

## Holly Terry Boland

**Position:** Assistant Research/ Extension Professor  
Beef Cattle Production

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### EDUCATION

#### **Doctorate of Philosophy**

**Animal and Poultry Sciences: Ruminant Nutrition and Behavior:** January, 2009  
Virginia Polytechnic Institute and State University, Blacksburg, VA

*Dissertation:* Spatial allocation of forages and its impact on grazing behavior, diet selection and dry matter intake of beef steers.

Committee Co-Chairs: G. Scaglia and D.R. Notter

**Master of Science, Animal and Poultry Sciences:** August, 2005  
Virginia Polytechnic Institute and State University, Blacksburg, VA

*Thesis:* Grazing behavior of beef steers grazing endophyte-infected, endophyte-free, and novel endophyte infected tall fescue and Lakota prairie grass.

Committee Co-Chairs: J.P. Fontenot and G. Scaglia

**Bachelor of Science, Biology,** July, 1999  
Virginia Polytechnic Institute and State University, Blacksburg, VA

### AWARDS AND HONORS

- Second place, Bob Barnes Graduate Oral Paper Competition, International Annual Meeting of the American Society of Agronomy, Crop Science Society of America, and Soil Science Society of America, Salt Lake City, UT., Nov 6-10, 2005
- PhD. 2010 Graduate Fellowship, August 2005-present
- Graduate Student Assembly Research Grant, December 2005
- E.T. Kornegay Memorial Graduate Scholarship, Summer 2004

**PAST WORK EXPERIENCE**

<b>Position</b>	<b>Employer</b>	<b>Year</b>
Graduate Research Assistant Interim Lab Supervisor	Ruminant Nutrition Laboratory Animal and Poultry Sciences, VA Tech	2005-2008
<p><b>Field work:</b> Animal handling and sampling; jugular venipuncture, collecting from ruminally cannulated animals, grab and total fecal collection, urine collection, behavioral observations, and general animal husbandry. Forage sampling; hand-plucked nutritive value sampling, botanical composition, herbage mass, sward height.</p> <p><b>Lab work:</b> Analyses of forages, feeds, feces, and blood (whole blood, serum, and plasma), Procedures include: sample prep, dry matter, ash, crude protein (Kjeldahl and combustion methods), NDF, ADF, in vitro and in situ DMD, minerals (atomic absorption and colorimetric procedures), gas chromatography (n-alkanes, LCOH, and VLCFA), freeze drying, maintaining and repairing lab equipment, organization of the lab, scheduling lab use, ordering supplies, training technicians and students</p>		
Laboratory Specialist	Ruminant Nutrition Laboratory Animal and Poultry Sciences, VA Tech	2002-2005
<p><b>Duties:</b> Analyses of forages, feeds, feces, and blood (whole blood, serum, and plasma) Procedures include: sample prep, dry matter, ash, crude protein (Kjeldahl and combustion methods), NDF, ADF, vitro and in situ dry matter digestibility, minerals (atomic absorption and colorimetric procedures), gas chromatography, freeze drying, bomb calorimetry, Beckman blood chemistry analyzer (BUN, NEFA, glucose, CK), field work (forage and animal sample collection), maintaining lab equipment</p>		
Laboratory Specialist	Multidisciplinary Laboratories VA-MD College of Veterinary Medicine	2001-2002
<p><b>Duties:</b> Provide support and technical assistance for veterinary student labs, preparing specimens and organizing setup of labs for anatomy and physiology</p>		
Laboratory Specialist	Food Analysis Control Center Biochemistry Department, VA Tech	2000-2001
<p><b>Duties:</b> Prepare food samples for nutrient analyses, maintain detailed records of procedures, develop new SOPs; receive, log-in, store and ship samples</p>		

Chemical Analyst                      Olver Laboratories, Inc.                      1999-2000  
Metals Department; Blacksburg, VA

*Duties: Operate and maintain Atomic Absorption and ICP spectrometers, perform chemical extractions and digestions of samples (waste water, drinking water, sludge, etc.) in preparation for analyses*

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## **TEACHING EXPERIENCE**

### Graduate Teaching Assistant

Virginia Polytechnic Institute and State University, Blacksburg, VA

- ALS 3204: Animal Nutrition and Feeding, Spring 2006
  - Diet formulation
  - Nutrient requirements
  - Feed identification
- APSC 3004: Junior Seminar: Science and Animal Industry Interface, Spring 2005

Invited guest lecturer, Agriculture Technology, Virginia Polytechnic Institute and State University, Blacksburg, VA, Fall 2005

Invited guest lecturer, CSES 4984 Grassland Based Agriculture, Fall 2007

## **HONOR SOCIETIES**

- Gamma Sigma Delta, Honor Society of Agriculture, Virginia Tech
- Phi Kappa Phi, Chapter 025, Virginia Tech
- Phi Sigma National Biological Sciences Honor Society, Virginia Tech

## **MEMBERSHIP IN PROFESSIONAL SOCIETIES**

- American Society of Animal Science
- American Society of Agronomy
- Animal Behavior Society
- Crop Science Society of America
- American Forage and Grassland Council
- Virginia Forage and Grassland Council

## PAPERS IN REFEREED JOURNALS

Boland, H. T., G. Scaglia, J. P. Fontenot, A. O. Abaye, R. L. Stewart, and R. Smith. 2007. Grazing behavior of beef steers grazing different Tall fescue types and Lakota prairie grass. *Prof. Anim. Sci.* 23:721-727.

Boland, H. T., G. Scaglia, W. S. Swecker Jr., and N. C. Burke. 2008. Effects of alternate weaning methods on behavior, performance, and blood metabolites of beef calves. *Prof. Anim. Sci.* 24:539-551

Boland, H. T., G. Scaglia, and K. Umemura. 2008. Impact of horn flies, *Haematobia irritans* (L.) (Diptera: Muscidae), on the behavior of beef steers. *Prof. Anim. Sci.* 24:656-660.

Stewart, Jr., R. L., G. Scaglia, A. O. Abaye, W. S. Swecker, Jr., G. E. Rottinghaus, H. T. Boland, M. McCann, J. P. Fontenot, and J. H. Fike. 2008. Estimation of forage intake by steers grazing three fescue types and determination of alkaloids in ruminal fluid and forage. *Prof. Anim. Sci.* 24:578-587

Burke, N. C., G. Scaglia, H. T. Boland, and W. S. Swecker, Jr. 2009. Influence of two-stage weaning with subsequent transport on body weight, plasma lipid peroxidation, plasma selenium, and on leukocyte glutathione peroxidase and glutathione reductase activity in beef calves. *Vet. Immunol. Immunopathol.* 127: 365-370.

## PAPERS IN REFEREED CONFERENCES PROCEEDINGS

Boland, H. T., G. Scaglia, J. P. Fontenot, A. O. Abaye, and R. Smith. 2005. Grazing behaviour of beef steers grazing Kentucky 31 endophyte infected tall fescue, Q4508-AR542 novel endophyte tall fescue, and Lakota prairie grass. Page 168 in *Proc. XX Int. Grassl. Cong. Satellite Workshop "The utilization of grazed grass in temperate animal systems"*. Cork, Ireland.

Scaglia, G., H. T. Boland, I. Lopez-Guerrero, R. K. Shanklin, and J. P. Fontenot. 2005. Use of alkanes to estimate dry matter intake of beef steers grazing high quality pastures. Page 250 in *Proc. XX Int. Grassl. Cong. Satellite Workshop "The utilization of grazed grass in temperate animal systems"*. Cork, Ireland.

## ABSTRACTS

Boland, H. T., G. Scaglia, W. S. Swecker, Jr., and N. C. Burke. 2007. Effects of preweaning strategies on blood metabolites, behavior, and performance of beef calves. *J. Anim. Sci.* 85:364 (Suppl. 1).

Boland, H. T., G. Scaglia, W. S. Swecker, Jr., and J. P. Fontenot. 2006. Effects of Different Pre- and Post-weaning Strategies on Grazing Behavior of Beef Calves. ASA, CSSA, SSSA. International Annual Meeting. Indianapolis, IN. November 12-16.

Boland, H., G. Scaglia, J. P. Fontenot, A. O. Abaye, and R. Smith. 2005. Continuous direct visual observation of the grazing behavior of beef steers grazing Lakota prairie grass and different Tall fescue types. ASA-CSSA-SSSA International Annual Meeting. Salt Lake City, UT. November 6-10.

Burke, N, G. Scaglia, H. Boland, and W. Swecker, Jr. 2008. Effects of gradual weaning and transport on leukocyte antioxidant enzymes and plasma malondialdehyde. XXV World Buiatrics Congress, Budapest, Hungary. July 6-11.

Boland, H. T., G. Scaglia, and W. S. Swecker, Jr. 2008. Giving beef calves a choice of pasture-type influences behavior and weight gain. Abstract 39. Joint ADSA-ASAS Annual Meeting. Indianapolis, IN. July 7-11.

Boland, H. T. and G. Scaglia. 2008. Influence of horn flies on the behavior of beef cattle. Abstract 203. Joint ADSA-ASAS Annual Meeting. Indianapolis, IN. July 7-11.

Boland, H. T., G. Scaglia, A. J. Rook, A. O. Abaye, W. S. Swecker, Jr., J.H. Fike, D. R. Notter. 2008. Behavior of cattle grazing adjacent monocultures of tall fescue and alfalfa. ASA-CSSA-SSSA International Annual Meeting. Houston, TX. October 5-9.

## **SYMPOSIA ABSTRACTS**

Boland, H. T., G. Scaglia, W. S. Swecker, Jr., and N. C. Burke. 2007. Blood metabolites, behavior, and performance of beef calves under different pre-weaning management strategies. 23<sup>rd</sup> Annual Research Symposium and Exposition, The Graduate Student Assembly of Virginia Tech, March 28.

Boland, H., G. Scaglia, J. P. Fontenot, A. O. Abaye, R.L. Stewart, Jr., and R. Smith. 2007. Grazing behavior of beef steers grazing Lakota prairie grass, endophyte infected tall fescue, and novel endophyte infected tall fescue. Deans' Forum on Health, Food, and Nutrition, Virginia Tech, November 5.

Boland, H. T., G. Scaglia, W. S. Swecker, Jr., and N. C. Burke. 2007. Blood metabolites, behavior, and performance of beef calves under different pre-weaning management strategies. Deans' Forum on Health, Food, and Nutrition, Virginia Tech, November 5.

Burke, N. C., G. Scaglia, H. T. Boland, and W. S. Swecker, Jr. 2007. Effects of gradual weaning methods and transport on leukocyte antioxidant enzymes and plasma malondialdehyde, 19<sup>th</sup> Annual Research Symposium, Virginia-Maryland Regional College of Veterinary Medicine, May 15-16.

Boland, H., G. Scaglia, J. P. Fontenot, A. O. Abaye, R.L. Stewart, Jr., and R. Smith. 2006. Grazing behavior of beef steers grazing Lakota prairie grass, endophyte infected tall fescue, and novel endophyte infected tall fescue. 22<sup>nd</sup> Annual Research Symposium and Exposition, The Graduate Student Assembly of Virginia Tech, March 29.

### **INVITED PRESENTATIONS**

“Grazing Behavior Research at Virginia Tech”, Grazing Behavior Workshop; Penn State, State College, PA. Coordinator: Kathy Soder, USDA-ARS. July 25-26, 2006

“Beef cattle nutrition and forages”, Chatham County North Carolina Livestock Association, Kentland Farm Tour, Virginia Tech Farm, Blacksburg, VA, July 29, 2005.

“Grazing behavior of beef steers grazing different tall fescue types and Lakota prairie grass”, seminar held for representatives of Ampac and Wrightson Seed Companies of New Zealand. July 7, 2005.

American Forage and Grasslands Council, 2004 Annual Meeting, Kentland Farm Tour, Virginia Tech Farm, Blacksburg, VA. Presentation of current research, June 12.