th Midwest Processed/Cured Meats Workshop. Manhattan, KS. March 30, 2012.

Sullivan, G.A., Jackson, A.L., Niebuhr, S.E., Schrader, K.D., Sebranek, J.G., Dickson, J.S. 2010. Use of natural antimicrobials for *L. monocytogenes* control on ham. International Congress of Meat Science and Technology. Jeju, South Korea. August 15-20, 2010.

Conference Proceedings Abstracts (Since 2018):

Hahn, A., Venzor, L.G., Curry, S.A., Johnson, G.C., Danao, M-G., Ramanathan, R., Wicks, J.C., Sullivan, G.A. 2024. Defining the parameters of high-pressure processing needed to improve dark cutting beef color. Reciprocal Meat Conference, Oklahoma City, OK, June 15-19, 2024.

Venzor, L.G., Sullivan, G.A., Karr, L. 2024. Preparing students for the Spanish-speaking workforce in Nebraska. Reciprocal Meat Conference, Oklahoma City, OK, June 15-19, 2024.

Venzor, L.G., Jeffries, J., Weinandt, B.L., Sullivan, G.A., Karr, L. 2024. Academic motivation and goal orientation of rural vs urban students in Animal Science at the University of Nebraska - Lincoln. Reciprocal Meat Conference, Oklahoma City, OK, June 15-19, 2024.

Nino-Fuerte, Y., Wang, B., Sullivan, G., Shrestha, S., M.-G. Danao. 2024 The effect of fat content on the inactivation of *Listeria innocua* in meat emulsions after high pressure processing. Reciprocal Meat Conference, Oklahoma City, OK, June 15-19, 2024.

Reiling, B.A., Garcia, B.M, Sullivan, G., Benes, A., Raymond, A., French, B. Wicks, J., Stanke, K. 2024. Impact of the Nebraska Youth Beef Leadership Symposium. Reciprocal Meat Conference, Oklahoma City, OK, June 15-19, 2024.

Ramanathan, R., Holcomb, R.B., Mafi, G., Sullivan, G., Pfeiffer, M., Danao, M.-G. 2024. Dark Cutting Beef Economic Assessment. Annual Conference of the Food Distribution Research Society. Fajardo, Puerto Rico, Oct. 20-24.

Nino-Fuerte, Y., Prow, A., Wang, B., Sullivan, G., Delserone, L., M.-G. Danao. 2024. The effect of fat level on the inactivation and recovery of *Listeria* spp. in ready-to-eat (RTE) foods after high pressure processing (HPP): A review. International Association of Food Protection Annual Meeting. Long Beach, CA, July 14-17, 2024.

Ghorbani, J., Sumargo, F., Sullivan, G., Danao, M.-G., Wang, B. 2024. Combining Lactic Acid Dipping and Mild High-Pressure Processing for the Inactivation of Non-pathogenic *Enterococcus faecium* as a *Salmonella* surrogate in Pork. International Association of Food Protection Annual Meeting. Long Beach, CA, July 14-17, 2024.

Herrera, N., Sullivan, G., Wang, S., Dinh, T., Miller, R., Kerth, C., Calkins, C. 2023 Impact of dry aging parameters on beef flavor. Reciprocal Meat Conference, St. Paul, MN, June 25-28, 2023.

Reiling, L., Venzor, L., Sumargo, F., Danao, M-G., Sullivan, G. 2023. Evaluation of the effects of high-pressure processing and lactic acid treatments on quality characteristics of ground pork throughout retail display. Reciprocal Meat Conference, St. Paul, MN, June 25-28, 2023.

Watson, S., Karr, L.K., Jones, S.J., and Sullivan, G.S. 2022. Implementation of a group quiz format in an introductory meat science course. Presented at the American Meat Science Association, Reciprocal Meat Conference, Des Moines, IA, June 12-15. Abstract #11.

Furbeck, R., Fernando, S.C., Chaves, B.D., Sullivan, G.A. 2022. Impact of packaging system on the microbial ecology of raw ground turkey. Presented at the American Meat Science Association, Reciprocal Meat Conference, Des Moines, IA, June 12-15. Abstract #22.

Watson, S., Furbeck, R.A., Chaves, B.D., Fernando, S.C., Sullivan, G.A. 2022 Microbiome analysis of vacuum packaged raw beef treated with organic acids. Presented at the American Meat Science Association, Reciprocal Meat Conference, Des Moines, IA, June 12-15. Abstract #48.

Sumargo, F., Danao, M.G, Wang, B., Sullivan, G., Fudolig, F. 2022. Leveraging the synergistic effect of organic acids with mild high pressure processing (HPP) to reduce *Salmonella* spp. in pork trim. Presented at the American Meat Science Association, Reciprocal Meat Conference, Des Moines, IA, June 12-15. Abstract #145.

Cancio, L., Danao, M.G., Sullivan, G., Chaves, B. 2022. Antimicrobial activity of peracetic acid, cultured dextrose fermentate, and buffered vinegar on *Salmonella* and aerobic bacteria in raw chicken livers. Presented

at the American Meat Science Association, Reciprocal Meat Conference, Des Moines, IA, June 12-15. Abstract #150.

C. Reesman, M. Denzer, **G. Sullivan**, M. G. Danao, M. Pfeiffer, G. Mafi, and R. Ramanathan. 2022. Effects of high-pressure processing on dark-cutting beef color. Presented at the American Meat Science Association, Reciprocal Meat Conference, Des Moines, IA, June 12-15. Abstract #67.

C. Reesman, **G. Sullivan**, M. G. Danao, M. Pfeiffer, G. Mafi, and R. Ramanathan. 2022. Effects of High-Pressure Processing on cooked color and sensory attributes of dark-cutting beef. Presented at the American Society of Animal Science Annual Meeting, Oklahoma City, OK, June 26-30.

M. Denzer, R. Furbeck, **G. Sullivan**, M. Danao, G. G. Mafi, and R. Ramanathan. 2022. Effects of high-pressure processing on color attributes of sarcoplasmic extract. Presented at the Institute of Food Technologists Annual Meeting, Chicago, IL, July 10-13.

Cancio, L.P.M., Sumargo, F., Chaves, B.D., **Sullivan, G.A.**, Robinson, E., Danao, M-G, C. 2022. Microbial quality of meat blends and livers sold as pet foods online. American Feed Industry Association Pet Food Conference, Atlanta, GA. January 25.

Watson, S.C., Furbeck, R.A., Chaves, B.D., Fernando, S.C., **Sullivan, G.A.**, 2021. Impact on antimicrobial interventions on spoilage bacteria during extended storage of raw, vacuum packaged beef from two facilities. Reciprocal Meat Conference, Reno, NV. August 15-18.

Hunt, H.B., Watson, S.C., Chaves, B.D., **Sullivan, G.A.**, 2021. Fate of Generic *Salmonella enterica* serotypes Typhimurium, Enteritidis, and Heidelberg in Beef Steaks during Sous Vide Cooking at Different Holding Time and Temperature Combinations. Reciprocal Meat Conference, Reno, NV. August 15-18.

Reyes P.R., Danao M.C., Chaves B.D., **Sullivan G.A.**, Wang B. 2021. Effects of high pressure and initial product temperature on color, pH, and inactivation of Salmonella in ground chicken breasts, backs, and racks. Oral (lightning) presentation. ASABE Annual International Meeting, Virtual and On-Demand. July 12-16, 2021

Sumargo F., Johnson A., Rukundo I.R., **Sullivan G.A.**, Danao M.C. 2021. Effects of high pressure and initial product temperature on color, pH, and inactivation of E. coli O157:H7 in raw ground pork and pork livers. Poster presentation. ASABE Annual International Meeting, Virtual and On-Demand. July 12-16, 2021

Cancio, L.P.M., Sumargo, F., Chaves, B.D., **Sullivan, G.A.**, Danao, M-G, C. 2021. Microbial Assessment of Fresh Meats and Blends Sold as Raw Pet Foods by Online Retailers. International Association of Food Protection Annual Meeting. Phoenix, AZ. July 18-21, 2021

Furbeck, R.A., Fernando, S.C., **Sullivan, G.A.** 2020. Effect of processing parameters and storage time on the spoilage microbiome of turkey products. International Congress of Meat Science and Technology, Virtual, August 3-6, 2020.

Watson, S.C., Furbeck, R.A., Chavez, B.D., **Sullivan, G.A.** 2020. Spoilage *Pseudomonas* survive thermal processing and grow during vacuum packaged storage in an emulsified meat system. International Congress of Meat Science and Technology, Virtual, August 3-6, 2020.

Hunt, H.B., Watson, S.C., Chavez, B.D., **Sullivan, G.A.** 2020. Fate of *Escherichia coli* ATCC 25922 in beef steaks during sous vide cooking at different holding time and temperature combinations. International Congress of Meat Science and Technology, Virtual, August 3-6, 2020.

Furbeck, R.A., Knapp, J.P, Trenhaile-Grannemann, M.D., Burkey, T.E., Fernando, S.C., **Sullivan, G.A.**, Miller, P.S. 2020. Effect of Green Grass supplementation of swine diet on pork quality characteristics. Midwest Animal Science Meetings. Omaha, NE, March 2-5, 2020.

Reiling, B.A., Benes, A. **Sullivan, G.**, Raymond, A, and Brink, D. 2019. Innovative Collaboration of Youth Promotes Deeper Learning with the Nebraska Youth Beef Leadership Symposium. NAE4HA National Conference, NAE4HA, White Sulphur Springs, WV. November 4-7, 2019

Bower, C.G., Fernando, S.C., **Sullivan, G.A.** 2019. Spoilage microbiota of beef throughout various phases of processing. Reciprocal Meat Conference, Fort Collins. CO, June 23-26, 2019.

Rasmussen, F.D., **Sullivan, G.A.** 2018. Comparison of nitrite sources and reducing agents on reactions with myoglobin and cysteine using a model meat curing system. Reciprocal Meat Conference, Kansas City. MO, June 24-27, 2018.

Bower, C.G., Stanley, R.E., Fernando, S.C., Burson, D.B., **Sullivan, G.A.** 2018. Effects of salt and nitrite on the spoilage microbiota of deli-style ham. Reciprocal Meat Conference, Kansas City. MO, June 24-27, 2018.

Bower, C.G., Fernando, S.C., **Sullivan, G.A.** 2018. Evaluation of the spoilage microbiota associated with sliced pre-packaged deli-style ham. Reciprocal Meat Conference, Kansas City. MO, June 24-27, 2018.

Extension and Industry Publications & Technical Reports:

D. Burson, E. Boyle, and **G. Sullivan.** 2020. Best Practices for Controlling COVID-19 in Small Business Meat Processors in Nebraska. Nebraska Extension Report. Available online: <https://disaster.unl.edu/agriculture>

D. Burson, E. Boyle, and **G. Sullivan.** 2020. Las Mejores Prácticas para Controlar el COVID-19 en Pequeñas Empresas Procesadoras de Carne en Nebraska. Nebraska Extension Report. Available online: <https://disaster.unl.edu/agriculture>

G.A. Sullivan. 2013. A comparison of traditional and alternative meat curing methods. Fact Sheet. American Meat Science Association, Champaign, IL. <https://meatscience.org/TheMeatWeEat/resources/fact-sheets>

J. Sebranek and **G. Sullivan.** 2013. Properties of natural and organic ‘naturally cured’ meats. National Provisioner. February 8, 2013.

C.R. Calkins and **G.A. Sullivan.** 2007. Ranking of beef muscles for tenderness. Beef Fact Sheets: Product Enhancement. National Cattlemen’s Beef Association, Centennial, CO.

C.R. Calkins and **G.A. Sullivan.** 2007. Adding enzymes to improve beef tenderness. Beef Fact Sheets: Product Enhancement. National Cattlemen’s Beef Association, Centennial, CO.

Invited Presentations:

UNL Meat Manager Training Program, **Value added and Processed Meats**, Nov. 7, 2024, Online

UNL Center for Agricultural Profitability, **Fill Your Freezer: Purchasing Local Meat in Bulk (Oct. 30, 2024 Webinar)**, Online, October 30, 2024 (Evening Webinar)

UNL Center for Agricultural Profitability, **Fill Your Freezer: Purchasing Local Meat in Bulk (Oct. 30, 2024 Webinar)**, Online, October 3, 2024 (Daytime Webinar)

US Meat Export Federation Global Processing Workshop, **Thermal Processing**, Lincoln, NE Aug 14, 2024.

US Meat Export Federation Global Processing Workshop, **Innovative Flavors**, Lincoln, NE Aug 13, 2024.

US Meat Export Federation Global Processing Workshop, **Basic Ingredients of Meat Processing**, Lincoln, NE Aug 13, 2024.

American Association of Meat Processors, **Added Solutions for Added Value**, July 31, 2024, Lincoln, NE

American Meat Science Association Reciprocal Meat Conference, **Exploring Pathways Guiding Students through Meat Industry Study Tours**, Oklahoma City, OK, June 19, 2024.

Nebraska Association of Meat Processors, **Emulsions: How to Build a Sausage**, Lincoln, NE, March, 15, 2024

Yangling International Agri-Science Forum, **Current Perspectives on Meat Curing**, Northwest Agriculture and Forestry University, Yangling, Shaanxi Province, China. Sept. 20, 2023.

US Meat Export Federation Global Processing Workshop, **Thermal Processing**, Lincoln, NE July 31, 2023.

US Meat Export Federation Global Processing Workshop, **Innovative Flavors**, Lincoln, NE August 1, 2023.

Korean Society of Foods of Animal Resources International Conference. **Current Perspectives on Meat Curing**, Gwangju, South Korea, May 18, 2023.

Nebraska Association of Meat Processors, **What to do when the consumer wants more “value” products**. Kearney, NE. February 18, 2023.

Cold Pressure Council Annual Conference. G. Sullivan and R. Ramanathan. **Application of HPP to Improve Quality of Dark-cutting Beef**. Chicago, IL, October 25, 2022.

US Meat Export Federation Global Processing Workshop, **Thermal Processing**, Lincoln, NE August 10, 2022.

US Meat Export Federation Global Processing Workshop, **Packaging for Ready-to-Cook and Ready-to-Eat Meat**, Lincoln, NE August 10, 2022.

US Meat Export Federation Global Processing Workshop, **Innovative Flavors**, Lincoln, NE August 9, 2022.

UNL Center for Ag Profitability Webinar, On-Line. Sullivan, G., C. Emswiler, M. Barreras, and E. Dennis. **“So You Want to Direct Market Your Meat to Consumers? Now What?”** Lincoln, NE, July 2022

Block and Bridle National Convention, **Covid Happened; What has Changed: Reflections of the Meat Industry**. Lincoln, NE. April 2, 2022.

UNL Extension Chick Days. **Poultry Processing and Regulations**. Lincoln, NE. March 26, 2022

UNL Extension Omaha Nation Series. **Poultry Processing and Regulations**. Lincoln, NE. March 10, 2022
Agricultural Utilization Research Institute and USDA Agricultural Marketing Service - Finance Working Group, **Overview of the Meat Business**. Lakeville, MN. February 17, 2022.

UNL Center for Ag Profitability Webinar, On-Line, **“Grant Opportunities for New and Existing Meat Processing Plants: FAQ and Things to Know”** October 12, 2021

Iowa State University Meat Science Seminar – **“Improving Product Quality - Natural Ingredients/Alternatives to replace Conventional Ingredients”** February 16, 2021

Nebraska Association of Meat Processors Pre-convention Workshop, Lincoln, NE, **“Bacon Innovations”** February 20, 2020.

Maruha Nichiro Corporation/IANR Global Engagement – Lincoln, NE, **“Beef Products Research”** October 17, 2019.

U. S. Meat Export Federation, Global Processing Workshop – Lincoln, NE, **“Ingredients and Processing”** June 11, 2019.

U. S. Meat Export Federation, Global Processing Workshop – Lincoln, NE, “**Thermal Processing**” June 11, 2019.

USDA Cochran Fellows – Brazil, UNL. “**Using Natural Ingredients/Alternatives to Conventional Ingredients**” Sept. 26, 2018.

Science Festival (93– students in 7th to 8th grade from northeast Nebraska), UNL Extension, Eastern Nebraska Research and Extension Center, Ithica, NE, “**How to Make a Hot Dog**” April 13, 2018.

American Meat Science Association Reciprocal Meat Conference - Dr. Jimmy T. Keeton Ingredients Technology Workshop, College Station, TX, “**Improving Product Quality - Natural Ingredients/Alternatives to Conventional Ingredients**” June 17th, 2017.

American Angus Association, Cattlemen’s Bootcamp, Lincoln, NE, “**Adding Value to Beef**” April 27th, 2017

Nebraska Association of Meat Processors Annual Convention, Grand Island, NE, “**A Detailed Look on Cured Meat Judging**” March 31st, 2017.

NuTek Food Science Leadership Team, Omaha, NE, “**Influence of sodium chloride reduction and replacement with potassium chloride based salts on the sensory and physico-chemical characteristics of pork sausage patties.**” September 19th, 2016.

American Meat Science Association Reciprocal Meat Conference, San Angelo, TX, “**Meat science education survey: What did we learn?**” June 22nd, 2016.

Nebraska Association of Meat Processors Pre-Convention Workshop, Lincoln, NE, “**An overview of Alternative Meat Curing**”, April 17th, 2015.

Minnesota Association of Meat Processors Convention. St. Cloud, MN, “**An overview of Alternative Meat Curing**”, March 14th, 2015.

Minnesota Association of Meat Processors Pre-Convention Workshop. St. Joseph, MN, “**Specialty Fresh Sausage Production**”, March 13th, 2015.

Kemin Lectures for the Advancement of the ScienceS (KLASS), Kemin Industries, Des Moines, IA, “**Impacts of Cattle Diet and Antioxidants on the Shelf Life of Ready-to-Eat Beef Products**” November 5th, 2014.

American Meat Science Association Educational Webinar, American Meat Science Association, Part of an Online Lecture/Webinar Series, “**Overview of Alternative Meat Curing**” September 19th, 2014.

World Food Prize Nebraska Youth Institute, World Food Prize Foundation and Institute of Ag and Natural Resources University of Nebraska, Lincoln, NE, “**Putting Science to Work: The Role of Meat Processing in Reducing Waste and Loss**” September 19th, 2014.

Nebraska Association of Meat Processors Annual Convention, Kearney, NE, “**Acidified and Pickled Meat Products**” March 29th, 2014.

Better Process Control School, UNL Food Processing Center, Lincoln, NE, “**Formulation of Acidified Foods**” April 8th, 2013.

Science Festival (71 – students in 5th to 8th grade from northeast Nebraska), UNL Extension, Eastern Nebraska Research and Extension Center, Ithica, NE, “**How to Make a Hot Dog**” March 13, 2013

Nebraska Cattlemen’s Young Cattlemen’s Conference, Lincoln, NE, “**Value added and processed beef products: Raw Materials and Ingredients**” January 22nd, 2013.

World Food Prize Nebraska Youth Institute, World Food Prize Foundation and Institute of Ag and Natural Resources University of Nebraska, Lincoln, NE, “**Adding Value and Reducing Waste of Meat Products**” September 21st, 2012.

Nebraska Training and Education for Nutrition Training, Lincoln, NE, “**Discussion of LFTB in the School Lunch Program**”, July 7th, 2012.

Better Process Control School, UNL Food Processing Center, Lincoln, NE, “**Formulation of Acidified Foods**” April 16th, 2012.

35th Midwest Processed/Cured Meats Workshop – Kansas Association of Meat Processors, Manhattan, KS, “**Alternative Nitrite Delivery Systems and Labeling**” March 30th, 2012.

Nanjing Agriculture University, Nanjing, China, “**Understanding Nitric Oxide Chemistry to Provide a Fresh Look at the Curing Reaction**” March 23rd, 2012.

Nebraska Cattlemen’s Young Cattlemen’s Conference, Lincoln, NE, “**Ready to Eat Beef - packaging and ingredients**” February 14th, 2012.

Merck Cattle College, Lincoln, NE, “**Value of Ground Beef Production**” August 11th, 2011.

Grants and Research Proposals:

Funded \$3,412,218

Industry Service \$ 270,293

Teaching:

Teaching & Instruction:

Instructor	University of Nebraska, ASCI 210, Animal Products, Resident and Distance sections: F 2020, S 2021, F 2021 (Distance), S 2022 (Distance) F 2022 (Distance) S 2023 (Distance)
Instructor	University of Nebraska, ASCI 410/810, Processed Meats. Residence Sections: S 2012, S 2103, S 2014, S 2015, S 2016, S 2017, Residence and Distance Sections: S 2018, S 2019, S 2020, S 2021, S 2022, S2023
Instructor	University of Nebraska, ASCI 817, Meat Technology. F 2012, F 2014, F 2016, F 2018, F 2020, F 2023
Instructor	University of Nebraska, ASCI 311B, Meat Industry Study Tour, F 2018 (co-instructor), F 2019, F 2022
Instructor	University of Nebraska, ASCI/FDST 419/819, Meat Investigations. Independent study offered each semester. S 2020- current.
Instructor	University of Nebraska, ASCI 905, Industry Seminar, Spring and Fall semesters, S 2020-current
Teaching Assistant	Iowa State University- ANS 475D, Meat Animal Evaluation. S 2008, S 2009, S 2010
Teaching Assistant	Iowa State University- FSHN 468X, Science of Foods for Health, F 2009
Teaching Assistant	Iowa State University- ANS 460, Processed Meats. S 2009
Teaching Assistant	Iowa State University- ANS 475C, Meat Evaluation. F 2008
Teaching Assistant	University of Nebraska- ASCI 210, Introduction to Meat Science. S 2007
Teaching Assistant	Iowa State University- ANS 114L, Working with Animals. F 2004, S 2005

Guest Lectures:

ASCI 100 “Fundamentals of Animal Biology and Industry” 3-4 sections each fall semester and 2 each spring
Laboratory session on meat processing “How to Make a Hot Dog” , F 2011, S 2012, F 2012, S 2013, F 2013, S 2014, F 2014, S 2015, F 2015, S 2016, F 2016, S 2017, F 2017, S 2018, F 2018, S 2019, F 2019, S 2020, F 2020, S 2021, F 2021, S 2022, F 2022, S 2023, F 2023, S 2024, F 2024
Laboratory session on factors influencing product quality and characteristics covering species differences, fat content, muscle function, and variety meats. S 2019, F 2019, S 2020, F 2021, F 2022

ASCI 210 “Animal Products” Section on production and characteristics of processed meats, F 2011, S 2012, F 2012, S 2013, S 2014, F 2014, S 2015, S 2016, F 2016, S 2017, S 2018, F 2018, F 2021, S 2022, F 2023, S 2024, F 2024

FDST 132 “Practical Applications of Food Science” Laboratory session on meat science and meat processing – S 2012, S 2013, S 2014, S 2015, S 2016, S 2017, S 2018, S 2019, S 2021, S 2022, S 2023, S 2024

ASCI 486 “Animal Biological Systems” - Developed and presented 1 lecture on Global Food Security and the Role of Livestock in Food Security. F 2014, F 2015, F 2016, F 2017, F 2018, F 2019, F 2020

FDST 880P “Food Proteins” – Lecture on Meat Proteins. S 2020, S 2022, S 2024

FDST 455 “Microbiology of Fermented Foods” Laboratory on manufacturing fermented meat products, S 2012

ASCI 421/821 “Advanced Animal Nutrition” - Developed and presented 1 lecture on Lipid oxidation and Antioxidants to Advanced Nutrition class. F 2014

Directed Student Learning:

M.S. – 7
M.A.S – 1
Ph.D. – 5
B.S. – 10

Committee Member

M.S. – 24
Ph.D. – 12

Outreach and Service:

Outreach/Short Courses:

Involvement during Extension Short Courses includes one or more of the follow:

Planning and organization of courses
Instructional lectures on meat science topics
Leading group projects on processing meat and fabrication of beef, pork, and veal carcasses
Coordinating assistance during short courses
Preparing product for demonstration and sampling

Global Meat Processing Workshop

U.S. Meat Export Federation and University of Nebraska, 2019, 2022 (Lead),
2023(Lead), 2024(Lead)

Nebraska Youth Beef Leadership Symposium

University of Nebraska and Nebraska Extension, 2012, 2013, 2014, 2015, 2016,
2017, 2018, 2019, 2021, 2022, 2023, 2024

Nebraska Association of Meat Processors Pre-Convention Workshop

Nebraska Association of Meat Processors, 2015, 2020, 2024

American Association of Meat Processors Pre-Convention Workshop,

July 2024

Meat Processing Workshop, University of Guam

January and August 2023

Beef Products Workshop (1/2 day program)

National Junior Hereford Association, 2019

R. W. Mandigo Processed Meats Short Course

American Meat Science Association and University of Nebraska, 2015

Minnesota Association of Meat Processors Pre-Convention Workshop

Minnesota Association of Meat Processors, 2015

Understanding the Zilmax Advantage

Merek and University of Nebraska-Lincoln, 2011

Merek Cattle College

Merek and University of Nebraska-Lincoln, 2011

Smithfield Foods Meat and Poultry Brown Belt Training, 3 course series

Smithfield Foods and Iowa State University, 2008, 2009, 2010

Cured Meat Short Course Iowa State University, 2008, 2009, 2010, 2011

Dry and Semi-Dry Short Course	Iowa State University, 2008, 2009, 2010, 2011
Smithfield Foods Maintenance and Engineering Brown Belt Training, 3 course series	Smithfield Foods and Iowa State University, 2010
Pork 101	University of Nebraska-Lincoln and Iowa State University 2005, 2006, 2007, 2008, 2009, 2010, 2014
Sausage and Processed Meat Short Course	Iowa State University, 2008, 2009, 2010
Basic Sausage Short Course	Iowa State University, 2008, 2009, 2010
Innovations 2009	Iowa State University, WorldPac International, Poly-Clip and Red Arrow, 2009
Thermal Processing Workshop	Iowa State University and HansonTech, 2009
Smithfield Foods Black Belt Training, 2 course series	Smithfield Foods and Iowa State University, 2008, 2009
Western Meat Academy	Western Technology Center and Iowa State University, 2008
Center of the Plate	North American Meat Processors Association and University of Nebraska-Lincoln, 2007
Nebraska Association of Meat Processors Annual Convention Workshop	University of Nebraska-Lincoln, 2007
Beef 808	University of Nebraska-Lincoln, 2005, 2006, 2007
Beef 706	University of Nebraska-Lincoln, 2005, 2006, 2007

Service

University of Nebraska – Lincoln

Loeffel Meat Laboratory, Faculty Supervisor, 2020 - 2023
Departmental Curriculum Review committee, 2019 – 2023
Departmental Undergraduate Curriculum committee, 2020 – 2022
Departmental Graduate committee, 2020 - present
Nebraska Youth Beef Leadership Symposium,
 Planning Committee and Project Coordinator, 2012-present
Institutional Animal Care and Use Committee, alternate member, 2012- present
Meat Science Club, Advisor, 2018-Present
Departmental Seminar Committee, 2018-present
Block and Bridle, Advisor, 2012-2015, 2018-2020
Academic Quadrathlon Meat Science Lab Practicum, Coordinator, 2017, 2018,
 2019, 2020
Animal Science Graduate Student Association, Advisor, 2017-2019, 2021-2022
Nebraska Youth Pork Conference, planning committee, 2015, 2016, 2018
Department of Food Science, Search committee member, 2016

American Meat Science Association

Director, 2023-2026
RMC Chair, 2025
RMC Abstract Chair, 2021, 2022
Undergraduate and Graduate Poster Competition Chair, 2021, 2022
Processed Meats Education and Judging Contest Committee, 2021, 2022, 2023
Ph.D. Research Poster Competition, Judge, 2011, 2020
RMC Technical Programming Committee, 2014, 2015, 2016, 2017, 2018, 2019,
 2020, 2021, 2022, 2023F
Undergraduate Research Poster Competition, Judge, 2016
RMC Processed Meats Concurrent Session planning committee, 2015, 2016, 2018,
 2023
RMC Host Committee Member, 2015
RMC Processed Meats Concurrent Session Co-chair, 2015
Roger W. Mandigo Processed Meats Short Course Co-chair, 2015

Gary A. Sullivan

National FFA Processed Meats Judging Guideline committee, 2014-2015
Revise Pork 101 processed meats programming and presentations, 2013, 2017
Fundraising Committee, Student Board, 2009-2010
Meat Science Quiz Bowl, ISU, Coach, 2008
Meat Science Quiz Bowl, ISU, Team Member, 2004, 2005

Institute of Food Technologists

Muscle Foods Division Leadership Team – Member at Large, 2018-2023
Educational Session Chair, What is the role of meat in a healthy diet and for a healthy world, 2021
Educational Session Co-Chair, Pet Food Safety: Full Circle, 2019

Nebraska Association of Meat Processors

Technical Advisor – 2022 to present
Judge the Nebraska Cured Meats Championship, 2010, 2011, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020
Assist with Convention Planning, 2015, 2019, 2020

American Association of Meat Processors and State Associations

Judge the American Cured Meats Championships, 2017, 2021, 2024
Judge the Minnesota Cured Meats Championship, 2015
Judge the Iowa Cured Meats Championship, 2011

Journal and Grant (ad hoc) Peer-Reviewer (year first reviewed):

Meat Science, 2010
LWT- Food Science and Technology, 2011
Journal of Animal Science, 2012
Philippine Journal of Science, 2012
Animal Frontiers, 2012
Alberta Livestock and Meat Agency (project report), 2012
Principles of Food Processing (book chapter), 2012
Food Control, 2013
Journal of Food Science, 2013
Journal of Food Protection, 2015
Israeli Ministry of Science, Technology and Space (grant), 2016
Food Research International, 2017
Livestock Science, 2017
Microbiology of Fermented Foods (Book Chapter), 2018
Journal of Agriculture and Food Chemistry, 2018
The Professional Animal Scientist, 2018
Journal of Poultry Science, 2019
Food Chemistry, 2019
Meat and Muscle Biology, 2019
USDA Institutional Meat Purchasing Specifications, ad hoc, 2020
Journal of Food Processing and Preservation, 2020
Food Chemistry, 2021
Sustainable Food Technology,
Ciencia Rural, 2024
Scientific Reports, 2024
PlosOne, 2024
International Journal of Gastronomy and Food Science, 2024
Food and Bioproducts Processing, 2024
Microchemical Journal

W3177/W4177 - Multistate Research Committee – member 2011 to present

Member of renewal writing team, 2012, 2017, 2022

Gary A. Sullivan

Chair, 2013-2014
Secretary, 2012-2013