

## After Eight Decades, A New Page for the Foundation.

The Foundation for Meat and Poultry Research and Education (Foundation) Board of Directors held its inaugural meeting after merging with the NAMI Scholarship Foundation on January 10-11, 2024. The Board addressed governance issues as well as programmatic efforts. Officers elected include Al Almanza, JBS USA as Chair; Kirby Childs, Ph.D. as Vice Chair; Susan Backus as President; and Mark Dopp as Secretary/Treasurer.

The Foundation, established eight decades ago, has focused on enhancing the production of safer and higher-quality meat and poultry products and will now also recognize through scholarships the pivotal role students pursuing degrees in Animal Science, Meat Science, Food Sciences, and Culinary Arts will play as future leaders within the meat industry. Collectively, the Foundation's strategic direction aligns to promote continuous improvement across both research and education and to advance the industry's next generation. This alignment will facilitate the expansion of the research scope to focus on critical areas such as food safety; nutrition; health and wellness; environment; animal welfare; and labor and human rights. The envisioned research scope will serve to strengthen and broaden existing Foundation education and training programs.

More details will be shared on the Foundation's programs and organizational changes in the coming issues of *Foundation Focus*.

## 2023 Research Review

**11 Projects Approved for Funding**  
**9 Implemented**

- 4 projects funded with National Pork Board
- 1 project administered by the Foundation and funded by Beef Checkoff
- 1 project funded with Beef Checkoff
- 1 project funded with the Beef Industry Food Safety Council
- 2 projects funded by the Foundation

Foundation Investment: \$646,613  
Research Value: \$1,567,730\*

Collaboration Resulted in more than 2X Research Value

\* Includes Ground Beef Baseline funded by the Beef Checkoff and ASF Inactivation funded by the National Pork Checkoff

**RESEARCH UPDATE**  
January 2024

**Current Research Projects**

**Understanding the impact of the farms and lairage environments on Salmonella contamination in market hogs.**  
University of Wisconsin-Madison, Kansas State University, Texas Tech University, USDA-ARS  
Salmonella contamination in market hog tonsils, lymph nodes, feces, and carcass contents likely occurs regularly, and previous research suggests that the lairage period provides risk for cross contamination to occur. The study objectives are to detect and quantify Salmonella from market hogs on farm, at lairage, carcass swabs, and lymph nodes. The Salmonella isolates will be characterized to determine their serotype and the presence of highly pathogenic Salmonella at the different stages of sampling. Salmonella concentration and serotypes in post-harvest samples will be evaluated to determine if it most closely represents Salmonella contamination on farm or from lairage, and the impact of time spent in lairage.  
Funded in part by the National Pork Checkoff

**Survival of African swine fever in pork and processed pork products, Canadian Food Inspection Service, Agriculture and Agri-Food Canada**  
African Swine Fever (ASF) is a contagious, haemorrhagic viral disease of pigs that is currently spreading westwards throughout Europe and eastwards into China, with significant economic losses along its path. While strict regulatory guidelines are in place to prevent the spread of this virus, little is known about the effectiveness of current meat processing methods in inactivating ASF. In addition, the matrix effect of individual meat products and ingredients on ASF survival is not well documented. This project aims to explore the survival of ASF in different meat products from ASF infected pigs as well as investigate the effect of different ingredients, cooking temperature, storage time and high pressure processing on ASF inactivation in different meat model systems.  
Funded in part by the National Pork Checkoff under an ASF Partnership and administered by the Foundation

**Coating Alternative Support for Lethality and Stabilization for Meat Treated and Fully Cooked Meat and Poultry Products, University of Wisconsin, HarscoTech**  
Nearly all meat processed in the United States utilize USDA, FSIS Appendix A and B to ensure adequate thermal lethality and stabilization is achieved for partially and fully cooked products. Through the development and release of updated versions in 2017 and 2021, and the realization that a host of potential food safety vulnerabilities exist, the widespread use and in their practical application of these guidance documents has become a significant concern and practical challenge to implement. The primary objective of this study is to develop a scientific based, regulatory supported, and industry world thermal processing and cooling resource (e.g. cooking and cooling food safety handbook) for validating pathogen destruction and control, and regulatory compliance for partially and fully cooked meat products that can be used in conjunction with or in lieu of USDA, FSIS Appendix A & B.  
Funded in part by the Beef Checkoff

**Summarizing the current knowledge and existing knowledge gaps for pre-harvest and post-harvest Salmonella contamination in pork, Kansas State University, Triunfante Foods**  
Research on pre-harvest and post-harvest measures to prevent or reduce pathogen contamination have been published. However, knowledge gaps still remain, and a thorough literature review is necessary to fully understand what steps should be taken to address Salmonella concerns both pre-harvest and post-harvest in the same. Therefore, this project will conduct a thorough search of pre-harvest and post-harvest Salmonella research to assess, compile the literature and prepare a written review of the existing knowledge. Knowledge gaps and research recommendations will be identified. BAME members/volunteers will serve as focus group participants to ensure all current knowledge is considered.  
Funded in part by the National Pork Checkoff

## **IFSAC Releases Annual Report for 2021 on Sources of Foodborne Illness.**

The Interagency Food Safety Analytics Collaboration's (IFSAC) published its newest annual report, "[Foodborne illness source attribution estimates for \*Salmonella\*, \*Escherichia coli\* O157, and \*Listeria monocytogenes\* – United States, 2021.](#)" IFSAC analyzes foodborne illness outbreak data for priority pathogens and specific foods and food categories responsible for foodborne illnesses in the United States. The data are analyzed by calendar year and released in [annual reports](#) as part of ongoing efforts to understand sources of foodborne illness in the United States. Attribution estimates for *Campylobacter* are not presented in this year's report. Evidence suggests the sources of *Campylobacter* outbreaks likely differ considerably from those of non-outbreak-associated illnesses caused by this pathogen. IFSAC is exploring alternative approaches for estimating the sources of *Campylobacter* illnesses. View the report with the link above.

## **2023-25 National Advisory Committee on Microbiological Criteria for Foods New Genomics Charge**

The role of United States Department of Agriculture's (USDA's) National Advisory Committee on Microbiological Criteria for Foods (NACMCF) is to provide impartial, scientific advice, and peer reviews to the federal food safety agencies. This guidance may be used in the development of food safety systems. The NACMCF Food Safety and Inspection Service's charge is below.

*FSIS wants to further utilize genomics to characterize and identify the foodborne pathogen subtypes isolated from regulated commodities that pose the greatest risk to public health. FSIS is seeking advice from NACMCF on the considerations, advantages, and disadvantages of using genomic analyses, as well as information on current or emerging technologies and strategies that would help to rank and focus resources on foodborne pathogen subtypes based on risk to public health. The charge questions below should be considered for Salmonella, STEC, Lm and Campylobacter routinely isolated from FSIS-regulated commodities. The information NACMCF provides will assist FSIS with decision-making to potentially reduce pathogen subtypes of public health significance through targeted risk management strategies.*

More information on NACMCF and the FSIS genomics charge can be found [here](#).

## Scholarship Winners

The Foundation is excited to announce another successful year of scholarships. The application window for the 2023-2024 academic year closed on May 31, 2023, attracting an outstanding response from dedicated students pursuing degrees in Animal Sciences, Meat Sciences, Poultry Sciences, Food Sciences, Culinary Arts, or other aspiring towards careers in the meat industry.

The merit-based scholarships remain pivotal in nurturing future industry leaders. This year, one prestigious \$10,000 Barry Carpenter Scholarship and several \$5,000 scholarships, were awarded totaling \$80,000 in financial support for deserving students. The competition was strong, with numerous outstanding applications demonstrating the talent and dedication of our future professionals. These scholarships aim to inspire and empower these young scholars, and we take pride in contributing to their educational and professional journeys.

The Foundation is very grateful to the scholarship committee, which consists of Bob Delmore,; Phil Bass, University of Idaho; (Co-Chairs); Jeff Sindelar, University of Wisconsin; Tricia Harlan, JBT; Gary Sullivan, University of Nebraska; Loni Lucherk, West Texas A&M University; Diana Clark, Certified Angus Beef; Francisco Najar, Ultra Source; Jessica Lancaster, National Cattleman's Beef Association; Kaitlin Compant, Smithfield; and Shawna Veasey, Tyson. The collective efforts have led to the success of the 2023-2024 scholarship honors. As we look ahead, we are confident that these exceptional scholars will make substantial contributions to the meat industry, fostering its continued growth, innovation, and excellence.

### 2023 Undergraduate Scholarship Winners

#### ***Barry Carpenter Scholarship***

Chesney Effling, Kansas State University

#### ***Frank DeBenedetti Scholarship***

Anna Wyle, Texas Tech University

#### ***Florence Smith Powers Scholarship***

Camila Esquivel, University of Tennessee, Knoxville

#### ***Ron Gustafson Scholarship***

Ryan Heitschmidt, West Texas A&M University

#### ***NAMI Merit Scholarship***

Chloe Calhoun, University of Nebraska-Lincoln  
Maddy Henson, California State University, Fresno  
Meagan McMurray, Texas Tech University  
Nathan Kerth, Texas A&M University  
Brittley Bowers, Texas A&M University  
Elias Perez, Iowa State University  
Karina Vestergaard, University of Florida  
Natalie Vennell, University of Idaho

### 2023 Graduate Scholarship Winners

#### ***Rosemary Mucklow Scholarship***

Elizabeth Neal, Texas Tech University

#### ***Al Piccetti Scholarship***

Samantha Barker, Texas Tech University

#### ***John Duyn Scholarship***

Logan Johnson, Iowa State University

#### ***NAMI Merit Scholarship***

Megan Eckhardt, West Texas A&M University  
Sebastian Hernandez, Texas Tech University  
Bo Garcia, University of Nebraska – Lincoln  
Edmund Benefo, University of Maryland  
Lindsey Decker, Kansas State University  
Sydni Borders, South Dakota State University  
Madelyn Scott, Oklahoma State University  
Paxton Sullivan, Colorado State University

**A Cross-Sectional Investigation of *Salmonella* in Market Hog Lymph Nodes & Leveraging a current market hog lymph node study to further understand *Salmonella* transmission and internal colonization, Kansas State University, Texas Tech University, Triumph Foods**

A cross-sectional study design was employed to evaluate which lymph node (LN) type presented the highest risk for containing *Salmonella* and at what level of contamination, while also investigating the seasonal and regional variability of *Salmonella* in market hog LNs. Findings show *Salmonella* prevalence varies by LN type in different seasons and regions. Tonsils and mesenteric LNs were associated with the greatest overall *Salmonella* prevalence and concentration; however they are not commonly associated with ground pork contamination. The highest prevalence was observed in tonsils during the spring in the eastern region. The results from this study reinforced data previously reported in the literature by indicating that market hog LNs harbor *Salmonella* in various lymphoid tissue. The risk of *Salmonella* contaminated LNs is greatest when the interior of a LN is exposed.

*Funded in part by the National Pork Checkoff.*



**Development and validation of an antimicrobial database to predict microbial load reduction on raw pork components against *Salmonella*, University of Illinois at Urbana-Champaign**

This study implemented a high-throughput miniature assay to evaluate *Salmonella* reduction after pork carcass wash with antimicrobial treatments. Response surface methodology (RSM) was used to determine synergistic or antagonistic interactions between antimicrobials and optimize combinations to reach desired *Salmonella* reductions. The RSM model predicted, later validated and confirmed in a lab setting, that the tested antimicrobials do not have a significantly higher inhibitory effect against *Salmonella* on pork when added in combination. The tools developed in this study can be used to screen other compounds that can be potentially effective alone and/or in combination to further the understanding of antimicrobial activity and to ensure the food safety of pork products in a time- and cost-effective manner.

*Funded in part by the National Pork Checkoff.*



**Exploring the use of ProbiCon as a direct-fed microbial to reduce the *Salmonella* burden in market hogs, Kansas State University, USDA-ARS-U.S. Meat Animal Research Center, Triumph Foods**

Supplementation with this additive in finishing diets of market pigs had no effect on 1) average daily gain, average daily feed intake, gain:feed ratio, or any carcass traits, or 2) the prevalence of STEC or STEC serogroups O26, O121, O45, O103 and O145 in pig feces, boot covers, ropes, and lymph node samples of commercial pigs at loadout or at the abattoir. The prevalence of *Salmonella* throughout the experiment was very low, limiting the power and ability to detect a treatment effect.

This study provides 1) information regarding STEC carriage in market hogs on-farm and at the abattoir, including lymph nodes, and 2) can inform future studies with increased *Salmonella* prevalence and concentration.

*Funded in part by the National Pork Checkoff.*



**Effects of proportioning meat and plant-based protein-rich foods within the U.S. Healthy Eating Pattern on cardiovascular disease risk factors, Purdue University**

This project assessed the effects of consuming different proportions of red meat and plant-based, protein-rich foods incorporated into a U.S. Healthy Eating Pattern (HEP) on cardiovascular disease risk factors in adults at high risk of developing a heart-related disease. Improvements in heart disease risk factors and consumer satisfaction among the three HEPs were compared. Unlike most published research that compares red meat-containing diets to vegetarian diets, this project assessed how red meat and plant-based protein-rich foods are complementary for cardiovascular health.

*Funded in part by the Beef Checkoff.*



The Foundation's Research Advisory Committee (RAC) develops meat and poultry research priorities which serve as the basis for the Foundation's research agenda and also communicates the areas of greatest research needs to the government, public and interested stakeholders. The RAC is made up of four subgroups across minimally processed (fresh) meat and poultry safety, further processed meat and poultry safety, nutrition sciences and product quality.

**Chris Bodendorfer, Johnsonville Sausage**  
**Ted Brown, Cargill, Inc.**  
**Zach Cameron, Tyson Foods, Inc.**  
**Anna Carlson, Cargill, Inc.**  
**Kaitlyn Compart, Smithfield Foods**  
**Kyle Donnelly, empirical foods**  
**Wade Fluckey, Clemens Family Corporation**  
**Heather Fowler, National Pork Board**  
**John Handley, III, OSI Group**

**Collette Kaster, AMSA**  
**Pat Mies, National Beef Packing Co.**  
**Sue Schwartz, Ed Miniati LLC**  
**Subash Shrestha, Cargill, Inc.**  
**Sally Staben, Hormel Foods Corporation**  
**Ben Stellmacher, Johnsonville Sausage, LLC**  
**Tommy Wheeler, USDA, ARS, U.S. Meat Animal Research Center**  
**Barry Wiseman, Triumph Foods**

## 2024 BOARD OF DIRECTORS

The Foundation Board of Directors are selected by the Meat Institute's Nominating Committee and elected by the membership of the Meat Institute. The Board provides strategic direction, financial leadership and acts upon recommendations from the Foundation's Research Advisory Committees/Chief Scientist and the scholarship review committee. Terms are for three years.

**Al Almanza, JBS Foods USA**  
**Jonathan Amidei, Swaggerty's Sausage Co.**  
**Edwin Botero, Viz Cattle Corp. dba SUKARNE**  
**Kirby Childs, Ph.D., Greater Omaha Beef Packing**  
**Louis Eni, Dietz & Watson, Inc.**  
**Brad Hamilton, Seaboard Foods**  
**Meredith Healan, FPL Food LLC**  
**Christopher J Jenkins, Catelli Brothers Inc.**  
**Shane MacKenzie, Superior Farms**  
**Steven Maxey, Certified Meat Products**  
**Scott Rich, Wasatch Meats**  
**Don Schanbel, Amcor**  
**Kevin Sheehan, National Pork Board**  
**Donald Thomas, Jack Links Beef Jerky**  
**Suzanne Strassburger Reidy, Strassburger Meats/Suzy Sirloin Inc.**

# THANK YOU TO THE FOUNDATION'S 2023 CONTRIBUTORS

The Foundation is supported through generous contribution of companies and individuals. Company names with an asterisks (\*) indicate NAMI Board of Directors companies. 2023 fundraising efforts are now underway.

Alaska Sausage Co., Inc.\*  
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Brown Packing Co., Inc.\*  
Brush Meat Processors, LLC  
Burnett & Son Meat Co., Inc.  
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