

Kirk W. Braden, Ph. D.  
Assistant Professor, Department of Agriculture

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## **Education**

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Ph. D. Auburn University, Meat Science and Muscle Biology – December 2006  
Dissertation: Alternative Beef Finishing Strategies: Effects on Animal Performance, Retail Shelf Life, Sensory Lipid Stability, Fatty Acid Profile and Microbial Loads

M.S. Texas Tech University, Meat Science and Muscle Biology – August 2003  
Thesis: Effects of 2% *Ascophyllum nodosum* Supplementation on Carcass Characteristics, Retail Shelf Life and Prevalence of *Escherichia coli* O157:H7 and *Salmonella* spp. in Feedlot Steers

B.S. Texas Tech University – Animal Science – May 2001

## **Professional Experience**

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Angelo State University Department of Agriculture, San Angelo TX, 8/2006 - present  
*Assistant Professor of Animal Science and Research Scientist*  
-Teaching program consist of undergraduate and graduate courses in animal sciences, meat sciences and live animal carcass evaluation as well as advising.  
-Research program focuses on the factors controlling meat quality, color stability, shelf life, new product development and food safety concerns.  
-Advisor/Coach ASU Intercollegiate Meats Judging Team  
-Advisor/Coordinator ASU Food Safety and Product Development Laboratory  
-Advisor/Coordinator ASU Meat and Food Science Programs

Auburn University Department of Animal Science, Auburn AL, 8/2003 – 8/2006  
*Graduate Research Assistant*

Texas Tech University, Lubbock TX, 5/2001 – 8/2003  
*Graduate Research Assistant*

Seaboard Farms, Guymon OK, 5/2000 – 8/2000  
*Quality Assurance Department*

Tyson Foods Inc., Holcombe KS, 5/1999 – 8/1999  
*Quality Assurance Department*

## **Certifications**

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Advanced HACCP Verification and Validation Programs – 2004  
*International HACCP Alliance*

HACCP Implementation and Management – 2002, 2004  
*International HACCP Alliance*

Good Clinical Practice Guidelines – 2001  
*Biotechnical Services*

## **Teaching Activities**

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### **Undergraduate Advising**

- Advisor and mentor for students in the Department of Agriculture. Assist students in course selection, scheduling, job placement, career opportunity development and provide letters of reference to qualified students. 2006 - present
- Advise approximately 30 undergraduate students. 2006 - present
- Faculty Advisor. The Meat and Food Science Association. 2006 – present
  - Lead students in fundraising events
  - Lead students in catering events
  - Advise students on usage of association funds
  - Advise students on new membership opportunities
  - Achieved university student organization status in 2007
  - Advise students on development of endowment for Meat and Food Science
- Advisor/Coach. 2006 - 2009 ASU Intercollegiate Meats Judging Team
  - Achieved highest national contest placing in the 2 year history of a new program
  - Advised several members of career potential and graduate school opportunity
- Advisor/Coach. 2007 - 2009 AMSA Undergraduate Quiz Bowl Team
  - Two teams to national meetings – 6 undergraduates and 2 graduate students
  - 2007 Reserve National Champion Team
  - 2007 5<sup>th</sup> place Team
  - 2008 – 5<sup>th</sup> and 6<sup>th</sup> Place Team
  - 2009 – 6 undergraduates to contest

### **Undergraduate Research**

- Leo Batot. 2007. Modified Atmosphere Packaging. Angelo State University
- Kari Galm. 2008. Production of a Beef “Popcorn” Item. Angelo State University
- Kaci Foote. 2009. Fundamentals of Cheese Production. Angelo State University
- Jennie Canon. 2009. Development of a Food Science Day Camp for High School Students. Angelo State University

## **Graduate Advising**

-Advise graduate thesis and non-thesis students

### Graduate Committees (Indicates \*chair/co-chair or \*\*member)

#### *Masters of Science – Thesis*

- Shanon Wilber. 2008. The effect of zinc supplementation on feedlot performance and carcass characteristics of growing and finishing lambs. Angelo State University \*\*
- Mathew Menchaca. 2008. Effects of Juniper Consumption on Meat Quality in Boer-Cross Goats. Angelo State University \*\*
- John McEachern. 2008. The Effect if Feeding Distiller’s Dried Grains to Market Lambs on Performance, Wool and Carcass Characteristics. Angelo State University\*\*
- Thomas Epting. 2009.\*
- Leo Batot. 2010. Effects of antioxidant application on color, oxidative stability and shelf life of beef striploin steaks in a retail case environment\*
- Kaci Foote. 2011.\*
- Jennie Canon. 2011.\*

#### *Masters of Science – Non-thesis*

- Sam Schiwart. 2008. Effects of Electrical Stimulation on White-Tailed Deer Carcasses to Increase Tenderness. Angelo State University

#### *Masters of Science – University Graduate Faculty Representative*

- Andrew Tiedt. Biology. Thesis Option

## **Courses Taught**

### Angelo State University

#### *Undergraduate*

- Animal Science 2241 – Live Animal Carcass Evaluation
- Animal Science 3241 – Livestock and Meat Evaluation
- Animal Science 3349 – Anatomy and Physiology
- Animal Science 4181 – Senior Seminar
- Food Science 4446 – Introduction to Meat Science
- Food Science 4447 – Introduction to Processed Meats

#### *Graduate*

- Animal Science 6321 – Experimental Methods
- Food Science 5446 – Introduction to Meat Science
- Food Science 5447 – Introduction to Processed Meats
- Animal Science 6346 – Advanced Meats

### Auburn University

#### *Undergraduate*

- Animal Science 2710 – Commercial Meat Management
- Animal Science 3310 – Introduction to Meat Selection and Grading
- Animal Science 4310 – Advanced Meat Judging

- Animal Science 3700 – Muscle Foods
- Animal Science 4700 – Muscle Foods

## **Research Activities**

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### **Experience**

-Meat science research includes: quality factors affecting beef and pork palatability, supplementation of various additives and its affects on beef and pork tenderness etc. Food safety research is comprised of: pre and post harvest intervention strategies. Laboratory skills include proficiency in an array of muscle sensory, biology, biochemistry, lipid determination, fatty acid determination, forage quality analysis, microbiology assays, microbiological plating strategies and retail shelf-life visual and instrumental techniques; as well as, assistance in an FDA regulated research trial.

### **Interest**

- Development of alternative beef finishing systems for production of products for identified niche consumer markets
- Pre-harvest intervention strategies for reduction of pathogens prior and during harvest
- New protein product development: sensory, quality, food safety, shelf-life and marketability
- Consumer research, education and outreach programs for lamb and goat products
- Factors affecting retail shelf-life and methods of increasing color/quality stability

### **Extramural Funding** (Indicates \*PI or \*\*Co-PI)

-Supplemental Distillers Dry Grains in Lambs. 2008. Whitney, Salisbury and Braden \$13,500.00 \*\*

-Southern Region Sustainable Agriculture Research and Education Graduate Grant. 2004. Evaluating the efficacy of Tasco supplementation on carcass and performance characteristics of cattle finished on winter annual forages as a sustainable alternative finishing system in the southeast - \$9,814.00 \*

### **In-Kind Support**

- Braden, K. 2006. *Departmental Allocation of HEAF Funds* – Emulsifying Chopper. Angelo State University, Department of Agriculture. \$16,000.00
- Branham, L and Braden K. 2009. Evaluation of Shelf Stability of Beef Snack Stick – Angelo State University, Research Enhancement Grant. \$3,700.00

### **Proposals Pending**

- \*Braden, K and B. May. 2008. Development of Value-Added Lamb Products. American Lamb Board. \$ 19,000.00
- \*Braden, K and L. Branham. 2009. Effects of antioxidant application on color, oxidative stability and shelf life of beef striploin steaks in a retail case environment. \$40,000.00

## Publications

### Peer Reviewed Journal Articles

-S.D. Roberts, C.R. Kerth, K.W. **Braden**, D.L. Rankins, Jr., L. Kriese-Anderson, and J.W. Prevatt. 2009. Finishing steers on winter annual ryegrass (*Lolium multiflorum* Lam.) with varied levels of corn supplementation I: Effects on animal performance, carcass traits, and forage quality. J. Anim. Sci. Accepted

- **Braden**, K.W., J.R. Blanton Jr., J.L. Montgomery, E. van Santen, V.G. Allen, and M.F. Miller. 2007. Tasco supplementation: Effects on carcass characteristics, sensory attributes, and retail display shelf-life. J. Anim. Sci. 85:754-768

-Kerth C. R., K. W. **Braden**, R. Cox, L. K. Kerth and D. R. Rankins, Jr. 2007. Carcass, sensory, subcutaneous fat color, and consumer acceptance characteristics of Angus-cross steers finished on ryegrass (*Lolium multiflorum*) forage or on a high-concentrate diet. Meat Sci. 75:324-331

-Cox R.B., C.R. Kerth, J.G. Gentry, J.W. Prevatt, K.W. **Braden** and W.R. Jones. 2006. Determining acceptance of domestic forage- or grain-finished beef by consumers from three southeastern USA states. J. Food Sci. Accepted.

-Montgomery, J. L., W. M. Harper, Jr., M. F. Miller, K. J. Morrow, Jr., K. W. **Braden**, and J. R. Blanton, Jr. 2006. Optimization of culture conditions for determining protein degradation in myoblasts using extracts of adult bovine muscle treated with muscle enhancing compounds. The Professional Animal Scientist. (Awaiting Citation)

-Montgomery, J. L., W. M. Harper, Jr., M. F. Miller, K. J. Morrow, Jr., K. W. **Braden**, and J. R. Blanton, Jr. 2006. Optimization of culture conditions for determining protein synthesis in myoblasts using extracts of adult bovine muscle treated with muscle enhancing compounds. The Professional Animal Scientist. Vol. 22 No. 4

-**Braden**, K.W., J.R. Blanton Jr., V.G. Allen, K.R. Pond, and M.F. Miller. 2004. *Ascophyllum nodosum* supplementation: A Preharvest Intervention for reducing *Escherichia coli* O157:H7 and *Salmonella* spp. J. Food Prot. 67:9 1824-1828.

### Abstracts and Proceedings

-**Braden**, K.W., C. Kerth, K. Willian, S. Roberts and J. Gentry. 2006. Finishing steers on winter annual ryegrass (*Lolium multiflorum* Lam.) with varied levels of supplementation: Effects on fatty acid profile, shelf life and lipid stability. In: Proc. 59th Recip. Meats Conf., Champagne-Urbana, Illinois.

-**Braden**, K., K. Willian, S. Roberts, J. Gentry and C. Kerth. 2006. Finishing steers on winter annual ryegrass (*Lolium multiflorum* Lam.) with varied levels of supplementation: Effects on fatty acid profile, shelf life and lipid stability. In: Proc Am. Soc. Anim. Sci. South. Sec. Vol. 84(Suppl. 2)

-Roberts, S, C. Kerth, K. **Braden**, D. Rankins, L Kriese-Anderson and J. Prevatt. 2006. Forage quality, animal performance, and carcass traits of steers finished on

winter annual ryegrass (*Lolium multiflorum* Lam.) pasture with varying levels of corn supplementation. In: Proc. Am. Soc. Anim. Sci. South. Sec. Vol. 84(Suppl. 2)

-Kerth, C.R., K.W. **Braden**, R.B. Cox and J.G. Alexander. 2004. Consumer Acceptance of Beef from Steers Finished on Ryegrass Forage or a High-Concentrate Diet. J. Anim Sci. Volume 82. Supplement 1

-**Braden**, K.W., J.R. Blanton, JR., V. G. Allen, K.R. Pond and M.F. Miller. 2002. Effects of Tasco-14 Supplementation at 2% in a Commercial Grain Based Diet on Carcass Characteristics, Retail Display Shelf Life and Prevalence of *Escherichia coli* O157:H7 and *Salmonella* spp. in Feedlot Steers. In: Proc. 55 th Recip. Meats Conf., East Lansing, Michigan. p.126

-Montgomery, J.L., W.M. Harper Jr., K.W. **Braden**, K.J. Morrow, M.F. Miller and J.R. Blanton Jr. 2002. Modifications of a technique to measure bovine muscle protein degradation using an in-vitro cell culture system. J. Anim. Sci. Vol.80 Supplement 2. Proceedings Southern Section. Abs. No. 50

#### Final Reports

- **Braden** , K.W. and C.R. Kerth. 2005. Evaluating the efficacy of Tasco-14® supplementation on carcass and performance characteristics of cattle finished on winter annual forages as a sustainable alternative finishing system in the Southeast. Final Report. Sustainable Agriculture Research and Education Program. Southern Region

-**Braden**, K.W., J.R. Blanton, JR., V.G. Allen, K.R. Pond and M.F. Miller. 2002. Effects of Tasco-14 Supplementation at 2% in a Commercial Grain Based Diet on Carcass Characteristics, Retail Display, Shelf Life and Prevalence of *Escherichia coli* O157:H7 and *Salmonella* spp. in Feedlot Steers. Final Report. National Cattlemans Beef Association and Texas Beef Council

#### Other Publications

- Procedures and Protocols Manual – Food Safety and Product Development Lab
- Lecture Manual – FSCI 4446 Introduction to Meat Science
- Lecture Manual – ASCI 3241 Livestock and Meat Evaluation
- Lecture Manual – FSCI 4447 Introduction to Processed Meats
- Laboratory Manual – FSCI 4446 Introduction to Meat Science

#### Multimedia Productions

- ASU Intercollegiate Meats Judging Specifications Video – 2008

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## **Outreach Activities**

### **Invited Presentations**

- Texas Sheep and Goat Raisers Annual Convention. 2007  
Title: Value-Added Lamb Product Development. 2007
- Texas Hair Sheep Cooperative Meeting  
Title: Labeling Concerns and Procedures for Red Meats
- ASU Retired Faculty Annual Meeting. 2008  
Title: Meat Quality and Related Issues
- Summer 4-H Camp. 2008  
Title: Introduction to Meat Science
- District 7 4-H Beef Field Day. 2009  
Title: Beef Carcass Evaluation

### **Extension Programs and Events**

- Beef 706 Extension Beef Program. 2007
- San Angelo Stock Show and Rodeo Meat Contest Superintendent. 2007
- San Angelo Stock Show and Rodeo Livestock Contest Asst. Superintendent. 2007
- District 7 4-H Meats Contest Superintendent. 2007
- Beef 2010/706 Extension Beef Program. 2008
- San Angelo Stock Show and Rodeo Meat Contest Superintendent. 2008
- San Angelo Stock Show and Rodeo Livestock Contest Asst. Superintendent. 2008
- District 7 4-H Meats Contest Superintendent. 2008
- Summer 4-H Camp Introduction to Meat Science. 2008
- District 7 Food Science Tours and Informational Meeting. 2008
- Taste of San Angelo, The Meat Market. 2008
- San Angelo Stock Show and Rodeo Meat Contest Superintendent. 2009
- San Angelo Stock Show and Rodeo Livestock Contest Asst. Superintendent. 2009
- District 7 4-H Meats Contest Superintendent. 2009
- District 7 4-H Beef Field Day. 2009

### **Professional and University Service**

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#### **Professional Memberships**

- American Meat Science Association, Professional Member
- International Meat Judging Coaches Association
- American Society of Animal Scientist, Professional Member
- Institute of Food Technologist, Professional Member
- Southwest Meat Association, Professional Member

#### **Professional Committees**

- Student Membership Committee. AMSA. 2007
- RMC Planning Committee. AMSA. 2007
- American Society of Animal Science. Meat Science Division Annual Proceedings. 2008
- American Society of Animal Science. Annual Meetings. Session Moderator. 2008
- Graduate Student Poster Competition Committee. AMSA 2008-2010
- Undergraduate Quiz Bowl Committee. AMSA. 2009-2011
- Research Protocol Committee. AMSA. 2009-2011
- Meat Color and Sensory Guidelines. RMC Session Moderator. AMSA. 2009

### **University Committees and Service**

- College Mission Statement Committee, College of Sciences. 2007
- Asst. Prof of Animal Science Search Committee. Department of Agriculture. 2007
- Departmental Website Development and Maintenance Coordinator. 2008 - present
- Meat and Food Science Program Website Development and Maintenance. 2008 - present
- Search Committee, Coordinator of Meat and Food Science Programs. Department of Agriculture. 2008
- The Meat Market Website Development and Maintenance. 2008 - present
- University Curriculum Committee. 2008-2010

### **Industry Affiliations**

- Texas Club Lamb Breeders Association
- St. Lawrence Cotton Growers Association
- Texas Sheep and Goat Raisers Association

### **Consulting and Professional Services**

- St. Lawrence Fall Festival, Festival Sausage Production, Large Scale Production Troubleshooting and the Addition of Phosphates to Improve Quality and Yield. 2008
- Garden City Community College, Consultant to Community College Faculty, Construction/Planning of New College Meats Facility. 2008
- Texas A&M Kingsville, Construction/Planning of New College Meats Facility. 2009

### **Honors and Awards**

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- Spirit and Motivation Award. AU Meat Science Association. 2004
- Outstanding masters student. Animal and Food Science Department, TTU. 2003
- 1<sup>st</sup> in TTU GPSGA Graduate Student Research Poster Competition. 2003
- 3<sup>rd</sup> Bob Albin Graduate Student Research Award. TTU. 2003
- Excellence in Meat Science Scholarship. 2001 - 2003

### **Graduate and Undergraduate Activities**

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#### **Coaching**

- Coach/Recruitment, AU Undergraduate AMSA Quiz Bowl Team
- Coach/Recruitment, Auburn University Meats Judging Team

#### **Judging**

- 2000 Texas Tech University Meat-Animal Evaluation Team
- 1999 Texas Tech University National Champion Meats Judging Team
- 1998 Texas Tech University Wool & Mohair Judging Team

#### **Organizations**

- Founding member of AU Animal Science Graduate Student Assoc.
- Auburn University HACCP Team and co-author of food safety program

- Texas Tech University Block and Bridle, 1997-2001
- TTU Animal Science Graduate Student Association, 02-03 Treasurer
- Shake hands with your future educational programs, 2001-2003
- Texas Tech University Collegiate 4-H, 1997-2001
- Texas Tech University Meat Science Association, 1997-2003