

Career Summary – Michael Galyean
Paul Whitfield Horn Distinguished Professor
Department of Veterinary Sciences
Texas Tech University, Lubbock

Education:

- B.S. in Agriculture, New Mexico State University – 1973
- M.S. in Animal Science, Oklahoma State University – 1975
- Ph.D. in Animal Nutrition, Oklahoma State University – 1977

Current Position:

- Paul Whitfield Horn Distinguished Professor, Department of Veterinary Sciences, Texas Tech University, Lubbock – July 2021 to present

Job Duties:

- Beef cattle nutrition and management research and teaching

Previous Positions:

- Assistant Professor, Associate Professor, and Professor in the Department of Animal and Range Sciences, New Mexico State University, Las Cruces – 1977 to 1990
- Professor and Superintendent, New Mexico State University Clayton Livestock Research Center – 1990 to 1996
- Professor of Ruminant Nutrition – West Texas A&M University, Canyon, and Texas Agricultural Experiment Station, Amarillo – 1996 to 1998
- Thornton Distinguished Chair, Department of Animal and Food Sciences – January 1998 to August 2018
- Paul Whitfield Horn Distinguished Professor – 2006 to present
- Interim Dean, College of Agricultural Sciences and Natural Resources, Texas Tech University, Lubbock – July 2011 to April 2012
- Dean, College of Agricultural Sciences and Natural Resources, Texas Tech University, Lubbock – April 2012 to August 2016
- Interim Provost and Senior Vice President, Texas Tech University, Lubbock – August 2016 to March 2017
- Provost and Senior Vice President for Academic Affairs, Texas Tech University, Lubbock – March 2017 to July 2021

Awards and Honors:

- Young Scientist Award, Western Section, American Society of Animal Science – 1988
- Distinguished Research Award, College of Agriculture and Home Economics, New Mexico State University – 1989
- American Feed Industry Association Ruminant Nutrition Research Award (*a National Academies Prestigious Award*), American Society of Animal Science – 1999
- Advanced Degree Graduate of Distinction Award, Department of Animal Science, Oklahoma State University – 2002

- College of Agricultural Sciences and Natural Resources, Outstanding Researcher Award, Texas Tech University – 2004 and 2005
- President’s Academic Achievement Award, Texas Tech University – 2005
- Appointment as Paul Whitfield Horn Distinguished Professor, Texas Tech University – 2006
- Animal Management Award (*a National Academies Prestigious Award*), American Society of Animal Science – 2006
- College of Agricultural Sciences and Natural Resources, Service and Outreach Award, Texas Tech University – 2007
- Fellow, American Society of Animal Science – 2010
- Morrison Award (*a National Academies Highly Prestigious Award*), American Society of Animal Science – 2012
- FASS-AFIA New Frontiers in Animal Nutrition Award (*a National Academies Prestigious Award*), Federation of Animal Science Societies – 2013
- Awarded membership in the American College of Animal Sciences (ACAS) as a highly qualified individual in the discipline area of Animal Nutrition – 2014
- Bartley Memorial Lecturer, Department of Animal Science and Industry, Kansas State University – 2016
- Distinguished Service Award, Western Section of the American Society of Animal Science – 2016
- Totusek Lecturer, Department of Animal Science, Oklahoma State University – 2017
- Inducted into the “Legends of Feedlot Nutrition” by the Plains Nutrition Council – 2020
- Distinguished Alumni Award, Ferguson College of Agriculture, Oklahoma State University – 2021
- Distinguished Alumni Award, Department of Animal and Range Sciences, New Mexico State University – 2021
- Distinguished Alumni Award – College of Agricultural, Environmental, and Consumer Sciences, New Mexico State University Alumni Association – 2022

Direction of Graduate Student and Postdoctoral Students:

- 29 M.S. students
- 33 Ph.D. students
- 9 postdoctoral research associates

Publications:

- 275 peer-reviewed journal articles
- 12 book chapters
- 48 invited papers
- 84 published proceedings, reports, and experiment station articles
- 72 published progress reports
- 213 published abstracts
- According to Google Scholar, published works have been cited 19,063 times as of December 2024; h-index = 74.

Grants, Contracts, and Research Support:

- Approximately \$3.35 million in grant and contact awards (investigator's portion only; approximately \$2.75 million at Texas Tech Univ.).
- Approximately \$3.4 million (non-salary funds only) in Agric. Exp. Stn. Funds (New Mexico), state line-item funds (West Texas A&M), and endowment funds (Texas Tech Univ.).

Editorial and Professional Service:

- Member, Editorial Board, *Journal of Animal Science* – 9 years between 1980 to 2002
- Section Editor, Ruminant Nutrition (Pasture and Forage Utilization) *Journal of Animal Science* – 1991 to 1993
- Member, National Research Council, Committee on Animal Nutrition, Subcommittee on Beef Cattle Nutrition – 1992 to 1997
- Secretary-Treasurer, Western Section, American Society of Animal Science – 1993 to 1994
- President, Western Section, American Society of Animal Science – 1995 to 1996
- Member, National Research Council, Committee on Animal Nutrition – 1997 to 2000
- Board of Directors, American Society of Animal Science – 1995 to 1996; 2002 to 2005; 2006 to 2009
- Secretary and Member of the Governing Council, American Registry of Professional Animal Scientists – 1996 to 1999
- Editor-in-Chief, *Journal of Animal Science* – 2002 to 2005
- President-Elect, American Society of Animal Science – 2006 to 2007
- President, American Society of Animal Science – 2007 to 2008
- Past-President, American Society of Animal Science – 2008 to 2009
- Board of Directors, Federation of Animal Science Societies – 2008 to 2010
- Member, Coordinating Committee, National Animal Nutrition Program – 2012 to 2016
- President-Elect, American Registry of Professional Animal Scientists – 2012 to 2013
- President, American Registry of Professional Animal Scientists – 2013 to 2014
- Past-President, American Registry of Professional Animal Scientists – 2014 to 2015
- Committee Chair, National Academies of Sciences, Engineering, and Medicine, Nutrient Requirements of Beef Cattle – 2013 to 2016

Organizations:

- American Society of Animal Science
- American Registry of Professional Animal Scientists
- American Dairy Science Association
- American Society for Nutrition

RÉSUMÉ

MICHAEL L. GALYEAN

GENERAL

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e-mail – michael.galyean@ttu.edu

Family Information

Wife – Charlotte
Children – Joseph (44), Kyle (40), and Kevan (40)

Educational Background

B.S. in Agriculture – New Mexico State University – 1973
M.S. in Animal Science – Oklahoma State University – 1975
Ph.D. in Animal Nutrition – Oklahoma State University – 1977

Employment

Present Position:

Paul Whitfield Horn Distinguished Professor, Department of Veterinary Sciences, Texas Tech University, Lubbock – July 2021 to present

Previous Positions:

National Science Foundation Trainee – Oklahoma State University, 1973 to 1974
Ralston Purina Research Fellow – Oklahoma State University, 1975 to 1976
Graduate Research Assistant – Oklahoma State University, 1974 to 1975 and 1976 to 1977
Assistant and Associate Professor of Animal Nutrition – New Mexico State University, Las Cruces, 1977 to 1986
Professor of Animal Nutrition – New Mexico State University, Las Cruces, 1986 to 1990
Professor and Superintendent, Clayton Livestock Research Center – New Mexico State University, Clayton, 1990 to 1996
Professor of Ruminant Nutrition – West Texas A & M University, Canyon and Texas Agricultural Experiment Station, Amarillo, 1996 to 1998

Thornton Distinguished Chair, Department of Animal and Food Sciences, Texas Tech University, Lubbock, TX – 1998 to August 2018

Paul Whitfield Paul Whitfield Horn Distinguished Professor – 2006 to present

Interim Dean College of Agricultural Sciences and Natural Resources – Texas Tech University, Lubbock, July 2011 to April 2012

Dean, College of Agricultural Sciences and Natural Resources – Texas Tech University, Lubbock – April 2012 to August 2016

Interim Provost and Senior Vice President – Texas Tech University, Lubbock, August 2016 to March 2017

Provost and Senior Vice President, Texas Tech University, Lubbock – March 2017 to July 2021

ADMINISTRATIVE SERVICE

Texas Tech University Provost and Senior Vice President for Academic Affairs

- Managed 21 direct reports (14 Deans, VP for Information Technology [CIO], Associate VP for Outreach and Engagement, 7 Vice Provosts, and one Director) who oversee all colleges (including the Graduate School, School of Law, School of Veterinary Medicine, and University Libraries), information technology, student affairs, student success and university programs, academic affairs, online learning and academic partnerships, institutional effectiveness, international affairs, and the Texas Tech University Press (TTUP)
- Oversight responsibility for the Texas Tech Museum, National Ranching Heritage Center (NRHC), Humanities Center, and Remnant Trust
- Interacted regularly with the VP for Finance and Administration (CFO), VP for Diversity, Equity, and Inclusion, VP for Development, and VP for Research and Innovation
- Interacted with leadership of the Texas Tech Faculty Senate (twice monthly) and Texas Tech AAUP chapter officers (monthly)
- Worked with the CFO to oversee yearly budget hearings for colleges and various academic units
- Worked with the VP for Research and Innovation to develop research strategies, manage start-up funding, and evaluate centers and institutes
- Managed the campus-wide promotion and tenure process
- Led development and rollout of the Texas Tech University strategic plan, “*A Foundation for the Next Century – A Pathway to 2025*”
- Initiated the Faculty Success Task Force (now the Faculty Success Advisory Committee) to evaluate areas limiting faculty academic growth and development and to better define pathways for faculty success
- Instituted the Provost’s Faculty Fellow program to provide leadership and administrative experience opportunities to faculty members, with a focus on faculty success, emphasizing faculty of color
- Worked with Vice Provosts to initiate the Chairs Council to provide consistent training and regularly scheduled informational sessions for department chairs
- Initiated the Transformative Undergraduate Experience (TrUE) program to optimize programming and provide support for all Texas Tech students to have a research, creative activity, study away, internship, or service project experience by 2025

- Worked with a committee of the faculty and external supporters to evaluate and ultimately restructure the TTUP and move oversight from the University Library to the Office of the Provost
- Hired 7 Deans (Business, Law, Agriculture and Natural Resources, Education, Veterinary Medicine, Human Sciences, and University Libraries) and 2 Directors (NRHC and TTUP)
- In conjunction with the Office of the President and the Office of Diversity, Equity, and Inclusion, provided \$500,000 to hire more Hispanic and African American faculty members; 10 faculty members were hired over a 2-year period
- Established a monthly luncheon meeting series with women faculty members
- Instrumental in recruiting Dr. Luis Herrera-Estrella, the first National Academy of Sciences member at Texas Tech, and working with the CFO, VP for Research and Innovation, and Department of Plant and Soil Science leadership to secure a Governor's University Research Initiative (GURI) award of \$5 million to support Dr. Herrera-Estrella's program
- Worked on development and approval of the Texas Tech University School of Veterinary Medicine (approved for full funding by the Texas Legislature and the Governor in June 2019; approved by the Texas Higher Education Coordinating Board; AVMA reasonable assurance granted September 2020 and reconfirmed in 2022)
- Managed all academic and regulatory issues related to opening the Texas Tech University campus in San Jose, Costa Rica, which offers 5 academic degrees from 3 colleges (campus opened Fall 2018, with SACSCOC approval in October 2018)

Texas Tech University Dean, College of Agricultural Science and Natural Resources (CASNR)

- Managed 10 direct reports (6 department chairs, 3 associate deans, and 1 college development officer)
- Fostered development of programs to recruit and retain undergraduate students and to grow graduate programs
 - CASNR enrollment increased 17.5% for undergraduate students and 20% for graduate students from 2012 to 2016
 - CASNR 1st-year retention averaged 85.4% from 2012 to 2016, compared with the university average of 83.4%
 - CASNR 6-year graduation rate averaged 68.2% in 2016, compared with the university average of 59.2%
- Hired a recruiter to specifically focus on recruiting Hispanic and under-represented minority students
- Worked with faculty to develop 3 new research focus areas in the college to match academic/research capacity and infrastructure
 - Gained support of the university administration for the 3 focus areas, resulting in hiring of approximately 25% of current CASNR faculty members, with 20 new faculty positions in strategic research areas added to the college's ranks since 2012
 - Worked with Animal and Food Science to develop a new companion animal program supported by 2 positions from central resources
 - Established the new Department of Veterinary Science and secured central funding for 3 faculty positions
 - CASNR total research expenditures averaged \$19.4 million from 2012 to 2016, with federal and private research expenditures averaging \$6.4 million

- Added 2 endowed professorships and upgraded 1 professorship to a chair, bringing the total endowed faculty positions in the college to 18
- Hired the first safety officer and the first grants coordinator in CASNR history
- Responsible for fundraising for construction projects, scholarships, and faculty support, and engaging the college's diverse clientele and strong alumni base
 - From 2012 to 2016, the CASNR endowment grew by more than \$12 million from approximately \$43 million to \$55 million (currently \$64 million)
 - Reorganized the CASNR Advisory Board to increase external input and to provide support for the college's programs
 - Received the largest research gift in the history of Texas Tech University of more than \$19 million from Bayer CropScience
 - Oversaw fundraising for and construction of a \$14 million addition to the Plant Science Building (completed in 2015)
 - Leveraged a combination of \$500,000 in university funds and a donation by a CASNR alumnus of \$1 million for renovations and improvements to support both academic and research efforts, including a major remodel of facilities for the Department of Landscape Architecture

TEACHING

General Instructional Area

Animal nutrition, with emphasis on feedstuff utilization, protein and energy metabolism of farm animals, and mineral and vitamin nutrition of livestock; statistical applications in agricultural sciences.

Courses Taught at Texas Tech University

AnSc 3307 – Feeds and Feeding – Characteristics of feedstuffs used in livestock enterprises. Nutrient requirements of livestock. Manual and computer diet formulation. Nutritional management of beef and dairy cattle, sheep, goats, swine, horses, poultry, and other animals. Methods of grain, protein supplement, and forage evaluation and processing. Enrollment – typically 50 to 60 Junior and Senior animal science students.

AnSc 5311 – Ruminant Nutrition – Digestive physiology of ruminants with emphasis on ruminal fermentation and its relationship to practical nutrition. Enrollment – typically 5 to 10 students at both M.S. and Ph.D. levels.

AnSc 5314 – Protein and Energy Metabolism – Methods for calculating protein and energy requirements of beef cattle. Experimental methods for determining heat production and energy expenditure by ruminants. Metabolic uses of energy and protein by ruminants. Enrollment – typically 5 to 10 students at both M.S. and Ph.D. levels.

AnSc 5403 – Biometry – Introduction to biological statistics. Topics include measures of central tendency and variability, probability, confidence intervals, hypothesis testing, analysis of variance, mean separation procedures, linear regression and correlation, and chi-square tests.

Introduction to computerized statistical analysis software. Enrollment – typically 20 to 35 students at the M.S. level.

AnSc 5001 – Nutrient Requirements of Beef Cattle (one week of lectures on predicting feed intake). Enrollment – typically 5 to 10 students at both M.S. and Ph.D. levels.

VSci 5001 – Diseases of Livestock (1.5 weeks of lectures on digestive disorders in cattle). Enrollment – typically 10 to 15 students at the M.S. level.

VSci 5001 – Statistical Analysis Seminar. Review and determine appropriate statistical analyses for graduate student research projects. Enrollment – typically 10 to 12 students.

Courses Taught at West Texas A&M University

AnSc 375 – Feeds and Feeding; AnSc 5507 – Research Techniques in Animal Nutrition

Courses Taught at New Mexico State University

AnSc 507/HNFS 507 – Laboratory Techniques in Nutrition; AnSc 622 – Energy Metabolism; AnSc 624 – Mineral and Vitamin Metabolism

Other courses taught (not on a regular basis): AnSc 402 – Animal Science Seminar; AnSc 422 – Animal Nutrition; AnSc 451 – Reproductive Physiology; AnSc 484 – Ruminant Nutrition

Teaching Load – Percentage of Teaching Time

1977 – 100%
1978 to 1990 – 35 to 69%
1991 to 1996 – 0%
1997 – 25%
1998 to 2011 – 40% to 50%
2021 to present – 20%

Graduate Student Supervision

M.S. Students Advised:

Name	Date of degree	Current position
M. E. Hubbert	1981	Consulting Nutritionist, Fort Collins, CO
R. C. Chabot	1981	Las Cruces, NM – Deceased
F. T. McCollum	1982	Professor, Texas A & M Univ., Amarillo – Retired
D. M. Ruppe	1983	Biozyme, Inc., St. Joseph, MO

Name	Date of degree	Current position
M. A. (Funk) Archuleta	1986	Professor, Dept. of Nutr., Dietetics, and Food Sci., Utah State Univ. – Ph.D. from Univ. of Illinois
A. U. Cheema	1987	Scientific Officer, Government of Pakistan
R. W. Davenport	1988	Ranching, Floydada, TX
S. O. Kone	1989	Scientific Officer, Government of Mali
F. E. Morris	1989	Ranching, Wyoming
S. E. Bachman	1990	Bachman Nutritional Consulting, Amarillo, TX
G. D. Pulsipher (Co-advisor)	1993	Private industry, Nevada
R. A. Berrie (Research advisor)	1994	Purina Mills, Stephenville, TX
A. S. Flake (Research advisor)	1995	Pfizer Animal Health, Cimarron, KS
T. C. Bryant	1998	General Manager, Kurer Feedlot, JBS Five Rivers Cattle Feeding, LLC, Kersey, CO – Ph.D. from Colorado State Univ.
P. J. Defoor	1998	Senior Vice President, Chief Operating Officer, Cactus Feeders, Ltd., Amarillo, TX
H. M. Derington	1999	Feedlot Specialist, Zoetis Animal Health, Amarillo, TX
C. F. Ward	1999	Mechanical Design Engineer, Dril-Quip, Houston, TX
M. D. Abney	2001	Nutritionist, Nutrena Feeds, Athens, TX
K. E. Barrett	2001	Clinical Research Veterinarian, Boehringer Ingelheim Vetmedica, Inc. – D.V.M., from Iowa State Univ.

Name	Date of degree	Current position
J. E. Stockstill	2002	Pharmaceutical Sales Representative, Eli Lilly and Co., Midland, TX
J. J. Cranston	2003	Attorney, Fennemore Craig, P.C., Phoenix, AZ, J.D. from Univ. of Michigan Law School
J. T. Richeson	2004	Assoc. Professor, West Texas A&M Univ., Canyon
G. D. Osborn	2004	Feedlot Cattle Manager, Garden City, KS
K. A. Lemon	2004	Ranching and Farming, Vernon, TX
J. P. McMeniman	2005	Feedlot Project Manager, Meat and Livestock Australia, Queensland, Australia
S. A. (Keyser) Roberts	2006	Homemaker, Lubbock, TX
L. M. Shaw	2006	Quality Control Specialist, Purina Mills, Lubbock, TX
J. Leibovich	2008	Technical Services Nutritionist, Elanco, Argentina
J. DeClerck	2009	Technical Consultant, Land O'Lakes, College Station, TX – Ph.D. from Texas Tech Univ.

Ph.D. Students Advised:

Name	Date of degree	Current position
R. W. Lee	1981	Nutritionist, Kan-Tech Res. Ctr., Garden City, KS
C. A. Arzola	1982	Professor, Univ. of Chihuahua, Chihuahua, Mexico
A. L. Goetsch	1982	Research Scientist, Kiki de la Garza, Goat Res. Inst., Langston Univ., Langston, OK
F. T. McCollum	1983	Professor, Texas A & M Univ., Amarillo – Retired

Name	Date of degree	Current position
M. S. Daugherty	1984	Professor, California Polytechnic Univ., San Luis Obispo – Retired
R. E. Estell	1984	Research Scientist, USDA-ARS, Jornada Exp. Range, Las Cruces, NM
L. J. Krysl	1986	Assoc. Professor, Univ. of Nevada, Reno – Deceased
M. E. Branine	1987	Technical Services Manager – Zinpro, Canon City, CO
A. S. Freeman	1987	Nutritionist, Quality Liquid Feeds, Dodgeville, WI
J. S. Caton	1987	Professor, North Dakota State Univ., Fargo
A. U. Cheema	1989	Scientific Officer, Government of Pakistan
G. C. Duff	1990	Professor, Clayton Livestock Res. Center, New Mexico State Univ., Clayton
E. L. Fredrickson	1990	Professor, Sterling College, Craftsbury Common, VT
A. J. Pordomingo	1990	Research Scientist, Government of Argentina, Santa Rosa, Argentina
S. E. Bachman	1991	Bachman Nutritional Consulting, Amarillo, TX
M. J. Guthrie (Research advisor)	1993	Private industry, Commerce, TX
P. J. Defoor	2000	Senior Vice President, Chief Operating Officer, Cactus Feeders, Ltd., Amarillo, TX
G. B. Salyer	2000	Nutritionist, Land O'Lakes/Purina, Lubbock, TX
C. H. Parsons	2001	Consulting Nutritionist, Omaha, NE

Name	Date of degree	Current position
G. A. Nunnery	2002	Technical Services Representative, Quali-Tech, Inc., Amarillo, TX
J. F. Gleghorn	2003	Director of Value Mgmt., Cactus Feeders, Amarillo, TX
N. A. Elam	2003	Consulting Nutritionist, Nutrition Service Associates, Hereford, TX
M. D. Abney	2004	Nutritionist, Nutrena Feeds, Athens, TX
C. S. Abney	2006	Technical Services Representative, Cargill Corn Milling, Canyon, TX
K. R. Wilson	2006	Manager, Bell Ranch, Bell Ranch, NM – Deceased
R. R. Reuter	2007	Assoc. Professor, Dept. of Anim. Sci., Oklahoma State Univ., Stillwater
J. P. McMeniman	2007	Feedlot Project Manager, Meat and Livestock Australia, Queensland, Australia
T. L. Covey	2008	Director of Research, OT Feedyard and Research Facility, XF Enterprises, Inc., Canyon, TX
K. E. Hales	2009	Assoc. Professor, Thornton Distinguished Chair, Dept. Anim. Food Sci., Texas Tech Univ., Lubbock
M. L. May	2010	Nutritional and Production Consultant, Feedlot Health Management Services, Okotoks, Alberta, Canada
M. J. Quinn	2010	Nutritional and Production Consultant, Feedlot Health Management Services, Amarillo, TX
D. R. Smith	2011	Nutritional Consultant, Performance Plus, Sterling, CO
E. M. Domby	2013	Nutritionist, Cargill Animal Nutrition, Amarillo, TX

Post-Doctoral Students Advised:

Name	Date	Current position
S. A. Gunter	1992-1994	Research Leader, USDA-ARS, Woodward, OK
G. C. Duff	1994-1996	Professor, Clayton Livestock Res. Center, New Mexico State Univ., Clayton
F. M. Mitlöhner	2000-2001	Professor and Air Quality Ext. Specialist, Univ. of California, Davis
J. D. Rivera	2002-2004	Assoc. Professor, Univ. of Arkansas, Southwest Res. and Ext. Ctr., Hope
J. T. Vasconcelos	2006-2008	North America Ruminant Technical Services Team Leader, Kemin Industries, Houston, TX
N. DiLorenzo	2008-2010	Professor, Univ. of Florida, NFREC, Marianna
C. H. Ponce	2010-2012	Technical Services Specialist, Elanco, Mexico
J. S. Schutz Miller	2011-2012	Technical Services Manager, Chr. Hansen Animal Health, Greeley, CO
U. Y. Anele	2011-2013	Assoc. Professor, North Carolina A&T State Univ., Greensboro

Teaching Services

- Academic Advising: NMSU Pre-Veterinary Medicine Curriculum – approximately 40 students per year from 1978 to 1990.
- Sponsorship of Student Organizations: Sponsor of the NMSU Block and Bridle Club from 1980 to 1981; Advisor of the Pre-Vet Club from 1981 to 1985.

Self-Improvement Activities

Student evaluations were used in each course to determine student response to teaching methods.

Teaching Workshops

“Writing a Scientific Paper for Publication” – Workshop for M.S. and Ph.D. students conducted with Dr. Gregory S. Lewis at the American Society of Animal Science Midwest (March 2009), Western (June 2009), and National (July 2009) meetings.

Teaching Awards

Distinguished Graduate Teacher/Advisor Award – NMSU Chapter of Gamma Sigma Delta – November 1985.

RESEARCH AND OTHER CREATIVE ACTIVITY

Agricultural Experiment Station Research Projects (Yearly funding for these projects provided by the New Mexico Agricultural Experiment Station from 1982 until 1995 ranged from approximately \$40,000 to 75,000).

- Response to altered fluid dilution rate in cattle – 1978-1980; Influence of drinking water pH on the utilization of nitrogen by ruminants – 1978-1980; Postruminal buffers and fiber digestion in ruminants – 1981-1982; Nutrition, management, and health of newly received calves – 1978-1983; Nutritional factors affecting fermentation, digestion, and hormonal patterns in ruminants – 1983-1988; Nutritional properties of rangeland vegetation for grazing livestock – 1983-1988; Improved sheep production efficiency in range and farm flocks – 1983-1987; Nutrition of stocker and feeder cattle – 1983-1988; Nutrition and management of newly received cattle – 1983-1988; Effect of ionophores on digestion, fermentation, and metabolism in ruminants – 1988-1993; Nutritional and management programs for growing/finishing beef cattle – 1990-1995; Nutritional and management programs for newly received beef cattle – 1990-1995.

Research Load - Percentage of Research Time

1977 – 0%
1978 to 1990 – 31 to 65%
1991 to 1995 – 100%
1996 to 1997 – 75 to 80%
1998 to 2011 – 50 to 60%
2021 to present – 80%

Publications

Journal Articles:

- Childress, K. D., K. E. Hales, T. G. Nagaraja, T. E. Lawrence, R. G. Amachawadi, N. C. Burdick Sanchez, A. C., Thompson-Smith, A. N. Hanratty, C. W. Dornbach, M. Abbasi, X. Shi, M. S. Grant, M. L. Galyean, and P. R. Broadway. 2024. Evaluating the effects of acidosis and bacterial inoculum concentrations on the development of liver abscess in beef $\times$ dairy steers. *Appl. Anim. Sci.* (Accepted).
- Thompson, A. B., T. L. Perkins, T. E. Lawrence, R. G. Amachawadi, T. G. Nagaraja, P. R. Broadway, N. C. Burdick Sanchez, V. Machado, M. S. Grant, M. L. Galyean, and K. E. Hales. 2024. Efficacy of ultrasonography to detect liver abscesses in cattle. *Appl. Anim. Sci.* (Accepted).

- Galyean, M. L., and L. O. Tedeschi. 2024. Predicting microbial protein synthesis in cattle: Evaluation of extant equations and steps needed to improve accuracy and precision of future equations. *Animals* 14, 2903:1-11. doi.org/10.3390/ani14192903.
- McDaniel, Z. S., M. L. Galyean, P. R. Broadway, J. A. Carroll, N. C. Burdick Sanchez, A. N. Hanratty, C. W. Dornbach, D. J. Line, T. M. Smock, J. L. Manahan, and K. E. Hales. 2024. Effects of increasing the concentration of neutral detergent fiber in roughage and bulk density of steam-flaked corn on growth performance, carcass characteristics, and liver abscesses of finishing beef steers fed diets without tylosin phosphate. *Appl. Anim. Sci.* 40:269.
- Broadway, P. R., T. G. Nagaraja, T. E. Lawrence, M. L. Galyean, and K. E. Hales. 2024. Liver abscesses – new perspectives on a historic fed cattle issue. *Appl. Anim. Sci.* 40:237.
- Galyean, M. L., and K. E. Hales. 2024. Relationships between dietary chemical components and enteric methane production and application to diet formulation in beef cattle. *Methane* 3:1-11. doi.org/10.3390/methane3010001.
- McDaniel, Z. S., K. E. Hales, T. G. Nagaraja, T. E. Lawrence, T. C. Tennant, R. G. Amachawadi, J. A. Carroll, N. C. Burdick Sanchez, M. L. Galyean, E. Davis, K. Kohl, D. J. Line, C. W. Dornbach, M. Abbasi, A. Deters, X. Shi, M. A. Ballou, V. S. Machado, T. M. Smock, and P. R. Broadway. 2024. Validation of an experimental model to induce liver abscesses in Holstein steers using an acidotic diet challenge and intraruminal bacterial inoculation. *Appl. Anim. Sci.* 40:398.
- McDaniel, Z. S., K. E. Hales, H. Salih, A. Deters, X. Shi, T. G. Nagaraja, T. E. Lawrence, T. C. Tennant, R. G. Amachawadi, J. A. Carroll, N. C. Burdick Sanchez, M. L. Galyean, T. M. Smock, M. A. Ballou, V. S. Machado, E. Davis, and P. R. Broadway. 2024. Development of an experimental model for liver abscesses induction in Holstein steers using an acidotic diet challenge and bacterial inoculation. *J. Anim. Sci.* 102:1-15. doi.org/10.1093/jas/skae046.
- Galyean, M. L., and L. O. Tedeschi. 2023. Predicting microbial crude protein synthesis in cattle from intakes of dietary energy and crude protein. *J. Anim. Sci.* 101:1-6. doi.org/10.1093/jas/skad359.
- Galyean, M. L., and K. E. Hales. 2023. Evaluation of methods to assess variation in dry matter intake over time in feedlot cattle. *Appl. Anim. Sci.* 39:391.
- Hanratty, A. N., N. C. Burdick Sanchez, P. R. Broadway, J. A. Carroll, A. A. Hoffman, J. L. Manahan, Z. S. McDaniel, T. M. Smock, C. Dornbach, D. Line, M. E. Theurer, M. L. Galyean, and K. E. Hales. 2023. Random metaphylaxis effects on health outcomes, complete blood count, antimicrobial use, and growth performance of high-risk beef steers. *Appl. Anim. Sci.* 39:380.

- Galyean, M. L., K. E. Hales, and Z. K. Smith. 2023. Evaluating differences between formulated dietary net energy values and net energy values determined from growth performance in finishing beef steers. *J. Anim. Sci.* 101:1-8. doi.org/10.1093/jas/skad230.
- McDaniel, Z. S., Kristin E. Hales, T. G. Nagaraja, T. E. Lawrence, R. G. Amachawadi, J. A. Carroll, N. C. Burdick Sanchez, M. L. Galyean, T. M. Smock, M. A. Ballou, V. S. Machado, and P. R. Broadway. 2023. Short communication: evaluation of an endotoxin challenge and intraruminal bacterial inoculation model to induce liver abscesses in Holstein steers. *J. Anim. Sci.* 101:1-7. doi.org/10.1093/jas/skad242.
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- Vasconcelos, J. T., C. S. Abney, T. L. Covey, S. A. Keyser, J. P. McMeniman, R. J. Rathmann, R. R. Reuter, L. M. Shaw, and M. L. Galyean. 2006. Effects of the proportions of Sweet Bran[®] (wet corn gluten feed) and/or corn dried distiller's grains with solubles on performance and carcass characteristics of finishing beef cattle fed steam-flaked corn-based diets. Burnett Center Internet Prog. Rep. No. 18, Texas Tech Univ., http://www.depts.ttu.edu/afs/burnett_center/progress_reports/.
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- Galyean, M. L., S. A. Gunter, K. J. Malcolm-Callis, and D. R. Garcia. 1993. Effects of crude protein concentration in the receiving diet on performance and health of newly received beef calves. Clayton Livestock Res. Center Prog. Rep. No. 88.
- Malcolm-Callis, K. J., M. L. Galyean, S. A. Gunter, and D. R. Garcia. 1993. Effect of roughage source and level on performance by finishing steers. Clayton Livestock Res. Center Prog. Rep. No. 87.
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- Gunter, S. A., M. L. Galyean, K. J. Malcolm-Callis, and D. R. Garcia. 1993. Effects of origin of cattle and supplemental protein source on the performance by newly received feeder cattle. Clayton Livestock Res. Center Prog. Rep. No. 85.

- Gunter, S. A., M. L. Galyean, K. J. Malcolm-Callis, and D. R. Garcia. 1993. A mineral supplement for cattle grazing wheat pasture: Composition and consumption. Clayton Livestock Res. Center Prog. Rep. No. 84.
- Malcolm-Callis, K. J., M. L. Galyean, S. A. Gunter, and D. R. Garcia. 1993. Effects of different zinc sources and levels, with or without copper lysine, on performance of newly weaned calves. Clayton Livestock Res. Center Prog. Rep. No. 83.
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- Malcolm-Callis, K. J., M. L. Galyean, D. R. Garcia, and W. R. Parker. 1992. New Mexico Feeder Calf Study – Growing and finishing performance. Clayton Livestock Res. Center Prog. Rep. No. 81.
- Galyean, M. L., and M. E. Hubbert. 1992. Predicting intake by beef cattle – Relationship of dry matter intake to initial weight. Clayton Livestock Res. Center Prog. Rep. No. 80.
- Galyean, M. L., and M. E. Hubbert. 1992. Predicting intake by beef cattle – Relationship of energy intake to dietary energy concentration. Clayton Livestock Res. Center Prog. Rep. No. 79.
- Galyean, M. L., K. J. Malcolm-Callis, D. R. Garcia and G. D. Pulsipher. 1992. Effects of varying the pattern of feed consumption on performance by programmed-fed beef steers. Clayton Livestock Res. Center Prog. Rep. No. 78.
- Galyean, M. L., K. J. Malcolm-Callis, and D. R. Garcia. 1992. Effects of Wyoming leonardite on performance by yearling steers. Clayton Livestock Res. Center Prog. Rep. No. 77.
- Galyean, M. L., K. J. Malcolm-Callis, and D. R. Garcia. 1992. Effects of Presponse and dietary supplemental protein source on performance of newly weaned beef steers. Clayton Livestock Res. Center Prog. Rep. No. 76.
- Galyean, M. L., K. J. Malcolm, D. R. Garcia, M. J. Guthrie, J. T. Park and W. R. Parker. 1992. The New Mexico feeder calf study – Receiving period performance. Clayton Livestock Res. Center Prog. Rep. No. 75.
- Galyean, M. L., K. J. Malcolm, D. R. Garcia, G. C. Duff, M. J. Guthrie, and J. T. Park. 1992. Roughage sources for finishing steers fed whole-shelled and steam-flaked corn diets. Clayton Livestock Res. Center Prog. Rep. No. 74.
- Galyean, M. L., K. J. Malcolm, G. C. Duff, and D. R. Garcia. 1991. Oral α -interferon for newly received calves. Clayton Livestock Res. Center Prog. Rep. No. 73.

- Duff, G. C., M. L. Galyean, K. J. Malcolm, and D. R. Garcia. 1991. Ozone-treated water for finishing beef heifers and cows. Clayton Livestock Res. Center Prog. Rep. No. 72.
- Malcolm, K. J., G. C. Duff, M. L. Galyean, and D. R. Garcia. 1991. Effects of supplemental protein sources on performance of newly received calves. Clayton Livestock Res. Center Prog. Rep. No. 71.
- Galyean, M. L., G. C. Duff, K. J. Malcolm, and D. R. Garcia. 1991. Effects of a *Pasteurella haemolytica* vaccine and injectable vitamin E on performance and health of newly received calves. Clayton Livestock Res. Center Prog. Rep. No. 70.
- Galyean, M. L., K. J. Malcolm, D. R. Garcia, and G. C. Duff. 1991. Roughage source and level in whole shelled corn diets for growing/finishing beef heifers. Clayton Livestock Res. Center Prog. Rep. No. 69.
- Bachman, S. E., M. L. Galyean, G. S. Smith, and J. D. Graham. 1991. Early effects of locoweed toxicosis and influence of mineral supplements. Clayton Livestock Res. Center Prog. Rep. No. 68.
- Galyean, M. L. 1990. Nutrient composition of grazed forage and intake by beef steers grazing native rangeland at the Clayton Livestock Research Center. Clayton Livestock Res. Center Prog. Rep. 67.
- Malcolm, K. J., M. L. Galyean, and D. R. Garcia. 1990. Ionophores for programmed-fed growing heifers. Clayton Livestock Res. Center Prog. Rep. No. 66.
- Pordomingo, A. J., J. D. Wallace, A. S. Freeman, and M. L. Galyean. 1990. Effects of supplemental whole shelled corn on forage intake and digestion by steers grazing native rangeland. Clayton Livestock Res. Center Prog. Rep. No. 65.
- Malcolm, K. J., M. L. Galyean, and D. R. Garcia. 1990. Effects of supplementing sorghum sudangrass hay with whole shelled corn and soybean meal on performance of growing heifers. Clayton Livestock Res. Center Prog. Rep. No. 64.
- Branine, M., G. P. Lofgreen, M. L. Galyean, M. E. Hubbert, D. R. Garcia, and A. S. Freeman. 1989. Comparison of continuous with daily or weekly alternate feeding of lasalocid and monensin plus tylosin on performance of growing/finishing beef steers. Clayton Livestock Res. Center Prog. Rep. No. 61.
- Branine, M., M. E. Hubbert, M. L. Galyean, G. P. Lofgreen, D. R. Garcia, and A. S. Freeman. 1989. Effect of weekly rotation of lasalocid and monensin on performance of feedlot steers. Clayton Livestock Res. Center Prog. Rep. No. 60.
- Branine, M., M. L. Galyean, G. P. Lofgreen, and D. R. Garcia. 1988. Effects of supplemental grain and monensin on performance and bloat in steers grazing wheat pasture. Clayton Livestock Res. Center Prog. Rep. No. 51.

- Hubbert, M., M. Branine, M. L. Galyean, G. P. Lofgreen, and D. R. Garcia. 1987. Influence of alternate feeding of monensin and lasalocid on performance of feedlot heifers – Preliminary data. Clayton Livestock Res. Center Prog. Rep. No. 47.
- Wallace, J. D., M. B. Judkins, M. L. Galyean, and E. E. Parker. 1985. Influence of different protein supplements on forage intake by cattle grazing dormant range. Livestock Research Briefs and Beef and Cattle Grower's Short Course. NMSU Coop Ext. Ser. Publ.
- McCollum, F. T., M. L. Galyean, L. J. Krysl, and J. D. Wallace. 1984. Seasonal changes in forage chemical and botanical composition and intake in cattle grazing blue grama rangeland. Page 20 in Clayton Livestock Res. Center Field Day Proceedings, NM Agric. Exp. Stn, Las Cruces.
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- Lee, R. W., M. L. Galyean, G. P. Lofgreen, E. A. Leighton, and M. E. Hubbert. 1981. Mixtures of whole shelled and steam flaked corn in beef cattle finishing diets. Livestock Research and Cattle Grower's Short Course. NMSU Coop. Ext. Ser. Publ.
- Galyean, M. L., C. A. Arzola, and M. E. Hubbert. 1980. Blood chemistry of newly received calves. Clayton Livestock Res. Center Prog. Rep. No. 18.
- Galyean, M. L., J. K. Elliott, and M. E. Hubbert. 1980. Influence of clinoptilolite on the performance of finishing steers. Clayton Livestock Res. Center Prog. Rep. No. 17.
- Kiesling, H., D. Adams, and M. Galyean. 1980. Influence of sodium bicarbonate, live yeast culture and Rumensin on ration digestibility and feedlot performance of growing steers. Livestock Research and Cattle Growers Short Course. NMSU Coop Ext. Ser. Publ.
- Galyean, M. L. 1979. The effect of buffering agents in high and low energy cattle diets. Livestock Research and Cattle Growers Short Course. NMSU Coop Ext. Ser. Publ.

Research Awards, Honors, and Invited Presentations

Awards, Honors, Lectures, and Adjunct and Visiting Professorships:

- Ralston Purina Research Fellowship – 1975 to 1976 – Oklahoma State University, Stillwater.
- Blakenbaker Foundation Distinguished Lecturer – Montana State University, Bozeman – March 1986.
- Sabbatical Leave – Oklahoma State University, Stillwater – Computer Modeling Research – June to December 1987.

- Visiting Professor – Dept. of Animal Science, University of Missouri, Columbia, – November 1987.
- Young Scientist Award – Western Section, American Society of Animal Science – June 1988.
- Visiting Professor – Dept. of Animal Science, University of Arizona, Tucson – February 1989.
- Distinguished Research Award – College of Agric. and Home Econ., New Mexico State University, Las Cruces – 1989.
- Adjunct Professor, Dept. of Animal and Range Science, New Mexico State University, Las Cruces – 1996.
- American Feed Industry Association Ruminant Nutrition Research Award, American Society of Animal Science – July 1999.
- Adjunct Professor, Div. of Agric., West Texas A&M University, Canyon – 2000.
- Advanced Degree Graduate of Distinction Award – Dept. of Animal Science, Oklahoma State University, Stillwater – April 2002.
- Faculty Affiliate Status –Dept. of Animal Science, Colorado State University, Fort Collins – 2003 to 2005.
- College of Agric. Sci. and Nat. Resources Outstanding Researcher Award, Texas Tech University – April 2004.
- College of Agric. Sci. and Nat. Resources Outstanding Researcher Award, Texas Tech University – April 2005.
- President’s Academic Achievement Award, Texas Tech University – April 2005.
- Paul Whitfield Horn Distinguished Professor, Texas Tech University – February 2006.
- Animal Management Award, American Society of Animal Science – July 2006.
- College of Agric. Sci. and Nat. Resources, Service and Outreach Award, Texas Tech Univ. – April 2007.
- Fellow, American Society of Animal Science – July 2010.
- Morrison Award, American Society of Animal Science – July 2012.
- FASS-AFIA New Frontiers in Animal Nutrition Award, Federation of Animal Science Societies – July 2013.
- Awarded membership in the American College of Animal Sciences (ACAS) as a highly qualified individual in the discipline area of Animal Nutrition – February 2014.
- Bartley Memorial Lecturer – Department of Animal Science and Industry, Kansas State University – March 2016.
- Distinguished Service Award, Western Section of the American Society of Animal Science – June 2016.
- Totusek Lecturer – Oklahoma State University, Department of Animal Science – October 2017.
- Inducted into the “Legends of Feedlot Nutrition” by the Plains Nutrition Council – March 2020

- Distinguished Alumni Award, Ferguson College of Agriculture, Oklahoma State University – 2021
- Distinguished Alumni Award, Department of Animal and Range Sciences, New Mexico State University – 2021
- Distinguished Alumni Award – College of Agricultural, Environmental, and Consumer Sciences, New Mexico State University Alumni Association – 2022

Invited Presentations:

- Invited to present a paper on estimation of fecal output and digestibility at the Feed Intake by Beef Cattle Symposium at Oklahoma State University, Stillwater – November 1986.
- Invited to present a paper on factors influencing digesta flow in grazing ruminants at the Grazing Livestock Nutrition Conference, Jackson Hole, WY – July 1987.
- Invited to present a paper on factors influencing fermentation and digestion in ruminants fed roughage and concentrate diets at the Southwest Nutrition and Management Conference, Tempe, AZ – February 1988.
- Invited to present a paper on rationale for use and selection of ionophores in ruminant production at the Southwest Nutrition and Management Conference, Tempe, AZ – February 1989.
- Invited to present a paper on effects of diet composition and level of feed intake on site and extent of digestion in ruminants at the VII International Symposium on Ruminant Physiology, Sendai, Japan – September 1989.
- Invited to present a review of factors affecting site and extent of digestion by ruminants at the 38th Annual Pfizer Research Conference, Reno, NV – April 1990.
- Invited to present a review of forage utilization by ruminants at the International Symposium on Forage Cell Wall Structure and Digestibility, Madison, WI – October 1991.
- Invited to present two papers (use of ionophores and review of grain processing) at the 26th annual Pacific Northwest Animal Nutrition Conference, Beaverton, OR – June 1991.
- Invited to present two papers (predicting feed intake by beef cattle and effects of roughage sources on cattle performance) at the Southwest Nutrition and Management Conference, Phoenix, AZ – February 1993.
- Invited to present a review of empirical approaches to predict feed intake by ruminants at the American Society of Animal Science National Meeting, Spokane, WA – July 1993.
- Invited to present a review of protein nutrition of newly received cattle at the 23rd Annual AFIA Liquid Feed Symposium, Denver, CO – September 1993.
- Invited to present data on the effects of laidlomycin propionate on ruminal fermentation and acid production at the Cattlyst Launch Meeting (Syntex Animal Health) – Kansas City, MO – April 1994.
- Invited to present a paper on prediction of feed intake by growing and finishing cattle at the California Animal Nutrition Conference, Fresno, CA – May 1994.

- Invited to present a paper on effects of season, health, and management on feed intake by beef cattle at the Oklahoma State University/Plains Nutrition Council Symposium on Intake by Feedlot Cattle, Tulsa, OK – November 1994.
- Invited to present a paper on potential effects of zinc and copper on performance and health of beef cattle at the Southwest Nutrition and Management Conference, Phoenix, AZ – February 1995.
- Invited to present a paper on protein levels in finishing diets at the Roche-ASAS Foundation Beef Cattle Symposium, American Society of Animal Science National Meeting, Orlando, FL – July 1995.
- Invited to present a paper on nutrition and management of newly received calves at the Minnesota Nutrition Conference, Minneapolis, MN – September 1995.
- Invited to present a paper on cattle feeder concerns relative to calf management and backgrounding at the Beef Efficiency Enhancement Forum, Texas Tech University, Lubbock – September 1995.
- Invited to present a paper on management factors to decrease health problems in weaned calves at the Range Beef Cow Symposium XIII, Gering, NE – December 1995.
- Invited to present a paper on the disparity between zinc requirements and current fortification levels in beef cattle finishing diets at the Southwest Nutrition and Management Conference, Phoenix, AZ – February 1995.
- Invited to present a review of feed intake prediction at the National Symposium on the New 7th ed. of the Beef Cattle NRC at Iowa State University, Ames – June 1996.
- Invited to present a conference summary and research agenda at the Bud Britton Memorial Symposium on Metabolic Disorders of Feedlot Cattle at the American Society of Animal Science National Meeting, Rapid City, SD – July 1996.
- Invited to present an overview of the 7th revised edition of the NRC *Nutrient Requirements of Beef Cattle* publication at the Mallinckrodt Veterinary Technical Symposium (Optimizing Cattle Performance – Understanding Science to Increase Beef Production) at Beaver Creek, CO – August 1996.
- Invited to present a review of feed intake prediction and its relationship to determining nutrient requirements at the 26th Annual AFIA Liquid Feed Symposium, Omaha, NE – September 1996.
- Invited to present an overview of the 7th ed. of the NRC *Nutrient Requirements of Beef Cattle* publication at the American Society of Animal Science Southern Section Meeting, Birmingham, AL – February 1997.
- Invited to present a review of factors affecting feedstuff nutritional value at the Feeds and Feeding Seminar, Center for Feed Industry Research and Education, Texas Tech University, Lubbock, TX – March 1997.
- Invited to present a review of the basics of ruminant nutrition for the Armbruster-Bachman Consulting Feed Bunk Management Seminar, West Texas A&M University, Canyon, TX – July 1997.

- Invited to present a paper on the interaction of beef cattle health/immunity and nutrition at the Roche-ASAS Foundation Beef Cattle Symposium, American Society of Animal Science National Meeting, Nashville, TN – July 1997.
- Invited to present a paper on the potential benefits of phase-feeding of finishing cattle on efficiency and environmental nutrient management at the Plains Nutrition Council Spring Conference, San Antonio, TX – April 1998.
- Invited to present a paper on grain quality at processing at the High Plains Beef Conference, Texas A&M Research and Extension Center, Amarillo – August 1999.
- Invited to present a paper on nitrogen content of beef cattle diets and nitrogen excretion by beef cattle at the Colorado Nutrition Roundtable, Ft. Collins, CO – September 1999.
- Invited to present a paper on environmental stewardship in the future beef cattle industry at the Western Section American Society of Animal Science Meeting, Davis, CA – June 2000.
- Invited to present two papers, one on health of newly received cattle and one on grain processing for beef cattle at the Agribrands Purina Bi-Annual Feedlot Conference, Stratford, Ontario, Canada – November 2000.
- Invited to present a review on nutritional and metabolic disorders in feedlot cattle at the National Beef Science Seminar sponsored by the Agriculture and Agri-Food Canada Research Centre, Lethbridge, Alberta, Canada – November 2001.
- Invited to present a paper entitled “Summary of the 2000 Texas Tech University Consulting Nutritionist Survey” at the Plains Nutrition Council Spring Conference, San Antonio, TX – April 2002.
- Invited to present a paper on optimizing health and performance of newly received beef cattle through nutrition and management at the Fort Dodge Animal Health Technical Symposium, Winston Salem, NC – April 2002.
- Invited to present ““Effects of roughage source and level on intake by feedlot cattle” at the Alpha Beef Cattle Symposium, American Society of Animal Science National Meeting, Quebec City, Quebec, Canada – August 2002.
- Invited to present “Beef Production in Challenging Times,” an overview of problems and opportunities facing feedlot beef cattle producers, at the Texas Cattle Feeders Annual Convention, Amarillo, TX – October 2002.
- Invited to present “Effects of supplemental amylase and roughage source on performance and carcass characteristics of finishing beef cattle” at the 19th Annual Alltech Symposium, Lexington, KY – May 2003.
- Invited to present “Benefits of a high-intensity sweetener in diets for feedlot cattle” at the 24th Prince Agri Products Feed Ingredient Conference, Des Moines, IA – August 2004.
- Invited to present “Changes in dry matter intake and variance in dry matter intake in the late feeding period” at the Husker Beef Nutrition Conference, Mead, NE – October 2005.
- Invited to present “Variation in feed intake: Significance and measurement in feedlot cattle” at the VetLife-Elanco Benchmark Advantage Forum, Phoenix, AZ – November 2005.
- Invited to present “Assessing roughage value in diets of high-producing cattle” at the Southwest Nutrition and Management Conference, Tempe, AZ – February 2006.

- Invited to present “Effects of dietary fiber concentration on intake by high-producing ruminants” at the Intercollegiate Faculty of Nutrition Seminar, Texas A&M University, College Station, TX – March 2006.
- Invited to present “Intake by feedlot cattle: A retrospective look and suggestions for future research” at the Plains Nutrition Council Spring Conference, San Antonio, TX – April 2006.
- Invited to present “Seasonal and environmental effects on energy requirements and performance of high-producing cattle” at the Mid-South Ruminant Nutrition Conference, Arlington, TX – April 2006.
- Invited to present “Using byproduct feeds for grazing cattle” at the Floyd County Cow-Calf Beef Producer Meeting, Muncy, TX – February 2007.
- Invited to present “University Research Updates: Texas Tech University Burnett Center” at the Plains Nutrition Council Spring Conference, San Antonio, TX – March 2007.
- Invited to present “Rumensin – Mode of Action and its Role in Feedlot Nutrition and Management” at two seminars in ruminant nutrition sponsored by Elanco Animal Health in Buenos Aires and Cordoba, Argentina – August 2008.
- Invited to present “Optimizing the use of forages in feedlot finishing diets” at the 29th Western Nutrition Conference, Edmonton, Alberta, Canada – September 2008.
- Invited to present “Interpreting research results: Applied statistical principles” at the Plains Nutrition Council Spring Conference, San Antonio, TX – April 2009.
- Invited to present “Intake management for feedlot cattle” at the 2nd Brazilian Ruminant Nutr. Conf. – Recent Advances in Feedlot Cattle Nutrition. Universidade Estadual Paulista, Botucatu, Brazil – April 2009.
- Invited to present “Effects of roughage source and level in feedlot finishing diets” at the 2nd Brazilian Ruminant Nutr. Conf. – Recent Advances in Feedlot Cattle Nutrition. Universidade Estadual Paulista, Botucatu, Brazil – April 2009.
- Invited to present “Building sustainable beef production: How will we address the Environmental and Management Challenges?” at the 25th Annual Alltech Symposium, Lexington, KY – May 2009.
- Invited to present “Applying technology with newer feed ingredients – Do the old paradigms apply?” at the Alpha Beef Cattle Symposium, American Society of Animal Science National Meeting, Montreal, Quebec, Canada – July 2009.
- Invited to present “Addressing fiber digestibility in low-forage diets” at the Ruminant Nutrition Symposium, “Forage Digestibility Estimates: Obtaining and Applying Meaningful Values,” American Society of Animal Science National Meeting, Montreal, Quebec, Canada – July 2009.
- Invited to present “Distillers grain research update – State of Texas Initiative, 2007-2010” at the Texas Cattle Feeders Annual Convention, Amarillo, TX – October 2009.
- Invited to present “Protein systems for feedlot cattle” to the Elanco (South America) Feedlot Technical Meeting, Video Conference to Buenos Aires, Argentina – November 2009.
- Invited to present “The future of feedlot beef production” at the Southwest Nutrition and Management Conference, Tempe, AZ – February 2010.

- Invited to present “Predictability of feedlot cattle growth performance” at the AlphaBeta Beef Cattle Symposium, American Society of Animal Science/American Dairy Science Association National Meeting, Denver, CO – July 2010.
- Invited to present “Managing acidosis and related disorders in finishing cattle” at the 31st Western Nutrition Conference, Saskatoon, Saskatchewan, Canada – September 2010.
- Invited to present a plenary lecture entitled “Building sustainable beef production: Addressing environmental and management challenges in intensive production systems” at the 33rd Congress of the Argentine Association of Animal Production, Viedma, Argentina – October 2010.
- Invited to present “Practical methods for predicting performance of growing and finishing beef cattle” at the 33rd Congress of the Argentine Association of Animal Production, Viedma, Argentina – October 2010.
- Invited to present “The future of beef production in North America” at the ASAS Web Chat, American Society of Animal Science, Champaign, IL – October 2011.
- Invited to present “Effects of roughage source and level in feedlot finishing diets” to the Elanco (South America) Feedlot Technical Meeting, Video Conference to Buenos Aires, Argentina – November 2011.
- Invited to present “Traditional and alternative sources of fiber – Roughage values, effectiveness, and concentrations in starting and finishing diets” at the 2012 Plains Nutrition Council Spring Conference, San Antonio, TX – April 2012.
- Invited to present “Predictability of feedlot cattle growth performance” at the University of Queensland, Gatton Campus, Gatton, Queensland, Australia. Sponsored by the Australian Society of Animal Production – May 2012.
- Invited to present “Traditional and alternative sources of fiber – Roughage values, effectiveness, and concentrations in starting and finishing diets” and “Protein systems for beef cattle – Theory and practice” at the Nutrition Service Associates Northern and Southern Feedlot Nutrition Conferences in Dalby, Queensland, Australia and Wagga, Wagga, New South Wales, Australia – May 2012.
- Invited to present “Customer/consumer confidence in the livestock industry – Ethics: University perspective” at the ARPAS Symposium, American Society of Animal Science National Meeting/American Dairy Science Association National Meeting, Kansas City, KS – July 2012.
- Invited to present “Update of the NRC 1996/2000 Nutrient Requirements of Beef Cattle” at the 2013 Plains Nutrition Council Spring Conference, San Antonio, TX – April 2013.
- Invited to present “Nutrient requirements: derivation, validation, and application” at the ARPAS Symposium, American Society of Animal Science National Meeting/American Dairy Science Association National Meeting, Indianapolis, IN – July 2013.
- Invited to present “Why are research ethics important and how do they affect academia?” at the ASAS Graduate Student Symposium, American Society of Animal Science National Meeting/American Dairy Science Association National Meeting, Indianapolis, IN – July 2014.

- Invited to present “Global livestock production challenges: Current status, future needs, and production obstacles – North America” at the Contemporary and Emerging Issues and International Animal Agriculture Symposium, American Society of Animal Science National Meeting/American Dairy Science Association National Meeting, Orlando, FL – July 2015.
- Invited to present “Introduction to the new nutrient requirements of beef cattle” and “Predicting dry matter intake, microbial protein supply, and dietary metabolizable energy concentration” at the International Symposium Phibro – The Nutrient Requirements of Beef Cattle, Ribeirao Preto, Brazil – March 2016.
- Invited to present “The NRC requirements of beef cattle – An overview of updates and revisions” at the Plains Nutrition Council Spring Conference – April 2016.
- Invited to present “Overview of the process and changes in the eighth edition of the Nutrient Requirements of Beef Cattle” at the Beef Cattle Nutrition Symposium, American Society of Animal Science National Meeting/American Dairy Science Association National Meeting, Salt Lake City, UT – July 2016.
- Invited to present “What I have heard – Conference summary and thoughts for the future” at the California Net Energy 50th Anniversary Symposium, University of California, Davis – September 2018.
- Invited to present “Revisiting health and nutritional management of newly received, highly stressed cattle – What have we learned from the past?”, a webinar for Elanco Mexico – May 2020.
- Invited to present “The need for forage intake measurements” at the Forages and Pastures Symposium, American Society of Animal Science, Canadian Society of Animal Science, Western Section of the American Society of Animal Science Virtual Annual Meeting – July 2020.
- Invited to present “Keynote Address: The NASEM Nutrient Requirements Series: Value, History, Processes, and Future” at the 40th Discovery Conference, American Dairy Science Association – August 2021.
- Invited to present “Revisiting nutrition and health of newly received cattle – What have we learned in the last 15 years?” at the Plains Nutrition Council Spring Conference – April 2022.
- Invited to present “Predicting intake by growing and finishing beef cattle” at the Elanco Mexico Plains Nutrition Conference Pre-Congress, San Antonio, TX – April 2023.
- Invited to present “Effects of Extended Days on Feed on Rate of Change in Performance and Carcass Characteristics of Feedlot Steers and Heifers and Holstein Steers: Merck Animal Health Serial Harvest Data at the Merck Animal Health Plains Nutrition Conference Pre-Symposium, San Antonio, TX – April 2023.
- Invited to present “Factors affecting growth and carcass characteristics of finishing beef and Holstein cattle” at the Elanco Mexico Plains Nutrition Conference Pre-Congress, San Antonio, TX – April 2024.
- Invited to present, “Feeding cattle – Optimal days on feed – Rates of change of economically important performance and carcass characteristics” at the Beef Symposium of the American Society of Animal Science, Canadian Society of Animal Science, Western Section of the American Society of Animal Science Annual Meeting, Calgary, Alberta, Canada – July 2024.

Grants Funded – New Mexico State University (Ordered by Date – 1977 to 1996)

Title	Term	Agency	Funding
Ultrasonic irradiation of feeds	1 year	NMSU Grant	\$850
Triaccontanol and digestion of feed	1 year	NMSU Grant	\$650
Blood chemistry of stressed calves	1 year	USDA-SEA	\$10,736
Gamma irradiation of low-quality roughages – Co-Investigator	1 year	CH ₂ M Hill	\$6,867
Effects of grain and monensin on performance and bloat in wheat pasture stocker cattle – Co-Investigator	1 year	Eli Lilly & Co.	\$3,600
Monensin in grain-based supplements for wheat pasture stocker cattle	1 year	Eli Lilly & Co.	\$1,000
Effect of monensin ruminal delivery devices on rate of weight gain by growing cattle grazing winter wheat pasture	2 years	Eli Lilly & Co.	\$10,500
Poloxalene-medicated water for cattle grazing winter wheat	1 year	SmithKline, Inc.	\$14,050
Effects of ionophore rotation on ruminal fermentation and digestion in beef cattle	2 years	Hoffmann-LaRoche, Inc.	\$22,500
Effects of laidlomycin propionate on performance by feedlot steers, ruminal fermentation, and rate of feed intake	2 years	Syntex Anim. Health	\$61,500
Effects of oral α -interferon on performance and health of newly received calves	1 year	Amarillo Cell Culture, Co.	\$5,000
Effects of injection site of LA-200 on feed intake by newly received beef cattle	1 year	Pfizer Anim. Health	\$4,000
Effects of supplemental Bovatec on performance and frothy bloat in steers grazing winter wheat pasture	1 year	Hoffmann-LaRoche, Inc.	\$10,000

Title	Term	Agency	Funding
Effects of zinc source and level on growth and metabolic hormone concentrations in growing lambs – Co-Investigator	1 year	Zinpro Corp.	\$5,000
Effects of a probiotic drench at the time of processing on health and performance of newly received calves	1 year	Diamond V Mills, Inc.	\$6,000
Interactions of ionophores with dietary roughage level and added dietary fat in the diets of finishing beef cattle	2 years	Hoffmann-LaRoche, Inc.	\$28,800
Effects of lasalocid, laidlomycin propionate, or monensin on weight gain and feed efficiency in the starting and finishing phase of steers.	1 year	Hoffmann-LaRoche, Inc.	\$28,800
Effects of graded levels ruminally protected choline on performance and carcass characteristics of finishing beef steers	1 year	DuCoa	\$16,000

Grants Funded – West Texas A&M University (1996 to 1997)

Title	Term	Agency	Funding
Effects of level of defluorinated rock phosphate on consumption of mineral blocks by stocker cattle grazing native rangeland	1 year	Coronet Industries, Inc.	\$7,500
Statistical analyses of pooled trial data	1 year	Hoffmann-LaRoche, Inc.	\$1,500

Grants Funded – Texas Tech University (1998 to Present)

Title	Term	Agency	Funding
Effects of source and level of ruminally protected choline on performance and carcass characteristics of finishing beef steers	1 year	DuCoa	\$38,993
Effects of implant programs on performance and carcass characteristics of growing/finishing beef heifers	1 year	Hoechst Roussel Vet	\$66,991

Title	Term	Agency	Funding
Graduate student support for cooperative research with copper and zinc sources in beef cattle diets	2 years	Quali Tech, Inc.	\$27,132
Effects of Franklin feed-grade limestone vs. Aerion Industries Nutrion limestone on performance and carcass characteristics of finishing beef steers	1 year	Aerion Industries, Inc.	\$16,650
Effects of SarStart DSC on performance and carcass characteristics of finishing beef steers	1 year	SarTec Corp.	\$21,440
Effects of Sweet Bran [®] brand corn gluten feed and level of roughage on performance and carcass characteristics of finishing beef steers	1 year	Cargill Corn Milling	\$40,539
Graduate student support for cooperative research with zinc sources in beef cattle diets	1.5 years	Kemin Industries, Inc.	\$24,800
Effects of live cultures of <i>Lactobacillus acidophilus</i> and <i>Propionibacterium</i> on performance and carcass characteristics of finishing beef steers	1 year	Nutrition-Physiology Corp.	\$42,977
Testing of probiotic bacteria for the elimination of <i>Escherichia coli</i> O157:H7 in cattle – Co-Investigator	2 years	American Meat Institute	\$39,000 (Total = \$158,750)
Graduate student and equipment support for cooperative research with direct-fed microbial products	2 years	Alltech, Inc.	\$42,000
Solubility and reactivity to acid of feed-grade magnesium sources	1 year	Cargill Animal Nutrition	\$4,000
Effects of live cultures of <i>Lactobacillus acidophilus</i> and <i>Propionibacterium freudenreichii</i> on performance, carcass characteristics, and shedding of <i>E. coli</i> O157:H7 in finishing beef steers	1 year	Nutrition-Physiology Corp.	\$51,182 (Total = \$66,482)

Title	Term	Agency	Funding
Effects of an experimental enzyme preparation with amylase activity and source of neutral detergent fiber from roughage on performance and carcass characteristics of finishing beef cattle	1 year	Alltech, Inc.	\$12,095
Increasing the marketing value of cottonseed as a pre-harvest control measure for <i>E. coli</i> O157:H7 in feedlot cattle – Co-Investigator	2 years	International Cotton Research Council	\$38,400 (Total = \$75,000)
Effects of an experimental enzyme preparation with amylase activity on performance and carcass characteristics of finishing beef heifers fed a finishing diet with cottonseed hulls as the roughage source	1 year	Alltech, Inc.	\$3,957
Reduction of <i>E. coli</i> O157:H7 in feedlot beef cattle using varying doses of a direct-fed microbial – Co-Investigator	1 year	American Meat Institute and National Cattlemen’s Beef Association	\$44,600 (Total = \$154,990)
Effects of live cultures of <i>Lactobacillus acidophilus</i> on performance, carcass characteristics, and shedding of <i>E. coli</i> O157:H7 in finishing beef steers	1 year	Nutrition Physiology Corp.	\$21,710
Performance and carcass characteristics of beef cattle fed whole or pelleted (FuzZpellet™) cottonseed	1 year	Buckeye Technologies and Cotton Inc.	\$25,725 (Total = \$37,692)
Effects of Sucram C-150 on performance of beef cattle	1 year	Pancosma S.A. and Prince Agri-Products	\$41,640
Effects sorghum distillers grains plus solubles on performance and carcass characteristics of finishing beef cattle fed steam-flaked corn-based diets	1 year	USDA-ARS Cooperative Agreement	\$36,100
Equipment support for continuous culture fermentation system	1 year	Alltech, Inc.	\$2,329

Title	Term	Agency	Funding
Effects of distillers grains in ruminant diets	1 year	USDA-ARS Cooperative Agreement	\$49,140
Effects of live active <i>Saccharomyces cerevisiae</i> type <i>boulardii</i> yeast on feed intake by healthy calves given a strong antibiotic	1 year	Ivy Animal Health	\$9,994
Effects of hydroxy methyl-thio butanoic acid (Alimet) on performance and carcass characteristics of finishing beef cattle fed a 90% concentrate diet	1 year	Novus International, Inc.	\$9,857
Reduction of <i>E. coli</i> O157 in beef feedlot cattle using varying doses of a direct-fed microbial	1 year	Nutrition Physiology Corp.	\$44,600 (Total = \$172,770)
Effects of Levucell SB Yeast on average daily gain, feed intake, and morbidity of newly received cattle	1 year	Vet Life, Inc./Lallemand Animal Nutrition	\$31,302
Use of nutritional supplements to provide immunological protection in beef cattle	2 years	USDA-ARS Cooperative Agreement	\$60,000
Effects of Micro-Aid concentration in a high-concentrate beef cattle finishing diet on fermentation and microbial protein synthesis in a continuous culture fermentation system	1 year	Distributors Processing, Inc.	\$8,480
Effects of the proportions of Sweet Bran™ wet corn gluten feed and/or dried distillers grains on performance and carcass characteristics of finishing beef cattle fed steam-flaked corn-based diets	1 year	Cargill Corn Milling	\$31,912
Effects of Micro-Cell LA and Micro-Cell PB on performance and carcass characteristics of finishing beef cattle fed a 90% concentrate diet	1 year	Lallemand Animal Nutrition	\$29,256
Immune function and performance of Holstein steers fed concentrate diets supplemented with sodium selenite or Sel-Plex selenium	1 year	Alltech, Inc.	\$17,865

Title	Term	Agency	Funding
Graduate student support for cooperative research with Sel-Plex selenium	1 year	Alltech, Inc.	\$35,500
Decreasing energy and roughage use in feedlots by altering bulk density of steam-flaked corn and dietary roughage concentration	1 year	Texas Cattle Feeders Assoc.	\$5,000
Effects of distillers grains in ruminant diets	1 year	USDA-ARS Coop. Agreement	\$40,000
Unrestricted grant for development of an in vitro gas production system	-	Alpharma, Inc.	\$5,000
Statistical analyses of Intervet field-trial data	1 year	Intervet, Inc.	\$11,200
Effects of MIN-AD with or without distillers grain on performance and morbidity of newly received cattle and on performance by finishing cattle	1 year	MIN-AD, Inc.	\$55,167
TAES Legislative Initiative – Enhancing feedyard beef cattle production through efficient and sustainable use of ethanol byproducts	2 years	Subcontract with Texas AgriLife Research	\$240,000
Unrestricted grant for purchase of laboratory equipment and support of laboratory research in ruminant nutrition	1 year	Ganado Research	\$12,000
Pilot Laboratory Study – Evaluation of monensin and sulfur level on in vitro gas production in steers	1 year	Elanco Animal Health	\$16,647
Effects of corn processing and wet distillers grains on in vitro hydrogen sulfide production	2 years	USDA-ARS Cooperative Agreement	\$12,000
Hosting and maintenance of the North American Implant Database	5 years	Intervet/Schering-Plough Animal Health	\$25,000
Effects of amylase supplementation on total tract nutrient digestibility by feedlot steers	2 years	DSM Nutritional Products, Inc.	\$19,422

Title	Term	Agency	Funding
TAES Legislative Initiative – Enhancing feedyard beef cattle production through efficient and sustainable use of ethanol byproducts	2 years	Subcontract with Texas AgriLife Research	\$163,400
Effects of Bovine Blend W-80 on performance and carcass characteristics of finishing beef cattle		C and E Agri Products	\$25,210
Effects of MorindaMax on average daily gain, feed intake, immune competence, and morbidity of newly received cattle	1 year	Morinda Agriculture	\$5,826 (Total = \$28,061)
Effects of an experimental <i>Lactobacillus</i> -based direct-fed microbial on performance and carcass characteristics of finishing beef cattle	1 year	MicroBios, Inc.	\$21,792
Effects of ionophores on in vitro dry matter disappearance, gas production, and volatile fatty acid concentrations and proportions	1 year	Alpharma, Inc.	\$11,100
Effects of RAMP® receiving diets on performance and morbidity of newly received beef cattle	1 year	Cargill Corn Milling,	\$30,458
Effects of Celmanax® on performance and morbidity of newly received beef cattle	1 year	Vi-Cor, Inc.	\$25,796
Effects of <i>Lactobacillus</i> -based direct-fed microbials on performance and carcass characteristics of finishing beef cattle	1 year	MicroBios, Inc.	\$36,434
Interactive effects of roughage concentration and bulk density of steam-flaked corn in diets containing Sweet Bran wet corn gluten feed on feedlot cattle performance, carcass characteristics, and apparent total tract nutrient digestibility	1 year	Texas Cattle Feeders Assoc.	\$17,184
Effects of restricted/programmed feeding on methane production, growth performance, carcass characteristics, carbon footprint, and economics in finishing beef cattle.	2 years	National Cattlemen’s Beef Association	\$10,000 (Total = \$200,000)
Statistical analyses of Merck Animal Health serial harvest data	2 years	Merck Animal Health	\$70,000

Title	Term	Agency	Funding
Tackling liver abscesses in cattle by exploring pathogenesis and developing nutritional strategies to decrease prevalence	3 years	USDA-NIFA	\$650,000 (Co-PI with K. E. Hales and O. Benitez)

SERVICE

Research Service

Manuscript and project outline reviews at New Mexico State University – Served on 10 Agric. Exp. Stn. (NMSU) project outline review teams and on approximately 12 Agric. Exp. Stn. (NMSU) review teams for either Bulletins or Research Reports. Peer review of numerous manuscripts submitted as scientific papers and journal articles.

Editorial Service to the Journal of Animal Science

- Member of the Editorial Board for the *Journal of Animal Science*
 - Ruminant Nutrition – 1980 to 1983
 - Ruminant Nutrition – 1987 to 1990
 - Applied Animal Science – 1996 to 1999
 - Ruminant Nutrition – 2001 to 2002
- Section Editor - Ruminant Nutrition (Pasture and Forage Utilization) for the *Journal of Animal Science* - 1991 to 1993
- Editor-in-Chief – *Journal of Animal Science* – 2002 to 2005

Other Editorial and Review Service

- Review of manuscripts for *Annales de Zootechnie*, *Animal Production Science*, *Canadian Journal of Animal Science*, *Cereal Chemistry*, *Journal of Dairy Science*, *Journal of Production Agriculture*, *Journal of Range Management*, *Professional Animal Scientist*, and *Small Ruminant Research*.
- Peer reviewer for USDA scientists at Beltsville, MD; Clay Center, NE; Bushland, TX; El Reno, OK, Miles City, MT, Dubois, ID, and Logan, UT.
- Ad-hoc reviewer for USDA-CREES National Research Initiative (NRI) proposal.
- Member – CSREES Departmental Review Team – Animal Sciences Unit, University of Missouri, Columbia, MO – May 1994 and May 2000.
- Chair – Departmental Review Team – Department of Animal Science, University of Arkansas, Fayetteville, AR – April 2015.

Other University Administrative Responsibilities

1998 to 2016 – Responsible for supervision of the Texas Tech University Burnett Center Feedlot and Feed Mill and the Ruminant Nutrition Laboratory. This position involves supervision of four full-time employees and two to three part-time employees, four to five graduate students, and budgetary responsibility for operating funds total approximately \$750,000 per year, including endowment funds, grant funds, and a livestock revolving account.

2002 to 2006 – Chair of the Texas Tech University Animal Care and Use Committee. This position involved a 25% administrative appointment through the Office of the Vice President for Research.

1996 to 1998 – Responsible for establishing and supervising the Animal Nutrition Laboratory at West Texas A&M University. This position included 50% responsibility for supervision of one technician and one secretary. Responsible for planning the West Texas A&M University Nance Ranch Experimental Feedlot and Feed Mill, a \$2 million facility upgrade.

1990 to 1996 – Superintendent of the Clayton Livestock Research Center. This position involved budgetary responsibility for Center funding and supervision of four full-time employees, one post-doctoral research associate, and four part-time employees. Operating funds totaled approximately \$650,000 per year, including state and federal funds, grant funds, and a livestock revolving account.

1978 to 1990 – Supervision of the NMSU Animal Nutrition Laboratory. This function involved supervision of two full-time technicians and one to two part-time student aides. The laboratory provided service work for members of the Dept. of Animal and Range Sciences and other departments on campus.

Committee Membership and Offices Related to Teaching, Research, and Service

Departmental, College, and University Committees

New Mexico State University

- Chair, NMSU Animal and Range Sciences Scientific Equipment Committee – 1984 to 1990.
- Chair of the NMSU Animal Science Graduate Committee – 1981 to 1984. Member from 1984 to 1990.
- NMSU College of Agriculture and Home Economics, Awards Day Committee – 1983 to 1985.
- NMSU College of Agriculture and Home Economics, Search Committee, Director of Experiment Station – 1989.
- NMSU Graduate School, Member of Graduate Council (Elected) – 1988 to 1990.

West Texas A&M University

- West Texas A&M University Graduate School, Member of Graduate Council (Elected) – 1997.

- Member, Cooperative Research, Education, and Extension Triangle (Amarillo area) Animal Care and Use Committee – 1997 to 1998.

Texas Tech University

- Chair (2008 to 2010), College of Agriculture and Natural Resources Strategic Planning and Visioning Committee, Texas Tech University.
- Member (1999 to 2001; 2007), Vice Chair (2001 to 2002), and Chair (2002 to 2006) – Animal Care and Use Committee, Texas Tech University.
- Member (1998 to 2001) and Chair (2002 to 2004) College of Agriculture and Natural Resources Promotion and Tenure Committee, Texas Tech University.
- Member, Panel for Tenure Hearing – Texas Tech University – 2002 to 2004.

Professional Society and National Academies of Sciences, Engineering, and Medicine (National Research Council) Offices and Committees

- Member of the Competition Paper Committee – Western Section of the American Society of Animal Science. This committee is responsible for judging the written and oral research presentations of graduate students participating in the Western Section Competition Paper Sections – 1987 to 1989 (Chair in 1989).
- Member of the Ruminant Nutrition Program Committee – American Society of Animal Science – 1987 to 1990 and 1997 to 2000. Chair of this committee for 1990 meetings at Iowa State University (Ruminant Nutrition and Forages combined).
- Juror for the Kenneth A. Spencer Award of the American Chemical Society – 1989 to 1990.
- Member of the American Society of Animal Science Strategic Planning Committee – 1992 to 1993.
- Member of the Subcommittee on Beef Cattle Nutrition, National Research Council, Board on Agriculture, Committee on Animal Nutrition – 1992 to 1997.
- 1st Vice President – Plains Nutrition Council – 1993 to 1994. President – 1994 to 1995. Member of the Planning and Organization Committee for the Symposium on Managing Energy Density of Ruminant Diets, sponsored by the Plains Nutrition Council, Texas Tech University, Lubbock, TX – June 1 and 2, 1994. Organized the Plains Nutrition Council Symposium, Update on Protein Nutrition of Beef Cattle (Amarillo, TX, May 25, 1995) and the Plains Nutrition Council Symposium, Update on Mineral Nutrition of Beef Cattle (Lubbock, TX, November 10, 1995).
- Secretary-Treasurer, Western Section of the American Society of Animal Science. Responsible for the 66th Annual Meeting of the Western Section, June 22-24, 1994, Las Cruces, NM.
- President, Western Section of the American Society of Animal Science – 1995 to 1996.
- Member, Board of Directors, American Society of Animal Science – January 1995 to July 1996.
- Secretary, American Registry of Professional Animal Scientists, 1996 to 1999.
- Member, Editor's Operations Advisory Committee, *Journal of Animal Science* – 1996 to 1998.
- Member of the Committee on Animal Nutrition, National Research Council, Board on Agriculture – 1997 to 2000.

- Review Coordinator – National Research Council, Board on Agriculture, *Nutrient Requirements of Dairy Cattle*, 7th ed. – 2000.
- Member, Board of Directors, American Society of Animal Science – 2002 to 2005.
- Giraffe Nutrition Workshop (invitation-only workshop to recommend dietary guidelines for giraffe in AZA-accredited zoos) – Lincoln Park Zoo, Chicago, IL – May 2005.
- Review Coordinator – National Research Council, Board on Agriculture, *Nutrient Requirements of Small Ruminants: Sheep, Goats, Cervids, and New World Camelids* – 2005 to 2006.
- President-Elect, American Society of Animal Science – 2006 to 2007.
- President, American Society of Animal Science – 2007 to 2008.
- Past-President, American Society of Animal Science, 2008 to 2009.
- Member, Board of Directors, American Society of Animal Science – 2006 to 2009.
- Ruminant Browser Nutrition Workshop (invitation-only workshop to recommend dietary guidelines for browsing ruminants in AZA-accredited zoos) – Saint Louis Zoo, Saint Louis, MO – September 2009.
- Member, Federation of Animal Science Societies Board of Directors – 2008 to 2010.
- Member, Coordinating Committee, National Animal Nutrition Program (NRSP-9) – 2012 to 2016.
- Chair, National Academies of Sciences, Engineering, and Medicine, Committee on Nutrient Requirements of Beef Cattle – 2013 to 2016.
- President-Elect, American Registry of Professional Animal Scientists – 2012 to 2013.
- President, American Registry of Professional Animal Scientists – 2013 to 2014.
- Past-President, American Registry of Professional Animal Scientists – 2014 to 2015.
- Review Coordinator – National Academies of Sciences, Engineering, and Medicine, Consensus Study Report, *Heritable Genetic Modification in Food Animals* – 2024.

PROFESSIONAL SOCIETIES AND HONORARY ORGANIZATIONS

Professional Societies

American Society of Animal Science
 American Registry of Professional Animal Scientists
 American College of Animal Sciences
 American Dairy Science Association
 American Society for Nutrition

Honorary

Alpha Zeta
 Gamma Sigma Delta – NMSU and Texas Tech Univ. – Chapter Secretary at NMSU from 1985 to 1987
 Phi Kappa Phi – NMSU and Texas Tech Univ.