

Project Listings

Beef Safety Research
Product Enhancement
Research

Human Nutrition Research
Market Research

BEEF SAFETY RESEARCH			
Completed and Ongoing Projects 2004, 2005, 2006			
PROJECT	RESEARCHER/INSTITUTION	DURATION/STATUS	TOTAL GRANT COOPERATORS
An Evaluation of Beef Splitting Saw Operational Sanitation Standard Operating Procedures Ability to Remove Glial Fibrillary Acidic Protein (GFAP*)	J.A. Scanga, Ph.D. Colorado State University	2005 Completed	\$69,600
An Evaluation of Central Nervous System (CNS) Cross-Contamination Due to Carcass Splitting in Commercial Beef Packing Plants using Glial Fibrillary Acidic Protein (GFAP)	K.E. Belk, Ph.D. Colorado State University	2004 Completed	\$42,665
An Evaluation of the Ability of Commercial Carcass Washing Cabinets to Remove Glial Fibrillary Acidic Protein (GFAP) from Beef Carcasses	J.A. Scanga, Ph.D. Colorado State University	2005 Completed	\$38,375
Application of Antimicrobial Treatments in a Commercial Simulation to Reduce <i>E. coli</i> O157:H7 and <i>Salmonella spp</i> in Beef Trim and in Ground Beef	M.F. Miller, Ph.D. Texas Tech University	2004-2005 Completed	\$80,285
Assessing the Ruminant and Gastrointestinal Metabolism of 2-nitroethane, a Potential Cost Recoverable Feed Supplement to Reduce <i>Escherichia coli</i> O157:H7, <i>Salmonella</i> and <i>Campylobacter</i> in Fed Cattle	R.C. Anderson, Ph.D. USDA/ARS	2004-2005 Completed	\$37,130
At Risk Populations for <i>Salmonella</i> Contamination and the Effects of Pre-slaughter Wash/Contamination	T.E. Besser, Ph.D. Washington State University	2005-2006 Completed	\$59,936
At-risk Populations for <i>Salmonella</i> Contamination and the Effects of Pre-slaughter Hide Wash Decontamination	T.E. Besser, Ph.D. Washington State University	2006-2007 Completed	\$63,086 (Washington State Beef Commission)
Best Practices for Removal and Disposition of Specified Risk Materials Associated with the Transmission of Bovine Spongiform Encephalopathy (BSE) - Guidance Document	T.L. Frederick Food Safety Net Services, Ltd.	2004 Completed	\$10,425

Best Practices for Removal and Disposition of Specified Risk Materials Associated with the Transmission of Bovine Spongiform Encephalopathy (BSE)	T.L. Frederick Food Safety Net Services, Ltd.	2004-2005 Completed	\$6,000
Characterization of the Relationship between Rumen Protozoa and Enhanced <i>Salmonella</i> Virulence	S. Carlson, Ph.D. USDA/ARS	2004-2005 Completed	\$24,870
Comparison of Rapid and Immunomagnetic Separation Methods for Detection and Quantification of <i>E. coli</i> O157 in Fecal, Hide, Carcass and Ground Beef Samples	M. Brashears, Ph.D. Texas Tech University	2005 Completed	\$84,132
Competitive Fitness of Multi Drug-resistance Pathogenic <i>Salmonella</i> enterica serotype Newport Isolates from Cattle	T.L. Poole, Ph.D. USDA/ARS/SPA	2005-2006 Completed	\$29,995
Consequences of Stress and Diet on the Immune and Endocrine Systems of Cattle and their Effects on the Seasonal Shedding of <i>Escherichia coli</i> O157:H7	E. Karunasena, Ph.D. Texas Tech University	2006-2007 Completed	\$90,089
Decontamination of Beef Cuts, Intended for Blade/Needle or Moisture-Enhancement Tenderization, by Surface Trimming vs. Rinsing with Solutions of Hot Water, Warm Lactic Acid or Activated Lactoferrin Plus Warm Lactic Acid	G.C. Smith, Ph.D. Colorado State University	2004-2005 Completed	\$77,255
Demonstrate the Technical Feasibility of Co-firing Animal-Tissue Biomass (SRMs and Carcasses) with Coal in a Pilot-Scale Bubbling Fluidized-Bed Combustor	B.G. Miller, Ph.D. Pennsylvania State University	2005 Completed	\$99,754
Demonstration of the Safety and Efficacy of Converting Bovine Specific Risk Materials (SRM's into Non-ruminant Animal Feeds or Biofuels	J.A. Scanga, Ph.D. Colorado State University	2006-2007 Completed	\$87,220
Detaching and De-clumping of Enterohemorrhagic <i>Escherichia coli</i> (EHEC) adhered to Cattle Hide and the Surface of Beef Processing Equipment	J. Chen, Ph.D. University of Georgia	2006-2007 Completed	\$75,000
Determination of the Most Effective Intervention Strategy for Microbiological Reduction on Cattle Hides Prior to Removal	G. Bellinger, M.S. Food Safety Net Services, Ltd.	2005 Completed	\$42,190

Determination of a Sodium Chlorate Dose that Results in Safe Concentrations of Tissue Residues in Beef Cattle	D.J. Smith, Ph.D. USDA/ARS	2004-2005 Completed	\$42,200
Determination of the Incidence of <i>E. coli</i> O157:H7 and <i>Salmonella</i> Contamination on Hides and Carcasses at Cow/Bull Packing Plants	M. Koohmaraie, Ph.D. USDA/ARS	2003-2004 Completed	\$190,000
Determination of the Prevalence and Level of Multi-drug Resistant (MDR) <i>Salmonella</i> in Rectal-anal Swab and Hide Samples Obtained from Calf-fed Holstein Steers	T. Arthur, Ph.D. USDA/ARS	2006-2007 Completed	\$19,950
Development and Validation of Intervention Strategies to Control <i>Escherichia coli</i> and <i>Salmonella spp.</i> In Needle Tenderized and Injected Beef	J.C. Brooks, Ph.D. Texas Tech University	2006-2007 Completed	\$134,073
Development of Pre-harvest Nutritional Management Strategies to Reduce <i>E. Coli</i> O157:H7 and <i>Salmonella spp.</i> Gastrointestinal Survival and Shedding	H.N. Zerby, Ph.D. The Ohio State University	2005-2006 Completed	\$84,346
<i>E. coli</i> O157:H7 Survival and/or Potential Introduction on Beef Carcass Surfaces During Initial Chilling and Characterization of Hotbox Best Practices	J.A. Scanga, Ph.D. Colorado State University	2003-2004 Completed	\$148,300
<i>E. coli</i> O157:H7 Survival on Cattle Hides	M. Koohmaraie, Ph.D. USDA/ARS	2005-2006 Completed	\$80,000
Effect of Vaccinating against Type III Secretory Proteins of <i>Escherichia coli</i> O157:H7 on the Occurrence of <i>E. coli</i> O157:H7 on Hides Pre- and Post-harvest	T.J. Klopfenstein, Ph.D. University of Nebraska, Lincoln	2005 Completed	\$42,525
Effects of Antimicrobial Interventions on Multidrug-resistant (MDR) <i>Salmonella</i>	T. Arthur, Ph.D. USDA/ARS	2006-2007 Completed	\$51,080
Effects of Dust Cloud Cross-contamination on <i>E. coli</i> O157 and <i>Salmonella</i> during Cattle Transport	M.F. Miller, Ph.D. Texas Tech University	2005 Completed	\$68,725
Effects of Pond Ash as a Feedlot Pen Surface and Animal Stress-level on the Prevalence, Levels, and Persistence of <i>E. coli</i> O157:H7 and <i>Salmonella spp.</i> In Feces, on Hides, and in Manure of Feedlot Cattle	E. Berry, Ph.D. USDA/ARS	2006-2007 Completed	\$104,500

Effects of Processing Plant Lairage on the Prevalence and Load of <i>E. coli</i> O157:H7 on the Hides of Beef Cattle	T. Arthur, Ph.D. USDA/ARS	2006-2007 Completed	\$130,000
Effects of SRP Vaccine Technology on Pre-harvest Control and Shedding of <i>E. coli</i> O157:H7 in Cattle	D. Thomson, Ph.D. Kansas State University	2006-2007 Completed	\$215,800
Efficacy of the Brovac System for Decontamination of Retail Beef Trimmings: Process Validation against Pathogens and Commercial Shelf-Life Study	R.K. Phebus, Ph.D. Kansas State University	2003-2004 Completed	\$47,916 (Washington State Beef Commission)
Enhancing the Heat Sensitivity of <i>Escherichia coli</i> O157:H7 in Ground Beef by Monocaprylin	K. Venkitanarayanan, Ph.D. University of Connecticut	2004-2005 Completed	\$41,666
Evaluate Survival/Growth During Frozen, Refrigerated, or Retail-type Storage, and Thermal Resistance, Following Storage of <i>Escherichia coli</i> O157:H7 Contamination on or in Marinated, Tenderized or Restructured Beef Steaks and Roasts Formed with Ingredients	J.N. Sofos, Ph.D. Colorado State University	2006-2007 Completed	\$70,000
Evaluation of a Bacteriophage Cocktail to Reduce <i>Escherichia coli</i> O157:H7 Shedding in Beef Cattle	L.D. Goodridge, Ph.D. University of Wyoming	2005-2006 Completed	\$75,000
Evaluation of Peroxyacetic Acid (Inspexx 200) as a Potential Pre-Grinding Treatment for Control of <i>Escherichia coli</i> O157:H7 and <i>Salmonella typhimurium</i> on Beef Trimmings	J.W. Savell, Ph.D. Texas Agricultural Exp. Station	2003-2004 Completed	\$28,720
Evaluation of the Effectiveness of Acidified Sodium Chlorite (Sanova) for Decontaminating Commercial Beef Carcasses Post-Chill	J.L. Marsden, Ph.D. Kansas State University	2003-2004 Completed	\$79,700 (Kansas Beef Council)
Evaluation of the Relationship between Stress Response and Fecal Shedding of <i>Escherichia coli</i> O157:H7	J.W. Savell, Ph.D. Texas Agricultural Exp. Station	2004-2005 Completed	\$139,550
Examination of the Seasonal Variation of <i>E. coli</i> O157:H7 in Beef Cattle: Effect of Day Length and Subsequent Changes in Hormone Concentrations and Immune Function	T.S. Edrington, Ph.D. USDA/ARS/SPA	2003-2004 Completed	\$20,000
Examination of Waste Milk Pasteurization on <i>Salmonella</i> Prevalence in Dairy Cattle	T.S. Edrington, Ph.D. USDA/ARS/SPA	2006-2007 Completed	\$44,850

Further Study of Hide-on Carcass Washing to Identify Alternative Chemiocals/Conditions for Lowering Microbial Indicator Counts and Incidence of <i>E. coli</i> O157:H7 on Incoming Slaughter Cattle	J.A. Scanga, Ph.D. Colorado State University	2004 Completed	\$72,006
Genetic Characterization of <i>Salmonella</i> enterica serova Newport Isolated from Cattle Using a DNA Microarray to Identify Genes Conveying Multi Drug-resistance, Increased Virulence and Conjugative Ability	N. Ramlachan, Ph.D. USDA/ARS/SPA	2005-2006 Completed	\$44,175
Genetic Profiles of Bovine-origin <i>Salmonellae</i>	J.T. LeJeune, Ph.D. The Ohio State University Research and Development Center	2005-2006 Completed	\$47,163
Heat Resistance of <i>Salmonella</i> Sterotypes (including multi-drug resistant and non multi-drug resistant) on Beef Exposed to Consumer-Style Cooking	M. Samadpour, Ph.D. Institute for Environmental Health	2006-2007 Completed	\$70,000
Hide-on Decontamination System using Sandia National Laboratories DF-200 Foam	J.L. Marsden, Ph.D. Kansas State University	2003-2004 Completed	\$44,800
High Pressure/Temperature Inactivation of TSE Agents in SRMs and Beef Products	R. Meyer, Ph.D. Meyer and Associates	2004-2005 Completed	\$123,840
High Pressure/Temperature Inactivation of TSE Agents in Specified Risk Materials and Beef Products	R. Meyer, Ph.D. Meyer and Associates	2006-2007 Completed	\$93,300
Identification and Evaluation of Cattle Persistently Shedding vs. Cattle Non-Persistently Shedding <i>E. coli</i> O157:H7	K.E. Belk, Ph.D. Colorado State University	2005-2006 Ongoing	\$117,425
Identification of Humane Cattle Stunning Systems that Minimize the Likelihood of Central Nervous System Tissue Entering the Circulatory System	J.A. Scanga, Ph.D. Colorado State University	2005-2006 Completed	\$79,675
Identification of the At-risk Population(s) for Shedding Multi Drug-resistant <i>Salmonella</i> in Harvest-ready Cattle	G.H. Loneragan, Ph.D. West Texas A&M University	2005-2006 Completed	\$98,128
Identification of the At-risk Population(s) for Shedding <i>Salmonella</i> in Harvest-ready Cattle During Spring and Summer	G.H. Loneragan, Ph.D. West Texas A&M University	2006-2007 Completed	\$98,128

Impact of Feeding Neomycin on the Emergence of Antimicrobial Drug Resistance in <i>E. coli</i> O157, <i>Salmonella</i> spp. And Commensal Organisms in Cattle	M. Brashears, Ph.D. Texas Tech University	2004 Completed	\$67,450
Isolation and Use of Bacteriophage to Reduce <i>E. coli</i> O157:H7 Populations on Hides of Cattle	T.R. Callaway, Ph.D. USDA/ARS	2006-2007 Completed	\$25,500
Isolation and Use of Bacteriophage to Reduce <i>E. coli</i> O157:H7 Populations in Ruminants	T.R. Callaway, Ph.D. USDA/ARS	2004-2005 Completed	\$71,148
Mechanisms of <i>Escherichia coli</i> O157:H7 Attachment to and Transfer between Meat and Equipment Surfaces	A. Orta-Ramirez, Ph.D. Michigan State University	2006-2007 Completed	\$105,999
Method Development for Enumeration of <i>E. coli</i> O157:H7 for Ground Beef and Hides, Carcasses, and Feces of Cattle	M. Koochmarai, Ph.D. USDA/ARS	2005-2006 Completed	\$100,000
Microbiological Safety of Needle-Tenderized Beef Steaks, Cook and Uncooked, Surface Inoculated with <i>Escherichia coli</i> O157:H7	J.B. Luchansky, Ph.D. USDA/ARS,NAA	2003-2004 Completed	\$117,000
Mobility of Infectious Prion Proteins in Soil	J.A. Pedersen, Ph.D. University of Wisconsin	2003-2004 Completed	\$118,603.00
Molecular Characterization of <i>Escherichia coli</i> O157:H7 Hide Contamination Routes- Feedlot to Harvest Floor	W. Warren, Ph.D. Food Safety Net Services, Ltd.	2004-2005 Completed	\$158,550
NAMP/KSU Survey for Blade Tenderization	Ann Rasor, Ph.D. North American Meat Processors Association	2003-2004 Completed	\$75,000
Novel Uses of Natural Tannin Sources to Mitigate Risk of <i>Escherichia coli</i> O157:H7 and Other Food Pathogens Contamination of Beef through Integrated Pre- and Post-harvest Strategies	W.E. Pinchak, Ph.D. Texas Agricultural Experiment Station	2006-2007 Completed	\$92,053
Phage Encoded Dissemination of <i>Shiga</i> Toxin Genes Among Bovine <i>E. coli</i>	J.T. LeJeune, Ph.D. The Ohio State University Research and Development Center	2005-2006 Completed	\$89,787
Phage Encoded Transfer of Antibiotic Resistance Genes in <i>Salmonella</i>	J.T. LeJeune, Ph.D. The Ohio State University Research and Development Center	2006-2007 Completed	\$59,000

Preharvest Pathogen Reduction Practices: Reduction of Prevalence of <i>E. coli</i> O157:H7 in Feeder Cattle During the 45-day Preconditioning Period	J.A. Paterson, Ph.D. Montana State University	2003-2004 Completed	\$74,600
Prevalence and Characterization on non-O157 EHC/STEC on Pre- and Post Intervention Cull Cow Carcasses and in Ground Beef	J.M. Bosilevac, Ph.D. USDA,ARS	2006-2007 Completed	\$50,000
Prevalence and Growth of <i>E. coli</i> O157:H7 in the Bovine Gall Bladder	C.W. Kaspar, Ph.D. University of Wisconsin	2004-2005 Completed	\$10,000 (Wisconsin Beef Council)
Prevalence of <i>E. coli</i> O157:H7 on Hides and in Feces of Feedlot Cattle Over Time	M. Koochmarai, Ph.D. USDA/ARS	2004 Completed	\$200,000
Prevalence of Mycobacterium avium Paratuberculosis in Feces and on Hides and Carcasses from Cull Cow and Fed Cattle Slaughter Plants	J.E. Wells, Ph.D. USDA/ARS	2006-2007 Completed	\$90,000
Pursuit of a Bovine-Adapted, Bacteriocin-Producing Microbe that Excludes <i>Salmonella</i> and <i>E. coli</i> O157:H7	S. Carlson, DVM, Ph.D. USDA/ARS	2006-2007 Completed	\$34,078
Rapid Quantification of Culturable and Viable-but-Nonculturable <i>Escherichia coli</i> O157:H7 in Beef Products Using EMA-Real Time PCR	A. Mustapha, Ph.D. University of Missouri	2006-2007 Completed	\$30,383 (Missouri Beef Industry Council)
Real-Time Monitoring of Cross-Contamination of <i>Listeria monocytogenes</i> between Equipment and Ready-To-Eat Meat Products via a GFP Reporter	A. Mustapha, Ph.D. University of Missouri	2006-2007 Completed	\$30,583 (Missouri Beef Industry Council)
Recto-Anal Mucosa Swab Culture: A New Technique to Identify Long-term <i>E. coli</i> O157:H7 Colonized Cattle	C.H. Bohach, Ph.D. Washington State University	2004-2005 Completed	\$101,354
Reduction of <i>E. coli</i> O157:H7 in Beef Feedlot Cattle using Varying Doses of a Direct-Fed Microbial	M. Brashears, Ph.D. Texas Tech University	2003-2004 Completed	\$77,495
Reduction of Food-borne Pathogens on Cattle During Loading through Control of Dust Generation	M.F. Miller, Ph.D. Texas Tech University	2006-2007 Completed	\$66,550
Reduction of Food-borne Pathogen on <i>Salmonella</i> on Cattle During Loading through Control of Dust Generation at the Feed Lot	M.F. Miller, Ph.D. Texas Tech University	2006-2007 Completed	\$66,824
Reduction of <i>Salmonella</i> in Cattle Feces and on Cattle Hides	T. Arthur, Ph.D. USDA/ARS	2006-2007 Completed	\$90,000

Regional Variation in the Incidence of <i>E. coli</i> O157:H7 on Hides and Carcasses of Feedlot-Finished Cattle	M. Koohmaraie, Ph.D. USDA/ARS	2003-2004 Completed	\$20,000
Role of Recto-Anal Junction <i>E. coli</i> O157:H7 Intestinal Colonization in Influencing Feedlot Cattle <i>E. coli</i> O157:H7 Dynamics	R.N. Cobbold, Ph.D. Washington State University	2003-2005 Completed	\$149,909
Role of Super-shedders in Determining Feedlot Pen Prevalence of <i>E. coli</i> O157:H7	R.N. Cobbold, Ph.D. Washington State University	2005-2006	\$60,001
Seasonal Effects on Multi Drug-resistant <i>Salmonella spp.</i>, and <i>Listeria monocytogenes</i> Prevalence and <i>Salmonella</i> Load on Hides and Carcasses at Cow/Bull Packing Plants	M. Koohmaraie, Ph.D. USDA/ARS	2005-2006 Completed	\$199,302
Source and Prevalence of Multi-Resistant <i>Salmonella</i> in Dairy Cattle	T.S. Edrington, Ph.D. USDA/ARS/SPA	2005-2006	\$49,750
Supplementation of Feedlot Cattle with Octanoic Acid for Three Days Pre-harvest to Reduce Risk of Contamination with <i>E. coli</i> O157:H7	K.E. Belk, Ph.D. Colorado State University	2005-2006 Completed	\$94,670
Survey of Prevalence of <i>Escherichia coli</i> O157:H7 on Surface of Subprimal Cuts of Beef During Winter Months (Phase I)	J.E. Kennedy, Ph.D. ABC Research	2004 Completed	\$40,530
Therapeutic Use of Ceftiofur Crystalline Free Acid (EXCEDE) and its Impact on Numbers and Susceptibility of Generic <i>E. coli</i> in Feedlot Cattle	G.H. Loneragan, Ph.D. West Texas A&M University	2005-2006 Completed	\$75,493
Update on the Scientific Literature Review on Cause and Transmission of Transmission Spongiform Encephalopathies, with Particular Reference to Bovine Spongiform Encephalopathy	R. Weiss, Ph.D. University of Wisconsin	2003-2004 Completed	\$2,000
Use of an Experimental Vaccine in Gestating Beef Cows to Reduce the Shedding of <i>E. coli</i> O157:H7 in the Newborn Calf	J.A. Paterson, Ph.D. Montana State University	2004 Completed	\$32,375
Use of Genomic Approaches to Identify <i>Escherichia coli</i> O157:H7 Genes important for Growth and Survival in Cattle	G.J. Phillips, Ph.D. Iowa State University	2004-2005 Completed	\$63,780
Validation of Sampling Methods to Determine the Prevalence of <i>E. coli</i> O157:H7 in Beef Feedlot Cattle	G. Loneragan, Ph.D. West Texas A&M University	2004-2005 Completed	\$21,875

Validation of Texas Beef Jerky Processing	J.W. Savell, Ph.D. Texas Agricultural Exp. Station	2005-2006 Completed	\$24,750
Validation of Trichloromelamine as an Effective Hide Wash Technology	J. Blanton, Ph.D. Texas Tech University	2005-2006 Completed	\$30,631
Variables Affecting the Environmental Fate, Safety, and Efficacy of Chlorate Salts Proposed for use in Beef Cattle Production as a Food Safety Tool	D.J. Smith, Ph.D. USDA/ARS	2006-2007 Completed	\$44,000

PRODUCT ENHANCEMENT RESEARCH			
Completed and Ongoing Projects 2004, 2005, 2006			
PROJECT	RESEARCHER/INSTITUTION	DURATION/STATUS	TOTAL GRANT COOPERATORS
Adding Value to Non-conforming "Out" Beef Carcasses	K.E. Belk, Ph.D. Colorado State University	2006-2007 Completed	\$87,508
A Novel Approach to Improving Tenderness of Underutilized Muscles from the Round from Pasture-fed Beef Steers	D.C. Beitz, Ph.D. Iowa State University	2006-2007 Completed	\$86,018
Augmentation of the OSU Near-infrared and In-plant Beef Video Image Analysis Systems to Sort Carcasses into Tenderness Categories	J.B. Morgan, Ph.D. Oklahoma State University	2006-2007 Ongoing	\$63,840 (Oklahoma Beef Council)
Beef Carcass Fabrication Strategies in Mexico and South/Central America	C.R. Calkins, Ph.D. University of Nebraska-Lincoln	2005-2006 Completed	\$20,026
Biochemical and Physical Properties Associated with Meat Color of Beef Muscles Targeted for Future Market Penetration	J.R. Claus, Ph.D. University of Wisconsin	2004-2005 Completed	\$33,001
Bovine Myology Manual	S.J. Jones, Ph.D. University of Nebraska-Lincoln	2004 Completed	\$23,250
Can Lean Beef Color Originating from Dark-cutting Carcasses be Improved by "Super-saturation" Oxygen Packaging?	J.B. Morgan, Ph.D. Oklahoma State University	2006-2007 Completed	\$27,600
Carcass Quality and Longissimus Tenderness of Calf-fed Steers and Steers and Heifers Produced Using Alternative Growth-Management Strategies	J.D. Tatum, Ph.D. Colorado State University	2006-2007 Completed	\$85,925
Cause and Prevention of Liver flavor in five muscles of the Beef Chuck	D.P. Cornforth, Ph.D. Utah State University	2006-2007 Completed	\$42,025
Characterization of Intramuscular Adipogenesis in Cattle	J.B. Morgan, Ph.D. Oklahoma State University	2000-2006 Completed	\$295,597
Color Stability, Fatty Acid Profile, and Shelf Life of Ground Chuck and Round Muscles of Fed Beef Steers, Beef Cull Cows, and Dairy Cull Cows	M.C. Hunt, Ph.D. Kansas State University	2006-2007 Completed	\$57,070
Comparison of Tenderness, Palatability and Retail Caselife of Enhanced Cow Subprimals to Control Cow and USDA Select Subprimals	D. VanOverbeke, Ph.D. Oklahoma State University	2006-2007	\$50,000 (Oklahoma Beef Council)
Comparison of the Biobullet versus Traditional Injection Techniques on Tissue Damage and Tenderness in Beef Subprimals	D. VanOverbeke, Ph.D. Oklahoma State University	2006-2007 Completed	\$41,500 (Oklahoma Beef Council)

Consumer and Shear Force Evaluation of Steaks from the M. serratus Ventralis	J.W. Savell, Ph.D. Texas A&M University	2005-2006 Completed	\$48,500
Determine the Genetic and Phenotypic Variances of Meat Quality Traits and their Interrelationships with Economically Important Traits in Bos Indicus Type Cattle	G.E. Carstens, Ph.D. Texas A&M University	2004-2005 Completed	\$40,830
Determining the Proper Use of Beef Chuck and Round Muscles by Sorting into Muscle Families	R.J. Maddock, Ph.D. South Dakota State University	2004-2005 Completed	\$54,000
Development of a Beef Muscle "Aging Index" for Purposes of Managing Beef Palatability at the Consumption Level	K.E. Belk, Ph.D. Colorado State University	2003-2004 Completed	\$60,800
Development of a Beef Muscle "Aging Index" for Purposes of Managing Beef Palatability at the Consumption Level - Short-Term Muscles	K.E. Belk, Ph.D. Colorado State University	2003-2004 Completed	\$82,570
Do Heifer Finishing Implants Affect Beef Tenderness?	J.D. Tatum, Ph.D. Colorado State University	2005-2006 Completed	\$92,100
Does Pressurized Pretreatment with Carbon Monoxide Improve Fresh Beef Shelf-Life Characteristics in Case-Ready Packaging Systems?	J.B. Morgan, Ph.D. Oklahoma State University	2005-2006 Completed	\$43,875
Effect of Anionic Mineral Supplementation on Animal Performance, Plasma and Muscle Calcium, Carcass Composition, and Meat Tenderness in Brahman-influenced Feedlot Cattle	T.D. Pringle, Ph.D. University of Georgia Research Foundation	2006-2007 Completed	\$38,160
Effect of Fresh and Frozen Storage on Palatability, Oxidative Rancidity and Color of Packaged Beef Steaks	J.B. Morgan, Ph.D. Oklahoma State University	2003-2004 Completed	\$31,800
Effect of Moisture Enhancement on Sensory Attributes and Shear-force of Choice and Select Grade Beef Cuts from the Chuck and Round	P.S. Kuber, Ph.D. Ohio State University	2004-2005 Completed	\$88,984
Effect of Needle Tenderization, Aging Time and Aging Temperature on Postmortem Proteolysis and Tenderness of Beef Longissimus Lumborum and Gluteus Medius	T. Wheeler, Ph.D. USDA/ARS	2006-2007 Completed	\$45,750
Effect of Steak Location and Postmortem Aging Time on Top Sirloin and Shoulder Clod Tenderness	M. Koohmaraie, Ph.D. USDA/ARS	2005-2006 Completed	\$90,140
Effects of Feeding Regime and Enhancement on Quality Characteristics of Muscles from Cull Cows	J. Killefer, Ph.D. University of Illinois	2004-2005 Completed	\$101,800

Effects of Muscle Type, Enhancement and Cooking Technique on Selected under Utilized Beef Muscles	J.M. Martin, Ph.D. Mississippi State University	2004-2005 Completed	\$10,960
Effects of Packaging Atmospheres and Injction Enhancement on Beef Instrumental Tenderness, Sensory Traits and Display Color	M.E. Dikeman, Ph.D. Kansas State University	2006-2007 Completed	\$36,601
Engineering Optical Biosensors to Detect Calpastatin, a Meat Tenderness Indicator	C.L. Lorenzen, Ph.D. University of Missouri-Columbia	2005-2006 Completed	\$50,380
Evaluation of Factors Causing the 'Black Bone' Condition in Packaged Beef Retail Cuts and Ways to Decrease the Incidence	M.E. Dikeman, Ph.D. Kansas State University	2003-2004 Completed	\$47,430.00
Evaluation of Hyperspectral NIR Spectroscopy and Imaging for Tenerness Determination in Cattle	S. Coleman, Ph.D. USDA/ARS/SPA	2003-2004 Completed	\$28,770
Evaluation of Solubilized Proteins as an Alternative to Phosphates for Meat Enhancement	C.A.M. DeWitt, Ph.D. Oklahoma State University	2006-2007 Completed	\$9,810
Evaluation of Temperament Indicator Traits to Predict Growth Performance and Beef Tenderness in Finishing Steers	R.K. Miller, Ph.D. Texas Agricultural Experiment Station	2006-2007 Completed	\$73,720
Evaluation of the Relationship between Stress Response and Muscle Tenderness in Feedlot Cattle	J.W. Savell, Ph.D. Texas A&M University	2004-2005 Completed	\$66,000.00
Factors Affecting Myoglobin Color Reversion in Cooked Ground Beef Patties	J.R. Claus, Ph.D. University of Wisconsin	2005-2006 Completed	\$7,305.00
Feeding Optaflexx™ 45 (ractopamine HCl) to Cull Cows II: Effects on Carcass Composition and Yield	D.D. Johnson, Ph.D. University of Florida	2006 Completed	\$23,618.00
Fiber-Optic Characterization of the Tenderness of Low Marbled Beef Steaks	G. Yao, Ph.D. University of Missouri-Columbia	2005-2006 Completed	\$54,000.00
Flavor Profile and Volatiles, Color and Warner-Bratzler Shear Changes of Five Beef Muscles Enhanced Prior to Aging - Long-Term Muscles	S. Brewer, Ph.D. University of Illinois	2003-2004 Completed	\$98,000.00
Flavor Profile and Volatiles, Color and Warner-Bratzler Shear Changes of Five Beef Muscles Enhanced Prior to Aging - Short-Term Muscles	S. Brewer, Ph.D. University of Illinois	2003-2004 Completed	\$98,000.00
Hyperspectral Imaging to Predict Sensory Beef Tenderness and Marbling Score	C.R. Calkins, Ph.D. University of Nebraska, Lincoln	2006-2007 Completed	\$64,840.00

Identification of Cattle Production/Management Practices to Minimize Variation in Beef Tenderness	J.D. Tatum, Ph.D. Colorado State University	2003-2004 Completed	\$16,410.00
Identification of Threshold Levels for Warner-Bratzler Shear Force of Beef Value Cuts	J.W. Savell, Ph.D. Texas A&M University	2006-2007 Completed	\$30,000.00
Identifying Beef Muscles and Processing Treatments Suitable for Use in Fajita Applications	J.W. Savell, Ph.D. Texas A&M University	2005-2006 Completed	\$21,510.00
Impact of Cutting Procedures on the Tenderness Properties of Muscles from the Beef Knuckle	C.R. Calkins, Ph.D. University of Nebraska, Lincoln	2006-2007 Completed	\$46,156.00
Impact of Feeding 2,500, 50,000, or 100,000 IU of Vitamin D³ Daily on Beef Tenderness and on Performance of Feedlot Cattle	J.B. Morgan, Ph.D. Oklahoma State University	2003-2004 Completed	\$63,307 (Oklahoma Beef Council)
Improving the Accuracy of Tenderness Categorization of Beef Carcasses	J.B. Morgan, Ph.D. Oklahoma State University	2004-2005 Completed	\$81,750.00
In Home Consumer Evaluation of Individual Muscles from Beef Rounds Subjected to Tenderization Treatments	J.W. Savell, Ph.D. Texas A&M University	2004-2005 Completed	\$21,235.00
Influence of Enhancement and Blade Tenderization on Beef Subprimals (Short Term Muscles) of Beef of Known Categories of Tenderness	J.B. Morgan, Ph.D. Oklahoma State University	2004-2005 Completed	\$63,000.00
Is the Difference in Tenderness Commonly Observed between Heifers and Steers Attributable to Differences in Temperament and Reaction to Pre-Harvest Stress?	J.D. Tatum, Ph.D. Colorado State University	2005-2006 Completed	\$56,300.00
Mapping Tenderness of the Serratus Ventralis	C.R. Calkins, Ph.D. University of Nebraska, Lincoln	2006 Completed	\$11,309.00
Mapping the Muscle Fiber Orientation and Adapting Slice Shear Force for Major Beef Muscles	M. Koohmaraie, Ph.D. USDA/ARS	2003-2004 Completed	\$80,300.00
Meat Science Graduate Student Assistantship	J.B. Morgan, Ph.D. Oklahoma State University	2006-2007 Ongoing	\$15,000 (Oklahoma Beef Council)
Mitigation of Off-Flavors in Beef Muscle	C.R. Calkins, Ph.D. University of Nebraska-Lincoln	2005-2006 Completed	\$46,166.00
National Beef Market Basket Survey - 2005	J.W. Savell, Ph.D. Texas A&M University	2005-2006 Completed	\$52,800.00
National Beef Tenderness Survey - 2005	J.W. Savell, Ph.D. Texas A&M University	2005-2006 Completed	\$115,000.00
Novel Strategies to Improve Tenderness of Underutilized Round Muscles from Cows	D.C. Beitz, Ph.D. Iowa State University	2004-2005 Completed	\$45,552

On-Line Classification of U.S. Select Beef Carcasses for Longissimus Tenderness Using Near-Infrared Reflectance Spectroscopy	M. Koohmaraie, Ph.D. USDA/ARS	2004-2005 Completed	\$49,700
Optimization Guide for Value-Added Beef Cuts	J.C. Brooks, Ph.D. Texas Tech University	2004 Completed	\$25,000
Prediction of Beef Carcass Cut-out Yields using the MARC Beef Image Analysis System	M. Koohmaraie, Ph.D. USDA/ARS	2003-2004 Completed	\$172,792
Properties of Cow and Beef Muscles - Benchmarking the Differences and Documenting the Similarities	C.R. Calkins, Ph.D. University of Nebraska-Lincoln	2003-2004 Completed	\$66,510
Properties of Cow and Beef Muscles - Benchmarking the Differences and Documenting the Similarities	D.D. Johnson, Ph.D. University of Florida	2003-2004 Completed	\$52,695
Quality Attribute Characterization of Beef-Long Term Muscles	A.L. Alderton, Ph.D. University of Kentucky	2004-2005 Completed	\$50,109
Round Muscle Profiling: Management of Tenderness and Sensory Improvement of Specific Muscles with Aging	E. Huff-Lonergan, Ph.D. Iowa State University	2006-2007 Completed	\$41,570
Use of Citrate in Enhancement Solutions to Improve Quality of Muscles from the Chuck and Round in Fed and Non-Fed Cull Cows	F. McKeith, Ph.D. University of Illinois	2005-2006 Completed	\$75,000
Standardization of Slice Shear Force Measurements Across Research Institutions and Evaluation of Repeatability of Slice Shear Force Measurement at Multiple Institutions	M. Koohmaraie, Ph.D. USDA/ARS	2003-2004 Completed	\$9,200
Supplementation of Fed Steers with an Anionic Compound to Improve Beef Tenderness	K.E. Belk, Ph.D. Colorado State University	2004-2005 Completed	\$30,200
Survey of and Strategies for Variation in Functional Properties of Chuck and Round Muscles from Fed and Cow Beef	J.W. Savell, Ph.D. Texas Agricultural Experiment Station	2006-2007 Completed	\$30,000
Using a Combination of 25-hydroxyvitamin D3 and Vitamin E to Improve Beef Tenderness - Phase I	D.C. Beitz, Ph.D. Iowa State University	2003-2004 Completed	\$10,000
Using a Combination of 25-hydroxyvitamin D³ and Vitamin E to Improve Beef Tenderness - Phase II	D.C. Beitz, Ph.D. Iowa State University	2003-2004 Completed	\$12,863 (Iowa Beef Industry Council)
Using Serum Chemistry Profiles to Predict Beef Tenderness for the Purpose of On-line Instrument Grading	D.M. Wulf, Ph.D. South Dakota State University	2004-2005 Completed	\$58,500

Using the OSU Near-Infrared (NIR) System to Sort Various Beef "Middle and End Muscle Cuts" into Tenderness Categories	J.B. Morgan, Ph.D. Oklahoma State University	2004-2005 Completed	\$103,000
Value Optimization of Veal Muscles	D.D. Johnson, Ph.D. University of Florida	2006 Completed	\$25,798
Value Optimization of Veal Muscles	C.R. Calkins, Ph.D. University of Nebraska, Lincoln	2006 Completed	\$32,328
Volatile Compounds in Beef and Their Contribution fo Off-Flavors	C.R. Calkins, Ph.D. University of Nebraska-Lincoln	2005-2006 Completed	\$50,988

NUTRITION RESEARCH			
Completed and Ongoing Projects 2004, 2005, 2006			
PROJECT	RESEARCHER/INSTITUTION	DURATION/STATUS	TOTAL GRANT COOPERATORS
Assessment of Vitamin B12 Bioavailability from Beef	J.W. Miller, Ph.D. University of California-Davis	2005-2007 Ongoing	\$117,358
Beef as a Source of Vitamin B-12, Iron and Zinc to Improve Development of Infants Fed Low Amounts of Animal Products	L.H. Allen, Ph.D. University of California-Davis	2002-2005 Completed	\$450,000 (South Dakota Beef Council)
Beef in a Balanced Diet and Cancer Inhibition	M. Lipkin, M.D. Strang Cancer Prevention Center	2002-2004 Completed	\$150,727
Beef Ingestion and Muscle Metabolism	D. Paddon-Jones, Ph.D. University of Texas Medical Branch	2005 Completed	\$96,466
Beef Intake in the Framingham Children's Study: Development of an Analytic Data Set	L.L. Moore, Ph.D. Boston University School of Medicine	2005 Completed	\$194,816
Beef Intake, Weight Loss and Bone Mineral Density in Postmenopausal Women	W.W. Campbell, Ph.D. Purdue University	2004-2005 Completed	\$39,050
Changing the Nutritional Composition of Beef: Can We Mitigate the Risk of Colon Cancer?	J.W. Finley, Ph.D. USDA/ARS	2002-2004 Completed	\$102,490
Composition of Grass-Fed Beef in the U.S. - Part 1	M.F. Miller, Ph.D. Texas Tech University	2004-2005 Completed	\$26,500
Composition of Grass-Fed Beef in the U.S. - Part 2	M.F. Miller, Ph.D. Texas Tech University	2005-2006 Ongoing	\$21,700
Contribution of Beef Products to the Overall Nutritional Quality, Adequacy of Dietary Intakes, and Health Outcomes in Children and Young Adults	T.A. Nicklas, Ph.D. Baylor College of Medicine	2004-2005 Completed	\$184,371
Developing Data for Comments on the Food Guide Pyramid	V. Fulgoni, III, Ph.D. Nutrition Impact, LLC	2003-2004 Completed	\$25,280
Effect of Beef and Heme Iron on Zinc Absorption in Children (The)	I. Griffin, M.D. Baylor College of Medicine	2002-2004 Completed	\$83,160
Effect of Dose and Composition of Dietary Beef on Muscle Protein Anabolism in the Young and Elderly	D. Paddon-Jones, Ph.D. University of Texas Medical Branch	2005-2007 Ongoing	\$244,132
Health Impact of Beef from Cattle Fed Flaxseed	D.M. Medeiros, Ph.D. Kansas State University	2005 Completed	\$33,543
In Vivo Enrichment of Beef with [¹⁴C] Vitamin B-12 for Bioavailability Studies in Humans	J.W. Miller, Ph.D. Regents of the University of California/Davis	2003-2004 Completed	\$26,333
Increasing Dietary Protein Improves Long-Term Weight Management	D.K. Layman, Ph.D. University of Illinois	2003-2005 Completed	\$597,543

Improving Children's Responses to Increases in Portion Size: Promoting Self-regulation of Energy Intake	S.L. Johnson, Ph.D. University of Colorado Health Sciences Center	2005-2006 Ongoing	\$72,072
Manipulation of Beef Fatty Acides to Tailor Ground Beef Products to Individual Consumer Needs	S.B. Smith, Ph.D. Texas Agricultural Exp. Station	2005-2007 Ongoing	\$166,262
Meat Protein and Calcium: Do they Interact Synergistically or Antagonistically?	Z.K. Roughead, Ph.D. USDA/ARS	2003-2005 Completed	\$153,228
Protection Against Atherosclerosis by Dietary Zinc	B. Hennig, Ph.D. University of Kentucky	2003-2005 Completed	\$38,948
Reduced Conjugated Linoleic Acid Requirement for Altered Mammary Tumorigenesis by Fatty Acids Found in Beef	K.L. Erickson, Ph.D. University of California/Davis	2003-2005 Completed	\$121,318
Relationship between Beef Intake and Nutrient Status with Homosysteine Levels in Young Women	L.B. Bailey, Ph.D. University of Florida	2004-2005 Completed	\$149,900
Relationship of Zn Intake and Zn Status to Insulin Levels in Severely Obese Adolescents Enrolled in a Weight Loss Intervention Trial	N.F. Krebs, M.D., M.S. University of Colorado School of Medicine	2002-2004 Completed	\$98,561
Role of Beef in Meeting Iron Needs	R.W. Lambrecht, Ph.D. University of Connecticut Health Center	2005 Completed	\$60,000
Role of Beef in Reduced Calorie Diets: Mechanisms for Regulation of Skeletal Muscle Protein Metabolism	N.R. Rodriguez, Ph.D. University of Connecticut	2005-2007 Ongoing	\$149,946

MARKET RESEARCH			
Completed and Ongoing Projects 2004, 2005, 2006			
PROJECT	RESEARCHER/INSTITUTION	DURATION/STATUS	TOTAL GRANT COOPERATORS
95% Lean Ground Beef Patty Consumer Taste Test	Food Perspectives, Inc.	2006 Completed	\$86,684
Health Media Professionals Attitudes and Knowledge Telephone Survey	Pelegrin Gray Research, Inc.	2006 Completed	\$28,500
Ukrop's In-Store Meat Case Labeling Effectiveness Survey - PRE-WAVE	Sorensen Associates	2006 Completed	\$30,600
NET In Home Eating Trends	The NPD Group, Inc.	2006 Ongoing	\$116,100
Brand Enhancement Creative Communication Check Mini Focus Group	BRS Group	2006 Ongoing	\$33,400
CREST Limited Subscription	The NPD Group, Inc.	2006 Completed	\$101,540
Youth New Product Concepts IdeaPower Online Survey	Pelegrin Gray Research, Inc.	2006 Completed	\$38,500
Ukrop's In-Store Meat Case Labeling Effectiveness Survey - POST-WAVE	Sorensen Associates	2006 Completed	\$26,800