# FOUNDATION FOCUS



## Foundation Drafts 22-23 Request for Proposals on Research Priorities

The Foundation has drafted the 2022-2023 request for proposals (RFP). The Foundation invites pre-proposals in the research areas of food safety, product quality and nutrition sciences. These research priorities were developed by the Foundation's Research Advisory Committee (Committee) and represent immediate research needs for Foundation funding. The Committee is comprised of leaders in industry, academia and government who volunteer their time to serve in this critical capacity. Research pre-proposals will be reviewed by the Committee and selected pre-proposals will be recommended for a more comprehensive proposal. Please check www.meatpoultryfoundation.org for the RFP, instructions on pre-proposal development and submission. Interested researchers must submit pre-proposals via the online web form by Friday, August 26.

## White House Conference on Hunger, Nutrition and Health

The Biden Administration announced they will hold a White House Conference on Hunger, Nutrition, and Health (Conference) in September (specific dates TBD) in Washington, D.C. The Conference will release a national strategy on hunger, nutrition and health with executive actions and a call to action for the private sector.

The first, and only other, Conference was hosted by President Nixon in 1969. It led to many of the nutrition programs established or expanded in the 1970s including food stamps (now SNAP) school lunch and breakfast, WIC (the Special Supplemental Feeding Program for Women, Infants and Children), The Emergency Food Assistance Program (TEFAP), and others. It also led to the creation of the nutrition labeling system. The conference goal is to end hunger and increase healthy eating and physical activity by 2030, so fewer Americans experience diet-related diseases like diabetes, obesity, and hypertension.

There are five pillars that define the scope of the 2022 Conference and they will be used to identify actions, including policy levers, that can be taken across all sectors. The five pillars are:

1. Improve food access and affordability;
2. Integrate nutrition and health;
3. Empower all consumers to make and have access to healthy choices;
4. Support physical activity for all; and
5. Enhance nutrition and food security research.

The White House says the fifth pillar on nutrition and food security research will "Improve nutrition metrics, data collection, and research to inform nutrition and food security policy, particularly on issues of equity, access, and disparities."

The North American Meat Institute (NAMI) — through Protein PACT — hosted a listening session using the Conference tool kit on July 12. The resulting report was submitted to the White House.

## 2025 DIETARY GUIDELINES PROCESS UNDERWAY

The *Dietary Guidelines for Americans, 2025-2030 (Dietary Guidelines)* development process is under way. Through the spring and early summer, the U.S. Departments of Health and Human Services (HHS) and Agriculture (USDA) requested separately comments on the proposed scientific questions to be examined by the 2025 Dietary Guidelines Advisory Committee (Committee) as well as nominations for the Committee.

The Committee's evidence review will focus on diet and health outcomes across the lifespan. This will include the relationship between diet and risk of overweight and obesity across the lifespan with a new emphasis on weight loss and weight maintenance for adults. The evidence review will also address ultra-processed foods and food-based strategies that can be used by individuals and families to support implementation of the *Dietary Guidelines* and help prevent or manage overweight and obesity.

The Committee will use a health equity lens across its evidence review to ensure factors such as socioeconomic status, race, ethnicity, and culture are described and considered to the greatest extent possible based on the information provided in the scientific literature and data. The Committee's review will also consider evidence across the lifespan and will tailor its approach to address any life stage-specific considerations. Life stages to be examined include infants, toddlers, children, adolescents, adults, individuals who are pregnant or lactating, and older adults.

The Committee will use 3 approaches to examine the evidence: Nutrition Evidence Systematic Review (NESR) systematic reviews, food pattern modeling, and data analysis. Each of these approaches has its own rigorous, protocol-driven methodology, and plays a unique, complementary role in examining the science. For each approach, staff from HHS and USDA will support the Committee's review of the evidence.

The Committee will review evidence starting in early 2023 until late 2024. They will meet approximately five times and all Committee meetings will be open to the public. Additional information is available at http://www.dietaryguidelines.gov/.

## FOUNDATION EDUCATION SCHEDULE

### Meat Industry Food Safety Conference

*August 24-25, 2022*
*Kansas City, MO*

*August 23: Pre-conference Workshop: Understanding and Implementing Updated Appendix A&B Guidelines*

### Animal Care and Handling Conference

*September 13-14, 2022*
*Kansas City, MO*

## 2022-2023 RESEARCH ADVISORY COMMITTEE MEMBERS

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.

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The Foundation for Meat and Poultry Research and Education is governed by a Board of Directors, which provides scientific leadership and financial oversight, and acts upon recommendations from the Foundation's Research Advisory Committee. The North American Meat Institute's Executive Board is afforded the opportunity to serve on the Foundation's Board of Directors or appoint a designee to serve on their behalf. In an effort to broaden the scope of influence and direction, representatives from the livestock (beef, pork, poultry and egg), retail, academic, government agency and consumer sectors, among others, are invited to serve on the Board of Directors. Terms are for one year.

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## THANK YOU TO THE FOUNDATION'S 2022 CONTRIBUTORS

The Foundation is supported through generous contribution of companies and individuals. Company names with an asterisks (*) indicate NAMI Board of Directors companies.

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## CURRENT FOUNDATION RESEARCH PROJECTS

**Leveraging a current market hog lymph node study to further understand *Salmonella* transmission and internal colonization, Kansas State University, Texas Tech University, Triumph Foods**

This project will probe a possible relationship between *Salmonella* antibodies in oral fluids and internal colonization of market hog carcasses by determining if antibody testing of oral fluids can be used as an effective antemortem screening tool to assess a group/lot of pigs for *Salmonella* risk. Further, it will characterize internal colonization within market hogs by detecting and enumerating *Salmonella* in lymph nodes and tonsils, cecal contents, spleen, and oral fluids.

*Research 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 will implement a high-throughput miniature assay to evaluate *Salmonella* reduction after pork carcass wash with antimicrobial treatments. Response surface methodology will be used to determine synergistic or antagonistic interactions between antimicrobials and optimize combinations to reach desired *Salmonella* reductions. The results are intended to validate the predicted interactions between antimicrobials in laboratory experiments, as well as build an antimicrobial database in which additional antimicrobial treatments data can be added as new compounds become relevant against *Salmonella* in pork.

*Research 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**

This study will evaluate the influence of direct fed microbials (DFM) on pig performance, morbidity, and mortality throughout the feeding period. The feces and mesenteric lymph nodes of market hogs fed a control or DFM augmented diet will be collected to establish the impact of each diet on *Salmonella* internalized in the lymphatic system. By determining *Salmonella* serotype and presence of highly pathogenic *Salmonella* (HPS), it evaluates whether *Salmonella* diversity and/or presence of HPS is impacted by probiotic administration.

*Research funded in part by the National Pork Checkoff.*

**Dietary modeling the nutritional impact of removing/adding/substituting meat and poultry servings to the healthy dietary patterns, Nutrition Impact LLC, NutriScience LLC**

This project will model the effect of removing or adding a serving of minimally processed and further processed meat and poultry or substituting a serving of various foods with a serving of minimally processed and further processed meat and poultry on nutrient profiles in the healthy dietary patterns identified in the Dietary Guidelines for Americans, 2020-2025.

*Research funded in part by the Beef Checkoff.*

**Effects of helium gas utilization in Modified Atmosphere Packaging (MAP) on beef quality, Texas A&M AgriLife**
This project will determine if the inclusion of various levels of helium gas in modified atmosphere packaging (MAP) impacts color shelf-life or microbiological reductions on steaks surfaces.

**Effect of clean label antimicrobials on the inhibition of *Clostridium perfringens* and *Bacillus cereus* during extended cooling of uncured beef and poultry products, University of Wisconsin-Madison, Cargill**
This study will compare the effect of clean label antimicrobial ingredients on the inhibition of *Clostridium perfringens* and *Bacillus cereus* in model uncured beef and poultry products, having different moisture, pH, and salt contents, primarily focusing on extending Phase 1 cooling from 120 to 80°F.
*Research funded in part by the Beef Checkoff*

**A Cross-Sectional Investigation of *Salmonella* in Market Hog Lymph Nodes, Kansas State University, Texas Tech University, Triumph Foods, LLC, Smithfield Foods, Inc., JBS Foods, Clemens Food Group**
A cross-sectional study design will investigate the prevalence and concentration of *Salmonella* in up to 6 lymph nodes and tonsils of market hogs. Prevalence and concentration data will be subsequently used to design a risk-assessment mapping of the carcass for prioritization of node-removal for pathogen control. The study also intends to address knowledge gaps regarding *Salmonella* prevalence by region and/or season in the United States.
*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 will assess the effects of consuming different proportions of red meat and plant-based, protein-rich foods incorporated into a U.S. Healthy Eating Pattern on cardiovascular disease risk factors in adults at high risk of developing a heart-related disease.
*Research funded in part by the Beef Checkoff.*

**Meat as a First Solid Food on Risk of Overweight and Neurodevelopment in Infants, University of Colorado Anschutz Medical Campus, University of Colorado Denver**
Early complementary feeding is a unique and malleable period to prevent rapid weight gain and later obesity, and is also a critical phase for neurodevelopment. Meat is an excellent source of high-quality protein and micronutrients, which are critical for the normal development of older infants. This research will conduct a randomized controlled trial to comprehensively evaluate the effect of meat on growth, body composition, risk of overweight and neurodevelopment, with a protein intake at the reported population median. Findings from this study will be generalizable and help inform future dietary guidance.
*Research funded in part by the Beef Checkoff.*

**Pathogen Growth in Alternatively Cured Ham and Bacon during Cooking, Cooling, and Process Deviations, Iowa State University and Smithfield Foods**
The overall goal of the project is to determine the inhibitory effect of nitrite from a natural source (i.e., pre-converted celery juice powder) in processed meat products with a natural label during "real world" cooking and chilling procedures, which often include instances of process deviation, and non-continuous cooling.

**Tests of *Salmonella* Sub-unit Proteins as Vaccines for Broiler Chickens, USDA-ARS U.S. National Poultry Research Center**
This project will identify the *Salmonella* protein antigens able to induce humoral immune response in broilers, and consequently these antibodies can prevent *Salmonella* colonization in the broiler gastrointestinal tracts.

**Funded by the National Pork Checkoff and Administered by the Foundation**

**Risk assessment model to assess the impact on public health of pork based on the contamination level and presence of highly virulent or multidrug resistant strains, University of Minnesota**
This project will build upon a risk assessment model developed using existing FSIS prevalence and enumeration data to assess the impact of raw pork characterized by contamination level and presence of highly virulent or multidrug resistant strains on public health. Results of this model could evaluate potential impact on public health of model performance standards based on *Salmonella* spp. enumeration level and strain characteristics to reduce the number of human cases due to pork consumption.

**Novel TaqMan assays for the specific detection and simultaneous differentiation of virulent and avirulent non-O157 Shiga toxin-producing *Escherichia coli* strains, Florida State University, USDA-ARS, U.S. Meat Animal Research Center**
This study intends to standardize six multiplex TaqMan assays for the identification of virulent strains of *E. coli* O26, O111, O45, O103, O121, and O145 serogroups. Further, it will demonstrate the applicability of the standardized assays in inoculated food samples and red meat enrichments from national red meat surveillance programs through a direct comparison with the FSIS MLG 5C.01 reference method.

**Impact of sanitization and natural biofilm communities on *Salmonella* prevalence at processing plants, USDA-ARS, U.S. Meat Animal Research Center**
This study will evaluate the efficacy of commercial sanitizers against *Salmonella* harbored within environmental mixed biofilms by measuring biofilm forming ability and community structure of environmental biofilms before and after sanitization. It will compare environmental microbial communities and *Salmonella* survival in mixed biofilms before and after sanitization to determine the impact of different sanitizers on controlling *Salmonella*.

**Risk assessment model to assess the impact on public health of ground beef lots based on the contamination level and presence of highly virulent or multidrug resistant strains, University of Minnesota**
This project will develop a risk assessment model using existing Food Safety and Inspection Service prevalence and enumeration data to assess the impact of ground beef lots characterized by contamination level and presence of highly virulent or multidrug resistant strains on public health. Results of this model could be used to evaluate potential impact on public health of model performance standards based on *Salmonella* spp. enumeration level (CFU/g) and strain characteristics to reduce the number of human cases due to ground beef consumption.

**Evidence-based, quantitative risk assessment to control salmonellosis attributable to ground beef: Evaluating and mitigating the contribution of lymph nodes to *Salmonella* contamination, University of Nebraska-Lincoln, U.S. Meat Animal Research Center, USDA ARS, Michigan State University, The University of Vermont, University of California**
This project will characterize the distribution of both prevalence and concentration of *Salmonella enterica* in bovine deep tissue lymph nodes (DTLNs) by lymph node type, production source, region and season using systematic review and meta-analysis approaches. The relative contributions of DTLNs and the efficacy of their removal at processing on salmonellosis risk associated with ground beef consumption will be evaluated using a quantitative microbial risk assessment approach.

**Using empirical evidence, modeling, and risk assessment methods to estimate the public health impact of incorporating enumeration and virulence as part of the criteria for evaluation of *Salmonella* contamination in ground beef in the US, EpiX Analytics, Colorado State University**
This project will develop a quantitative microbial risk assessment to assess the potential public health impact of incorporating enumeration and virulence evaluation strategies as part of the criteria for evaluation of *Salmonella* contamination in ground beef in the U.S. Additionally, using existing surveillance data the effect of season and regional sources of the live cattle on changes in *Salmonella* prevalence, virulence, and enumeration in ground beef and trim will be estimated.

**Effect of Minimally Processed Meat and Further Processed Meat on Biomarkers and Risk Factors for Cancer and Cardiovascular Disease—Phase I, USDA-ARS-Beltsville Human Nutrition Research Center**
A randomized diet controlled crossover study will be conducted with diets containing either minimally processed or further processed meat to assess how the diet effected biomarkers associated with cardiovascular disease. This study will also examine the effect of the background diet on health outcomes.
*Funded by the Foundation for Meat and Poultry Research and Education and the National Cattlemen's Beef Association (NCBA) on behalf of the Beef Checkoff. NCBA has primary oversight responsibility for this project.*

FOUNDATION FOR MEAT & POULTRY RESEARCH & EDUCATION