

FACULTY RECORD

Keith E. Belk, Ph.D.

CURRENT POSITION:

Professor (2004-current)
Center for Meat Safety & Quality, Department of Animal Sciences, Campus Delivery 1171
Colorado State University
Fort Collins, Colorado 80523
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EDUCATION:

- Ph.D., Meat Science, Texas A&M University. Department of Animal Science, College Station, TX. May 1992.
- M.S., Meat Science, Colorado State University. Department of Animal Science, Fort Collins, CO. May 1986.
- B.S., Animal Science, Colorado State University. Department of Animal Science, Fort Collins, CO. May 1983.

RESEARCH INTERESTS:

- Red meat quality and safety; live animal development; international marketing of red meats; quality management systems.

AWARDS:

- USDA-AMS-LS Marketing Assistance Award for Re-establishment of Export Markets for U.S. Beef; 2005.
- CSU "Celebrating Service Milestones" 10 Years of Service Award; 2005.
- U.S. Meat Export Federation Distinguished Service Award; 2004.
- American Society of Animal Science Meat Science Research Award; 2003
- CSURF (Colorado State University Research Foundation) Honored Researcher; 2000-2001.
- Named One of Seven of Meat Processing Magazines "Rising Stars for 2001."
- Western Section, American Society of Animal Science; 1999 Young Scientist Award.
- American Meat Science Association; 1998 Achievement Award.
- Awarded USDA Certificate of Merit for conducting a worldwide beef quality audit, 1995.
- Selected for inclusion in Marquis "Who's Who In Science and Engineering", 1993.
- Champion Ph.D. Graduate Research Poster, 1992 AMSA Reciprocal Meat Conference.
- Coached the high meats judging team at the 1985 International.
- Winner of the 1980 Douglas County (Colorado) 4-H Scholarship.
- Winner of the 1979 Jr. Colorado Cattlemen's Association Scholarship.

TEACHING AND ADVISING:

CSU Classes taught:

- ANEQ 565 "Interpreting Animal Science Research"; Spring 1997-2013
- ANEQ 360 "Meats"; Spring 2003; Fall 2003-2012
- ANEQ 792D "Seminar-Meats"; Spring/Fall 2000-2013
- ANEQ 350BV "Animal & Products Judging-Meats"; Coordinator 1995-2009

CSU Classes taught as guest instructor:

- VM 648 "Food Animal Production and Food Safety"; Spring 2001-2002
- VM 757 "Bovine Herd Medicine"; Spring 2008-13
- AN 250 "Live Animal & Carcass Evaluation"; Fall 2002
- AN 560 "Current Issues In The Meat Industry"; Fall 1996-97, 1999-2004
- AN 300L "Health Programs and Quality Assurance"; Spring 1996-2000
- AN 286 "Livestock Practicums"; Spring & Fall 1997-98, Spring 1999
- ANEQ 478 "Beef Production and Management"; Fall 1997, 2008-09
- ANEQ 470 "Meat Systems"; Fall 2008-09
- ANEQ 381 "Beef Supply Chain Management"; Fall 2009
- CSU McNair Intern Program host, 1998

Classes taught as a Graduate Instructor:

- Live animal and carcass evaluation, CSU (5 semesters)
- Beef production and the beef industry, CSU (1 semester)
- Meats, TAMU (5 semesters)
- Freshman level animal science, CSU and TAMU (various lectures and laboratories)
- Coached 1984-85 Colorado State University Meat Evaluation Teams

EXPERIENCE:

- Associate Professor, Department of Animal Sciences, Colorado State University, 2001-2004.
- Assistant Professor, Department of Animal Sciences, Colorado State University, 1995-2001. Colorado Meat Extension Specialist (1995-1999).
- International Marketing Specialist, USDA Agricultural Marketing Service, Livestock and Seed Division, 1992-95. Developed/implemented international standards programs for federal grading, certification, & market information services to facilitate U.S. agricultural trade; coordinated AMS foreign assistance programs for developing/emerging democracies; provided technical input into trade negotiations and international standards development bodies; and worked closely with academia and industry on marketing-related issues. Travel included 26 countries on five continents.
- Research Associate, Texas A&M University, 1992. Conducted research and extension activities for the Meat Science Section Head in the Department of Animal Science.
- Buyer, Fresh Meat Procurement, Corporate Meat Division, Safeway Stores, Inc., 1986-88. Duties included market analyses and procurement of fed beef carcasses, cow carcasses, raw grinding materials, and various by-products for fabrication facilities and various retail and ground beef processing operations.
- Quality Control Supervisor, Corporate Meat Division, Safeway Stores, Inc., 1986. Developed/supervised quality and safety assurance programs in Los Angeles beef prefabrication plant and ground beef unit, managed three QA technicians.
- Intern, Corporate Meat Division, Safeway Stores, Inc., Summers of 1981-83. Installed production control systems in a Denver prefabrication plant, revised carcass and boxed beef purchasing specifications, conducted quality assurance and yield testing, and trained receiving personnel in Denver, Dallas, Los Angeles, and Wichita plants.
- Livestock production. Family enterprise which included management, production and showing of registered purebred Suffolk sheep, club calves, and custom-fed slaughter cattle.

AFFILIATIONS:

- Member, The Western Stock Show Association.
- American Society of Animal Science.
- Institute of Food Technologists.
- American Meat Science Association.
- International Association for Food Protection.
- Intercollegiate Meat Coaches Association.
- National Cattlemen's Beef Association.
- Colorado Livestock Association.
- Colorado Cattlemen's Association.
- American Society for Testing & Materials, International.
- Lloyd's Register Quality Assurance Certificate Number US 00126 for Lead Assessor.
- Alpha Gamma Rho, Rho Chapter Alumni.

UNIVERSITY & OTHER SERVICE:

Department, College & University Assignments:

- College of Agriculture Computer Use Committee (1996).
- Initiated development of the Department of Animal Science World Wide Web internet home page (1996).
- Departmental Committee for Audio/Visuals, 1998 ASAS/ASDA Meetings (1997).
- Member "Resource Pool" for the NE Region Livestock Systems Team (Cooperative Extension; 1997).
- Departmental Search and Screening Committee for Intermediary Metabolism Position (1997).
- Cooperative Extension Agent Search Committees Volunteer (1998-99).

- Departmental Search and Screening Committee for Meat Extension Specialist Position (1999).
- Alpha Gamma Rho, Rho-Chapter Advisor (1998-1999).
- Department Meat Laboratory/Meat Plant Faculty Supervisor (1999, 2008-10).
- Departmental Search and Screening Committee for Meat Laboratory Manager Position (1999).
- University of Wyoming Agricultural Experiment Station RFP Proposal Reviewer (1999).
- Department Research/Graduate Student Committee (1999-2000).
- Chair, Department Website Steering Committee (1999-2002).
- Departmental Search and Screening Committee for Animal Breeding/Bioinformatics Position (2001).
- College “Interdisciplinary Studies Program in Food Science” Committee (2001).
- Co-Chair, College of Agriculture Committee for the Enhancement of Sponsored Research (2001).
- Departmental Long-Range ECRC Planning Team (2001).
- Departmental Curriculum Committee Task Force to “Assess Meat Science Curriculum” (2001).
- Departmental WSASAS Host “Publications” Committee (2001-2002).
- College Committee to develop an Interdisciplinary Degree Program in Food Science (2002).
- Departmental Search Committee, Department Head (2002-2003).
- Department Search and Screening Committee for two RA positions (2004).
- College of Agricultural Sciences Multi-Disciplinary AEP Food Safety Committee (2004).
- Departmental Search Committee, Molecular Microbiologist (2005).
- Departmental Search Committee, Department Post-Doctorate, Chair (2005).
- ARDEC Management Committee (2004-2006).
- Animal Sciences Department Laboratory Usage & Technical Support Committee (2006).
- College of Agricultural Sciences Search Committee, Coordinator—Sponsored Project Support (2006).
- Department of Animal Sciences B-1 Task Force Chair, Food Animal Research Funding (2006).
- Department of Animal Sciences A-2 Task Force Chair, Facilities Architecture (2006).
- Animal Sciences Department Graduate Research Committee (2002-2004; Chair 2006-2008).
- Departmental Search Committee Chair, Assistant/Associate Professor Meat Science Position (2008).
- Departmental Search Committee Chair, Assistant/Associate Professor Beef Management Position (2008-2009).
- University Evaluation Committee for the Department of Microbiology, Immunology and Pathology (2009).
- Departmental Search Committee Chair, John E. Rouse Endowed Chair in Beef Cattle Genetics (2009-2011).
- CAS “Strategic Initiatives White Paper Assuring Meat/Produce Safety & Quality”; Chair (2010).
- College of Agricultural Sciences Search Committee, Head of Department of Animal Sciences (2010-2011).
- Colorado School of Public Health, Center for Food Safety & the Prevention of Foodborne Diseases Director (2011).
- Animal Sciences Department Coordinating Committee; Elected (2002-2013).
- Departmental Search Committee, Assistant/Associate Professor Food Microbiologist Position (2012-2013)
- Animal Sciences Building Renovation & Addition; Selection of Construction Manager/General Contractor (2012)
- Department Tenure & Promotion Committee (2004-2008; Chair 2009-2013).
- Departmental Search Committee, Associate/Full Professor Meat Scientist Position (2012-2013)

Other Assignments:

- American Meat Science Association “1996 RMC Muscle Growth Biology Program Committee” (1995-96).
- American Meat Science Association “1996 International Award Selection Committee” (1995-96).
- American Meat Science Association “Carcass Assessment Task Force” (1995-96).
- American Meat Science Association “1997 RMC International Markets Program Committee” (1996-97).
- American Meat Science Association “MIRC Planning Subcommittee” (1997-98).
- American Meat Science Association “International Relations Committee” (1997-99).
- Chair, American Meat Science Association “1999 RMC Achievement Award Committee” (1999).
- Editorial Board, Journal of Animal Science, American Society of Animal Science (1997-2000).
- American Meat Science Association “Regulatory Affairs Committee” (2000).
- American Meat Science Association Scientific Information Committee (2001).
- ASTM Livestock & Meat Standardization Committee (2001-2004).
- Western Section American Society of Animal Science “Symposium” Organizing Committee (2001-2004).
- Chair, American Meat Science Association “Scientific Information Committee” (2002-2003).
- Secretary, U.S. International Organization for Standardization (ISO)/American National Standards Institute (ANSI)

Technical Advisory Group for ISO Subcommittee 6, Technical Committee 34 (1997-2005).

- American Meat Science Association Board of Directors; elected (2003-2005).
- American Society of Animal Science Meats Research Award Committee (2004-2005).
- National Western Stock Show Fed Beef Committee (1996-2007).
- USDA-NCBA Beef Instrument Grading Task Force (2003-2009).
- USDA-ASI Lamb Instrument Grading Task Force (2006-2009).
- American Meat Science Association “Scientific Information Committee” (2006-2008).
- American Meat Science Association President-Elect (2008-2009).
- American Meat Science Association President (2009-2010).
- American Meat Science Association Past-President (2010-2011).
- JBS Food Safety and Quality Advisory Team, Member (2009-2011).
- USDA-AMS Beef Grading Instrument Review Procedures Panel, Member (2011).
- American Meat Science Association International Committee Member (2011).
- American Meat Science Association Nominations Committee (Chair 2011, Member 2012-2013).
- American Meat Science Association Membership Committee (2012-2013)
- Colorado Junior Angus Association, Advisor (2011-2013)

CSU Graduate Candidates (1995-Present):

Student	Year Completed	Degree	Student	Year Completed	Degree
Sherri Kochevar	1996	M.S.	Gretchen Hilton	1996	M.S.
Matthew George	Not Completed	Ph.D.	Henry Zerby*	1997	M.S.
John Scanga*	1997	M.S.	Chris Mullinix*	Withdrew	M.S.
Mario Martinez*	1999	M.S.	Rob Cannell	2000	Ph.D.
Audra Grona*	1999	M.S.	Todd Bacon*	1999	M.S.
Michelle Vonada*	1999	M.S.	Aaron Wyle*	2000	M.S.
Henry Zerby*	1999	Ph.D.	John Scanga*	1999	Ph.D.
Elizabeth Duffy*	2000	M.S.	Patrick Mies*	2000	M.S.
Deb Roeber*	2000	M.S.	Keolebogile Segomelo	2000	M.S.
Derek Vote*	2001	M.S.	Bryce Moore	2000	M. Ag.
Chad Smith*	Withdrew	Ph.D.	Bill Platter*	2001	M.S.
Deb Roeber*	2002	Ph.D.	Todd Bacon	2002	Ph.D.
Amber Brady*	2002	M.S.	Rudolpho Steiner*	2002	M.S.
Emily McClure*	2002	M.S.	Michael Genho*	2002	M.S.
Jennifer Lanier	2002	Ph.D.	Jennifer Stefanek	2002	M.S.
Kevin Smith	2003	M.S.	Sara Rose	2002	M.S.
Derek Vote*	2003	Ph.D.	Lora Kohls-Wright	2003	M.S.
Bruno Cunha*	2003	M.S.	Bill Platter	2003	Ph.D.
Justin Ransom*	2004	Ph.D.	Laura V. Ashton	2004	M.S.
Jaime Bard*	Withdrew	M.S.	Tanner J. Machado*	2005	M.S.
Kirby Childs*	2005	Ph.D.	Travis Choat*	2006	Ph.D.
Chandra Reddy Murthala	2005	M.S.	Sandra Gruber*	2006	M.S.
Alexandra (Alexia) Lianou	2006	M.S.	Catherine Simpson*	2006	M.S.
Mitch Bowling*	2006	M.S.	Sara Rose*	Withdrew	Ph.D.
Chancie Moore*	2007	M.S.	Courtney Heller*	2006	M.S.
Brandon Carlson*	2007	M.S.	Pablo Rovira	2006	M.S.
Kenichi (Ken) Katoh*	2008	M.S.	Gianna Duran	2007	Ph.D.
Wendie Phelps	2008	M.S.	Grant Dewell, DVM	2008	Ph.D.
Travis Hoffman*	2008	M.S.	Mawill Rodriguez*	2009	Ph.D.

Student	Year Completed	Degree	Student	Year Completed	Degree
Ryan Murphy*	2008	M.S.	Phil Bass*	2009	Ph.D.
Dale Woerner*	2009	Ph.D.	Oleksandr Byelashov	2009	Ph.D.
Mitch Bowling*	2009	Ph.D.	Brandon Carlson*	2009	Ph.D.
Sandra Gruber	2009	Ph.D.	Shivani Gupta	2011	Ph.D.
Trevor Nunes*	2011	M.S.	Jeremy Adler	2010	Ph.D.
Cangliang Shen	2010	Ph.D.	Curtis Pittman*	2011	M.S.
Scott Howard*	2010	M.S.	Melissa Green*	2010	M.S.
Ryan Murphy*	2010	Ph.D.	Tanner Carpenter*	Not Completed	M.S.
Jessica Meisinger*	2012	Ph.D.	Scott McCumber*	Withdrew	M.S.
Tonina Desimone*	2011	M.S.	Cheyenne Dixon*	2010	M.S.
Filogomes Alves de Carvalho Neto*	2011	M.S.	Aliyar Fouladkhah	2012	Ph.D.
Jessica Igo*	2012	Ph.D.	Scott Howard*		Ph.D.
David Vargas*	Withdrew	Ph.D.	Kristina Brenman*	2012	M.S.
Xiang (Crystal) Yang*	2012	M.S.	Travis Arp*	2012	Ph.D.
Travis O'Quinn*	2012	Ph.D.	Rebecca Achesen		Ph.D.
Jordon McHenry		M.S.	Curtis Pittman*		Ph.D.
Xiang (Crystal) Yang*		Ph.D.	Santiago Luzardo*		Ph.D.
Danielle (Dani) Shubert		M.S.	Erin Karney		M.S.
Jessica Steger		M.S.	Megan Webb*		M.S.
Carlie Perham*		M.S.			

*Denotes served/serving as Committee Chairperson or Co-Chairperson—others are Committee Member only.

OUTREACH:

Mo/Yr	Program Title or Purpose	Nature of Participation
1989-92	Live Animal & Carcass Evaluation Service of Texas	Data collector
1989-92	Texas Beef 101 training courses	Instructor
1989	Mexican retailer short course—meat marketing systems (for USMEF)	Instructor
1989-90	Texas Beef Retail Seminar for retail meat merchandisers	Instructor
1992	“Technology for Latin America” short course	Instructor
1992	Arcop, Inc., cow carcass cutability and anatomy seminar	Coordinator
1992	Course in cow carcass composition for Mexican businessmen	Instructor
1992	AMSA “Official” cutability guidelines for lamb carcass contests	Author
1992	Live animal/carcass evaluation short course Barquisimeto, Venezuela	Instructor
8/95	USDA Cochran Fellows Program	Instructor
1-12/96	Carcass data collection/ultrasound services	Coordinator
1/96	NWSS 4-H & FFA Regional/National Meat Judging Contest	Coordinator
1/96	NWSS Fed Beef Contest	Superintendent
1/96	National Cattlemen’s Convention Cattlemen’s College	Instructor
2/96	CAST Congressional Staff Briefing, Washington, DC	Instructor
2/96	Colorado Junior Livestock Symposium	Instructor
3/96	World Brahman Congress, Maracaibo, Venezuela	Speaker
4/96	San Juan Basin Bull Sale Educational Program	Speaker
6/96	Colorado State “Beef University”	Coordinator, Instructor
6/96	State 4-H Conference “Meat Judging Clinic”	Coordinator
6/96	Summer Institute for Agricultural Education workshop-meats	Coordinator
6/96	Keystone/McDonald’s Beef Industry Tour	Speaker
6/96	Queensland, Australia Trade Delegation	Host, Instructor

Mo/Yr	Program Title or Purpose	Nature of Participation
7/96	Rouse Bull Sale Educational Program	Speaker
8/96	World Hereford Conference	A/V & Vitamin E display
8/96	Rocky Mountain Ranch-to-Rail Program	Speaker
9/96	NCBA Retailers Tour	Speaker
10/96	State FFA Meat Judging Contest	Coordinator
11/96	International Intercollegiate Meat Judging Contest	Official Committee
12/96	Minnesota Cattle Feeders Days	Speaker/Instructor
1-12/97	Carcass data collection/ultrasound services (> 2,900 hd in 1997)	Coordinator
1/97	NWSS 4-H & FFA Regional/National Meat Judging Contest	Coordinator
1/97	NWSS Fed Beef Contest	Superintendent
1/97	CAMP Cured Meat Championship Advisory Committee	Member
1/97	NCBA Cattlemen's College, Kansas City, MO	Speaker
2/97	Tri-State Cow/Calf Symposium, Wray, CO	Speaker
3/97	Houston Livestock Show Intercollegiate Meat Judging Contest	Committee Member
5/97	Colorado Cattle Feeders Association Board meeting, campus	Speaker
6/97	NCBA Beef Industry Long Range Planning meeting, Denver, CO	Speaker
6/97	NCBA Beef Quality Assurance Advisory Board, Memphis, TN	Speaker
6/97	Colorado State 4-H Roundup Meat Judging Clinic, campus	Coordinator
6/97	AMSA-RMC Intercollegiate Coaches Association Meeting, Ames, IA	Speaker
6/97	Beefmaster Breeders United tour, campus	Speaker
6/97	NCBA Grading Privatization Task Force Meeting, campus	Speaker
7/97	North Carolina Cattlemen's Tour, campus	Speaker
8/97	USDA Cochran Fellow U.S. Tour—Ukraine, campus	Speaker
9/97	Montana Stockgrowers "Gate-to-Plate" Seminar, Bozeman, MT	Coordinator/Speaker
9/97	"Ranch & Rural Living" Conference, Craig, CO	Speaker
10/97	AMI/AMSA Meat Industry Research Conference, Chicago, IL	Speaker
10/97	Colorado State FFA Meat Judging Contest	Coordinator
10/97	Iowa State University Meat Judging Contest	Committee Member
11/97	Pharmacia & Upjohn Cattle Feeders Seminar, Phoenix, AZ	Speaker
11/97	NCBA International Beef Symposium Tour, campus	Coordinator/speaker
11/97	USMEF Russian meat industry officials tour, campus	Coordinator/speaker
12/97	NPPC Asian Consumer Preference Meeting, Des Moines, IA	Speaker/Participant
1-12/98	Carcass data collection/ultrasound services (>2,500 Hd)	Coordinator
1/98	NWSS 4-H & FFA Regional/National Meat Judging Contest	Superintendent
1/98	NWSS Fed Beef Contest	Superintendent
1/98	NWSS Intercollegiate Meat Judging Workout	Host
1/98	NWSS Fed Beef Educational Display	Coordinator
1/98	CSU International Programs Norwegian Tour	Host
1/98	National Pork Producers Council Auditor Training	Participant
1/98	Visit by Congressmen Joe Skeen (NM)	Host
2/98	U.S. Meat Export Federation/NPPC Pork Variety Meats	Host
2/98	American National Standards Institute TAG Training	Participant
2/98	VetLife Tenderness Conference	Participant
2/98	La Plata County Beef Symposium	Speaker
2/98	Eagle County Carcass Evaluation/Quality Clinic	Speaker
3/98	Houston Livestock Show & Rodeo Intercollegiate Meat Contest	Committee Chairman
4/98	Colorado Association of Meat Processors Annual Convention	Host
4/98	Meat Industry Research Conference Planning Committee, Kansas	Participant
4/98	Certified Angus Beef Roundup Symposium	Host/Speaker
4/98	IDEXX Food Safety Net Auditor Training	Participant
6/98	Colorado State 4-H Conference Meat Judging Workshop	Host
6/98	U.S. Meat Export Federation Mexican Trade Team	Host/Speaker
6/98	USDA Cochran Fellows, China	Host/Speaker
6/98	AMSA Reciprocal Meat Conference	Participant
6/98	NPPC Pork Quality/Safety Summit, Des Moines, IA	Speaker/Moderator

Mo/Yr	Program Title or Purpose	Nature of Participation
7/98	American Society of Animal Science Annual Meeting	Host Committee
8/98	Eagle County Fair Carcass Show	Official
8/98	CSU International Programs Russian Visitor	Host
9/98	Colorado State Fair	Official
9/98	Certified Angus Beef Japanese Representative	Host
9/98	Kiowa County Fair	Official
9/98	AMSA/AMI Meat Industry Research Conference, Philadelphia	Organizing Committee
9/98	Colorado Livestock Association BQA Verification Training Course	Host/Speaker
9/98	Montana Stock Growers Association Gate-to-Plate Seminar	Organizer/Speaker
10/98	Certified Angus Beef Stampede Seminar	Host/Speaker
10/98	Colorado State FFA Meat Judging Contest	Organizer
12/98	National Meat Association, HACCP Training, Los Angeles, CA	Instructor
1-12/99	Carcass data collection/ultrasound services (>3,000 Hd)	Coordinator
1/99	NWSS 4-H & FFA Regional/National Meat Judging Contest	Superintendent
1/99	NWSS Fed Beef Contest	Superintendent
1/99	NWSS Intercollegiate Meat Judging Workout	Host
1/99	NWSS Fed Beef Educational Display	Coordinator
2/99	NWSS Fed Beef Committee Meeting	Member
2/99	Colorado Livestock Association BQA Meeting	Advisor
2/99	Colorado Livestock Association BQA Certification Training Course	Host/Speaker
2/99	USDA Argentine Cochran Fellows (Dr. Firpo)	Host
3/99	NPPC "Pork 101" training course	Host/Speaker
3/99	Colorado Association of Meat Processors Annual Meeting	Host/Judge
3/99	Continental Grain Feeders, Inc. Tenderness Meeting	Advisor
4/99	Roche/HEB Vitamin E Meeting, San Antonio, TX	Advisor
4/99	National Meat Association, HACCP Training, Las Vegas, NV	Instructor
4/99	Nolan Ryan "Think Tank", San Antonio, TX	Advisor/Speaker
4/99	Colorado Cooperative Extension Lamb/Onion Taste Panel	Coordinator
5/99	Keystone Foods/MacDonald's Tour	Host/Speaker
6/99	Colorado State 4-H Conference Quality Assurance Workshop	Host/Speaker
6/99	NCBA-BQA Advisory Board/ State Beef Council Meeting, Memphis, TN	Advisor/Speaker
6/99	Reciprocal Meat Conference Achievement Award, Stillwater, OK	Committee Chair
7/99	NCBA Bioxide Ozone Decontamination Meeting, Denver, CO	Advisor/Speaker
7/99	Keystone Foods/MacDonald's Tour	Host/Speaker
8/99	National Meat Association, HACCP Training, San Francisco, CA	Instructor
8/99	Colorado State Fair Junior Livestock Show, Carcass Show	Official
9/99	Montana "Gate-to-Plate" Seminar, Miles City, MT	Coordinator/Speaker
9/99	USMEF Pork Export Workshop	Host/Speaker
9/99	NCBA Combo-Bin Sampling Task Force, Fort Worth, TX	Advisor/Speaker
10/99	Loire Valley (France) Beef Meat Specialist Tour, Campus	Host/Speaker
11/99	USMEF Annual Board Meeting, Monterey, CA	Participant
11/99	Kansas City Royal Intercollegiate Meat Contest	Committee Chair
11/99	Irish "The National Food Centre" Meeting	Host
11/99	National Meat Association, HACCP Training, Los Angeles, CA	Instructor
12/99	National Market Cow & Bull Beef Quality Audit Strategy Workshop	Host/Speaker
1/2000	NWSS Fed Beef Contest	Superintendent
1/2000	NWSS Intercollegiate Meat Judging Workout	Host
1/2000	NWSS Fed Beef Educational Display	Coordinator
2/2000	AMI Foundation/pre-FSIS Public Meeting review, Arlington, VA	Advisor
2/2000	USDA-FSIS Public Meeting on <i>E. coli</i> , Arlington, VA	Speaker
2/2000	NWSS Fed Beef Committee Meeting	Committee Member
3/2000	CSU Search Committee Chair Training, campus	Student
3/2000	ConAgra/Dioxide meeting	Advisor
4/2000	Brazilian Meat Industry Visitors	Host
4/2000	NCBA "Beef Carcass Dehairing" meeting, Lakewood, CO	Advisor

Mo/Yr	Program Title or Purpose	Nature of Participation
4/2000	Bioxide/Battelle Inst. Deligen decontamination meeting, Columbus, OH	Advisor
5/2000	USMEF Korean Director visit	Host
5/2000	Institutionen for Illvsmedelsvetenskap/Colo. Dept. Agri. Swedish visitors	Host
5/2000	Cattle-Fax French visitors	Host/speaker
5/2000	USMEF Mexican Trade Team	Host/speaker
6/2000	Colorado BQA Train-the-Trainer Short Course, ARDEC	Instructor
7/2000	Yampa Valley Beef process audit	Auditor
8/2000	Pork 101 Short Course	Instructor
8-9/2000	CSU/INIA Project Development Initiative, Uruguay	Consultant
9/2000	Montana Stockgrowers Assoc. "Gate-to-Plate" Short Course	Instructor
9/2000	USDA-AMS/NCBA Instrument Grading Meeting, Denver, CO	Advisor
10/2000	Eastern Intercollegiate Meat Judging Contest	Committee Chair
11/2000	Nolan Ryan Tender Aged Beef "Think Tank" Meeting, Houston, TX	Advisor
1/2001	NCBA QA Advisory Board NBQA-2000 Strategy Workshop, Dallas, TX	Host/Speaker
1/2001	NWSS Fed Beef Contest, Denver, CO	Moderator/Advisor
1/2001	NWSS Jr. Fed Beef Show, Denver, CO	Judge
4/2001	National Meat Association HACCP Training Course, Denver, CO	Instructor
5/2001	Future Beef Operations, LLC, Beef University, ARDEC	Host
7/2001	Elanco Animal Health Beef University, ARDEC	Host/Speaker
7/2001	American Jr. Simmental Association Public Speaking Contest, Campus	Judge
10/2001	Montana Stockgrowers Association Gate-to-Plate Seminars, Montana	Instructor/Speaker
11/2001	U.S. Meat Export Federation, Latin Trade Team Pork 101, Campus	Host/Instructor
11/2001	Colorado Dept. Health & Environment Rendering Task Force, Denver, CO	Participant/Advisor
1/2002	USMEF Meat 101 course, Seoul, South Korea	Instructor/Speaker
1/2002	NWSS Fed Beef Contest, Denver, CO	Moderator/Advisor
1/2002	NWSS Intercollegiate Meat Judging Contest, Official Committee	Committee Chair
1/2002	American Sheep Industry Association Convention, San Antonio, TX	Speaker
2/2002	Roche Vitamins NCBA Convention Breakfast, Denver, CO	Speaker
2/2002	Eastern Colorado Research Center Field Day, Sterling, CO	Speaker
2/2002	Assistance to ConAgra Signature Foods, Los Angeles, CA	Technical Assistance
2/2002	Nolan Ryan Tender Aged Beef Investment Board Meeting, Houston, TX	Speaker
2/2002	AMI Animal Handling & Stunning Workshop, Kansas City, KS	Speaker
2/2002	Sheep Safety & Quality Assurance Train-the-Trainer Program	Host/Speaker
2/2002	Sheep Safety & Quality Assurance Reviewer Training Program	Host
3/2002	ANTAD Satisfacer al Consumidor Program, Guadalajara, Mexico	Speaker
5/2002	Swift & Company Research Report Meeting (E+V study), Greeley, CO	Technical Assistance
5/2002	National Beef Instrument Assessment Planning Symposium, Chicago, IL	Participant
6/2002	NCBA QA Advisory Board Meeting, Kansas City, MO	Speaker
6/2002	WSASAS Symposium, Campus	Organizer/Host
7/2002	AMSA Reciprocal Meat Conference, East Lansing, MI	Committee Chair
8/2002	Montana Stockgrower's Association Follow-The-Cattle tour, Campus	Speaker
9/2002	USMEF Japanese Meat Inspectors Tour, Campus	Host
9/2002	Excel Research Report Meeting (Renovation study), Ft. Morgan, CO	Technical Assistance
9/2002	Montana Stockgrower's Association Gate-To-Plate course, Bozeman, MT	Speaker
9/2002	Wyoming Dept. Public Health Annual Education Conference, Gillette, WY	Speaker
9/2002	Certified Angus Beef Stampede seminar, Campus	Speaker
10/2002	Neck Injection-Site Lesion Conference, Campus	Host/Speaker
10/2002	NCBA E. coli Summit Task Force Meeting, Denver, CO	Moderator
10/2002	DuPont Food Industry Solutions Think-Tank Meeting, College Station, TX	Speaker/Advisor
10/2002	Swift & Company MIT Conference, Greeley, CO	Speaker
11/2002	Harris Ranch Beef Plant Assessment, Selma, CA	Technical Assistance
11/2002	NCBA/USMEF Export Cutting Demonstration, Campus	Host
11/2002	Colorado BQA Joint Directional Meeting, Campus	Host
11/2002	USMEF Foreign Directors Meeting, Denver, CO	Speaker
11/2002	Colorado Livestock Association Producer Council Meeting, Ft. Morgan, CO	Speaker

Mo/Yr	Program Title or Purpose	Nature of Participation
11/2002	2 nd Congreso de Produccion y comercializacion, Montevideo, Uruguay	Speaker
12/2002	Colorado Agriculture & Rural Leadership Class, Campus	Speaker
12/2002	Academy of Veterinary Consultants Conference, Denver, CO	Speaker
12/2002	NPB Pork Chain Quality Audit Strategy Workshop, Kansas City, MO	Speaker
1/2003	NCBA Beef Safety Summit, San Antonio, TX	Speaker/Facilitator
1/2003	Nolan Ryan Tender Aged Beef Think Tank, San Antonio, TX	Speaker/Participant
1/2003	NWSS Fed Beef Contest, Denver, CO	Moderator/Advisor
1/2003	NCBA Convention, Nashville, TN	Participant
2/2003	NPB Advisory Group Competitive Disparities Conference, Des Moines, IA	Speaker/Facilitator
2/2003	International Livestock Congress, Houston, TX	Speaker/Facilitator
3/2003	NMA Convention Round-Table Discussions, Las Vegas, NV	Speaker/Participant
3/2003	CAMP Convention, ARDEC	Speaker
4/2003	DuPont Food Industry Solutions/FSNS Emmpak Meeting, Dallas, TX	Participant
5/2003	Nufield Visitor from Scotland, Campus	Host
5/2003	USMEF Board of Directors Meeting, St. Louis, MO	Speaker
6/2003	USMEF Japanese MAF Meeting on BSE, Campus	Host/Speaker
6/2003	Beef Empire Days, Garden City, KS	Judge/Speaker
6/2003	AMSA Reciprocal Meat Conf., & Post-Conf. Symp., Columbia, MO	Participant/Speaker
6/2003	ASAS Meeting, Phoenix, AZ	Participant
7/2003	Elanco Optiflex Release Meeting, Denver, CO	Participant
7/2003	Douglas County 4-H Seminar, Campus	Host/Speaker
7/2003	NCBA Summer Conference, Dallas, TX	Speaker/Participant
8/2003	AMSA Board of Directors Meeting, Springdale, AR	Board Member
8/2003	ABIPECS Brazilian Pork Industry Seminar, Sao Paulo, Brazil	Organizer/Speaker
9/2003	Montana Stockgrowers Assn. Gate-to-Plate Seminar, Bozeman, MT	Speaker/Instructor
9/2003	USMEF International Culinary Team Seminar, New York, NY	Speaker/Instructor
9/2003	USMEF Indonesian Government Veterinarian Tour, ARDEC	Speaker/Host
9/2003	NCBA Feedlot Food Safety Media Tour, Imperial, NE	Speaker/Participant
9/2003	RAND Corporation/Agnosco Traceability Meeting, Washington, DC	Participant
10/2003	U.S. Animal Health Association, San Diego, CA	Speaker
10/2003	AMSA Board of Directors Meeting, Chicago, IL	Board Member
10/2003	Colorado Livestock Association BQA Level II Training, ARDEC	Host/Instructor
11/2003	AMSA/NPB Pork Chain Quality Benchmarking Conf., Kansas City, MO	Speaker
11/2003	RAND Corporation/Agnosco Meeting, Denver, CO	Participant
12/2003	Wyoming Stock Growers/Wool Growers Joint Convention, Casper, WY	Speaker
1/2004	NWSS Fed Beef Contest, Denver, CO	Superintendent
1/2004	U.S. Beef Trade Team to Japan, Tokyo, Japan	Academic Advisor
1/2004	NCBA Convention, Phoenix, AZ	Speaker/Participant
2/2004	AMSA Board of Directors Meeting, San Antonio, TX	Board Member
3/2004	IFT-FSIS Downer Interim Regulation Comments, Washington, DC	Participant
3/2004	Conti-Beef Meeting to Donate Research Feedlot, Lamar, CO	Participant
4/2004	National Beef Co. Instrument Grading Workshop, Kansas City, KS	Speaker
4/2004	NSA-BMP Non-Select Agent Working Group, Washington, DC	Participant
4/2004	NCBA Industry BSE Summit (invited), Fort Worth, TX	Participant
5/2004	USMEF/Japanese Environmental Sanitation Magazine BSE Visit, ARDEC	Host/Speaker
5/2004	CSU Beef University Short Course, ARDEC	Host/Speaker
5/2004	USMEF Annual Board of Directors Meeting, Cincinnati, OH	Participant
6/2004	Mr. Kenchii Iwasaki, Asashi Newspaper Reporter Interview, Campus	Interviewee
6/2004	Beef Empire Days, Garden City, KS	Judge
6/2004	USMEF Japan U.S. Control of BSE Seminars, Tokyo & Osaka, Japan	Speaker
6/2004	USMEF China U.S. Control of BSE Seminars, Beijing, China	Speaker
6/2004	AMSA Board Meeting & Reciprocal Meat Conference, Lexington, KY	Board Member
6/2004	USDA Official Planning Meeting, U.S./Japan BSE Working Group, Campus	Host/Participant
6/2004	U.S./Japan BSE Working Group 2 nd Meeting, USDA-APHIS Ft. Collins, CO	Speaker/Host
7/2004	USMEF/NCBA/Burson-Marsteller Intl. BSE Expert Forum Teleconference	Participant

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7/2004	Japan Asahi Interview, Greeley, CO	Interviewee
7/2004	Farmland Foods Injection-Site Lesion Meeting, Salt Lake City, UT	Advisor
8/2004	USMEF/NCBA/Burson-Marsteller Intl. BSE Expert Forum Teleconference	Participant
8/2004	Swift & Co./CSU Fund Raising Meeting, Greeley, CO	Participant
8/2004	NCBA Summer Conference, Denver, CO	Speaker/Participant
8/2004	Harris Ranch Beef Co. Corporate Seminar, Selma & Coalinga, CA	Advisor/Speaker
8/2004	Betty Fussell, Food Historian Interview	Interviewee
9/2004	Jaroslav Pesan, MP Parliament of Czech Republic, Cochran Fellow, Campus	Host
9/2004	USMEF Japanese Technical Team, ARDEC	Host/Speaker
9/2004	Japan Nikkei Newspaper Interview (Mr. Hara), Campus	Interviewee
9/2004	USMEF Japanese Trade Team, ARDEC	Host/Speaker
10/2004	U.S./Japanese BSE Technical Negotiation Team, Northern Colorado	Host/Speaker
10/2004	USMEF/NCBA/Burson-Marsteller Intl. BSE Expert Forum Teleconference	Participant
10/2004	ASI/USDA SSQA Train-the-Trainer & Reviewer Training Course, ARDEC	Host/Instructor
10/2004	AMSA Board of Directors Meeting, Savoy, IL	Board Member
10/2004	1 st Annual North American Beef Congress, London, Ontario, Canada	Speaker
11/2004	USMEF Board of Directors Meeting, Albuquerque, NM	Speaker/Awardee
11/2004	USDA Japanese Maturity Study (BSE) Meeting, Washington, DC	Participant
11/2004	Canadian Consul BSE Working Group Meeting, Denver, CO	Participant
11/2004	International Intercollegiate Meat Judging Contest, Dakota City, NE	Official Committee
11/2004	USMEF/NCBA/Burson-Marsteller Intl. BSE Expert Forum Teleconference	Participant
12/2004	U.S./Japanese BSE Technical Negotiation Team, Liberal, KS	Participant
12/2004	Limousin Visions Symposium, ARDEC	Speaker
12/2004	Robert E. Taylor Beef Symposium, ARDEC	Speaker
12/2004	Chipotle/Miniut University of Beef, Campus	Host/Speaker
1/2005	USG-GOJ Meeting, Washington, DC	Participant
1/2005	USG-GOJ Public Meeting of Maturity Experts, Tokyo, Japan	Delegation Member
2/2005	NHK-Japan Interview, Greeley, CO	Interviewee
2/2005	NCBA Convention, San Antonio, TX	Participant
2/2005	NCBA/USMEF BSE Expert Forum, Conference Call	Participant
2/2005	TV Asahi America, Inc. Interview, Greeley, CO	Interviewee
3/2005	Houston International Livestock Congress, Houston, TX	Speaker/Participant
3/2005	Intercollegiate Meat Judging Contest Official Committee, Houston, TX	Committee Member
3/2005	Nikkei News Interview, ARDEC	Interviewee
3/2005	AMSA Board of Directors Meeting, Springdale, AR	Board Member
3/2005	"The Ranch" Texas Dietitians and health reporters Tour, Amarillo, TX	Speaker
3/2005	Fuji TV Interview, Greeley, CO	Interviewee
4/2005	NCBA Beef Safety Summit, Orlando, FL	Speaker/Participant
4/2005	NCBA Beef E. coli O157 Sampling Procedures Task Force, Orlando, FL	Participant
4/2005	USG-GOJ Government Trade Mission, Tokyo, Japan	Delegation/Speaker
5/2005	USG-GOJ Japanese Verification Visits, Brawley, CA & Schuyler, NE	Host/Speaker
5/2005	Smithfield Beef Food Safety Advisory Committee, Ft. Collins, CO	Host/Speaker
5/2005	Pork Quality Benchmarking/AMSA Meeting, Kansas City, MO	Speaker
5/2005	Asahi News Interview, Greeley, CO	Interviewee
5/2005	USMEF BOD Meeting, Washington, DC	Speaker
5/2005	Coleman Natural Foods Beef University, Campus	Speaker
6/2005	USG-S. Korean Government Tour, Schuyler & Lincoln, NE	Host/Speaker
6/2005	NCBA BQA Coordinators Meeting, Kansas City, MO	Speaker
6/2005	ANETIF (USMEF) Conference on Grading/Branding, Mexico City, Mexico	Speaker
6/2005	USG-Hong Kong Delegation Tour, ARDEC & Schuyler, NE	Host/Speaker
7/2005	IMI Global Meeting with Consolidated Feeders, Amarillo, TX	Speaker
7/2005	USDA-FAS Cochrane Fellows, Campus	Host
7/2005	USMEF Japanese Visiting Professors, Campus	Host
7/2005	Colorado Department of Agriculture John's Conference, Greeley, CO	Speaker
7/2005	NCBA Summer Conference, Denver, CO	Speaker

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8/2005	Jørgen Johansen; Ph.D., Norwegian Meat Research Centre, Campus	Host
8/2005	51st International Congress of Meat Science & Technology, Baltimore, MD	Moderator
8/2005	AMSA Board of Directors Meeting, Springdale, AR	Board Member
8/2005	Gary Merritt, FSIS-EIAO Visit, Campus	Host
9/2005	USMEF Film Crew Interview, Campus	Interviewee
9/2005	Keystone/McDonalds Seminar, ARDEC	Speaker
10/2005	NCBA Strategy Workshop of NBQA—2005, Oklahoma City, OK	Host/Speaker
10/2005	USMEF-USG-Chinese Government Team Visit, ARDEC	Host/Speaker
11/2005	Elanco--Italian Feedlot Operators Visit, Campus	Speaker
11/2005	USDA-AMS “Beef Summit”, Kansas City, MO	Participant
11/2005	International Intercollegiate Meat Contest Committee, Dakota City, NE	Committee Member
11/2005	International 20 Year Anniversary Banquet, '85 Team, Dakota City, NE	Speaker
11/2005	USDA/NCBA Instrumentation QG Standard Task Force Conference Calls	Participant
11/2005	USG-Egyptian Government-USMEF Variety Meats Mission, Cairo, Egypt	Delegation
12/2005	USDA-AMS-MGC National Correlation, Instrument Grading, Denver, CO	Speaker
12/2005	NHK TV Interview, ARDEC	Interviewee
12/2005	USG-GOJ Japanese Media Event, Market-Opening/Audits, Greeley, CO	Interviewee/Host
1/2006	Colorado Beef council/ACFCCA Colorado Chefs Beef 101, Denver, CO	Speaker
1/2006	Southwest Beef Symposium, Tucumcari, NM	Speaker
2/2006	RMS Instrument Grading for Washington Beef, Toppenish, WA	Speaker
3/2006	International Livestock Conference, Houston, TX	Moderator
3/2006	Federal Court case Prairieland v Ridgefield, Denver, CO	Expert Witness
3/2006	NCBA National Beef Instrument Assessment Meeting, Denver, CO	Participant
4/2006	NCBA Beef Industry Safety Summit, Jacksonville, FL	Participant/Speaker
4/2006	Agri-Beef Information Technology Summit (ABITS), Boise, ID	Speaker
5/2006	USMEF Board of Directors Meeting, Las Vegas, NV	Speaker/Participant
6/2006	NPB Pork Academy, Des Moines, IA	Speaker/Participant
6/2006	USMEF-Tokyo “Virtual Tour” interview, Campus	Interviewee
6/2006	Texas Beef Council/U.S. State Department EU Technical Team, Austin, TX	Speaker
6/2006	USDA-FSIS Russell Eastern Laboratory GFP/IHC Meeting, Athens, GA	Participant
7/2006	Dr. Gail Buchanan visit, USDA Under Secretary for REE, Campus	Speaker/Participant
7/2006	Denver Post Interview, Campus	Interviewee
7/2006	USDA-FAS Tokyo, Mr. Paul Spencer visit to USMEF, Denver	Host
7/2006	Beef University, La Junta, CO	Speaker
9/2006	University of Wyoming Dept. Anim. Sci. Seminar	Speaker
9/2006	Food & Agriculture Export Alliance (FAEA) Team, Hanoi, Vietnam	Participant
10/2006	CLA Feeder Council Meeting, Ft. Morgan, CO	Speaker/Participant
10/2006	USDA-FAS Cochran Program for Russian Delegation, Denver, CO	Speaker/Host
10/2006	CSU President’s Council on Agriculture Tour, Campus	Host/Speaker
10/2006	VPR Colloquium on Zoonotic Disease, Hilton Hotel, Ft. Collins	Speaker
11/2006	USMEF Board of Directors Meeting, Cancun, Mexico	Speaker/Participant
11/2006	USMEF-NCBA-AMI-NMA SRM Briefing for USDA, Washington, DC	Speaker
11/2006	USMEF-Tokyo Japan Policy Development Team, Campus	Host
11/2006	USDA-AMS Pork Quality Standardization Meeting, Chicago, IL	Speaker/Participant
11/2006	USDA-AMS Beef Summit, Kansas City, MO	Participant
12/2006	Scott Howard Interview, Campus	Interviewee
12/2006	Elanco Animal Health Pre-Harvest Food Safety Meeting, Greenville, IN	Speaker/Participant
12/2006	USDA-AMS Darin Doerscher Visit, Campus	Host
12/2006	USMEF Mexican ANITIF Conference, Mexico City, Mexico	Speaker
1/2007	University of Tokyo Visiting Professors, Campus	Speaker
1/2007	NWSS Intercollegiate Meat Judging Contest Committee, Greeley, CO	Chairman
1/2007	NWSS Fed Beef Contest Live Jackpot, Denver, CO	Organizer
1/2007	American Sheep Industry Association Annual Convention, San Antonio, TX	Speaker
2/2007	National Cattlemen’s Beef Association Annual Convention, Nashville, TN	Broadcast Speaker
2/2007	National Meat Association Annual Convention, Las Vegas, NV	Speaker

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3/2007	NCBA Food Safety Summit, Dallas, TX	Speaker/Participant
3/2007	NWSS Fed Beef Committee Meeting, Denver, CO	Participant
3/2007	Texas Dietetic Association Convention, Frisco, TX	Speaker
4/2007	Colorado Science & Engineering Fair, Campus	Judge
4/2007	Japan Foodservice Association Seminar (USMEF), Campus	Host/Speaker
4/2007	Asahi Shinbum BSE Interview, Campus	Interviewee
5/2007	Elanco Sensory Briefing for Key Influencers & Editors, Ames, IA	Speaker/Instructor
5/2007	USMEF Board of Directors Meeting, La Jolla, CA	Speaker
5/2007	Texas Beef Council “The Ranch”, Amarillo, TX	Speaker/Instructor
6/2007	BIF Producer Applications Subcommittee, Ft. Collins, CO	Speaker
6/2007	NCBA Non-Conforming Beef Product Workshop, College Station, TX	Speaker/Participant
7/2007	US/China SPS Leadership Development Program (USDA/USMEF), CO	Host/Speaker
7/2007	USMEF “We Care” Campaign Seminars & Promotion, Tokyo, Japan	Speaker
8/2007	USDA-APHIS NAIS Termination Record Workshop, Breckenridge, CO	Host/Moderator
8/2007	NBIAP III Meeting (NCBA), Englewood, CO	Speaker/Participant
9/2007	NCBA Nutrient Database Improvement Team, Englewood, CO	Participant
9/2007	Mexican Institute of Nutrition “Salvador Zubiran”, Mexico City, Mexico	Speaker
10/2007	Animal Health Institute Board Meeting, Ames, IA	Speaker
10/2007	NCBA Invited Industry Forum On 2nd World Cancer Report, Chicago, IL	Participant
10/2007	INIA Uruguay Visiting Researchers, Campus	Host
10/2007	USDA/LMIC Visitors, Campus	Host/Speaker
10/2007	TAMU Import Food Safety Conference, College Station, TX	Participant
10/2007	Animal Sciences Building Tour for Doug May & Donors, Campus	Host
11/2007	Coleman Natural Meats Management Meeting, Campus	Host/Participant
11/2007	NCBA Nutrient Database Improvement Team, Lubbock, TX	Participant
11/2007	Phibro Animal Health, Darryl Clark Meeting, Campus	Host
12/2007	USMEF Mexico Beef Team, Campus	Host/Speaker
12/2007	Optibrand Advising Meeting for Fred Kerst, LSC Campus	Participant
1/2008	NWSS Fed Beef Awards/Red Meat Club, Denver, CO	Announcer
1/2008	NWSS 4-H/FFA Meat Judging Contest, Campus	Host
1/2008	NWSS Fed Beef Live Evaluation Jackpot, Denver, CO	Superintendent
2/2008	NCBA Convention, Reno, NV	Participant
2/2008	Lori Boyer, Colo. Ag News Interview, Campus	Interviewee
2/2008	Junior Food Animal Vet Students Lecture, VTH	Speaker
3/2008	South Dakota Nutrition Seminar, Brookings, SD	Speaker
3/2008	NWSS Fed Beef Committee Meeting, Denver, CO	Superintendent
4/2008	W2177 Western Regional Meeting, Honolulu, HI	Participant/Speaker
4/2008	Colorado State Science Fair/CAMP Award, Campus	Judge
4/2008	Optibrand Advising Meeting for Fred Kerst, Campus	Advisor
5/2008	Ft. Collins Science Café--Beet Street, Ft. Collins, CO	Speaker
5/2008	USMEF Board of Directors Meeting, Las Vegas, NV	Speaker
6/2008	AMSA Reciprocal Meat Conference, Gainesville, FL	Speaker
7/2008	SMA 52 nd Annual Convention, Scottsdale, AZ	Speaker
8/2008	Drovers Journal Interview w/ Holly Foster, Campus	Interviewee
9/2008	Instituto Nacional de Ciencias Medicas y Nutricion, Mexico City, Mexico	Speaker
9/2008	USMEF Retail Beef Promotions, Mexico City, Mexico	Speaker
9/2008	USMEF/USG Government Meetings (Thymus), Buenos Aires, Argentina	Speaker
9/2008	USMEF/USG Government Meetings (Thymus), Montevideo, Uruguay	Speaker
10/2008	CSU Student AABP Tour of JBS, Greeley, CO	Host
10/2008	CSU/Aristides Daskalopoulos Foundation Short Course, Athens, Greece	Speaker/Instructor
10/2008	JBS-Yoshinoya Customer Visit, Greeley, CO	Speaker
11/2008	USMEF Board of Directors Meeting, Tucson, AZ	Speaker
11/2008	Del Campo al Plato Conference, Montevideo, Uruguay	Speaker
12/2008	USMEF Japanese Media Team, Campus	Host
1/2009	ILC Tour of JBS Beef Plant, Greeley, CO	Host/Guide

Mo/Yr	Program Title or Purpose	Nature of Participation
1/2009	AMSA Sustaining Partner Meeting with JBS, Greeley, CO	Leader
1/2009	AMSA Board of Directors Teleconference, Campus	President-Elect
1/2009	USMEF-EU-PRT Team Visit, Denver, CO	Speaker
1/2009	Review Colorado Premium GB Plant, Denver, CO	Reviewer
1/2009	NCBA Annual Convention, Phoenix, AZ	Participant/Speaker
1/2009	NCBA Annual Convention Media Interviews, Phoenix, AZ	Interviewee
2/2009	USMEF Korean Government Official Posted in U.S. Meeting, Campus	Host
2/2009	Niman Ranch Branded Partner Meeting, ARDEC	Speaker
2/2009	NMA Convention, Las Vegas, NV	Participant
2/2009	AMSA Board of Directors Meeting, Las Vegas, NV	President-Elect
3/2009	NWSS Fed Beef Committee Meeting, Denver, CO	Participant
3/2009	Meet with Dr. Kadohira for Vet Sciences, Campus	Host
4/2009	Colorado Beef Council Meeting, Denver, CO	Speaker
4/2009	Interview for Tim Hoskins, Iowa/Missouri Farmer Today, Campus	Interviewee
4/2009	AMSA Board of Directors Teleconference, Campus	President-Elect
4/2009	ASAE CEO Symposium for AMSA, Chicago, IL	President-Elect
4/2009	IMOA Signing Ceremony for INIA-Uruguay, Campus	Host/Organizer
4/2009	Phone Radio Interview for NCBA, Instrument Grading, Campus	Interviewee
5/2009	AMSA Board Orientation Teleconference, Campus	President-Elect
5/2009	MIP Department Evaluation Committee Meeting, Campus	Departmental Reviewer
5/2009	Meet with Ryan Wood, Elk River Ranch, Steamboat Springs, CO	Extension
5/2009	AMSA Board of Directors Teleconference, Campus	President-Elect
5/2009	Meet with John Evans/Sebastian Baerend, SWB Consulting, Campus	Host
6/2009	AMSA Reciprocal Meat Conference, Rogers, AR	President-Elect
7/2009	Ryan Wood Visit, Campus	Host
7/2009	NCBA Summer Conference, Denver, CO	Speaker
7/2009	AMSA Board of Directors Teleconference, Campus	President
8/2009	USMEF Russian Media Team, ARDEC	Host/Speaker
8/2009	Ryan Wood Meeting with CSURF, Campus	Host/Organizer
8/2009	AMSA Strategic Planning Meeting, Indianapolis, IN	President
9/2009	Alchemy SISTEM Installation (David Tripplett), Campus	Host
9/2009	NWSS Hide Party, Denver, CO	Participant
9/2009	AMSA Meeting with FASS, Savoy, IL	President
9/2009	JBS Food Safety and Quality Advisory Team Meeting, Greeley, CO	Participant
10/2009	Colorado Premium Foods Meeting with Business School, Campus	Host/Organizer
10/2009	Cattle Weigh-Date, Ryan Woods, Steamboat Springs, CO	Participant
10/2009	NCBA Research Meeting, Denver, CO	Participant
10/2009	AMSA Board of Directors Meeting, Chicago, IL	President
11/2009	ASI Executive Board Meeting Superior Farms Tour, Denver, CO	Speaker/Host
11/2009	USMEF Board of Directors Meeting, Denver, CO	Participant
11/2009	AMSA International Meat Judging Official Committee, Dakota City, NE	Chair
11/2009	AMSA Board of Directors Teleconference, Campus	President
11/2009	JBS Kuner Feedlot Visit, Advisory Team, Kersey, CO	Participant
12/2009	AMSA Board of Directors Teleconference, Campus	President
12/2009	MLA Meeting with Allan Bloxson & Rod Polkinghorne, Campus	Host
12/2009	JBS Plant Review, Grand Island, NE	Participant/Advisor
12/2009	USDA/USSTR//AIT/USMEF Taiwan BSE Media DVC, Washington, DC	Speaker
1/2010	JBS Food Safety and Quality Advisory Team Meeting, Greeley, CO	Participant
1/2010	AMSA Board of Directors Teleconference, Campus	President
1/2010	CSU Livestock Leader Award Presentation at the NWSS—Dallas Horton	Participant
1/2010	NCBA Annual Convention, San Antonio, TX	Participant
1/2010	Drover's Journal Video Update at NCBA—Food Safety, San Antonio, TX	Speaker/Interviewee
2/2010	AMSA Board of Directors Teleconference, Campus	President
2/2010	AMSA Board of Directors Meeting, Des Moines, IA	President
3/2010	USMEF Korea Lotte Mart Group, ARDEC	Host/Speaker

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3/2010	AMSA Board of Directors Teleconference, Campus	President
3/2010	JBS Food Safety and Quality Advisory Team Meeting, Greeley, CO	Participant
3/2010	USMEF Korea E-Mart Group, ARDEC	Host/Speaker
4/2010	Colorado State Science Fair/CAMP Award, Campus	Judge
4/2010	California Beef Council Nutrition Seminar for CDA, Oakland, CA	Speaker
4/2010	AMSA Board of Directors Teleconference, Campus	President
4/2010	Michigan Beef Council Nutrition Seminar for MDA, Bay City, MI	Speaker
5/2010	AMSA Board of Directors Teleconference, Campus	President
6/2010	AMSA Reciprocal Meat Conference, Lubbock, TX	President/Participant
6/2010	AMI Video Shoot for YouTube (2), Lubbock, TX	Interviewee
7/2010	JBS Food Safety and Quality Advisory Team Meeting, Greeley, CO	Participant
7/2010	AMSA Executive Committee Teleconference, Campus	Past-President
7/2010	National Junior Angus Show Cookoff, Denver, CO	Judge
7/2010	NCBA Nutrient Database Initiative Advisory Meeting, Bastrop, TX	Participant/Speaker
7/2010	USMEF Egyptian Veterinarian Visitors	Host
7/2010	NCBA Midyear Conference, Denver, CO	Participant/Speaker
8/2010	NCBA Innovative Beef Symposium-Round Data, Denver, CO	Speaker
8/2010	NCBA/NPB Press Conference for USDA/DOJ GIPSA Public Meeting	Host/Meal
9/2010	NPB Pork WTP Study Webinar, Campus	Speaker
9/2010	National Provisioner Phone Interview w/ Megan Pellegrini, Campus	Interviewee
9/2010	USMEF Japanese Media Team, ARDEC & Campus	Host/Speaker
9/2010	JBS Food Safety and Quality Advisory Team Meeting, Greeley, CO	Participant
9/2010	AMSA Fall Board Meeting, Champaign, IL	Past-President
10/2010	LA County Food Safety Advisory Council Meeting, Los Angeles, CA	Speaker
10/2010	AMSA Board of Directors Teleconference, Campus	Past-President
10/2010	President's Ag Advisory Council Meeting, Rockwell Hall	Participant (CAS)
11/2010	Foodprint Project Panel, Museum of Contemporary Art, Denver, CO	Speaker
11/2010	Department Beef Advisory Committee Meeting, ARDEC	Speaker
11/2010	AMSA Board of Directors Teleconference, Campus	Past-President
11/2010	Birko Corp. Meeting w/ Kelly C. Green RE: Advisory Board, Windsor, CO	Participant
12/2010	JBS Food Safety and Quality Advisory Team Meeting, Greeley, CO	Participant
12/2010	Meet w/ JBS Brazilian Guests, Greeley, CO	Participant
12/2010	AMSA Board of Directors Teleconference, Campus	Past-President
12/2010	NPB Pork WTP Study Webinars for Exporting Companies (4), Campus	Speaker
1/2011	Northern Colorado Dietetic Association, Windsor	Speaker
2/2011	National Cattlemen's Beef Association Convention, Denver	Participant
2/2011	USDA-ASTM Beef Tenderness Marketing Claim Teleconference, Campus	Participant
2/2011	Fort Collins Rotary Club, <i>E. coli</i> & Food Safety	Speaker
3/2011	JBS Quality & Safety Advisory Team Meeting, Greeley	Member
3/2011	FSNS British Retail Consortium Training & Internal Auditing, Los Angeles	Participant
3/2011	AMSA Board of Directors Meeting, Toronto, Canada	Member
4/2011	Kentucky Dietetic Association Annual Meeting, Louisville, KY	Speaker
5/2011	USDA Sheep Instrument Approval Standard Teleconference, Campus	Participant
5/2011	Northern Colorado Dietetic Association ARDEC Tour	Host
5/2011	JBS Greeley Plant Tour for Elaine Scallan	Host
6/2011	JBS Tenderness/Publix Teleconference, Campus	Advisor
6/2011	CEV Content Use Meeting, Wyndham Love Field, Dallas	Participant
6/2011	JBS Quality & Safety Advisory Team Meeting, Greeley	Participant
6/2011	CJAA Association "Golden Trend" Field Day, ARDEC	Host
6/2011	AMSA Reciprocal Meat Conference, Manhattan, KS	Participant
6/2011	FSNS Shadow BRC Audit, Ogden, UT	Participant
7/2011	FSIS District EIAO Meeting--HACCP Validation, Denver	Lecturer
7/2011	SMA Research Update, San Antonio, TX	Speaker
7/2011	FSNS HACCP Course, Fresno, CA	Instructor
7/2011	NCBA's "Cattlemen to Cattlemen" Interview--Instrument Grading, Campus	Speaker

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8/2011	JBS Quality & Safety Advisory Team Meeting, Loveland	Participant
9/2011	National Provisioner Interview, Campus	Interviewee
9/2011	FSNS HACCP Course, Green Bay, WI	Instructor
10/2011	BIFSCO Meeting, Non-0157 STECs, Omaha, NE	Participant
10/2011	NPB Propensity to Pay for US Pork Study Web Conference, Campus	Speaker
10/2011	EU Commission AMT Food Safety Seminar, Brussels, Belgium	Speaker
10/2011	FSNS HACCP Course, Atlanta, GA	Instructor
10/2011	USMEF Egyptian Vets Presentation; Hallal Slaughter, Amarillo, TX	Speaker
10/2011	FSNS John Soules Foods HACCP Course, Tyler, TX	Instructor
11/2011	California Beef Council Beef Tour, Davis, CA	Speaker
11/2011	FSNS BRC Training Course, Fresno, CA	Instructor
11/2011	FSNS HACCP Course, Phoenix, AZ	Instructor
11/2011	Preston Middle School 6th-8th Grade Lego Robotics Team, Campus	Instructor
11/2011	JBS Quality & Safety Advisory Team Meeting, Loveland	Participant
12/2011	FSNS HACCP Course, San Antonio, TX	Instructor
12/2011	CSPH Center for Food Safety Meeting, Campus	Participant
1/2012	National Provisioner Interview, Megan Pellegrini Pre- & Post Interventions	Interviewee
1/2012	NWSS 2012 International Livestock Congress, Denver, CO	Moderator
2/2012	NCBA Annual Convention, Nashville, TN	Speaker/Attendee
2/2012	AMI/FMI Annual Meat Conference, Orlando, FL	Speaker
3/2012	JBS Quality & Safety Advisory Team, Greeley, CO	Advisor
4/2012	USMEF-EU Commission Tour, Lactic Acid, Greeley & Fort Morgan	Speaker
4/2012	International Meat Conference, Mexico City, Mexico	Speaker
4/2012	Colorado Beef Council Meeting, Denver, CO	Participant/Update
4/2012	Colorado State Science Fair, Special Awards Judge for CAMP, Campus	Judge
4/2012	NCBA NBQA-2011 Strategy Session, Denver, CO	Organizer/Speaker
5/2012	CEV Video Session, Campus (BSE)	Interviewee
5/2012	CAB Interview, Miranda Reiman, NBQA-2011, Campus	Interviewee
5/2012	Colorado Dept. Ag. Russian Team Visit, Campus	Host/Speaker
5/2012	Visit by Dr. Mauricio Rodriguez & Team from Uruguay, Campus	Host/Speaker
6/2012	German Federal Institute for Risk Assessment (BfR), Berlin, Germany	Speaker
6/2012	NCBA BQA Advisory Team & Coordinators Meeting, Denver, CO	Speaker
6/2012	CJAA Golden Trends, ARDEC	Host
6/2012	CAB "Open-Ended Round-Table Discussion", Fargo, ND	Participant
6/2012	AMSA Reciprocal Meat Conference, Fargo, ND	Participant
7/2012	JBS Quality & Safety Advisory Team, Greeley, CO	Advisor
7/2012	Meet w/ Rachael Miller, FishChoice, Inc., Campus	Host
7/2012	NCBA Summer Conference, NBQA-2011 Presentation, Denver, CO	Speaker
7/2012	NCBA's Cattlemen-to-Cattlemen, Englewood, CO	Interviewee
7/2012	Animal Sciences Food Processing Center Planning, San Luis Obispo, CA	Participant
9/2012	JBS Quality & Safety Advisory Team, Greeley, CO	Advisor
10/2012	Beef + Transparency = Trust Meeting, Denver, CO	Host/Advisor
10/2012	AMSA Kansas City Royal Contest, Omaha, NE	Committee Chair
10/2012	Cargill Visiting Brazilians via Pablo Guiroy, ARDEC	Host/Speaker
10/2012	NAMA Inaugural Meeting, San Antonio, TX	Participant
11/2012	"Del Campo al Plato", Montevideo, Uruguay	Speaker

ADDRESSES, GUEST LECTURES OR PRESENTATIONS OF A PROFESSIONAL NATURE:

Date	Group & Location	Number
1/95	NCA Cattlemen's College, Nashville, KY	1
2/95	International Stockman's School, Houston, TX	1
3/95	U.S. Agriculture & International Trade, Auburn Univ.	2
5/95	U.S./Venezuelan Beef Marketing, Caracas/Maracaibo, Ven.	2
6/95	UN/ECE Committee on Agric., Rennes, France	1
7/95	USDA Grades & Market Information, Bogotá, Colombia	2
7/95	Ministry of Agriculture, Santiago, Chile	2
8/95	ICoMST, San Antonio, TX	1
9/95	AMI International Marketing Conference, Chicago, IL	1
1/96	NWSS Fed Beef Contest, Denver, CO	1
1/96	NCBA Cattlemen's College, San Antonio, TX	2
2/96	CAST Congressional Staff Briefing, Washington, DC	2
2/96	Colorado Youth Livestock Symposium, Pueblo, CO	1
3/96	World Brahman Congress, Maracaibo, Venezuela	1
3/96	NAMP Management Conference, Denver, CO	1
4/96	CSU San Juan Basin Bull Sale, Hesperus, CO	1
4/96	USMEF/Korean LPMO Conference, Denver, CO	1
5/96	Colorado Cattle Feeders Association, campus	1
6/96	Colorado State Beef University, Fort Collins, CO	3
6/96	Reciprocal Meat Conference, Provo, UT	2
6/96	National Cattlemen's Beef Assoc. Food Service Tour, campus	1
6/96	Keystone/McDonald's Beef Industry Tour, campus	1
6/96	Queensland, Australia Trade Delegation, campus	1
7/96	CSU Rouse Ranch Educational Program, Rouse Ranch	1
7/96	USMEF-Tokyo, Japan: Food safety, Tokyo	1
8/96	CSU/Horton Feedlots Rocky Mountain Ranch-to-Rail Program, campus	1
9/96	Japanese student tour delegation, campus	1
9/96	NCBA Retailers Tour, campus	1
10/96	NCBA Vitamin E Conference, Denver	1
12/96	Minnesota Beef Council, Cattle Feeders Days, Minnesota	6
12/96	West Virginia Cattlemen's Association Annual Convention, Cumberland, WV	1
12/96	NCBA-PACCP Implementation Workshop, Denver	1
1/97	NWSS Fed Beef Contest, Denver, CO	1
1/97	NCBA Cattlemen's College, Kansas City, MO	2
2/97	Tri-State Cow/Calf Symposium, Wray, CO	1
2/97	Roche/Waremart Vitamin E Seminars, Portland, OR	1
4/97	Harris Ranch Beef Co., Vitamin E Program, Selma, CA	1
5/97	Colorado Cattle Feeders Association Board meeting, campus	1
6/97	NCBA Beef Industry Long Range Planning meeting, Denver, CO	1
6/97	NCBA Beef Quality Assurance Advisory Board meeting, Memphis, TN	1
6/97	NCBA Grading Privatization Task Force Meeting, campus	1
6/97	AMSA-RMC Intercollegiate Coaches Association Meeting, Ames, IA	1
6/97	Beefmaster Breeders United tour, campus	1
7/97	North Carolina Cattlemen's Tour, campus	1
8/97	Rocky Mountain Ranch-to-Rail Wrap-up Seminar, campus	1
8/97	USDA Cochran Fellow U.S. Tour—Ukraine, campus	1
9/97	Montana Stockgrowers "Gate-to-Plate" Seminar, Bozeman, MT	2
9/97	"Ranch & Rural Living" Conference, Craig, CO	2
10/97	AMI/AMSA Meat Industry Research Conference, Chicago, IL	1
10/97	King Soopers, Inc. ground beef packaging meeting, Denver, CO	1
11/97	Pharmacia & Upjohn Cattle Feeders Seminar, Phoenix, AZ	1
11/97	Colorado Association of Fairs & Shows, Denver, CO	1
11/97	NCBA International Beef Symposium Tour, campus	1

Date	Group & Location	Number
11/97	USMEF Russian visitors tour, campus	1
11/97	T-Bone Club, Greeley, CO	1
12/97	Colorado Beef Council Board Meeting, Denver, CO	1
12/97	NPPC Asian Consumer Preference Meeting, Des Moines, IA	1
12/97	Larimer County Stockgrowers Winter Meeting, Livermore, CO	1
1/98	Rio Blanco County Stockgrowers Association, Meeker, CO	1
2/98	National Cattlemen's Beef Association Annual Convention, Kansas City, MO	1
2/98	U.S. Meat Export Federation/National Pork Producers Council, campus	1
2/98	San Juan Basin Extension Beef Cow Symposium, Durango, CO	1
2/98	Eagle County Livestock Commission Meeting, Eagle, CO	1
2/98	Beefmaster Breeders United Annual Meeting, Houston, TX	1
2/98	Southwest Nutrition Conference, Phoenix, AZ	1
3/98	Alberta Agriculture, Food & Rural Development Specialist Training, Canada	1
4/98	Leachman Cattle Company Cattlemen's Congress, Billings, MT	1
4/98	Certified Angus Beef Roundup Symposium, campus	3
5/98	Patricipes Dí del Ganadero, Hermosillo, Sonora, Mexico	2
6/98	NCBA Value-based Marketing Task Force, Denver, CO	1
6/98	U.S. Meat Export Federation Mexican Trade Team, campus	1
6/98	U.S. Meat Export Federation Buyers Conference, St. Louis, MO	2
6/98	USDA Cochran Fellows—China, campus	1
6/98	NPPC Pork Quality/Safety Summit, Des Moines, IA	3
6/98	NCBA Midyear Meeting, Denver, CO	1
8/98	Texas Cattle Feeders Association High Plains Beef Conference, Canyon, TX	1
9/98	Colorado Livestock Association BQA Verification Short Course, campus	2
9/98	Montana Stock Growers Association Gate-to-Plate Seminar, Bozeman, MT	3
10/98	Certified Angus Beef Stampede Seminar, campus	2
11/98	U.S. Meat Export Federation Board of Directors Meeting, Phoenix, AZ	1
11/98	Monfort/ConAgra, Inc. "Chain of Quality" Meeting, Greeley, CO	1
12/98	National Meat Association HACCP Training Course, Los Angeles, CO	3
1/99	NCBA, Raw Material Safety Task Force, Englewood, CO	1
1/99	Roche Vitamins, Inc., Lextron Vitamin E and D Meeting, Greeley, CO	2
2/99	NCBA Annual Convention, Food Safety Subcommittee, Charlotte, NC	2
2/99	Colorado Livestock Association BQA Training Course, campus	2
3/99	ConAgra Red Meat Companies, Inc., Beef Tenderness, Greeley, CO	1
3/99	Yampa Valley Y Knott Beef, LLC, Beef Value, Steamboat Springs, CO	1
3/99	National Pork Producers Council, "Pork 101" Training, campus	3
3/99	Colorado Livestock Association Livestock College, Milliken, CO	1
4/99	Nolan Ryan "Think Tank" Meeting, San Antonio, TX	1
5/99	Keystone Foods/MacDonald's Tour, campus	1
5/99	ConAgra Red Meats, Inc., Tenderness Meeting, Greeley, CO	1
6/99	NCBA-BQA Advisory Board Meeting, Memphis, TN	2
6/99	Colorado 4-H Conference Quality Assurance Workshop, campus	1
6/99	U.S. Meat Export Federation, Korean Pork Study Update, Denver, CO	2
7/99	NCBA Bioxide Ozone Decontamination Meeting, Englewood, CO	1
7/99	NCBA Midyear Meeting, Research Update Session, Denver, CO	2
9/99	Montana Stockgrowers Association "Gate-to-Plate" Seminar, Miles City, MT	4
9/99	USMEF Pork Export Workshop, campus	1
9/99	NCBA Combo-Bin Sampling Task Force, Fort Worth, TX	1
10/99	Nolan Ryan/Safeway Store's, Inc. Meeting, Denver, CO	1
10/99	USMEF Growth Promotants Staff Meeting, Denver, CO	1
10/99	Loire Valley, France, Beef Producers Tour, campus	1
11/99	Texas Cattle Feeders Association Annual Meeting, San Antonio, TX	1
12/99	Colorado Angus Association Meeting, DIA, CO	1
12/99	NCBA-NMCBBQA Strategy Workshop, Denver, CO	2
12/99	Range Beef Cow Symposium, Greeley, CO	1

Date	Group & Location	Number
1/2000	NCBA-BQA Advisory Board Meeting, Denver, CO	1
1/2000	Montana Stockgrowers Association “Beef University” Satellite Talk, campus	1
1/2000	NCBA Annual Convention, Phoenix, AZ	3
2/2000	USDA-FSIS Public Meeting on <i>E. coli</i> , Arlington, VA	2
4/2000	67 th Food & Dairy Industry Conference, Columbus, OH	1
5/2000	Cattle-Fax French visitors, campus	1
5/2000	USMEF Mexican Trade Team, campus	1
5/2000	Western Beef Expo Banquet, Sterling, CO	1
6/2000	AMSA Reciprocal Meat Conference, Columbus, OH	1
7/2000	NPPC Pork Quality/Safety Summit, Des Moines, IA	2
7/2000	Beef Improvement Federation Annual Meeting, Wichita, KS	1
8/2000	NCBA Summer Meeting, Denver, CO	2
8/2000	Future Beef Operations, LLC, campus	1
8-9/2000	CSU/INIA Project Development Initiative, Uruguay	4
9/2000	USDA-AMS Public Meeting, Instrument Grading, Washington, DC	1
9/2000	Montana “Gate-to-Plate” Short Course, Malta, MT	2
11/2000	USMEF Annual Board of Directors Meeting, San Antonio, TX	1
11/2000	Congreso de Produccion y Comercializacion de Carne, Montevideo, Uruguay	1
11/2000	Colorado Cattlemen’s Association Winter Meeting, Colorado Springs, CO	1
1/2001	NCBA QA Advisory Board NBQA-2000 Strategy Workshop, Dallas, TX	2
1/2001	NWSS Red Meat Club, Denver, CO	1
1/2001	American Sheep Industry Association Convention, Reno, NV	1
2/2001	NCBA Annual Convention, San Antonio, TX	3
2/2001	National Meat Association, Las Vegas, NV	2
5/2001	National Pork Board PPIC Meeting, Pork Chain Audit, Kansas City, MO	1
5/2001	Future Beef Operations, LLC, Beef University, ARDEC	1
5/2001	U.S. Meat Export Federation Board of Directors Meeting, New Orleans, LA	1
5/2001	Merial Animal Health, Inc., Deluth, GA	1
6/2001	USDA Food Safety & Inspection Service, HACCP Systems, Boulder, CO	1
6/2001	NCBA QA Advisory Board & State Coordinators Meeting, Arlington, TX	4
7/2001	Elanco Animal Health Beef University, ARDEC	1
8/2001	NCBA Summer Conference, Denver, CO	6
8/2001	Future Beef Operations, LLC, Implants, Arkansas City, KS	1
10/2001	Montana Stockgrowers Association Gate-to-Plate Seminars, Montana	9
10/2001	Gamma Sigma Delta, Campus	1
10/2001	American Meat Institute Convention, Chicago, IL	1
10/2001	Beefmaster Breeders, LLC, Board of Directors Meeting, ARDEC	1
10/2001	USDA Food Safety & Inspection Service, Hazard Analysis, Boulder, CO	1
11/2001	U.S. Meat Export Federation Board of Directors Meeting, Scottsdale, AZ	1
11/2001	U.S. Meat Export Federation, Latin Trade Team Pork 101, Campus	1
12/2001	American Meat Institute Foundation, Investors Meeting, Dallas, TX	1
1/2002	USMEF Meat 101 course, Seoul, South Korea	4
1/2002	American Sheep Industry Association Convention, San Antonio, TX	1
2/2002	Roche Vitamins NCBA Convention Breakfast, Denver, CO	1
2/2002	Eastern Colorado Research Center Field Day, Sterling, CO	1
2/2002	Nolan Ryan Tender Aged Beef Investment Board Meeting, Houston, TX	1
2/2002	AMI Animal Handling & Stunning Workshop, Kansas City, KS	1
2/2002	Sheep Safety & Quality Assurance Train-the-Trainer Program	2
3/2002	ANTAD Satisfacer al Consumidor Program, Guadalajara, Mexico	1
6/2002	NCBA QA Advisory Board Meeting, Kansas City, MO	1
8/2002	Montana Stockgrower’s Association Follow-The-Cattle tour, Campus	1
9/2002	Montana Stockgrower’s Association Gate-To-Plate course, Bozeman, MT	2
9/2002	Wyoming Dept. Public Health Annual Education Conference, Gillette, WY	1
9/2002	Certified Angus Beef Stampede seminar, Campus	1
10/2002	Neck Injection-Site Lesion Conference, Campus	1

Date	Group & Location	Number
10/2002	DuPont Food Industry Solutions Think-Tank Meeting, College Station, TX	1
10/2002	Swift & Company MIT Conference, Greeley, CO	1
11/2002	USMEF Foreign Directors Meeting, Denver, CO	1
11/2002	Colorado Livestock Association Producer Council Meeting, Ft. Morgan, CO	1
11/2002	2 nd Congreso de Produccion y comercializacion, Montevideo, Uruguay	1
12/2002	Colorado Agriculture & Rural Leadership Class, Campus	1
12/2002	Academy of Veterinary Consultants Conference, Denver, CO	1
12/2002	NPB Pork Chain Quality Audit Strategy Workshop, Kansas City, MO	1
2/2003	NPB Advisory Group Competitive Disparities Conference, Des Moines, IA	1
2/2003	International Livestock Congress, Houston, TX	1
3/2003	NMA Convention Round-Table Discussions, Las Vegas, NV	1
3/2003	CAMP Convention, ARDEC	1
5/2003	USMEF Board of Directors Meeting, St. Louis, MO	1
6/2003	USMEF Japanese MAF Meeting on BSE, Campus	1
6/2003	Beef Empire Days, Garden City, KS	1
6/2003	AMSA Reciprocal Meat Conf., & Post-Conf. Symp., Columbia, MO	1
7/2003	Douglas County 4-H Seminar, Campus	1
7/2003	NCBA Summer Conference, Dallas, TX	2
8/2003	ABIPECS Brazilian Pork Industry Seminar, Sao Paulo, Brazil	1
9/2003	Montana Stockgrowers Assn. Gate-to-Plate Seminar, Bozeman, MT	2
9/2003	USMEF International Culinary Team Seminar, New York, NY	1
9/2003	USMEF Indonesian Government Veterinarian Tour, ARDEC	1
9/2003	NCBA Feedlot Food Safety Media Tour, Imperial, NE	1
10/2003	U.S. Animal Health Association, San Diego, CA	1
10/2003	Colorado Livestock Association BQA Level II Training, ARDEC	2
11/2003	AMSA/NPB Pork Chain Quality Benchmarking Conf., Kansas City, MO	1
12/2003	Wyoming Stock Growers/Wool Growers Joint Convention, Casper, WY	1
1/2004	NCBA Convention, Phoenix, AZ	1
2/2004	Colorado Department of Health, Denver, CO	1
4/2004	Colorado Department of Health, Eagle, CO	1
4/2004	National Beef Co. Instrument Grading Workshop, Kansas City, KS	1
5/2004	USMEF/Japanese Environmental Sanitation Magazine BSE Visit, ARDEC	1
5/2004	CSU Beef University Short Course, ARDEC	2
6/2004	USMEF Japan U.S. Control of BSE Seminars, Tokyo & Osaka, Japan	3
6/2004	USMEF China U.S. Control of BSE Seminars, Beijing, China	2
6/2004	U.S./Japan BSE Working Group 2 nd Meeting, USDA-APHIS Ft. Collins, CO	1
7/2004	Colorado Cattlemen's Association Board Meeting, ARDEC	1
8/2004	NCBA Summer Conference, Denver, CO	1
8/2004	Harris Ranch Beef Co. Corporate Seminar, Selma & Coalinga, CA	1
8/2004	Intl. Association of Milk Control Agencies Annual Meeting, Colorado Springs	1
9/2004	Colorado Livestock Association Board Meeting, ARDEC	1
9/2004	USMEF Japanese Technical Team, ARDEC	1
9/2004	NWSS Trustees Luncheon & Update, Campus	1
9/2004	USMEF Japanese Trade Team, ARDEC	1
10/2004	U.S./Japanese BSE Technical Negotiation Team, Northern Colorado	1
10/2004	ASI/USDA SSQA Train-the-Trainer & Reviewer Training Course, ARDEC	1
10/2004	1 st Annual North American Beef Congress, London, Ontario, Canada	2
11/2004	USMEF Board of Directors Meeting, Albuquerque, NM	1
12/2004	Limousin Visions Symposium, ARDEC	1
12/2004	Robert E. Taylor Beef Symposium, ARDEC	1
12/2004	Chipotle/Miniati University of Beef, Campus	1
3/2005	Houston International Livestock Congress, Houston, TX	1
3/2005	"The Ranch" Texas Dietitians and health reporters Tour, Amarillo, TX	1
4/2005	NCBA Beef Safety Summit, Orlando, FL	2
4/2005	USG-GOJ Government Trade Mission, Tokyo, Japan	3

Date	Group & Location	Number
5/2005	USG-GOJ Japanese Verification Visits, Brawley, CA & Schuyler, NE	1
5/2005	Smithfield Beef Food Safety Advisory Committee, Ft. Collins, CO	1
5/2005	Pork Quality Benchmarking/AMSA Meeting, Kansas City, MO	1
5/2005	USMEF BOD Meeting, Washington, DC	1
5/2005	Coleman Natural Foods Beef University, Campus	1
6/2005	USG-S. Korean Government Tour, Schuyler & Lincoln, NE	1
6/2005	NCBA BQA Coordinators Meeting, Kansas City, MO	1
6/2005	ANETIF (USMEF) Conference on Grading/Branding, Mexico City, Mexico	2
6/2005	USG-Hong Kong Delegation Tour, ARDEC & Schuyler, NE	1
7/2005	IMI Global Meeting with Consolidated Feeders, Amarillo, TX	1
7/2005	Colorado Department of Agriculture John's Conference, Greeley, CO	1
7/2005	NCBA Summer Conference, Denver, CO	1
8/2005	51st International Congress of Meat Science & Technology, Baltimore, MD	1
9/2005	Keystone/McDonalds Seminar, ARDEC	1
10/2005	NCBA Strategy Workshop of NBQA—2005, Oklahoma City, OK	1
10/2005	USMEF-USG-Chinese Government Team Visit, ARDEC	1
11/2005	Elanco--Italian Feedlot Operators Visit, Campus	1
11/2005	International 20 Year Anniversary Banquet, '85 Team, Dakota City, NE	1
12/2005	USDA-AMS-MGC National Correlation, Instrument Grading, Denver, CO	1
1/2006	Colorado Beef council/ACFCCA Colorado Chefs Beef 101, Denver, CO	1
1/2006	Southwest Beef Symposium, Asian Exports, Tucumcari, NM	1
2/2006	RMS Instrument Grading for Washington Beef, Toppenish, WA	1
4/2006	NCBA Beef Industry Safety Summit, Jacksonville, FL	1
4/2006	Agri-Beef Information Technology Summit (ABITS), Boise, ID	1
5/2006	USMEF Board of Directors Meeting, Las Vegas, NV	1
6/2006	NPB Pork Academy, "Selling Pork In International Markets," Des Moines, IA	1
6/2006	Texas Beef Council/U.S. State Department EU Technical Team, Austin, TX	1
7/2006	Dr. Gail Buchanan visit, USDA Under Secretary for REE, Campus	1
7/2006	Beef University, "Biosecurity" presentation, La Junta, CO	1
9/2006	University of Wyoming Dept. Anim. Sci. Seminar	1
10/2006	CLA Feeder Council Meeting, Ft. Morgan, CO	1
10/2006	USDA-FAS Cochran Program for Russian Delegation, Denver, CO	1
10/2006	CSU President's Council on Agriculture Tour, Campus	1
10/2006	VPR Colloquium on Zoonotic Disease, Hilton Hotel, Ft. Collins	1
11/2006	USMEF Board of Directors Meeting, Cancun, Mexico	1
11/2006	USMEF-NCBA-AMI-NMA SRM Briefing for USDA, Washington, DC	2
11/2006	USDA-AMS Pork Quality Standardization Meeting, Chicago, IL	1
12/2006	Elanco Animal Health Pre-Harvest Food Safety Meeting, Greenville, IN	1
12/2006	USMEF Mexican ANITIF Conference, Mexico City, Mexico	1
1/2007	University of Tokyo Visiting Professors, Campus	1
1/2007	AES Research Center Conference, LSC, Campus	1
1/2007	American Sheep Industry Association Annual Convention, San Antonio, TX	2
2/2007	National Cattlemen's Beef Association Annual Convention, Nashville, TN	1
2/2007	National Meat Association Annual Convention, Las Vegas, NV	1
3/2007	NCBA Food Safety Summit, Dallas, TX	1
3/2007	Texas Dietetic Association Convention, Frisco, TX	1
4/2007	Japan Foodservice Association Seminar (USMEF), Campus	1
5/2007	Elanco Sensory Briefing for Key Influencers & Editors, Ames, IA	2
5/2007	USMEF Board of Directors Meeting, La Jolla, CA	1
5/2007	Texas Beef Council "The Ranch", Amarillo, TX	1
6/2007	BIF Producer Applications Subcommittee, Ft. Collins, CO	1
6/2007	NCBA Non-Conforming Beef Product Workshop, College Station, TX	1
7/2007	US/China SPS Leadership Development Program (USDA/USMEF), CO	2
7/2007	USMEF "We Care" Campaign Seminars & Promotion, Tokyo, Japan	1
8/2007	NBIAP III Meeting (NCBA), Englewood, CO	1

Date	Group & Location	Number
9/2007	Mexican Institute of Nutrition “Salvador Zubiran”, Mexico City, Mexico	1
10/2007	Animal Health Institute Board Meeting, Ames, IA	1
10/2007	USDA/LMIC Visitors, Campus	1
12/2007	USMEF Mexico Beef Team, Campus	1
2/2008	Junior Food Animal Vet Students Lecure, VTH	1
3/2008	South Dakota Nutrition Seminar, Brookings, SD	1
4/2008	W2177 Western Regional Meeting, Honolulu, HI	1
5/2008	Fort Collins Science Café—Beet Street, Ft. Collins, CO	1
5/2008	USMEF Board of Directors Meeting, Las Vegas, NV	1
6/2008	AMSA Reciprocal Meat Conference, Gainesville, FL	1
7/2008	SMA 52 nd Annual Convention, Scottsdale, AZ	1
9/2008	Instituto Nacional de Ciencias Medicas y Nutricion, Mexico City, Mexico	1
9/2008	USMEF Retail Beef Promotions, Mexico City, Mexico	1
9/2008	USMEF/USG Government Meeting (Thymus), Buenos Aires, Argentina	1
9/2008	USMEF/USG Government Meeting (Thymus), Montevideo, Uruguay	1
10/2008	CSU/Aristides Daskalopoulos Foundation Short Course, Athens, Greece	4
10/2008	JBS-Yoshinoya Customer Visit, Greeley, CO	1
11/2008	USMEF Board of Directors Meeting, Tucson, AZ	1
11/2008	Del Campo al Plato Conference, Montevideo, Uruguay	2
1/2009	USMEF-EU-PRT Team Visit, Denver, CO	1
1/2009	NCBA Annual Convention, Phoenix, AZ	1
2/2009	Niman Ranch Branded Partner Meeting, ARDEC	1
4/2009	Colorado Beef Council Meeting, BQA Update, Denver, CO	1
6/2009	AMSA Reciprocal Meat Conference, Rogers, AR	1
7/2009	NCBA Summer Conference, Denver, CO	1
8/2009	USMEF Russian Media Team, ARDEC	1
10/2009	AMSA MIRC Meeting, Chicago, IL	1
11/2009	ASI Executive Board Meeting Superior Farms Tour, Denver, CO	1
12/2009	USDA/USTR/AIT/USMEF Taiwan BSE Media DVC, Washington, DC	1
3/2010	USMEF Korea Lotte Mart Group, ARDEC	1
3/2010	USMEF Korea E-Mart Group, ARDEC	1
4/2010	California Beef Council Nutrition Seminar for CDA, Oakland, CA	1
4/2010	Michigan Beef Council Nutrition Seminar for MDA, Bay City, MI	1
6/2010	AMSA Reciprocal Meat Conference, Lubbock, TX	1
7/2010	NCBA Nutrient Database Initiative Advisory Meeting, Bastrop, TX	1
7/2010	NCBA Midyear Conference, Denver, CO	1
8/2010	NCBA Innovative Beef Symposium-Round Data, Denver, CO	1
9/2010	NPB Pork WTP Study Webinar, Campus	1
9/2010	USMEF Japanese Media Team, ARDEC & Campus	1
10/2010	LA County Food Safety Advisory Council Meeting, Los Angeles, CA	1
11/2010	Foodprint Project Panel, Museum of Contemporary Art, Denver, CO	1
11/2010	Department Beef Advisory Committee Meeting, ARDEC	1
12/2010	NPB Pork WTP Study Webinars for Exporting Companies (4), Campus	2
1/2011	Northern Colorado Dietetic Association (Natural/Grass/Organic), Windsor	1
2/2012	Fort Collins Rotary Club, <i>E. coli</i> & Food Safety	1
4/2011	Kentucky Dietetic Association Annual Meeting (Organic), Louisville, KY	1
7/2011	FSIS District EIAO Meeting--HACCP Validation, Denver	1
7/2011	SMA Research Update, San Antonio, TX	1
7/2011	NCBA's “Cattlemen to Cattlemen” Interview--Instrument Grading, Campus	1
10/2011	NPB Propensity to Pay for US Pork Study Web Conference, Campus	1
10/2011	EU Commission AMT Food Safety Seminar, Brussels, Belgium	1
10/2011	USMEF Egyptian Vets Presentation; Hallal Slaughter, Amarillo, TX	1
11/2011	California Beef Council Beef Tour, Davis, CA	1
1/2012	NWSS 2012 International Livestock Congress, Denver, CO	1
2/2012	NCBA Annual Convention, Nashville, TN (Cattlemen’s College)	2

Date	Group & Location	Number
2/2012	AMI/FMI Annual Meat Conference, Orlando, FL	1
4/2012	USMEF-EU Commission Tour, Lactic Acid, Greeley & Fort Morgan	1
4/2012	International Meat Conference, Mexico City, Mexico	1
4/2012	NCBA NBQA-2011 Strategy Session, Denver, CO	2
5/2012	Colorado Dept. Ag. Russian Team Visit, Campus	1
5/2012	Visit by Dr. Mauricio Rodriguez & Team from Uruguay, Campus	1
6/2012	German Federal Institute for Risk Assessment (BfR), Berlin, Germany	1
6/2012	NCBA BQA Advisory Team & Coordinators Meeting, Denver, CO	2
7/2012	NCBA Summer Conference, NBQA-2011 Presentation, Denver, CO	2
10/2012	Cargill Visiting Brazilians via Pablo Guiroy, ARDEC	1
11/2012	"Del Campo al Plato", Montevideo, Uruguay	2
Total		440

GRANTS AND EXTRAMURAL FUNDING:

Since December 1, 1995—the time of my appointment—my colleagues (D. R. Woerner, J. A. Scanga, G. R. Schmidt, J. N. Sofos, K. K. Nightingale, L. Goodridge, J. D. Tatum, and G. C. Smith) and I, in the Meat Science Program, received the following awards, grants, contracts or in-kind support (laboratory analyses, products/supplies, etc.) for research projects in which I served as Project Leader or Co-Leader and/or for teaching/extension/public-service activities of the Program/Department:

Sponsor, Project Description & Year	Amount
1. Colorado Agricultural Experiment Station. One-time infrastructure funding; equipment to support ongoing experiment station research in lipid and growth biochemistry of specifically selected genetic lines of purebred Hereford steers and heifers from the 1950s, 1970s and 1990s decades (PI, No. 15-8131, 1996)	\$29,917
2. National Cattlemen's Beef Association. Beef Quality Assurance Audits: incidence of injection-site damage in top sirloin butts and in muscles of the round (Co-PI, No. 53-6669, 1996-97)	\$40,200
3. National Cattlemen's Beef Association. Development of a palatability assurance "critical control points" (PACCP) model to reduce the incidence of beef palatability problems (Co-PI, No. 53-5079, 1996-97)	\$96,200
4. National Cattlemen's Beef Association. Domestic and international vitamin E shelf-life strategic alliance (PI, No. 53-5083, 1996)	\$48,530
5. Warren Analytical Laboratory. Obtaining carcass/cut tenderness estimates by use of the Australian Meat Research Corporation Tendertec instrument (Co-PI, 1996)	\$2,316
6. DeKalb Swine Breeders, Inc. Obtaining carcass/cut tenderness estimates by use of the Australian Meat Research Corporation Tendertec instrument (Co-PI, 1996)	\$2,316
7. National Cattlemen's Beef Association. An evaluation of HunterLab Color Vision System (a VIA system) for use in improving grading accuracy and for augmenting application of USDA Quality and Yield Grades, and of the Tendertec Probe as an on-line testing device for use in sorting beef carcasses according to tenderness for use in development of a palatability assurance critical control points (PACCP) model to reduce the incidence of beef palatability problems (PI, No. 53-5054, 1996)	\$78,300
8. U.S. Meat Export Federation. International segment: domestic and international vitamin E shelf life strategic alliance (PI, No. 53-5135, 1996) \$25,385 (CSU) + \$28,285 in-kind	\$53,670
9. National Cattlemen's Beef Association. Factors contributing to the incidence of the "dark cutting" condition in beef carcasses, and management strategies to prevent reductions in value as a result of their occurrence (PI, No. 53-5093, 1996-97)	\$29,500

Sponsor, Project Description & Year	Amount
10. National Live Stock and Meat Board. Obtaining carcass/cut tenderness estimates by use of the Australian Meat Research Corporation Tendertec instrument (Co-PI, 1996)	\$3,837
11. National Cattlemen's Beef Association. Service contract—collection and analyses of data regarding the B-maturity carcass grade change (PI, 1996)	\$2,170
12. Meat Research Corporation of Australia. Technical assistance grants—Part I and Part II—Junior Research Fellowship; palatability of beef from the USA, Japan, Canada and Australia (PI, 1996)	\$9,000
13. Alltech, Inc. Lactic acid bacteria & mannanoligosaccharides to reduce pathogens in cattle, preharvest (Co-PI, 1996-97)	\$6,996
14. Roche Vitamins & Fine Chemicals, Inc. Relationships between vitamin E supplementation of cattle (500 IU/day for 100 days) and differential microbial versus non-microbial oxidative color deterioration as well as differences in retail caselife of loin, round and shoulder steaks and ground beef following 7 to 56 days of storage in vacuum packages (PI, No. 53-6220, 1996-97)	\$40,000
15. Colorado Beef Council. Funding support for “Beef University” (PI, 1996)	\$6,000
16. Cooperative Extension Equipment/Technology Requests. Support for digital camera and color printer purchases (PI, 1996)	\$2,550
17. National Pork Producers Council. Alternative site(s) for microbiological sampling of hog carcasses (Co-PI, No. 53-5163, 1997-98)	\$80,287
18. National Cattlemen's Beef Association. An evaluation of the dual component video image analysis system as a predictor of beef carcass red meat yield percentage, for the augmentation of the application of USDA Quality and Yield Grades, and as an on-line testing device for use in sorting beef carcasses according to tenderness and palatability (Co-PI, No. 53-5160, 1997-98)	\$49,660
19. Montana Stockgrowers Association. Funding support for “Gate-to-Plate” Seminar (PI, 1997)	\$7,010
20. Colorado State University—Graduate School. University Graduate Fellowship Award for Henry Zerby (PI, 1996-97)	\$6,000
21. National Cattlemen's Beef Association. Beef quality assurance audits: incidence of injection-site damage in top sirloin butts and in muscles of the round (Co-PI, No. 53-6669, 1997-98)	\$43,025
22. King Soopers, Inc. Retail caselife and bacterial growth levels on the surface of ground beef in modified atmosphere packaging, in PVC film overwrap or in a master-pak (PVC film overwrap within a secondary modified atmosphere package) (PI, No. 53-6260, 1997)	\$16,500
23. Colorado State University—Graduate School. University Graduate Fellowship Award for Audra Grona (PI, 1997-98)	\$6,000
24. U. S. Meat Export Federation. Development of a microbial profile and identification of microbiological intervention strategies for beef variety meats (Co-PI, No. 53-5156, 1997-98)	\$229,810
25. National Cattlemen's Beef Association. Pilot study for the national study—microbial mapping II (Co-PI, No. 53-5359, 1997-98)	\$35,875
26. Horton Feedlots, Inc./Monfort, Inc. Service contract: effects of age at castration, maturity, implant strategy and aging on the tenderness and sensory attributes of <i>Longissimus</i> muscle steaks derived from steers, late-castrates and intact bulls (PI, 1997)	\$15,000
27. Colorado State University—Graduate School. University Graduate Fellowship Award for Henry Zerby (Co-PI, 1997-98)	\$6,000
28. National Cattlemen's Beef Association. Efficacy of pre-evisceration spray-washing of beef carcasses as a microbiological intervention (Co-PI, No. 53-5355, 1997-98)	\$112,780
29. USDA Agricultural Marketing Service. Validation of USDA frame size and muscle thickness specifications for feeder cattle (Co-PI, No. 53-2121, 1997-98)	\$50,180

Sponsor, Project Description & Year	Amount
30. National Cattlemen's Beef Association. Development of a HunterLab beef carcass color vision system to augment USDA quality grade application and for use in predicting palatability attributes of beef carcasses (PI, No. 53-5199, 1997-98)	\$50,000
31. Beefmaster Breeders Universal. Sorting carcasses from Beefmaster cattle based on palatability/tenderness traits using the HunterLab meat color imaging system (PI, No. 53-5188, 1997-98)	\$20,000
32. National Cattlemen's Beef Association. Beef quality assurance audits: assays for presence of antibiotic residues in injection-site lesions from muscles in top sirloin butts and in rounds (Co-PI, No. 53-8200, 1997-98)	\$33,970
33. USDA-APHIS. Sheep pathogen reduction intervention and animal production food safety practices (Co-PI, No. 53-2038, 1997-98)	\$245,377
34. U. S. Meat Export Federation. A microbiological profile of pork variety meats at two different plant production sites and development of applied intervention strategies for reducing microbiological contamination on pork variety meats (PI, No. 53-5360, 1997-98)	\$198,320
35. National Cattlemen's Beef Association. Microbial mapping II. Determining microbiological counts on beef carcasses, wholesale cuts and retail cuts, to assist those in the fabrication, distribution and retailing sectors to deliver safe beef to retail customers (Co-PI, No. 53-5373, 1997-98)	\$264,125
36. National Cattlemen's Beef Association. Economic implications of sorting finished cattle for "grid marketing" (Co-PI, No. 53-5357, 1997-98)	\$38,250
37. Monfort, Inc. Service contract to collect Warner-Bratzler shear force data (PI, 1997)	\$1,260
38. Padlock Ranches, Inc. Service contract to collect Warner-Bratzler shear force data (PI, 1997)	\$800
39. Horton Feedlots, Inc./Pharmacia & Upjohn. Service contract to collect and enter, into computer files, carcass data from research cattle (PI, 1997-98)	\$16,454
40. Agri-West Laboratory/National Cattlemen's Beef Association. A microbiological profile of domestic and imported beef raw material destined for use in ground beef production (PI, No. 53-5368, 1997-98)	\$31,600
41. National Cattlemen's Beef Association. Effectiveness of using the HunterLab BeefCam system to sort beef carcasses into differing product lines across four different packing facilities and from both source verified and non-source verified fed cattle, based on projected tenderness of subsequently aged and cooked product (PI, No. 53-5649, 1998-99)	\$99,460
42. National Cattlemen's Beef Association. Recommended aging guidelines for different beef subprimal cuts (PI, No. 53-5646, 1998)	\$3,000
43. Montana Stock Growers Association. Funding support for "Gate-to-Plate" seminar (PI, 1998)	\$9,676
44. National Cattlemen's Beef Association. Beef Quality Assurance Audits: Incidence of injection-site damage in top sirloin butts and in muscles of the round—1998-99 (Co-PI, No. 53-5392, 1998-99)	\$51,720
45. American Sheep Industry Association. Sheep pathogen reduction (Co-PI, No. 53-5395, 1998-99)	\$40,000
46. Roche Vitamins, Inc. Effects of supplemental vitamin E on reducing drip loss and enhancing oxidative stability of poultry retail products (PI, No. 53-8208, 1998-99)	\$60,780
47. National Cattlemen's Beef Association. Evaluation of multiple-hurdle microbiological interventions to include pre-evisceration spray-washing (Co-PI, No. 53-5355, 1998-99)	\$8,960
48. U.S. Meat Export Federation. Pork international consumer preference study: Japan (PI, No. 53-5387, 1998)	\$23,600

Sponsor, Project Description & Year	Amount
49. Roche Vitamins, Inc. Effects of supplementing feedlot cattle with high levels of vitamin D3 on plasma tissue calcium concentrations, calpain and the postmortem aging process of beef <i>Longissimus</i> (PI, No. 53-8209, 1998-99)	\$55,625
50. IDEXX Food Safety Net Services, Inc./National Cattlemen's Beef Association. Microbial contamination of raw ingredients and location of process control points for the manufacturing of ground beef destined for sale at retail supermarkets (PI, No. 53-8217, 1999)	\$104,100
51. Agri-West Laboratory/National Pork Producers Council. National pork retail microbiological baseline study (PI, No. 53-5656, 1998-99)	\$23,520
52. National Cattlemen's Beef Association. Effects of various feedlot growth promotant implant strategies on beef carcass grade characteristics and subsequent cooked beef palatability traits (PI, No. 53-5628, 1998-99)	\$39,592
53. Colorado Livestock Association/Colorado Department of Agriculture/Colorado Beef Council. Development and training—Colorado Beef Quality Assurance Verification Program (PI, 1998)	\$2,100
54. U.S. Meat Export Federation. Pork international consumer preference study: South Korea (PI, No. 53-5680, 1998-99) \$56,630 (CSU) + \$46,480 in-kind (direct payment of travel by USMEF)	\$103,110
55. Paper-Pak Products, Inc. Effects of different types of retail packaging soaker-pads on retail beef water loss and color (PI, No. 53-8214, 1998)	\$5,796
56. Colorado Livestock Association/Colorado Department of Agriculture/Colorado Beef Council. Development of a "Colorado Beef Quality Assurance Manual" (PI, 1998)	\$6,848
57. Monfort/ConAgra, Inc. Service contract to collect Warner-Bratzler shear force data (PI, 1998)	\$1,230
58. Monfort Integrated Genetics. Service contract to evaluate palatability of beef from seven different retail sources (Co-PI, 1998)	\$2,310
59. Monfort/ConAgra, Inc. Service contract to conduct additional microbiological analyses of samples for the "Verification of Multiple hurdle beef decontamination systems to include pre-evisceration spray washing and other antimicrobial interventions" project (Co-PI, 1998)	\$18,300
60. ConAgra Red Meat Companies, Inc. Service contract to assist ConAgra Beef Marketing (Co-PI, 1999)	\$14,500
61. Keystone Foods, Inc. Service contract to conduct a Keystone/McDonald's Beef Industry Tour (PI, 1999)	\$565
62. National Pork Producer's Council. Development of a food safety module for slaughtering/dressing operations in pork packing plants (Co-PI, No. 53-5009, 1999)	\$10,000
63. Colorado Livestock Association. Service contract for Beef Quality Assurance Certification/Verification implementation activities (PI, 1999)	\$2,850
64. National Cattlemen's Beef Association. Is carcass quality and tenderness affected by repetitive use of hormonal implants throughout a beef animal's lifetime? (Co-PI, No. 53-5558, 1999-2000)	\$88,650
65. Teague Diversified Feedlots, Inc. Service contract to conduct Warner-Bratzler shear force analyses (Co-PI, 1999)	\$5,220
66. Keystone Foods, Inc. Service contract to conduct a Keystone/McDonald's Beef Industry Tour (PI, 1999)	\$660
67. National Cattlemen's Beef Association. Fabrication and industry utilization of subprimal cuts from mature cow and bull carcasses videotape (Co-PI, No. 53-5531, 1999)	\$10,000
68. Kentucky Cattlemen's Association. Service contract to conduct a preconditioning trial: shear force and taste panel analyses (Co-PI, 1999)	\$3,955
69. National Cattlemen's Beef Association. Beef quality assurance audits: incidence of injection-site damage in top sirloin butts and in muscles of the round—March through September (Co-PI, No. 53-5589, 1999)	\$57,545

Sponsor, Project Description & Year	Amount
70. National Pork Producer's Council. Growth of bacteria on pork products after being subjected to temperature abuse during distribution and by consumers (PI, No. 53-5014, 1999-2000)	\$31,900
71. Colorado Livestock Association. Service contract to provide Lead Auditor Training for conducting statewide BQA verification audits (PI, 1999)	\$4,198
72. National Cattlemen's Beef Association. Microbial mapping III. Determining microbiological counts on beef cuts and trimmings during/following fabrication, with and without microbiological interventions (Co-PI, No. 53-5318, 1999)	\$50,000
73. National Pork Producer's Council. Service contract to conduct a "Pork 101™" (PI, 1999)	\$6,500
74. Roche Vitamins, Inc. Performance of beef from vitamin E supplemented cattle during retail display (PI, No. 53-8222, 1999) \$9,450 (CSU) + \$31,500 in-kind (travel/product payment)	\$40,950
75. ConAgra Red Meat Companies, Inc. Service contract to determine effects of electrical stimulation on tenderness, color and quality attributes of the beef <i>Longissimus</i> muscle (Co-PI, 1999)	\$11,782
76. National Cattlemen's Beef Association. Evaluation of the Canadian Computer Vision System (PI, No. 53-5306, 1999)	\$42,095
77. National Cattlemen's Beef Association. Objective measures of tenderness (PI, No. 53-5311, 1999-2000) \$88,650 (CSU) + \$26,350 in-kind (consumer panel recruitment paid by NCBA)	\$115,000
78. National Pork Producer's Council. Inactivation or inhibition of post-processing contamination of <i>Listeria monocytogenes</i> in pork products with antimicrobials in the formulation or by post-processing decontamination (Co-PI, No. 53-5037, 1999-2000)	\$20,000
79. National Cattlemen's Beef Association. National Market Cow & Bull Beef Quality Audit (Co-Pi, No. 53-5052, 1999)	\$73,450
80. National Cattlemen's Beef Association. Real time augmentation of USDA yield grade application to beef carcasses using state-of-the-art VIA instrumentation (PI, No. 53-5319, 1999-2000)	\$88,416
81. National Cattlemen's Beef Association. Beef quality assurance audits: incidence of injection-site damage in top sirloin butts and in muscles of the round (Co-PI, No. 53-5324, 1999-2000)	\$78,895
82. American Meat Institute Foundation. Implement hide and carcass survey to verify effectiveness of slaughter procedures and carcass interventions in controlling <i>Escherichia coli</i> O157:H7 (Co-PI, No. 53-5225, 1999-2000)	\$10,000
83. Montana Stockgrowers Association. Service contract to conduct a "Gate-to-Plate" seminar in Miles City, Montana (PI, 1999)	\$7,647
84. Continental Grain Co. & Sureleen-Albion. Service contract to assess the effects of supplementing feedyard finishing diets, with Mega-Pro with or without trace mineral amino acid chelates, on feedyard performance and factors relating to beef tenderness and quality (PI, 1999-2000)	\$15,979
85. Montana Stockgrowers Association. Service (reimbursement) to conduct a "Gate-to-Plate" seminar in Miles City, Montana (PI, 1999)	\$557
86. National Cattlemen's Beef Association. Effects of Bioxide Deligenated Ozone, as a decontamination intervention, when applied to hides and carcasses, and the impact of using the system on rates of oxidation when applied to lean and fat surfaces (PI, No. 53-5538, 2000)	\$44,950
87. Smart Machine Vision, Inc. Validation of the Nolan Ryan Tender Aged Beef Program (PI, No. 53-8226, 2000)	\$16,380
88. National Cattlemen's Beef Association—additional funds. Is carcass quality and tenderness affected by repetitive use of hormonal implants throughout a beef animal's lifetime? (PI-for this addition, No. 53-5558, 1999-2000)	\$80,000

Sponsor, Project Description & Year	Amount
89. National Cattlemen's Beef Association. National Beef Quality Audit—2000 (Co-PI, No. 53-5549, 2000)	\$100,000
90. Leachman Cattle Company. Evaluation of the palatability, tenderness & composition of Certified Piedmontese beef (Co-PI, No. 53-8224, 2000)	\$14,210
91. American Meat Institute Foundation. Develop optimal methods for sampling rectal/colonal feces, hides & carcasses to test for the presence of Escherichia coli O157:H7 & Samonella spp. (PI, No. 53-5252, 2000)	\$123,202
92. Roche Vitamins, Inc. Determination of appropriate vitamin E supplementation levels & administration times to insure adequate muscle tissue alpha-tocopherol concentrations (PI, No. 53-8231, 2000)	\$25,074
93. CHAD Co. Service contract to evaluate spray-washing of beef heads & tongues (Co-PI, 2000)	\$1,840
94. National Pork Producers Council. Service contract to conduct a "Pork 101™" (Co-PI, 2000)	\$7,250
95. National Pork Producers Council. Service contract to assemble pork export data (PI, 2000)	\$2,000
96. ConAgra Lamb Co. Service contract to collect microbiological data related to use of various pre-evisceration spray wash pressures (Co-PI, 2000)	\$6,820
97. Colorado Livestock Association. Continuing support of Colorado BQA activities (Co-PI, 2000)	\$3,000
98. Bioxide Corporation. Service contract to conduct microbiological analyses of various products and facilities subjected to decontamination with deligenated ozone (PI, 2000)	\$27,075
99. Research Management Systems, Inc. Service contract to perform data analysis (Co-PI, 2000)	\$5,000
100. Oklahoma State University. Service contract to conduct microbiological analyses (Co-PI, 2000)	\$21,158
101. Colorado Livestock Association. Continuing support of Colorado BQA activities (Co-PI, 2000)	\$1,521
102. Colorado Livestock Association. Continuing support of Colorado BQA activities (Co-PI, 2000)	\$1,769
103. Montana Stockgrowers Association. Service contract to conduct a Montana "Gate-To-Plate" Seminar in Malta, MT (Co-PI, 2000)	\$10,000
104. Leachman Cattle Co. Service contract to collect sensory data (Co-PI, 2000)	\$2,800
105. U.S. Meat Export Federation. Service contract to develop text for export brochures (PI, 2000)	\$10,000
106. National Institute of Agricultural Research (INIA), Uruguay. Service: Development of a Research Protocol to conduct a National Uruguayan Beef & Lamb Quality Survey and a VIA Validation Project (PI, 2000)	\$5,000
107. RMS Research Management Systems. Service (travel reimbursement): Development of a Research Protocol to conduct a National Uruguayan Beef & Lamb Quality Survey and a VIA Validation Project (Co-PI, 2000)	\$1,992
108. Rennessen (a subsidiary of Cargill, Inc.). Service: Vitamin E White Paper (PI, 2000)	\$5,000
109. Nolan Ryan Tender Aged Beef, LLC. Service: Evaluation of ground beef bloom time characteristics (PI, 2000)	\$2,000
110. National Cattlemen's Beef Association. Service: Instrument Repeatability & Accuracy of Ribeye Area Measurements (PI, 2000)	\$1,224
111. Futurebeef Operations, LLC. Service: Caselife Characteristics of Case-Ready Ground Beef Packaged using Five Differing Modified Atmosphere Techniques (PI, 2000)	\$19,332
112. National Pork Producer's Council. Service: Preparation of Food Safety Slide Set for Pork 101 (Co-PI, 2000)	\$3,500
113. Montana Stockgrowers Association. Service: Montana Beef Network Satellite Presentations (Co-PI, 2000)	\$1,203
114. American Sheep Industry Association. Development of a Sheep Quality Assurance Program (Co-PI, No. 53-5314, 2000-2002)	\$100,800

Sponsor, Project Description & Year	Amount
115. National Cattlemen's Beef Association. Comparison of New Intervention Additives/Chemicals (PI, No. 53-5018, 2001)	\$92,960
116. Samuel Roberts Noble Foundation. Cattle Feeding & Carcass Data Collection Trials (PI, No. 53-5429, 2001)	\$14,940
117. Samuel Roberts Noble Foundation. Cattle Feeding & Carcass Data Collection Trials (PI, No. 53-5436, 2001)	\$15,675
118. Samuel Roberts Noble Foundation. Cattle Feeding & Carcass Data Collection Trials (PI, No. 53-5437, 2001)	\$53,300
119. Samuel Roberts Noble Foundation. Cattle Feeding & Carcass Data Collection Trials Yardage & Chute Fees—total for three projects (PI, No. 21-4810, 2001)	\$29,000
120. Novozymes North America, Inc. Effects of NCT on Beef Tenderness (PI, No. 53-8246, 2001)	\$21,979
121. Roche Fine Vitamins, Inc. Effects of Vitamin C Supplementation on Plasma Vitamin Kinetics (Co-PI, No. 53-8211, 2001)	\$12,601
122. Zinpro Corporation. Effects of Zinc Source & Implant Strategy on Feedlot Performance, Immune Response, & Carcass Characteristics (Co-PI, No. 53-8255, 2001-2002)	\$65,017
123. USDA-AMS Section 201 Lamb Program (12-25-A-3930). Colorado State/Mountain States Lamb Cooperative (Co-PI, No. 53-2082, 2001-2002)	\$115,000
124. American Meat Science Association. Pork Chain Quality Audit—2001 (Co-PI, No. 53-5135, 2001-2002)	\$170,000
125. Swift & Co. Validation of the E + V Image Analysis System as a Predictor of Pork Carcass Red Meat Yield (Co-PI, No. 53-6054, 2001-2002)	\$36,020
126. PRAXAIR, Inc. The Potential of Using Ozone as a Disinfectant in Beef Slaughtering/Dressing &/or Fabrication (Co-PI, No. 53-8254, 2001-2002)	\$29,900
127. Beefmaster Cattlemen's, LLC. Service: Tenderness Comparison of Nolan Ryan Tender Aged Beef & Other Branded Beef Lines (PI, No. 22-0490, 2001)	\$6,253
128. Montana State University. Service: Satellite Presentations & Carcass Data (Co-PI, No. 22-0490, 2001)	\$1,203
129. Future Beef Operations, LLC. Service: Case-ready Ground Beef Data Collection (PI, No. 22-0490, 2001)	\$5,304
130. National Cattlemen's Beef Association. Service: Warner-Bratzler Shear Force (PI, No. 22-0490, 2001)	\$450
131. Smart Machine Vision, Inc. Service: Warner-Bratzler Shear Force (PI, No. 22-0490, 2001)	\$2,940
132. RMS Research Management Systems USA, Inc. Service: Uruguay Travel & Project Planning (PI, No. 22-0490, 2001)	\$1,916
133. Leachman Cattle Co. Service: Warner-Bratzler Shear Force (Co-PI, No. 22-0490, 2001)	\$4,517
134. Swift & Co. Service: Warner-Bratzler Shear Force (Co-PI, No. 22-0490, 2001)	\$8,668
135. Future Beef Operation, LLC. Service: Funds to Conduct FBO Gate-to-Plate Short Course (Co-PI, No. 22-0490, 2001)	\$5,790
136. RMS Research Management Systems USA, Inc. Service: ARDEC Use Fee	\$500
137. ConAgra Foods, Inc. Service: Cooking Time Data Collection (Co-PI, No. 22-0490, 2001)	\$1,200
138. Elanco Animal Health, Inc. Service: Beef University (Co-PI, No. 22-0490, 2001)	\$7,534
139. PerkinElmer, Inc. Service: Lamb Carcass for X-Ray Scanning (Co-PI, No. 22-0490, 2001)	\$117
140. Montana Stock Growers Association. Service: Funds to Conduct Montana Gate-to-Plate Short Course (Co-PI, No. 22-0490, 2001)	\$11,500

Sponsor, Project Description & Year	Amount
141. Food Safety Net Services, Inc. Service: Collect Data for <i>Mycobacterium avium</i> ss. paratuberculosis Study (Co-PI, No. 22-0490, 2001)	\$8,700
142. U.S. Meat Export Federation. Service: Collect Data to Determine the Value of Beef Exports (PI, No. 22-0490, 2001)	\$10,000
143. Future Beef Operations, LLC. Service: High Oxygen Ground Beef Data Collection (PI, No. 22-0490, 2001)	\$2,000
144. Smart Machine Vision, Inc. Service: Warner-Bratzler Shear Force (PI, No. 22-0490, 2001)	\$2,775
145. U.S. Meat Export Federation. Service: Funds to Conduct Latin Trade Team Pork 101 (PI, No. 22-0490, 2001)	\$1,800
146. Future Beef Operations, LLC. Service: Warner-Bratzler Shear Force (PI, No. 22-0490, 2001)	\$1,854
147. Future Beef Operations, LLC. Service: Travel to Deliver Electrical Stimulator to Arkansas City, KS (PI, No. 22-0490, 2001)	\$471
148. Smart Machine Vision, Inc. Service: Warner-Bratzler Shear Force (PI, No. 22-0490, 2001)	\$4,485
149. Future Beef Operations, LLC. Service: Warner-Bratzler Shear Force & Sensory Analysis for FBO Market Basket Study (PI, No. 22-0490, 2001)	\$7,260
150. Future Beef Operations, LLC. Foundation Gift: FBO Graduate Assistant Foundation (PI, No. 64-4716, 2001)	\$15,000
151. SmartVision, Inc. Service: Evaluation of Shear Force of Beef Steaks (PI, No. 22-0490, 2002)	\$7,270
152. Double RL Ranch. Service: Evaluation of Shear Force of Beef Steaks (PI, No. 22-0490, 2002)	\$344
153. John Deere and Company. Service: Preventing Agricultural Bioterrorism (PI, No. 22-0490, 2002)	\$1,191
154. Future Beef Operations. Service: Sensory Evaluation of Market Basket Steaks (PI, No. 22-0490, 2002)	\$7,170
155. Purac, Inc. Service: Beef Food Safety White Paper (PI, No. 22-0490, 2002)	\$1,500
156. California State Polytechnic University. Service: Palatability of Beef from Implanted Steers (PI, No. 22-0490, 2002)	\$4,650
157. Research Management Systems, Inc. Installation/Validation of CVS and BeefCam—Uruguay (PI, No. 53-8264, 2002-2003)	\$32,645
158. Research Management Systems, Inc. Uruguay Beef and Lamb Survey (Co-PI, No. 53-8265, 2002-2003)	\$47,260
159. National Pork Board. Optimization of Antimicrobials for <i>Listeria monocytogenes</i> (Co-PI, No. 53-5333, 2002-2003)	\$24,950
160. Colorado Livestock Association. Service: Beef Quality Assurance Manual (Co-PI, No. 22-0490, 2002)	\$15,386
161. Colorado Association of Meat Processors. Service: Biowaste Disposal in Colorado (Co-PI, No. 22-0490, 2002)	\$1,000
162. Safefoods Corporation. Service: Cetylpyridium Chloride Rinsing of Beef Carcass Trimmings (PI, No. 22-0490, 2002)	\$1,601
163. Roche Vitamins. Service: Vitamin E. Supplementation of Cattle (PI, No. 22-0490, 2002)	\$9,840
164. Tyson/IBP, Inc. Service: Histopathology of Black Spots in Ground Beef (PI, No. 22-0490, 2002)	\$1,594
165. Excel, Inc. Service: Evaluation & Zone Checks; Beef Harvesting (PI, No. 22-0490, 2002)	\$14,062
166. ConAgra, Inc. Service: Beef Academy Training Program (PI, No. 22-0490, 2002)	\$2,500
167. Zinpro Corp. Induced Morbidity in Pre-Weaned Calves & Receiving Cattle (Co-PI, No. 53-8285, 2002-2003)	\$64,010

Sponsor, Project Description & Year	Amount
168. National Cattlemen’s Beef Association. Susceptibility of <i>E. coli</i> O157:H7, <i>Salmonella</i> and <i>Listeria monocytogenes</i> to Lactoferrin (Co-PI, No. 53-7134, 2002-2003)	\$88,124
169. National Cattlemen’s Beef Association. On-Farm Management Practices as Pre-Harvest Beef Microbiological Interventions (PI, No. 53-7135, 2002-2003)	\$80,285
170. Penford Food Ingredients Company. Organic Acid and Electrostatic Coating Intervention Systems (Co-PI, No. 53-8294, 2002-2003)	\$4,713
171. National Cattlemen’s Beef Association. Service: Muscle Profiling Research and Short Course (Co-PI, No. 22-0490, 2002)	\$10,713
172. Keystone Foods. Service: McDonald’s Owners Meat Workshop (Co-PI, No. 22-0490, 2002)	\$1,446
173. University of Wyoming. Service: Palatability of Beef Striploins (Co-PI, No. 22-0490, 2002)	\$3,078
174. National Cattlemen’s Beef Association. Treatment of Beef Hides To Reduce Contamination Before Slaughter (PI, No. 53-8291, 2002)	\$68,620
175. Food Safety Net Services, Ltd. DuPont/Packerland <i>E. coli</i> O157:H7 Reduction Study (PI, No. 53-8202, 2002-2003)	\$29,201
176. Certified Angus Beef. Service: Beef Seminar/Workshop (Co-PI, No. 22-0490, 2002)	\$3,250
177. Montana Stock Growers Association. Service: Gate-To-Plate Seminar (Co-PI, No. 22-0490, 2002)	\$7,000
178. Chadron State University. Service: Collection/Analyses of Beef Palatability Data (Co-PI, No. 22-0490, 2002)	\$3,705
179. Miniat Meat Processors. Service: Boot Camp for Sales Representatives (Co-PI, No. 22-0490, 2002)	\$5,302
180. Food Safety Net Services, Ltd. Service: Microbial Studies of <i>Mycobacterium paratuberculosis</i> in Ground Beef (PI, No. 22-0490, 2002)	\$4,350
181. Birko, Inc. Service: Testing Sodium Chlorite Following Warm Lactic Acid as Decontaminants of Meat (Co-PI, No. 22-0490, 2002)	\$9,716
182. National Pork Board. Competitive Disparities for U.S. Pork in Export Markets (PI, No. 53-5332, 2002)	\$118,042
183. Wyoming Department of Agriculture. Validation of Regression Equations that Utilize Lamb Vision System Output to Predict Lamb Carcass Fabrication Yields (PI, No. 53-2201, 2002-2003)	\$25,000
184. The Samuel Roberts Noble Foundation. Service: Cattle Feeding and Carcass Data Collection Trials—Yardage and Chute Fees (PI, No. 21-4810, 2002)	\$28,264
185. Food Safety Net Services, Ltd.. Addition to Dupont/Packerland <i>E. coli</i> O157:H7 Reduction Study (PI, No. 53-8202, 2003)	\$71,340
186. John Morrell and Company. Comparison of Wholesale Pork Product Palatability, Retail Product Yield & Conformance to John Morrell Standards. (Co-PI, No. 53-6181, 2003-04)	\$17,944
187. Ford Dodge Animal Health. Determination of the Impact of Biological Products on the Green Discoloration of Injection-site Lesions. (PI, No. 53-6166, 2003)	\$22,084
188. National Cattlemen’s Beef Association. Identification of Cattle Production/Management Practices to Minimize Variation in Beef Tenderness. (Co-PI, No. 53-5094, 2003-04)	\$16,410
189. Catalyst International, Inc. A Pilot Study to Determine if Supplementation of Feedlot Cattle with BioChlor can Improve Beef Tenderness. (PI, No. 53-8330, 2003-04)	\$6,439
190. National Cattlemen’s Beef Association. Development of a Beef Muscle “Aging Index” (Long-term). (PI, No. 53-5098, 2003-04)	\$60,800
191. National Cattlemen’s Beef Association. Development of a Beef Muscle “Aging Index” (Short-term). (PI, No. 53-5099, 2003-04)	\$82,570

Sponsor, Project Description & Year	Amount
192. National Cattlemen's Beef Association. <i>E. coli</i> O157:H7 Survival, and/or Potential Introduction, on Beef Carcass Surfaces During Initial Chilling. (Co-PI, No. 53-5088, 2003-04)	\$148,300
193. USDA. Sheep Safety and Quality Assurance Program Implementation. (PI, No. 53-2080, 2003-04)	\$20,000
194. Purac, Inc. Evaluation of the Effects of Lactic Acid Treatment on Microbiological, Chemical & Sensory Properties of Fresh Meat. (PI, No. 53-8350, 2003-04)	\$29,609
195. American Sheep Industry Association. Sheep Safety & Quality Assurance Program Update & Implementation. (Co-PI, No. 53-5349, 2003-04)	\$25,000
196. Alltech, Inc. Ranch to Rail Mineral Nutrition. (Co-PI, No. 53-8299, 2003-05)	\$60,000
197. Zinpro Corporation. Effects of Copper & Zinc on Performance & Lipogenic Gene Expression in Finishing Steers. (Co-PI, No. 53-8348, 2003-04)	\$57,532
198. USDA-Foreign Agricultural Service. Agricultural Sciences Faculty Exchange Program. (PI, No. 53-2152, 2003-08)	\$53,293
199. Rhodia, Inc. Determining Commercial Application Parameters for Avgard. (Co-PI, No. 53-8360, 2003)	\$13,558
200. National Cattlemen's Beef Association. Improving Sensitivity, Precision, and Repeatability of the GFAP-ELISA for Detecting CNS Contamination in AMR-generated Tissues Compared to the Immunohistochemical Protocol used by USDA-FSIS. (PI, No. 53-5003, 2003)	\$196,500
201. Instituto Nacional de Carne (Uruguay). Service: Beef And Sheep Strategy Workshops In Uruguay. (Co-PI, No. 22-0490, 2003)	\$3,512
202. Montana Stockgrowers Association. Service: Montana Gate-To-Plate Training & Seminar. (Co-PI, No. 22-0490, 2003)	\$10,000
203. National Cattlemen's Beef Association. Cataloging Beef Muscles: Will They Perform for Consumers? (Co-PI, No. 53-5306, 2003)	\$31,407
204. CCHE-Commission on Higher Education. Bio-Waste Disposal & Utilization. (Co-PI, No. 53-0108, 2003)	\$59,852
205. The Samuel Roberts Noble Foundation. Service: Cattle Feeding and Carcass Data Collection Trials—Yardage and Chute Fees. (PI, No. 21-4810, 2003)	\$29,314
206. Elanco Animal Health. Effects of Optaflexx on Growth Performance, Carcass Characteristics & Expression of Lipogenic Genes in Feedlot Cattle. (Co-PI, No. 53-6030, 2004)	\$55,625
207. Penford Food Ingredients Company. Investigation of Penford Food's Organic Acid & Electrostatic Coating Intervention Systems. (Co-PI, No. 53-8294, 2004)	\$3,263
208. American Meat Institute Foundation. Use of Warm Lactic Acid for Reducing Microbial Counts on Beef Subprimal Cuts and Beef Trimmings and Reducing the Incidence of <i>E. coli</i> O157:H7 in Combo-Bins of Beef Trimmings and In the Interior of Blade/Needle or Moisture Enhanced Beef Cuts. (Co-PI, No. 53-5218, 2004)	\$107,106
209. American Meat Institute Foundation. Comparison of Use of Activated Lactoferrin with Use of a "Gold Standard" Combination/Concentration of Antimicrobials for Post Processing Control of <i>Listeria monocytogenes</i> in Ready-to-Eat Meat Products. (Co-PI, No. 53-5217, 2004)	\$60,500
210. Chisso Corporation. Evaluation of the Antimicrobial Activity of e-Polylysine. (Co-PI, No. 53-6053, 2004)	\$18,647
211. National Cattlemen's Beef Association. Further Study of Hide-On Carcass Washing to Identify Alternative Chemicals/Conditions for Lowering Microbial Indicator Counts and Incidence of <i>E. coli</i> O157:H7 On Incoming Slaughter Cattle. (Co-PI, No. 53-5101, 2004)	\$72,006

Sponsor, Project Description & Year	Amount
212. National Cattlemen's Beef Association. Decontamination of Beef Cuts, Intended for Blade/Needle or Moisture-Enhancement Tenderization by Surface Trimming vs. Rinsing with Solutions of Hot (82° C) Water, Warm (55° C) Lactic Acid or Activated Lactoferrin Plus Warm (55° C) Lactic Acid. (Co-PI, No. 53-5100, 2004)	\$77,255
213. U.S. Meat Export Federation. Evaluation of Physical, Organoleptic, and Safety Characteristics of Beef Variety Meats. (Co-PI, No. 53-2231, 2004)	\$54,550
214. National Cattlemen's Beef Association. Development of a Beef Muscle "Aging Index" (Long Term Muscles) (PI, No. 53-5098, 2004)	\$1,615
215. National Cattlemen's Beef Association. Development of a Beef Muscle "Aging Index" (Short Term Muscles) (PI, No. 53-5099, 2004)	\$1,615
216. National Cattlemen's Beef Association. Supplementation of Fed Steers with an Anionic Compound to Improve Beef Tenderness. (PI, No. 53-5130, 2004)	\$30,200
217. U.S. Meat Export Federation. Graduate Student International Internship. (Co-PI, No. 53-5155, 2004)	\$3,568
218. Food Safety Net Services, Ltd. Molecular Characterization of <i>Escherichia coli</i> O157:H7 Hide Contamination Routes--Feedlot to Harvest Floor. (PI, No. 53-6116, 2004)	\$28,500
219. USDA-CSREES. Effect of Transportation & Lairage on <i>Escherichia Coli</i> O157 & <i>Salmonella</i> spp. in Beef Cattle. (Co-PI, No. 53-1414, 2004)	\$489,527
220. Elanco Animal Health. Effects of Optaflexx on Growth Performance, Carcass Characteristics & Expression of Lipogenic Genes in Feedlot Cattle. (Co-PI, No. 53-6030, 2004)	\$23,175
221. USDA-Foreign Agricultural Service. Agricultural Sciences Faculty Exchange Program. (PI, No. 53-2152, 2004)	\$14,296
222. USDA-Foreign Agricultural Service. Agricultural Sciences Faculty Exchange Program. (PI, No. 53-2152, 2004)	\$1,430
223. National Cattlemen's Beef Association. An Evaluation of Central Nervous System (CNS) Cross-Contamination Due To Carcass Splitting in Commercial Beef Packing Plants. (PI, No. 53-5033, 2004)	\$42,665
224. RMS Research Management Systems USA. Service: Collection of Warner-Bratzler Shear Force Data. (PI, No. 21-4810, 2004)	\$3,016
225. National Cattlemen's Beef Association. Service: Preharvest Addendum. (PI, No. 21-4810, 2004)	\$2,000
226. U.S. Meat Export Federation. Service: Duplication of CDs for U.S./Japanese BSE Working Group. (PI, No. 21-4810, 2004)	\$57
227. Colorado Livestock Association. Service: Beef University. (Co-PI, No. 21-4810, 2004)	\$4,000
228. National Cattlemen's Beef Association. Service: Develop a Fact Sheet On Injection-Site Lesions That Develop Green Discoloration in MAP. (PI, No. 21-4810, 2004)	\$2,000
229. Food Safety Net Services, Ltd. Service: Collect Feedlot Fecal Samples for Oxion. (PI, No. 21-4810, 2004)	\$665
230. RMS Research Management Systems USA. Service: Validation of the Dumas, TX High-Voltage Electrical Stimulation & BeefCam Systems. (PI, No. 21-4810, 2004)	\$5,161
231. RMS Research Management Systems USA. Foundation Gift: Meat Science/Animal Science Graduate Assistantship. (PI, No. 6-46189, 2004)	\$10,000
232. National Cattlemen's Beef Association. Service: Develop a Beef Aging Fact Sheet. (PI, No. 21-4950, 2005)	\$8,500
233. National Cattlemen's Beef Association. Service: Grass Fed Beef White Paper. (Co-PI, No. 21-4950, 2005)	\$3,001

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234. Certified Angus Beef. Service: CAB Beef Stampede Workshop. (Co-PI, No. 21-4950, 2005)	\$2,154
235. Coleman Natural Meats. Service: WBS Samples. (Co-PI, No. 21-4950, 2005)	\$1,000
236. Coleman Natural Meats. Service: Coleman Beef University. (Co-PI, No. 21-4950, 2005)	\$3,550
237. Chipotle Mexican Grill. Service: Beef University. (Co-PI, No. 21-4950, 2005)	\$5,000
238. USMEF. Service: Japanese Diet Delegation Lunch. (PI, No. 21-4950, 2005)	\$688
239. National Cattlemen's Beef Association. Service: Beef Cut Photo Library. (Co-PI, No. 21-4950, 2005)	\$3,500
240. RMS Research Management Systems USA. Foundation Gift: Meat Science/Animal Science Graduate Assistantship. (PI, No. 6-46189, 2005)	\$10,000
241. USDA-CSREES-Coop State Rsrch Edu & Ext. Effect of Transportation & Lairage on <i>Escherichia Coli</i> O157 & <i>Salmonella</i> spp. in Beef Cattle. (PI, No. 53-1417, 2004-06)	\$3,000
242. National Cattlemen's Beef Association. Supplementation of Feedlot Cattle with Octanoic Acid for Three Days Pre-Harvest to Reduce Risk of Contamination with <i>E. coli</i> O157:H7. (PI, No. 53-5112, 2005-06)	\$94,670
243. Meyer Natural Angus, LLC. Cooking Time and Cooking Loss of Ground Beef Patties, as well as Palatability of Ribeye Steaks, for Meyer Natural Beef. (PI, No. 53-6061, 2005)	\$27,866
244. U.S. Meat Export Federation. USMEF Graduate Student International Internship. (PI, No. 53-5533, 2005-06)	\$5,260
245. Fort Dodge Animal Health (old Cyanamid). Efficacy of Fort Dodge Animal Health's <i>E. coli</i> bacterin in Cattle as a Pre-harvest Method to Reduce Fecal Shedding. (PI, No. 53-6134, 2005-06)	\$203,191
246. National Cattlemen's Beef Association. Identification and Evaluation of Cattle Persistently Shedding vs. Cattle Non-Persistently Shedding <i>E. coli</i> O157:H7. (PI, No. 53-5581, 2005-06)	\$117,425
247. Fort Dodge Animal Health (old Cyanamid). Efficacy of Fort Dodge Animal Health's <i>E. coli</i> bacterin in Cattle as a Pre-harvest Method to Reduce Fecal Shedding. (PI, No. 53-6134, 2005-06)	\$8,000
248. National Cattlemen's Beef Association. An Evaluation of the Ability of Commercial Carcass Washing Cabinets to Remove Glial Fibrillary Acidic Protein (GFAP) from Beef Products. (Co-PI, No. 53-5083, 2005)	\$38,375
249. National Cattlemen's Beef Association. An Evaluation of Beef Splitting Saw Operational Sanitation Standard Operating Procedures' Ability to Remove Glial Fibrillary Acidic Protein (GFAP) from Splitting Saw Blades and Housings. (Co-PI, No. 53-5096, 2005)	\$56,600
250. National Cattlemen's Beef Association. Identification of Humane Cattle Stunning Systems that Minimize Likelihood of Central Nervous System Tissue Entering the Blood Stream. (Co-PI, No. 53-5195, 2005-06)	\$79,675
251. National Cattlemen's Beef Association. An Evaluation of Beef Splitting Saw Operational Sanitation Standard Operating Procedures Ability to Remove Glial Fibrillary Acidic Protein (GFAP) from Splitting Saw Blades and Housings. (Co-PI, No. 53- 5096, 2005)	\$13,000
252. National Cattlemen's Beef Association. National Beef Quality Audit--2005: A New Benchmark for the US Beef Industry. (Co-PI, No. 53- 5399, 2005)	\$43,110
253. National Cattlemen's Beef Association. National Beef Quality Audit--2005: A New Benchmark for the US Beef Industry. (Co-PI, No. 53- 5399, 2005)	\$20,890
254. National Cattlemen's Beef Association. Is the Difference in Tenderness Commonly Observed Between Heifers & Steers Attributable to Differences in Temperament Score? (Co-PI, No. 53-5115, 2005-06)	\$56,300
255. National Cattlemen's Beef Association. Do Heifer Finishing Implants Affect Beef Tenderness? (Co-PI, No. 53- 5117, 2005-06)	\$92,100

Sponsor, Project Description & Year	Amount
256. Zinpro Corporation. The Effects of Trace Mineral Source on Health & Performance of Newly Received Cattle & the Impact of Cobalt Concentration on Performance and Lipid Metabolism in Finishing Steers. (Co-PI, No. 53-6197, 2006)	\$30,440
257. National Cattlemen's Beef Association. National Beef Quality Audit—2005 Part II. (Co-PI, No. 53-5675, 2005-06)	\$11,250
258. USDA National Sheep Center. National Sheep Quality Audit & Producer Education. (Co-PI, No. 53-2189, 2006-07)	\$35,000
259. National Cattlemen's Beef Association. Evaluate Survival/Growth During Frozen, Refrigerated, or Retail-Type Storage, & 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 Shown to Minimize Survival or Enhance Destruction of the Pathogen. (Co-PI, No. 53-5696, 2006-07)	\$70,000
260. U.S. Meat Export Federation. USMEF Graduate Student International Internship. (PI, No. 53-5533, 2006)	\$5,900
261. National Cattlemen's Beef Association. Demonstration of the Safety & Efficacy of Converting Bovine Specified Risk Materials (SRM's) Into Non-Ruminant Animal Feeds or Biofuels. (Co-PI, No. 53-5199, 2006-07)	\$87,220
262. Colorado Beef Council. Colorado Beef Quality Assurance Program 2006-2007. (Co-PI, No. 53-5332, 2006-07)	\$52,000
263. National Pork Producers Council. Preparation of a Technical Report for Approval of Sequential and Multiple Antimicrobial Treatment Applications on Pork Products Intended for Export to the European Union. (PI, No. 53-5356, 2006-07)	\$10,000
264. National Cattlemen's Beef Association. Preparation of a Technical Report for Approval of Sequential and Multiple Antimicrobial Treatment Applications on Beef Products Intended for Export to the European Union. (PI, No. 53-5146, 2006-07)	\$10,000
265. Swift & Co. Swift & Company Tenderness Study. (PI, No. 53-6301, 2006-07)	\$35,760
266. U.S. Meat Export Federation. The scientific merit of bi-lateral terminology used to restore beef trade in Asian countries and development of a glossary of terms for acceptance by trading partners and use in determining agreement compliance. (PI, No. 53-2298, 2006-07)	\$49,985
267. Tenera Technology, LLC. Tenera Tenderness Project. (PI, No. 53-6329, 2006-07)	\$14,500
268. National Cattlemen's Beef Association. Adding Value to Non-Conforming "Out" Beef Carcasses. (PI, No. 53-5166, 2006-07)	\$87,508
269. Colorado Dept. Agric. (USDA-APHIS Cooperative Agreement). Assessing the Impact of NAIS With Regard to Beef, Pork and Lamb Harvesting and Rendering Facilities in the U.S. (Co-PI, No. 53-0540, 2006-07)	\$295,227
270. Swift & Co. Service: Slice Shear Force Data Collection. (Co-PI, No. 21-4950, 2006)	\$1,800
271. National Cattlemen's Beef Association. Service: Beef Yield & Cutout Calculator Fact Sheet. (PI, No. 21-4950, 2006)	\$8,500
272. Food Safety Net Services. Service: Green Bay Travel to Sample Cattle Hides. (Co-PI, No. 21-4950, 2006)	\$6,654
273. RMS Research Management Systems, Inc. Service: Travel to Plainview, TX to Collect Instrument Grading Data for USDA Yield Grade Application Approval. (PI, No. 21-4950, 2006)	\$591
274. National Cattlemen's Beef association. Service: Travel to Dodge City, KS to Collect Instrument Grading Data for USDA Marbling Instrument Approval Standard Development. (PI, No. 21-4950, 2006)	\$3,515
275. American Meat Institute Foundation. Service: Travel to Athens, GA to Meet with USDA-FSIS Veterinary Pathologists. (PI, No. 21-4950, 2006)	\$1,227

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276. National Cattlemen’s Beef Association. Service: Travel to Athens, GA to Meet with USDA-FSIS Veterinary Pathologists. (PI, No. 21-4950, 2006)	\$1,227
277. National Cattlemen’s Beef association. Service: Travel to Greeley, CO, Dodge City, KS, Lexington, NE, and Green Bay, WI to Collect Instrument Grading Data for USDA Marbling Instrument Approval. (PI, No. 21-4950, 2006)	\$10,557
278. National Cattlemen’s Beef association. Service: Develop a White Paper Addressing Post-Harvest Practices for Enhancing Beef Tenderness. (Co-PI, 21-4950, 2006-07)	\$7,500
279. Smithfield Beef Division. Service: Travel to Complete NCBA Project “Identification and Evaluation of Cattle Persistently Shedding vs. Cattle Non-Persistently Shedding <i>E. coli</i> O157:H7.” (PI, No. 21-4950, 2006)	\$4,374
280. RMS Research Management Systems USA. Foundation Gift: Meat Science/Animal Science Graduate Assistantship. (PI, No. 56233, 2006)	\$20,000
281. U.S. Meat Export Federation. Service: Food & Agriculture Export Alliance (FAEA) Team, Hanoi, Vietnam Travel Reimbursement. (PI, No. 21-4950, 2006)	\$1,051
282. Beef Products, Inc. Service: Sensory Analysis of BPI Product. (Co-PI, No. 21-4950, 2006)	\$16,352
283. Food Lion, Inc. Service: Warner-Bratzler Shear Force. (Co-PI, No. 21-4900, 2007)	\$2,325
284. FPL Foods, Inc. Service: Histopathological Evaluation of Discolored Product. (PI, No. 21-4950, 2007)	\$65
285. Smithfield Beef. Service: Warner-Bratzler Shear Force. (Co-PI, No. 21-4900, 2007)	\$2,250
286. Montana State University. Service: Warner-Bratzler Shear Force. (Co-PI, No. 21-4900, 2007)	\$5,123
287. Coleman Natural Meats. Service: Warner-Bratzler Shear Force. (Co-PI, No. 21-4900, 2007)	\$450
288. NCBA. Service: Photo Shoot. (Co-PI, No. 21-4900, 2007)	\$1,542
289. Hydro-Pro. Service: Warner-Bratzler Shear Force. (Co-PI, No. 21-4900, 2007)	\$718
290. National Cattlemen’s Beef Association. Merchandizing the Ribeye and Striploin from Carcasses with Nonconforming Carcass Weights (Too Heavy) and Longissimus muscle Areas. (Co-PI, No. 53-5019, 2007)	\$43,000
291. National Cattlemen’s Beef Association. Beef Carcass Value Optimization: Identification and Prediction of Primal, Subprimal, Value-Cut and Offal Fabrication Styles that Optimize Carcass Value. (Co-PI, No. 53-5123, 2007)	\$114,544
292. National Cattlemen’s Beef Association. Formation, Destruction and Removal of <i>Escherichia coli</i> O157:H7 Biofilms on Materials that Comprise Meat-Contact Surfaces in Beef Fabrication and Grinding Processes. (Co-PI, No. 53-5132, 2007)	\$73,185
293. American Sheep Industry Association. Development of USDA Performance Standards for Officially Approving VIA Sheep Carcass-Evaluation Instrumentation. (PI, No. 53-6085, 2007)	\$10,000
294. National Cattlemen’s Beef Association. The History of Instrument Assessment of Beef. (PI, No. 53-5099, 2007)	\$5,000
295. National Cattlemen’s Beef Association. Economic Impacts of Dairy Market Cow Affected by DBQA. (PI, No. 53-5008, 2007)	\$4,000
296. National Cattlemen’s Beef Association. Identification of Genetic Markers Associated with <i>Escherichia coli</i> O157:H7 Attachment Efficiency and Novel Non-Cytotoxic Small Molecules that Interrupt <i>E. coli</i> O157:H7 Attachment. (Co-PI, No. 53-5113, 2007)	\$83,450
297. Colorado Beef Council. Colorado Beef Quality Assurance Program 2007-08. (Co-PI, No. 53-5359, 2007)	\$42,000
298. American Meat Institute Foundation. Effect of Traditional and Modified Brining Ingredients on Survival of <i>Escherichia coli</i> O157:H7 During Storage. (Co-PI, No. 53-5482, 2008-09).	\$81,000

Sponsor, Project Description & Year	Amount
299. National Cattlemen's Beef Association. Screening for Antibiotic-Resistance Genes and Class 1 Integrons in Commensal Bacteria in Agricultural and Other Environments. (Co-PI, No. 53-5358, 2008-09).	\$116,800
300. National Cattlemen's Beef Association. Attenuation of Stress-Induced Beef Quality and Tenderness Problems. (Co-PI, No. 53-5514, 2008-09).	\$68,175
301. National Cattlemen's Beef Association. Use of Video Imaging Technology to Predict Cutability and Sensory Quality of Beef Products Generated from Mature Cows & Bulls. (PI, No. 53-5793, 2008-09).	\$199,414
302. American Sheep Industry Association. Development of USDA Performance Standards for Officially Approving VIA Sheep Carcass-Evaluation Instrumentation. (PI, No. 53-6085, 2007-09).	\$10,000
303. U.S. Meat Export Federation. USMEF Graduate Student International Internship. (PI, No. 53-7120, 2008).	\$6,600
304. National Cattlemen's Beef Association. Identifying Management Strategies to Improve Cow and Bull Beef Quality. (PI, No. 53-7118, 2008).	\$5,000
305. National Cattlemen's Beef Association. Sample Collection for Residue Analysis. (PI, No. 53-5781, 2008).	\$16,400
306. National Cattlemen's Beef Association. Nutrient Database Improvement Research-Phase I. (PI, No. 53-5363, 2008).	\$55,764
307. Colorado Beef Council. Colorado Beef Quality Assurance Program 2008-09. (Co-PI, No. 53-5374, 2008-09).	\$42,000
308. U.S. Meat Export Federation. Service: Hong Kong Shipping Costs. (PI, No. 21-4950, 2008).	\$213
309. Standard Meat Company. Service: International Meat Marketing White Paper. (PI, No. 21-4950, 2008).	\$5,000
310. North American Meat Processors Association. Service: Center of the Plate Conference. (PI, No. 21-4950, 2008).	\$8,933
311. Bar-S Foods Co. Protocol: Product Testing for Listeria Monocytogenes Control. (Co-PI, No. 53-3264, 2009-11).	\$18,000
312. National Pork Board. Propensity of Importers to Pay for Pork Quality Attributes in Select U.S. Export Markets. (PI, No. 53-4066, 2009-10).	\$99,900
313. National Cattlemen's Beef Association. Validation of Tenderness Prediction Instruments. (PI, No. 53-7166, 2009).	\$37,800
314. U.S. Meat Export Federation. A Review of Procedures to Extend the Shelf Life of Fresh/Frozen Beef and Pork Muscle Cuts and Variety Meats in Foreign Markets. (PI, No. 53-2219, 2009).	\$48,982
315. National Cattlemen's Beef Association. Prediction of Meat Tenderness Using High-Resolution Imaging. (PI, No. 53-4082, 2009-10).	\$70,000
316. American Lamb Board. Comprehensive Consumer Panel Palatability Rankings and Establishing Baseline Tenderness of American Lamb Meat. (PI, No. 53-4075, 2009-10).	\$20,000
317. National Cattlemen's Beef Association. Validation of the Use of Citrus Essential Oils as a Post Harvest Intervention Against Escherichia coli O157:H7 and Salmonella (Co-PI, No. 53-4070, 2009-10).	\$26,000
318. National Cattlemen's Beef Association. Beef Nutrient Database Improvement Team Phase 1b. (Co-PI, No. 53-4069, 2009).	\$76,112
319. National Cattlemen's Beef Association. Beef Nutrient Database Improvement Team Phase 2a. (Co-PI, No. 53-0034, 2009).	\$53,627
320. Elk River Management Corporation. Investigating the Impact of Sugar Concentration on Microbial Fermentation Products of Grass Hay. (Co-PI, No. 53-8320, 2009).	\$1,463

Sponsor, Project Description & Year	Amount
321. Colorado Beef Council. Colorado Beef Quality Assurance Program. (Co-PI, No. 53-4078, 2009-10).	\$35,000
322. Colorado 4-H Foundation. Service: NWSS 4-H Meat Judging Contest. (Co-PI, No. 21-47000, 2009).	\$5,255
323. Dean of Agricultural Sciences. Service: State FFA Meat Evaluation Contest. (Co-PI, No. 21-47000, 2009).	\$2,178
324. National Cattlemen's Beef Association. Developing a Platform for Interactive Animation and Teaching Modules to Demonstrate Muscle Contraction. (Co-PI, No. 53-5693, 2010).	\$20,000
325. Bemis Company, Inc. An Evaluation of the Effectiveness of FreshCase Technology to Extend the Shelf Life of Whole Muscle Pork and Ground Pork. (Co-PI, No. 53-6001, 2010-11).	\$44,825
326. Bemis Company, Inc. An Evaluation of the Effectiveness of FreshCase Technology to Extend the Shelf Life of Whole Muscle Beef and Ground Beef. (Co-PI, No. 53-6003, 2010-11).	\$43,193
327. JBS International. An Evaluation of Carcass Characteristics, <i>Longissimus</i> Muscle Tenderness, and Prevalence of <i>E. coli</i> O157:H7 and <i>Salmonella</i> in Feedlot Steers Potentially Exhibiting Differences in Heat Stress Response. (Co-PI, No. 53-8390, 2010)	\$58,552
328. National Cattlemen's Beef Association. Muscles of the Round: Nutrient Composition of Cooked Cuts. (Co-PI, No. 53-5121, 2010).	\$29,295
329. National Cattlemen's Beef Association. Interactive Beef Quality Assurance Workshop: "Beginning With the End in Mind." (Co-PI, No. 53-5115, 2010).	\$5,750
330. National Cattlemen's Beef Association. Nutrient Database Improvement Research—BAM Cuts. (Co-PI, No. 53-8231, 2010).	\$69,076
331. National Cattlemen's Beef Association. Nutrient Database Improvement Research—Phase 2b: Nutrient Analysis of Collected Rib and Plate Cuts. (Co-PI, No. 53-5170, 2010-2011).	\$68,573
332. American Meat Institute Foundation. Evaluation of Chemical Decontamination Treatments for Beef Trimmings Against <i>Escherichia coli</i> O157:H7, Non-O157 Shiga-Toxin-Producing <i>E. Coli</i> , and <i>Salmonella</i> . (Co-PI, No. 53-5583, 2010-2011).	\$88,800
333. University of Nebraska. Food Safety Assistance for Small Meat and Poultry Processors Through Development and Implementation of Industry Best Practices. (Co-PI, No. 53-1399, 2010-2012).	\$128,958
334. National Cattlemen's Beef Association. Relationships of USDA Camera-Based Quality Grades to Beef Palatability Attributes. (Co-PI, No. 53-5154, 2010-2011).	\$70,675
335. National Cattlemen's Beef Association. National Beef Quality Audit—2011 (Phase I: Face-to-Face Interviews). (PI, No. 53-5035, 2010-2012).	\$105,250
336. National Cattlemen's Beef Association. Quantifying the "Aging Response" for Muscles of the Beef Round. (PI, No. 53-8223, 2010).	\$73,636
337. National Cattlemen's Beef Association. Beef Cutout Calculator Fact Sheet. (PI, No. 53-5117, 2010).	\$4,000
338. Novus International, Inc. Interaction of Copper Source, Bile Composition on Microbial Growth, and Cu Protein Homeostasis. (Co-PI, No. 53-6055, 2010).	\$21,000
339. Colorado Beef Council. Colorado Beef Quality Assurance Program. (Co-PI, No. 53-5365, 2010-2011).	\$35,000
340. Bar T Bar (Prosser). Service: Establishing WBSF values and sensory characteristics for 5 chuck muscles resulting from cull cows and bulls. (Co-PI, No. 21-47100, 2010).	\$16,550
341. JBS International. Service: Development of the Paper "Overview of US Beef Industry." (Co-PI, No. 21-47100, 2010).	\$5,000
342. JBS International. Service: An Evaluation of the Shelf Life Characteristics for Export Beef Chuck Flap, Chuck Short Ribs, and Rib Short Ribs. (Co-PI, No. 21-47100, 2010).	\$5,000

Sponsor, Project Description & Year	Amount
343. JBS International. Service: Pathogen Spray Intervention Validation Study. (PI, No. 21-47100, 2010).	\$8,056
344. Care Research, LLC. Service: Bovine blood collection. (Co-PI, No. 21-47100, 2010).	\$10,000
345. National Pork Board. Service: Pork WTP Study Webinars. (PI, No. 21-47100, 2010).	\$3,300
346. National Cattlemen’s Beef Association. Service: Export cut photo shoot. (Co-PI, No. 21-47100, 2010).	\$800
347. National Cattlemen’s Beef Association. Service: Beef Innovations Group demonstration. (Co-PI, No. 21-47100, 2010).	\$2,200
348. Hawkins, Inc. Service: Pathogen Spray Intervention Validation Study. (PI, No. 21-47100, 2010).	\$2,400
349. Jones Hamilton. Service: Pathogen Spray Intervention Validation Study. (PI, No. 21-47100, 2010).	\$2,400
350. USMEF. Service: Variety Meat Collection & Photo Preparation. (Co-PI, No. 15-92160, 2011)	\$5,000
351. Mountain States Rosen. Service: R& D, Sensory, & Shear Force. (Co-PI, No. 15-92160, 2011)	\$5,340
352. Bar-T-Bar Ranches. Service: Cow Beef Fabrication, Shear Force & Sensory. (Co-PI, No. 15-92160, 2011)	\$16,550
353. Care Research Laboratories, LLC. Service: Bovine Blood Collection. (Co-PI, No. 15-92160, 2011)	\$10,000
354. National Western Stock Show. Service: Bison Shear Force Testing. (Co-PI, No. 15-92160, 2011)	\$220
355. Western National Roundup. Service: Meat Evaluation Contest. (Co-PI, No. 15-92160, 2011)	\$5,575
356. JBS USA Beef Division. Service: Export Shelf Life. (Co-PI, No. 15-92160, 2011)	\$5,000
357. JBS USA Beef Division. Service: Beef Product Manual Development. (Co-PI, No. 15-92160, 2011)	\$5,000
358. JBS USA Beef Division. Service: Shear Force Testing. (Co-PI, No. 15-92160, 2011)	\$18,610
359. CO Casualty Insurance. Service: Shear Force Testing & TBA Analysis. (Co-PI, No. 15-92160, 2011)	\$575
360. Sylvandale Ranches. Service: Shear Force Testing. (Co-PI, No. 15-92160, 2011)	\$750
361. Texas A&M University. Service: National Beef Quality Audit Phase II. (Co-PI, No. 15-92160, 2011)	\$8,000
362. Missouri State Fair. Service: Lamb Carcass Evaluation. (Co-PI, No. 15-92160, 2011)	\$572
363. Iowa State Fair. Service: Lamb Carcass Evaluation. (Co-PI, No. 15-92160, 2011)	\$1,495
364. SECRC. Service: Carcass Data Collection. (Co-PI, No. 15-92160, 2011)	\$24,575
365. JBS Pilgrim’s Pride. Shear Force Testing. (Co-PI, No. 15-92160, 2011)	\$1,500
366. Colorado FFA. Service: Meat Evaluation Contest. (Co-PI, No. 15-92160, 2011)	\$2,309
367. Elanco Animal Health. Service: Shear Force Testing, Nolan Ryan Program. (Co-PI, No. 15-92160, 2011)	\$2,121
368. Elanco Animal Health. Service: Shear Force Testing, Ordway Holsteins. (Co-PI, No. 15-92160)	\$8,960
369. National Cattlemen’s Beef Association. Nutrient Database Improvement Research—Phase 3A: Collection & Proximate Analysis of Loin & Round Cuts. (Co-PI, No. 53-5516, 2011).	\$63,267
370. National Cattlemen’s Beef Association. Identifying Consumer Preferences for Specific Beef Flavor Characteristics. (Co-PI, No. 53-5615, 2011-2012).	\$89,525
371. Elanco Animal Health. North American Beef Quality Check. (PI, No. 53-8259, 2011-2012).	\$140,625

Sponsor, Project Description & Year	Amount
372. Elanco Animal Health. Elanco BoviBrom Validation Proposal. (PI, No. 53-6051, 2010-2013).	\$37,625
373. Colorado Beef Council. Colorado Beef Quality Assurance Program. (Co-PI, No. 53-5382, 2011-2012).	\$35,000
374. Elanco Animal Health. Graduate Student Foundation Support. (Co-Pi, No. 64-57680, 2011-2012).	\$25,500
375. National Cattlemen’s Beef Association. Special-Fed Veal: A Complete Nutrient Analysis of Pertinent Veal Cuts. (Co-PI, No. 53-15710, 2012-2013).	\$55,000
376. National Pork Board. Literature Review & Needs Assessment of Pathogen Reduction Technologies (PRTs) for Pork Products. (Co-PI, No. 53-15830, 2012-2013).	\$12,948
377. National Cattlemen’s Beef Association. Discovering Ground Beef Performance Through ‘Premium Grind’ Concepts. (Co-PI, No. 53-58290, 2012-2013).	\$48,616
378. National Cattlemen’s Beef Association. Effects of Extended Postmortem Aging Periods on the Shelf-Life and Eating Qualities of Beef Intended for Retail Sale. (Co-PI, No. 53-58280, 2012-2013).	\$54,546
379. National Cattlemen’s Beef Association. Nutrient Database Improvement—Phase 3B—Nutrient Analysis of Round & Loin Cuts. (Co-PI, No. 53-71520, 2012-2013).	\$58,277
380. Elanco Animal Health. Post Approval Study: Live Performance, Carcass Characteristics, Carcass Fabrication Yield and Strip Loin Palatability of Beef Steers Fed Varying Dosages and Potencies of Beta-Agonists. (Co-PI, No. 53-61810, 2012).	\$29,936
381. National Cattlemen’s Beef Association. Effects of Differences in Carcass Maturity on Eating Quality of Beef from Fed Steers & Heifers that Have Been Graded. (Co-PI, No. 53-72040, 2012-2013).	\$74,245
382. Colorado Beef Council. Colorado Beef Quality Assurance Program. (Co-PI, No. 53-56830, 2012-2013).	\$35,000
383. Colorado Beef Council. Modern Beef Production Seminar Entitled: Beef + Media Transparency = Trust. (Co-PI, No. 53-07890, 2012).	\$35,000
384. U.S. Meat Export Federation. Development of a Grading Video. (Co-PI, No. 53-56520, 2012).	\$27,967
385. Elanco Animal Health. Post Approval Study: Live Performance, Carcass Characteristics, Carcass Fabrication Yield and Strip Loin Palatability of Calf-Fed Holstein Steers Fed Varying Dosages and Potencies of Beta-Agonists. (Co-PI, No. 53-Project Pending, 2012-2013).	\$39,785
386. Elanco Animal Health. Service Projects. Project I: Primary project conducted in conjunction with Elanco Animal Health with the additional “Beef Samples” (JBS USDA Choice Product) furnished by JBS for sensory and shear force comparisons with Holstein products. Project II: Retail cutout/yield study for Holstein products and Beef Samples resulting from Project I. Project III: Customer survey of subprimal and retail cut preferences for saleable Holstein and Beef products. (Co-PI, No. 53-Project Pending, 2012-2013).	\$49,631
387. JBS North America. Service: Shear Force Testing. (Co-PI, No. 15-92160, 2012).	\$91,925
388. Elanco Animal Health. Service: Graduate Student Sponsorship. (Co-PI, No. 64-57680, 2012).	\$26,000
389. Elanco Animal Health. Service: Shear Force & Shelf Life Determination. (Co-PI, No. 15-92160, 2012).	\$4,505
390. SECRC. Service: Carcass Data Collection. (Co-PI, No. 15-92160, 2012).	\$7,944
391. Professor Hyungchul Han (CSU). Service: Carcass Data Collection. (Co-PI, No. 15-92160, 2012).	\$1,085
392. U. S. Meat Export Federation. Service: Development of a Pork Variety Meat Guide. (Co-PI, No. 15-92160, 2012).	\$5,626
393. SuKarne. Service: Shear Force Determination. (Co-PI, No. 15-92160, 2012).	\$3,000

Sponsor, Project Description & Year	Amount
394. National Western Stock Show. Service: Shear Force Determination-Bison. (Co-PI, No. 15-92160, 2012).	\$255
395. Miscellaneous. Service: Carcass/Ultrasound Data Collection, Colorado County Fairs. (Co-PI, No. 15-92160, 2012).	\$20,131
396. Simplot Land & Livestock. Service: Graduate Student Support & Sensory Panels. (Co-PI, No. 15-92160, 2012).	\$5,965
Cumulative Total	\$13,124,874

LIST OF PUBLICATIONS:***Refereed Journal Articles:***

1. Belk, K. E., J. D. Tatum, and F. L. Williams, Jr. 1991. Deposition and distribution of carcass fat for steers differing in frame size and muscle thickness. *J. Anim. Sci.* 69: 609-616.
2. Hodgson, R. R., K. E. Belk, J. W. Savell, H. R. Cross, and F. L. Williams. 1992. Development of a multivariate yield grade equation to predict compositional traits in mature cow carcasses. *J. Anim. Sci.* 70: 2159-2166.
3. Hodgson, R. R., K. E. Belk, J. W. Savell, H. R. Cross, and F. L. Williams. 1992. Development of a quantitative quality grading system for mature cow carcasses. *J. Anim. Sci.* 70: 1840-1847.
4. Belk, K. E., N. O. Huerta-Leidenz, J. W. Savell, and H. R. Cross. 1992. Relationships between U.S. beef consumption and Latin American rainforest destruction. *The Prof. Anim. Sci.* 8: 14-21.
5. Lorenzen, C. L., D. S. Hale, D. B. Griffin, J. W. Savell, K. E. Belk, T. L. Fisher, M. R. Miller, and G. C. Smith. 1993. National Beef Quality Audit: Survey of producer related defects and carcass quality and quantity attributes. *J. Anim. Sci.* 71: 1495-1502.
6. Belk, K. E., J. W. Savell, S. K. Davis, J. F. Taylor, S. B. Smith, and J. E. Womack. 1993. Tissue specific activity of pentose cycle oxidative enzymes during feeder lamb development. *J. Anim. Sci.* 71: 1796-1804.
7. Belk, K. E., G. L. Luchak, and R. K. Miller. 1993. Palatability of beef roasts prepared with different foodservice cooking methods. *J. Muscle Foods.* 4: 141-159.
8. Belk, K. E., G. L. Luchak, and R. K. Miller. 1993. Physical characteristics of beef roasts prepared with different foodservice cooking methods. *J. Muscle Foods.* 4: 119-139.
9. Belk, K. E., R. K. Miller, L. L. Evans, S. P. Liu, and G. R. Acuff. 1993. Flavor attributes and microbial levels of fresh beef roasts cooked with varying foodservice methodology. *J. Muscle Foods.* 4: 321-337.
10. Cross, H. R., and K. E. Belk. 1993. Objective measurements of carcass and meat quality. *Meat Sci.* 36: 191-202.
11. Nurmahmudi, K. E. Belk, and R. K. Miller. 1994. Thiobarbituric acid values of fresh beef roasts cooked with various foodservice oven methods. *J. Muscle Foods.* 5: 1-14.
12. Belk, K. E., C. L. Lorenzen, J. W. Savell, S. K. Davis, J. F. Taylor, S. B. Smith, and D. K. Lunt. 1997. Tissue specific pentose-phosphate oxidative activity in Angus and Wagyu steers after extensive feeding. *J. Musc. Foods.* 8:147-156.
13. *Schnell, T. D., K. E. Belk, J. D. Tatum, R. K. Miller, and G. C. Smith. 1997. Performance, carcass, and palatability traits for cull cows fed high-energy concentrate diets for 0, 14, 28, 42, or 56 days. *J. Anim. Sci.* 75:1195-1202.
14. *Scanga, J. A., K. E. Belk, J. D. Tatum, T. Grandin, and G. C. Smith. 1998. Factors contributing to the incidence of dark cutting beef and management strategies to reduce the occurrence of dark cutters. *J. Anim. Sci.* 76:2040-2047.
15. Belk, K. E., J. A. Scanga, J. D. Tatum, J. W. Wise, and G. C. Smith. 1998. Simulated Instrument Augmentation of USDA Yield Grade application to beef carcasses. *J. Anim. Sci.* 76:522-527.
16. *Hilton, G. G., J. D. Tatum, S. E. Williams, K. E. Belk, F. L. Williams, J. W. Wise and G. C. Smith. 1998. An evaluation of current and alternative systems for quality grading carcasses of mature slaughter cows. *J. Anim. Sci.* 76:2094-2103.
17. Luchak, G. L., R. K. Miller, K. E. Belk, D. S. Hale, S. A. Michaelsen, D. D. Johnson, R. L. West, R. W. Leak, H. R. Cross, and J. W. Savell. 1998. Determination of sensory, chemical and cooking characteristics of retail beef cuts differing in intramuscular and external fat. *Meat Sci.* 50:55-72.
18. *Zerby, H. N., K. E. Belk, J. K. Ahola, J. N. Sofos, D. M. Schaefer, J. B. Morgan, and G. C. Smith. 1999. Effects of Muscle α -tocopherol level and surface microbiological contamination on retail caselife of fresh beef from the U.S., Japan and Australia. *Meat Sci.* 52:111-118.
19. *Zerby, H. N., K. E. Belk, J. N. Sofos, L. R. McDowell, S. N. Williams, and G. C. Smith. 1999. Display life of fresh beef containing different levels of vitamin E and initial microbiological contamination. *J. Musc. Foods.* 10:345-355.

20. *George, M. H., J. D. Tatum, K. E. Belk and G. C. Smith. 1999. An audit of retail beef loin steak tenderness conducted in eight U.S. cities. 1999. *J. Anim. Sci.* 77:1735-1741.
21. Tatum, J. D., K. E. Belk, M. H. George and G. C. Smith. 1999. Identification of quality management practices to reduce the incidence of retail beef tenderness problems: development and evaluation of a prototype quality system to produce tender beef. *J. Anim. Sci.* 77:2112-2118.
22. *Cannell, R. C., J. D. Tatum, K. E. Belk, J. W. Wise, R. P. Clayton and G. C. Smith. 1999. Dual-component video image analysis system (VIASCAN™) as a predictor of beef carcass red meat yield percentage and for augmenting application of USDA yield grades. *J. Anim. Sci.* 77:2942-2950.
23. *Zerby, H. N., K. E. Belk, J. N. Sofos, L. R. McDowell and G. C. Smith. 1999. Caselife of seven retail products from beef cattle supplemented with alpha-tocopheryl acetate. *J. Anim. Sci.* 77:2458-2463.
24. *Delmore, R. J., J. N. Sofos, K. E. Belk, W. R. Lloyd, G. L. Bellinger, G. R. Schmidt and G. C. Smith. 1999. Good manufacturing practices for improving the microbiological quality of beef variety meats. *Dairy, Food and Env. San.* 19:742-752.
25. Doherty, R. L., T. G. Field, J. D. Tatum, K. E. Belk, J. A. Scanga and G. C. Smith. 1999. Developing benchmarks to familiarize cattle producers with the benefits and risks associated with grid pricing. *The Prof. Anim. Sci.* 15:136-140.
26. *Ware, L. M., M. L. Kain, J. N. Sofos, K. E. Belk and G. C. Smith. 1999. Comparison of sponging and excising as sampling procedures for microbiological analysis of fresh beef-carcass tissue. *J. Food Prot.* 62:1255-1259.
27. *Delmore, Jr., R. J., J. N. Sofos, G. R. Schmidt, K. E. Belk, W. R. Lloyd and G. C. Smith. 2000. Interventions to reduce microbiological contamination of beef variety meats. *J. Food Prot.* 63:44-50.
28. *Vote, D. J., W. J. Platter, J. D. Tatum, G. R. Schmidt, K. E. Belk, G. C. Smith and N. C. Speer. 2000. Injection of beef strip loins with solutions containing sodium tripolyphosphate, sodium lactate, and sodium chloride to enhance palatability. *J. Anim. Sci.* 78:952-957.
29. *Roeber, D. L., R. C. Cannell, K. E. Belk, J. D. Tatum and G. C. Smith. 2000. Effects of a unique application of electrical stimulation on tenderness, color and quality attributes of the beef longissimus muscle. *J. Anim. Sci.* 78:1504-1509.
30. *Roeber, D. L., R. C. Cannell, K. E. Belk, R. K. Miller, J. D. Tatum, K. Dean and G. C. Smith. 2000. Implant strategies during feeding: impact on carcass grades and consumer acceptability. *J. Anim. Sci.* 78:1867-1874.
31. *Scanga, J. A., R. J. Delmore, Jr., R. P. Ames, K. E. Belk, J. D. Tatum and G. C. Smith. 2000. Palatability of beef steaks marinated with solutions of calcium chloride, phosphate and(or) beef flavoring. *Meat Sci.* 55:397-401.
32. *Bacon, R. T., J. N. Sofos, K. E. Belk, W. M. Mirtsching, R. P. Clayton, J. O. Reagan and G. C. Smith. 2000. Microbial populations on animal hides and beef carcasses at different stages of slaughter in plants employing multiple-sequential interventions for decontamination. *J. Food Prot.* 63:1080-1086.
33. *Scanga, J. A., A. D. Grona, K. E. Belk, J. N. Sofos, G. R. Bellinger and G. C. Smith. 2000. Microbiological contamination of raw beef trimmings and ground products. *Meat Sci.* 56:145-152.
34. *Duffy, E. A., S. B. LeValley, K. E. Belk, J. N. Sofos and G. C. Smith. 2000. Preharvest management practices, good manufacturing practices during harvest, and microbiological quality of lamb carcasses. *Dairy, Food and Environmental Sanitation.* 20:753-762.
35. Tatum, J. D., G. C. Smith and K. E. Belk. 2000. New approaches for improving tenderness, quality and consistency of beef. *Proc. Of The Amer. Soc. Anim. Sci.* Available at: <http://www.asas.org/symposia/proceedings>
36. *Vonada, M. L., B. S. Bidner, K. E. Belk, F. K. McKeith, W. R. Lloyd, M. E. O'Connor and G. C. Smith. 2000. Quantification of pork belly and Boston butt quality attribute preferences of South Korean customers. *J. Anim. Sci.* 78:2608-2614.
37. *Ware, L. M., M. L. Kain, J. N. Sofos, K. E. Belk, J. O. Reagan and G. C. Smith. 2001. Influence of sampling procedure, handling and storage on the microbiological status of fresh beef. *Dairy, Food and Env. San.* 21:14-19.

38. Belk, K. E., M. H. George, J. D. Tatum, G. G. Hilton, R. K. Miller, M. Koohmaraie, J. O. Reagan and G. C. Smith. 2001. Evaluation of the Tendertec beef grading instrument to predict the tenderness of steaks from beef carcasses. *J. Anim. Sci.* 79:688-697.
39. *Roeber, D. L., P. D. Mies, C. D. Smith, K. E. Belk, T. G. Field, J. D. Tatum, J. A. Scanga and G. C. Smith. 2001. National Market Cow and Bull Beef Quality Audit—1999: a survey of producer-related defects in market cows and bulls. *J. Anim. Sci.* 79:658-665.
40. *Duffy, E. A., K. E. Belk, J. N. Sofos, G. R. Bellinger, A. Pape and G. C. Smith. 2001. Levels of microbial contamination in United States pork retail products. *J. Food Prot.* 64:172-178.
41. *Vonada, M. L., B. S. Bidner, K. E. Belk, F. K. McKeith, W. R. Lloyd, M. E. O'Connor and G. C. Smith. 2001. Factors influencing consumer demand for U. S. Pork exported to the Republic of Korea (South Korea). *J. Anim. Sci.* 79:907-911.
42. *Scanga, J. A., K. E. Belk, J. D. Tatum and G. C. Smith. 2001. Supranutritional oral supplementation with vitamin D₃ and calcium to improve beef tenderness. *J. Anim. Sci.* 79:912-918.
43. *Duffy, E. A., K. E. Belk, J. N. Sofos, S. B. LeValley, M. L. Kain, J. D. Tatum, G. C. Smith and C. V. Kimberling. 2001. Microbial contamination occurring on lamb carcasses processed in the United States. *J. Food Prot.* 64:503-508.
44. Westcott, E. A., J. B. Morgan, R. L. Stubbs, D. M. Schaefer, T. P. Ringkob, K. E. Belk and G. C. Smith. 2001. Vitamin E supplementation effects on beef retail cut caselife and economic attributes in actual store conditions. *J. Musc. Foods.* 11:261-272.
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46. *Roeber, D. L., K. E. Belk, J. D. Tatum, J. W. Wilson and G. C. Smith. 2001. Effects of three levels of alpha-tocopheryl acetate supplementation to feedlot cattle on performance of beef cuts during retail display. *J. Anim. Sci.* 79:1814-1820.
47. *Roeber, D. L., R. C. Cannell, K. E. Belk, J. A. Scanga, G. L. Cowman and G. C. Smith. 2001. Incidence of injection-site lesions in beef top sirloin butts. *J. Anim. Sci.* 79:2615-2618.
48. Samelis, J., J. N. Sofos, M. L. Kain, J. A. Scanga, K. E. Belk and G. C. Smith. 2001. Organic acids and their salts as dipping solutions to control *Listeria monocytogenes* inoculated following processing of sliced pork bologna stored at 4°C in vacuum packages. *J. Food Prot.* 64:1722-1729.
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51. *Bacon, R. T., J. N. Sofos, K. E. Belk, D. R. Hyatt, and G. C. Smith. 2002. Prevalence and antibiotic susceptibility of *Salmonella* isolated from beef animal hides and carcasses. *J. Food Prot.* 65:284-290.
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56. *Roeber, D. L., R. C. Cannell, W. R. Wailes, K. E. Belk, J. A. Scanga, J. N. Sofos, G. L. Cowman and G. C. Smith. 2002. Frequencies of injection-site lesions in muscles from rounds of dairy and beef cow carcasses. *J. Dairy Sci.* 85:532-536.
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