Foundation Releases Two RD-Authored Meat White Papers Aimed at Nutritionists

The Foundation for Meat and Poultry Research and Education released two new expert authored scientific reviews about the role of products like bacon, deli meats, sausage and cured meat in a healthy diet and how these products are formulated and produced.

*Should We All be Eating Less Meat?: Exploring the Science and Controversies Surrounding Meat and Understanding Processed Meat* are authored by dietitian Kathleen Zelman, MPH, RDN.

*Should We All be Eating Less Meat?* looks at current dietary patterns as outlined by the 2015 *Dietary Guidelines for Americans*, which found that most Americans are not overeating protein foods from meat, poultry and eggs. It evaluates the health benefits of meat consumption, the evidence related to health concerns tied to meat as well as the potential health risks of eliminating meat from the diet.

*Understanding Processed Meat* evaluates common meat processing methods, the ingredients used, the role of nitrate and nitrite in meat curing and the evidence linking processed meat to cancer.

Both papers were provided to dietitians at the Academy of Nutrition and Dietetics (AND) Food and Nutrition Conference and Expo (FNCE) in Chicago in fall 2017. They are available under Resources at www.meatpoultryfoundation.org.

Recent Research Findings

The Foundation received several research findings in 2017. Below are two projects completed since the last newsletter. Executive summaries, and final reports when available, of each project are available on meatpoultryfoundation.org

**Literature Review: Efficacy of Interventions on Pathogens in Processed Meats**

Wendy Bedale, Jeff Sindelar, Kathy Glass

*University of Wisconsin*

This project generated a comprehensive review of high-quality studies that describe interventions used to reduce microbiological risks in processed meat products. The output of this project is a searchable database that can be used in the design of intervention strategies and as scientific support in the validation of their HACCP system.

Funded in part by the Beef Checkoff

**Intervention Validation: A Review**

Ashley Arnold, Kerri Gehring, Jeffrey Savell

*Texas A&M University*

This project collected and summarized available scientific literature to demonstrate efficacy of various interventions and/or antimicrobials at a range of applicable concentrations on fresh beef, veal, pork, lamb and poultry products. The information is contained in a searchable database.

Funded in part by the Beef Checkoff

Both databases will be made available on www.meatpoultryfoundation.org. Information on how to access and use the databases will be made available shortly.
Contracting with the Beef Checkoff to Enhance Post-Harvest Beef Safety

The Foundation for Meat and Poultry Research and Education is contractor to the Beef Checkoff, which provides us the opportunity to conduct post-harvest beef safety research above and beyond that funded through the Foundation. As a contractor, the Foundation is able to identify data gaps specific to beef products and contract for research or conduct outreach to improve the safety profile of these products. Being a contractor also provides an opportunity to leverage resources and co-fund research when appropriate.

Some of the research priorities for post-harvest beef safety are:

- Investigate antimicrobial interventions and production processes for improved beef safety of
  - Fresh Meats;
  - Variety Meats;
  - Head and Cheek Meat; and
  - Enhanced and Ready-to-Eat Beef Products
- Examine the water sustainability of antimicrobial interventions, including re-use and water-use reductions in processing environment.

The following projects were initiated in Fiscal Year (FY) 2017 and funded by the Beef Checkoff:

- “Efficacy of antimicrobial interventions in reducing Salmonella, STECs, Campylobacter, and E. coli Biotype I Surrogates on pork carcasses, chilled pork products, beef and pork head meat, cheek meat, livers and hearts,” conducted by Colorado State University and co-funded with the Foundation
- “Assessing the impact in red meat processing of a mobile genetic element that imparts extreme heat resistance to E. coli,” conducted by USDA-ARS-Meat Animal Research Center and co-funded with the Foundation
- “Antimicrobial resistance (AMR) risk assessment data gaps: AMR in feces of culled market cows and bulls and retail meat products from animals raised with and without antibiotics,” Colorado State University
- “Effect of antimicrobial treatment of beef cheek meat and tongues on pathogen survival/death and product flavor volatiles during refrigerated storage,” Colorado State University

Several proposals are under consideration for FY 2018. More information will be shared in future newsletters.

Foundation and Meat Institute File Comments Detailing Research Priorities

The Foundation for Meat and Poultry Research and Education and North American Meat Institute jointly filed comments in December recommending the U.S. Department of Agriculture's National Institute of Food and Agriculture (NIFA) prioritize research initiatives that seek to better understand the risk of Salmonella throughout the food chain and develop control strategies based on that understanding.

The Meat Institute and Foundation contend the food industry needs a comprehensive, qualitative risk assessment to determine the public health risk attributable to Salmonella in food, including meat, poultry, produce and non-food sources. The assessment, according to the comments, should identify data gaps, isolate differences between meat and produce commodity classes and evaluate those differences. The organizations also expressed support for research that investigates potential strategies to prevent Salmonella colonization within the lymphatic system of livestock, including pre-harvest prevention.
2018 Board of Directors Seated

The Foundation for Meat and Poultry Research and Education is governed by a Board of Directors, which provides scientific leadership, 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. The 2018 Board of Directors are:

Tim Arndt, Jack Link’s Beef Jerky
Van Ayvazian, Boar’s Head Provisions Co. Inc.
Peter Bozzo, Michael’s Finer Meats and Seafoods
Terry Coffey, Smithfield Foods, Inc.
Brian Coelho, Central Valley Meat Co.
Bill Eisel, Fresh Mark, Inc.
Tony Gahn, Gahn Meat Company
Eric Gustafson, Coast Packing Company
Tom Hayes, Tyson Foods
Randy Huffman, Maple Leaf Foods, Inc.
Tim Klein, National Beef Packing Co., LLC
Kevin Ladwig, Johnsonville Sausage, LLC
Craig Letch, Beef Products, Inc.
Neal Leonard, Surlean Foods
Carlos Lopez, Bar-S Foods
John Patrick Lopez, Lopez Foods
Joe Maas, JTM Food Group

Shane MacKenzie, Superior Farms
Gary Malenke, Natural Food Holdings
Steve Maxey, Certified Meat Products
Brad McDowell, AB Foods
Dave Miniat, Miniat Holdings
Kathleen O’Donnell-Cahill, Wegmans Food Markets, Inc.
Ken Petersen, OSI Group, LLC
Dave Pyburn, National Pork Board
Mike Satzow, North Country Smokehouse
Suzanne Strasserburger, Strasserburger Steaks
Hilary Thesmar, Food Marketing Institute
Mike Townsley, Bob Evans Farms, Inc.
Steve VanLannen, American Foods Group
John Vatri, Cardinal Meat Specialists, Ltd.
Dennis Vignieri, Kenosha Beef International, Ltd.
Russ Yearwood, Indiana Packers Corporation

Foundation Education Programs Schedule of Events

Worker Safety Conference for the Meat and Poultry Industry
Co-located at the International Production and Processing Expo (IPPE)
Atlanta, GA
January 29-30, 2018

Center of the Plate Training
College Station, TX
June 5-7, 2018

Environmental Conference for the Meat and Poultry Industry
Co-located at the International Production and Processing Expo (IPPE)
Atlanta, GA
January 29-30, 2018

Pathogen Control and Regulatory Compliance in Beef Processing Conference
Rosemont, IL
September 5-6, 2018

Annual Meat Conference
Nashville, TN
February 25-27, 2018

Animal Care and Handling Conference
Kansas City, MO
October 18-19, 2018

Advanced Listeria monocytogenes Intervention & Control Workshop
Kansas City, MO
October 23-24, 2018

For more information on these programs, please visit the events page at www.meatinstitute.org.
Current Research Projects

Complete summaries of research underway are available on meatpoultryfoundation.org.

Assessing the impact in red meat processing of a mobile genetic element that imparts extreme heat resistance to *E. coli*
Mick Bosilevac, Norask Kalchayanand, John Schmidt, USDA-ARS-U.S. Meat Animal Research Center
This research will assess where in red meat processing extreme heat resistant *E. coli* may pose a problem, how easily the locus of heat resistance can be shared between bacteria and if current non-thermal interventions offer effective control
Funded in part by the Beef Checkoff

Efficacy of antimicrobial interventions in reducing *Salmonella*, STECs, *Campylobacter*, and *E. coli* Biotype I Surrogates on pork carcases, chilled pork products, beef and pork head meat, cheek meat, livers and hearts
Ashley Arnold, T. Matthew Taylor, Kerri Gehring, Jeffrey Savell, Texas A&M University
This project will document the efficacy of approved interventions in reducing pathogen contamination on pork carcases and chilled pork subprimals; pork head or cheek meat; beef head or cheek meat; pork hearts and livers; beef hearts and hot-boned pork. Research will also evaluate the color of pork following the application of antimicrobial.
Funded in part by the Beef Checkoff

Using Bioluminescent *Salmonella* to Identify Infection Sites Contributing to Contamination of Ground Turkey Meat
Monique França, John Maurer, University of Georgia
The intent of this research is to reveal harborage sites in turkeys following *Salmonella* infection as a source of contamination in ground poultry products. *Salmonella* harborage sites in ground product components and the ability of *Salmonella* to localize in microscopic lymphoid tissue and feather follicles will be assessed utilizing a bioluminescence imaging system in order to visualize infected tissues and to monitor *Salmonella* dissemination over time.

Validation of lethality and stabilization processes for products with slow come up time: bacon and bone-in ham
James Dickson, Joseph Sebranek, Joseph Cordray, Iowa State University
Jeff Sindelar, Kathleen Glass, University of Wisconsin
Robert Hanson, HansonTech
Research will determine the effect of slow come up time and slow stabilization during the thermal processing of bacon and bone-in ham on the survival of *C. perfringens*, *Staphylococcus aureus*, *Listeria monocytogenes* and *Salmonella* spp.

Reducing *Salmonella* serotypes on Chicken Carcasses by Sodium Bisulfate (SBS) and Investigation into its Reuse to Reduce Water Consumption
Steven Ricke, Peter Rubinelli, Si Hong Park, Casey Owens, University of Arkansas
Research will test the ability of sodium bisulfate (SBS) to kill *Salmonella* on fresh chicken carcases and measure the efficacy in eliminating pathogens after multiple reuse of the SBS-containing rinse. Potential color and flavor effects of the SBS will also be addressed as well as any barriers to regulatory approval of SBS for this application.

Research Priority Meeting for Certain By-Products
There is limited research on the impact of rendering on foodborne pathogens, particularly with the implementation of the Food Safety Modernization Act. The Foundation will work with allied stakeholders in the rendering, pet food and cosmetic industries throughout North America to assemble a meeting where industry standards can be discussed to better inform future research priorities and projects. There is a dearth of critical parameters for this type of research.
Foundation Contributors

The Foundation is supported through the generous contributions of Meat Institute members and individuals.

A to Z Portion Control Meats
AB Foods LLC*
AdvancePierre Foods *2
Alaska Sausage Co., Inc.*
American Custom Meats
American Foods Group, LLC*2
American Meat Companies
Atlantic Veal & Lamb
Susan Backus2
Bar-S Foods Co.*2
Beef Products, Inc.*2
Boar's Head Provisions Co., Inc.*2
Bob Evans Farms, Inc.*2
Betsy Booren2
Broadleaf (USA), Inc.*2
BROPACK ENTERPRISES, LLC
Brown Packing Co., Inc.*2
Brush Meat Processors
Butterball, LLC*
California Ranch Food Company
Capitol Wholesale Meats
Cardinal Meat Specialists*
Cargill Meat Solutions*
Barry Carpenter2
Catelli Brothers, Inc.*2
Caviness Beef Packers*2
Central Valley Meat Company*2
Certified Meat Products, Inc.*
Clemens Food Group*2
Cloverdale Meats
Coast Packing Company*2
Costco Wholesale Meats*
Dale T. Smith & Sons*2
Del Real, LLC2
Delft Blue
Devault Foods*2
Dietz & Watson*2
Ed Miniat LLC*2
Engelhart Gourmet Foods, Inc.
Eureka Sausage Inc.2
Evergood Sausage Company
Fair Oaks Farms, LLC*2
Far West Meats*
FirstClass Foods
Four Star Meat Co., Inc.
FPL Foods, LLC*
Fratelli Berretta USA, Inc.
Fred Usinger, Inc.*2
Fresh Mark*2
Gahn Meat Co., Inc.*
Ghiringhelli Specialty Foods
Glier's Meats2
Greater Omaha Packing Co., Inc.*2
Kelly Green
Eric Gustafson2
Harris Ranch Beef
Hartley Ranch Angus Beef, LLC*
Hastings Foods LLC
Hempler Foods Group, LLC
Hill Meat Company*2
Hormel Foods Corporation*2
HRR Enterprises
Independent Meat/Falls Brand2
Indiana Packers Corporation*2
JBS USA*2
Jensen Meat Company*
Jobbers Meat Packing Company*2
John Soules Foods
John Volpi & Company, Inc.
Jones Dairy Farm*2
JTM Provisions*2
Kayem Foods Incorporated*
Kenoosh Beef International, Ltd.*2
Kessler's Inc.*
Kruse & Son, Inc.
Kuna Meat Company
Land O’Frost, Inc.*
John Linker
Long Prairie Packing2
Lopez Foods*2
Los Banos Abattoir2
Main Street Wholesale Meats
Maple Leaf Foods, Inc.*2
Mary Ann's Foods
Meat Traders*
Meats by Linz2
Michael's Finer Meats*
Murry’s
Natural Foods Holdings
Nicolosi Foods2
Nordic Foods
North Country Smokehouse*2
NPC Processing
Nueske’s Applewood Smoked Meats
OSI Group*2
P.G. Molinari & Sons, Inc.2
Petschel's Quality Meats
Pineland Farms
Pitman Farms
Plymouth Beef Co., Inc.*2
Premiere Brand Meats
Prime Smoked Meats*2
Proportion Foods LLC2
Quality Processing Services, LLC
Randolph Packing Co., Inc.*2
Red Smith Foods, Inc.
Rite-Way Meat Packers Inc.
Rocky Mountain Natural Meats
Rose Meat Services, Inc.
Rose Packing Company*2
Russak's Cured and Smoked Products*
Salm Partners, LLC*
Michael Satzow
Serv-Rite Meat Company2
Smith Provisions2
Smithfield Foods, Inc.*
Square H Brands, Inc.
Sterling Pacific Meat Company
Strassburger Meats/Suzy Sirloin Inc.*
Strasser Brands, Inc.*2
Superior Farms*2
Surleam Foods*2
The Meat Market
Pete Thomson
Triumph Foods*
Tyson Foods*2
Uncle Charley's Sausage Co., LLC2
Unibright Foods, Inc.2
Villari Bros. Foods, LLC2
Vincent Giordano Corporation
Walt's Wholesale Meats, Inc.2
Wasatch Meats, Inc.*2
West Michigan Beef Co. LLC
William Westman2
Wolverine Packing Company2
Yosemite Meat Co.2

* NAMI Board Member, 2 Multi-year contributor
Research Advisory Committee

Aaron Asmus, Hormel Foods Corporate Services, LLC
Sharon Beals, US Foods
Angel Besta, Greater Omaha Packing Co., Inc.
Chris Bodendorfer, Johnsonville Foods LLC
Peter Bodnaruk, Tyson Foods, Inc.
Marisa Boss, Boar’s Head Provisions
Melissa Bonorden, Hormel Foods Corporation
Betsy Booren, OFW Law
Marisa Boss, Boar’s Head Provisions
Ann Brackenridge, Cargill, Inc.
Ted Brown, Cargill, Inc.
John Butts, Land O’Frost, Inc.
Mandy Carr, National Cattlemen’s Beef Association
Trevor Caviness, Caviness Beef Packers Ltd
Jorge Correa, Canadian Meat Council
Jeff Cromer, AB Foods, LLC
Mike DeCesare, Daniele, Inc.
Robert Delmore, Colorado State University
Jim Dickson, Iowa State University
Warren Dorsa, Smithfield Foods
Tom Edrington, Diamond V
Tim Freier, Mérieux NutriSciences
Christian Fuchs, Maple Leaf Consumer Foods
Kerri Gehring, Texas A&M University
Katie Hanigan, Smithfield Foods
Matt Henderson, Land O’Frost, Inc.
Kari Houchens, American Beef Packers, Inc.
Randy Huffman, Maple Leaf Foods Inc.
Mohammad Koohmaraie, IEH Laboratories & Consulting Group

Mark Kreul, In-N-Out Burger
Steve Larsen, National Pork Board
John Luchansky, Agricultural Research Service, USDA
Mike Luczynski, Boar’s Head Provisions Co., Inc.
Daniel Mallin, Tyson Foods
Brenden McCullough, National Beef Packing Co. LLC
Patrick Mies, National Beef Packing, Co. LLC
Andrew Milkowski, University of Wisconsin
Ali Mohseni, American Foods Group
Cynthia Moore, Tyson Foods
Kevin Myers, Hormel Foods Corporate Services, LLC
Nandini Natrajan, Keystone Foods LLC
Petri Papinaho, Jennie-O Turkey Store
Ken Petersen, OSI Group
Jerri Lynn Pickett, Tyson Foods, Inc.
Curtis Pittman, Harris Ranch Beef Company
Thomas Powell, American Meat Science Association
Stephen Quickert, Kraft Heinz Company
Rasool Rabbani, Bar-S Foods
Michael Robach, Cargill, Inc.
Scott Stillwell, Tyson Foods, Inc.
Kyle Swigart, Kraft Heinz Company
Rachel Tesconi, Independent Meat Company
Hilary Thesmar, Food Marketing Institute
Melissa VanLaningham, Superior Farms
Tommy Wheeler, Agricultural Research Service, USDA
Martin Wiedmann, Cornell University
Diane Wood, Maple Leaf Consumer Foods
Janice Wynn, Harris Ranch Beef Company