

Dr. Theodore H. Friend, PAS, Dpl. ACAABS
Professor, Applied Animal Ethology
Department of Animal Science
Texas A&M University

I. EDUCATION

B.S., Cornell University, Ithaca, N.Y., 1970, in Animal Science
M.S., Virginia Polytechnic Institute and State Univ., Blacksburg, VA, 1973 in Dairy Science
Ph.D., Virginia Polytechnic Institute and State Univ., Blacksburg, VA, 1977 in Dairy Science

II. PROFESSIONAL AND ACADEMIC EXPERIENCE

1970 - 1971: Communications Officer, U.S. Navy Destroyer, Viet Nam.
1971 - 1976: Graduate Research Assistant, Dairy Science Department, VPI & SU
1976 - 1977: Special Agent, State Extension Service, Virginia, managing the Dairy Calf Management Project
1977 - 1983: Assistant Professor, Texas A&M University (100% teaching)
1983 - 1991: Associate Professor, Texas A&M University (75% teaching, 25% research)
1987 - : Leader, Applied Animal Ethology Section, Department of Animal Science
1992 - : Professor, Texas A&M University (75% teaching, 25% research)
1995 - Charter Diplomate of the American College of Applied Animal Behavior Sciences, American Registry of Professional Animal Scientists.

III. ASSIGNED ACTIVITIES

A. Teaching

1. Percent of budgeted time: 75%
2. Undergraduate courses

<u>COURSE</u>	<u>CREDIT</u>	<u>NO. SECT.</u>
ANSC 310 Anim Behav & Mgt (I,II)	3	2
ANSC 485 Problems (I,II,S)	6/yr	1
ANSC 107 Intro. Animal Science (I,II)	guest lectures	

3. Graduate courses

<u>COURSE</u>	<u>CREDIT</u>	<u>NO. SECT.</u>
ANSC 610 Applied Animal Ethology (I)	3	1
ANSC 685 Problems (I,II,S)	6/yr	1
ANSC 691 Research (I,II,S)	8 - 16 / yr	1

B. Research

1. Percentage of budgeted time: 25%
2. Acquisition of research funds: career total ~ \$2,500,000.

IV. PROFESSIONAL ACTIVITIES

Member of the Following Scientific Societies.

Animal Behavior Society, American Society of Animal Science, and the International Society for Applied Ethology.

Editorial Board Member

Journal of Animal Science (two appointments)

Journal of Applied Animal Behaviour Science, 1984 – present.

Other Major Activities

American Registry of Professional Animal Scientists

Registered Professional Animal Scientist, 1986 - present;

Board Certified in Animal Behavior, 1995;

Chair, College of Animal Behavior and Animal Behavior Certification Board, 1996 - 1997

W-173 Regional Project "Stress Factors of Farm Animals" (Chair, 1994)

NCR-131 Regional Project "Animal Care and Behavior" (Chair, 1996)

V. AWARDS AND HONORS

Felix-Wankel International Award for research on animal care issues, 1981.

Animal Humanitarian of the Year, Animal Protection Inst. Of America, 1986.
Outstanding Service Award, Department of Animal Science, TAMU, 1991.

VI. REFEREED JOURNAL ARTICLES

- Dunkley, C. S., T. H. Friend, J. L. McReynolds, C.L. Woodward, W. K. Kim, K.D. Dunkley, L. F. Kubena, D. J. Nisbet and S. C Ricke. 2008. Behavioral Responses of Laying Hens to Different Alfalfa-Layer Ration Combinations Fed During Molting. *J Poultry Sci* (accepted with revisions).
- Dunkley, C. S., T. H. Friend, J. L. McReynolds, W. K. Kim, K.D. Dunkley, L. F. Kubena, D. J. Nisbet and S. C Ricke. 2008. Behavior of Laying Hens on Alfalfa Crumble Molt Diets. *J Poultry Sci* (accepted with revisions)
- Iacono, C. M., T. H. Friend, H. Keen, T. Martin, and P. Krawczel. 2007. Effects of density and water availability on the behavior, physiology, and weight loss of slaughter horses during transport. *J. Equine Vet. Sci.* 27:355-361.
- Archer, G. S., T. H. Friend, D. Caldwell, P. D. Krawczel, C. M. Iacono, H. Keen and T. Martin. 2008A. The impact of feeding several components of the seaweed *Ascophyllum nodosum* on transported lambs. *Animal Feed Science and Technology* 140:258-271.
- Iacono, C. M., T. H. Friend, R. D. Johnson, P. D. Krawczel and G. S. Archer. 2007. A preliminary study on the utilization of an onboard watering system by horses during commercial transport. *Appl. Anim. Behav. Sci.* 105:227-231.
- Krawczel, P. D., T. H. Friend, D. J. Caldwell, G. Archer and K. Ameiss. 2007. Effects of continuous versus intermittent transport on plasma constituents and antibody response of lambs. *J. Anim. Sci.* 85:468-476.
- Archer, G. S., T. H. Friend, D. Caldwell, K. Ameiss and P. D. Krawczel. 2007. Effect of the seaweed *Ascophyllum nodosum* on lambs during forced walking and transport. *J. Anim. Sci.* 85:225-232.
- Friend, T. H., H. A. Keen, C. M. Iacono. 2006. Activity of unrestrained horses during on-truck rest stops. *J. Equine Vet. Sci.* 26:573-577.
- Nevill, C. H. and T. H. Friend. 2006. A preliminary study on the effects of limited access to an exercise pen on stereotypic pacing in circus tigers. *Appl. Anim. Behav. Sci.* 101:355-361.
- Martin, T. I., T. H. Friend, J. L. Williams and G. S. Archer. 2006. Predictors of success in an undergraduate animal behavior course. *NACTA Journal.* Sept:51-56.
- Krawczel, P. D., T. H. Friend and R. Johnson. 2006. A note on the preference of naïve horses for different water bowls. *Appl. Anim. Behav. Sci.* 100:309-313.
- Krawczel, P.D., T.H. Friend and A. Windom. 2006. Stereotypic behavior of circus tigers: Effects of performance. *Appl. Anim. Behav. Sci.* 95:189-198.
- Williard, S. T., D. C. Lay Jr., T. H. Friend, D. A. Neuendorff, and R. D. Randel. 2005. Plasma progesterone response following ACTH administration during mid-gestation in the pregnant Brahman heifer. *Theriogenology* 63:1061-1069.

- Archer, G., and T. H. Friend. 2005. Statistics vs. biological significance: Response to Shutler et al. *Appl. Anim. Behav. Sci.* 91:367-369.
- Williams, J. L., T. H. Friend, C. H. Nevill, and G. Archer. 2004. The efficacy of a secondary reinforcer (clicker) during acquisition and extinction of an operant task in horses. *Appl. Anim. Behav. Sci.* 88:331-341.
- Nevill, C. H., T. H. Friend and M. J. Toscano. 2004. Survey of transport environments of circus tiger (*Panthera Tigris*) acts. *J. Zoo and Wildlife Medicine* 35:167-174.
- Williams, J. L. and T. H. Friend. 2003. Behavior of circus elephants during transport. *J. Elephant Managers Association* 14:8-11
- Archer, G. S., S. Dindot, T. H. Friend, S. Walker, G. Zaunbrecher, B. Lawhorn and J. A. Piedrahita. 2003. Hierarchical phenotypic and epigenetic variation in cloned swine. *Biol. Reprod.* 69:430-436.
- Archer, G. S., T. H. Friend, J. Piedrahita, C. H. Nevill, and S. Walker. 2003. Behavioral variation among cloned pigs. *Appl. Anim. Behav. Sci.* 82:151-161.
- Nevill, C. H., T. H. Friend. 2003. Behavior of circus tigers during transport. *Appl. Anim. Behav. Sci.* 82:329-337.
- Williams, J. L., T. H. Friend, M. J. Toscano, M. N. Collins, A. Sisto-Burt, and C. H. Nevill. 2003. The effects of an imprint training procedure conducted at birth on the reactions of foals at six months of age. *Equine Veterinary J.* 35:127-132.
- Broucek, J., M. Uhrincat, C. W. Arave, T. H. Friend, S. Mihina, P. Kisac and A. Hanus. 2002. Effects of rearing methods of heifers during milk replacement period on their postweaning behaviour in the maze. *Acta Vet. Brno.* 71:509-516.
- Williams, J. L., T. H. Friend, M. J. Toscano, M. N. Collins, A. Sisto-Burt, and C. H. Nevill. 2002. The effects of imprint training on the reactions of foals at one, two, and three months of age. *Appl. Anim. Behav. Sci.* 77:105-114.
- Toscano, M. J., T. H. Friend and C. H. Nevill. 2001 Environmental conditions and body temperature of circus elephants transported during relatively high and low temperature conditions. *J. Elephant Managers Association* 12:115-149.
- Friend, T. H. 2001. A review of recent research on the transportation of horses. *J. Anim. Sci.* 79(E. suppl.):E32-E40.
- Toscano, M.J. and T. H. Friend. 2001. A note on the effects of forward and rear-facing orientations on movement of horses during transport. *Appl. Anim. Behav. Sci.* 73:281-287.
- Sisto, A. M. and T. H. Friend. 2001. The effect of confinement on motivation to exercise in young dairy calves. *Appl. Anim. Behav. Sci.* 73:83-91.
- Reece, V. P., T. H. Friend, C. H. Stull, T. Grandin and T. Cordes. 2000. Equine slaughter transport – update on research and regulations. *J. Amer. Vet. Med. Assoc.* 216:1253-1258.
- Gibbs, A. E. and T. H. Friend. 2000. Effect of animal density and trough placement on drinking behavior and dehydration in slaughter horses. *J. Equine Vet. Sci.* 20:643-650.
- Friend, T. H. 2000. Dehydration, stress and water consumption in horses during long-distance commercial transport. *J. Anim. Sci.* 78:2568-2580.

- Gruber, T. M., T. H. Friend, J. M. Gardner, J. M. Packard, B. Beaver, and D. Bushong. 2000. Variation in stereotypic behavior related to restraint in circus elephants. *Zoo Biology* 19:209-221.
- Bushong, D. M., T. H. Friend and D. A. Knabe. 2000. Salivary and plasma cortisol response to acute or depot release of adrenocorticotropin in barrows. *Laboratory Animals* 34:171-181.
- Collins, M. N., T. H. Friend, F. D. Jousan and S. C. Chen. 1999. Effects of density on displacement, falls, injuries, and orientation during horse transportation. *Appl. Anim. Behav. Sci.* 67:169-179.
- Friend, T. H. and M. L. Parker. 1999. The effect of penning versus picketing on stereotypic behavior of circus elephants. *Appl. Anim. Behav. Sci.* 64:213-225.
- Gibbs, A. E. and T. H. Friend. 1999. Horse preference for orientation during transport and the effect of orientation on balancing ability. *Appl. Anim. Behav. Sci.* 63:1-9.
- Friend, T. H. 1999. Behavior of picketed circus elephants. *Appl. Anim. Behav. Sci.* 62:73-88.
- Anderson, M. K., T. H. Friend, J. W. Evans and D. M. Bushong. 1999. Behavioral assessment of horses in therapeutic riding programs. *Appl. Anim. Behav. Sci.* 63:11-24.
- Friend, T. H., M. Martin, D. Householder and D. M. Bushong. 1998. Stress responses of horses during commercial truck transport. *J. Amer. Vet. Med. Assoc.* 212:838-844.
- Lay, Jr., D. C., T. H. Friend, R. D. Randel, C. L. Bowers, K. K. Grissom, D. A. Neuendorff and O. C. Jenkins. 1998. Restricted nursing affects a calf's physiological and behavioral reactions to subsequent restraint and weaning. *Appl. Anim. Behav. Sci.* 56:109-119.
- Lay, D. C. Jr., R. D. Randel, T. H. Friend, T. H. Welsh jr., O. C. Jenking, D. A. Neuendorff, D. M. Bushong, E. K. Lanier and M. K. Bjorge. 1997. Effects of prenatal stress on the suckling calf. *J. Anim. Sci.* 75:3143-3151.
- Kapp, G. M., T. H. Friend, D. A. Knabe, D. M. Bushong and D. C. Lay, Jr. 1997. Nutritional, physiological and behavioral effects of metabolism crates on lambs. *Contemp. Topics Lab. Anim. Sci.* 36:61-65.
- Lay, D. C. Jr., R. D. Randel, J. A. Carroll, T. H. Friend, T. H. Welsh jr., O. C. Jenking, D. A. Neuendorff, D. M. Bushong and G. M. Knapp. 1997. Effects of prenatal stress on the fetal calf. *Domestic. Anim. Endo.* 14:73-80.
- Lay, Jr., D. C., T. H. Friend, R. D. Randel, O. C. Jenkins, D. A. Neuendorff, G. M. Kapp and D. M. Bushong. 1996. Adrenocorticotrophic hormone dose response and some physiological effects of transportation on pregnant Brahman cattle. *J. Anim. Sci.* 74:1806-1811.
- Olesen, L. S., C. M. Nygaard, T. H. Friend, D. Bushong, D. A. Knabe, K. S. Vestergaard, and R. K. Vaughan. 1996. Effect of partitioning pens on aggressive behavior of pigs regrouped at weaning. *Appl. Anim. Behav. Sci.* 46:167-174.
- Hsieh, M. -L., T. H. Friend, D. C. Lay, Jr., and G. G. Wagner. 1996. The effect of confinement in metabolism stalls on cortisol, antibody production, and antibody-dependent cell-mediated cytotoxicity of lambs. *Contemp. Topics Lab. Anim. Sci.* 35:48-52.
- Friend, T. H., D. C. Lay, Jr., D. M. Bushong and D. W. Pierce. 1994. Wisconsin's "Stale Calf" issue and a study designed to resolve some of the animal welfare concerns. *J. Anim. Sci.* 72:2260-2263.

- Clark, D. K., T. H. Friend, and G. Dellmeier. 1993. The effect of orientation during trailer transport on heart rate, cortisol and balance in horses. *Appl. Anim. Behav. Sci.* 38:179-189.
- Bowers, C. L., T. H. Friend, K. K. Grissom, and D. C. Lay, Jr. 1993. Confinement of lambs in metabolism stalls increased adrenal function, thyroxine and motivation for movement. *Appl. Anim. Behav. Sci.* 36:149-158.
- Lay, D. C., Jr., T. H. Friend, R. D. Randel, C. L. Bowers, K. K. Grissom, and O. C. Jenkins. 1992. Behavioral and physiological effects of freeze or hot-iron branding on crossbred cattle. *J. Anim. Sci.* 70:330-336.
- Lay, D. C., Jr., T. H. Friend, K. K. Grissom, R. L. Hale, and C. L. Bowers. 1992. Novel breeding box has variable effects on heart rate and cortisol response of cattle. *Appl. Anim. Behav. Sci.* 35:1-10.
- Lay, D. C., Jr., T. H. Friend, K. K. Grissom, C. L. Bowers, and M. E. Mal. 1992. Effects of freeze or hot-iron branding of Angus calves on some physiological and behavioral indicators of stress. *Appl. Anim. Behav. Sci.* 33:137-147.
- Lay, D. C., Jr., T. H. Friend, C. L. Bowers, K. K. Grissom, and O. C. Jenkins. 1992. A comparative physiological and behavioral study of freeze and hot-iron branding using dairy cows. *J. Anim. Sci.* 70:1121-1125.
- Carbonaro, D. A., T. H. Friend, and G. R. Dellmeier. 1992. Behavioral and physiological responses of dairy goats to food thwarting. *Physiol. Behav.* 51: 303-308.
- Carbonaro, D. A., T. H. Friend, and G. R. Dellmeier. 1992. Behavioral and physiological responses of dairy goats to isolation. *Physiol. Behav.* 51:297-301.
- Mal, M. E., T. H. Friend, D. C. Lay, S. G. Vogelsang, and O. C. Jenkins. 1991. Behavioral responses of mares to short-term confinement and social isolation. *Appl. Anim. Behav. Sci.* 31:13-24.
- Mal, M. E., T. H. Friend, D. C. Lay, Jr., S. G. Vogelsang and O. C. Jenkins. 1991. Physiological responses of mares to short term confinement and social isolation. *Equine Vet. Sci.* 11:96-102.
- Lay, D. C., Jr., T. H. Friend, G. R. Dellmeier, R. D. Randel, C. L. Bowers, M. E. Mal, and P. Zavala. 1991. The effect of naloxone on nursing behavior in Brahman calves. *Appl. Anim. Behav. Sci.* 31:131-138.
- Friend, T. H., G. R. Dellmeier, and J. L. Stuart. 1991. A noninvasive telemetry system for obtaining heart rate from free-ranging swine. *Appl. Anim. Behav. Sci.* 29:343-348.
- Friend, T. H. 1991. Behavioral aspects of stress. *J. Dairy Sci.* 74:292-303.
- Dellmeier, G. R. and T. H. Friend. 1991. Behavior and extensive management of domestic sows and litters. *Appl. Anim. Behav. Sci.* 29:327-341.
- Friend, T. H., G. R. Dellmeier, H. R. Cross, and J. W. Savell. 1990. Evaluation of a centralized retail display of beef nutrient composition data using time-lapse videotape. *J. Nutr. Education* 22:56D.
- Friend, T. H. 1990. Teaching animal welfare in the land grant universities. *J. Anim. Sci.* 68:3462-3467.
- Dellmeier, G. R., T. H. Friend, and E. E. Gbur. 1990. Effects of changing housing on open-field behavior of calves. *Appl. Anim. Behav. Sci.* 26:215-230.

- Stuart, J.L., and T.H. Friend. 1989. DATACOL: An automated telemetry data collection system for physiological studies of swine farrowing. In: Charles Amlaner (ed.), Biotelemetry X, University of Arkansas Press, Fayetteville. pp. 406-410.
- Friend, T. H., L. A. O'Connor, D. A. Knabe and G. R. Dellmeier. 1989. Preliminary trials of a sound-activated device to reduce crushing of piglets by sows. *Appl. Anim. Behav. Sci.* 24:23-29.
- Friend, T. H. 1989. Recognizing behavioral "needs". *Appl. Anim. Behav. Sci.* 22:151-158.
- Friend, T. H. and G. R. Dellmeier. 1988. Common practices and problems related to artificially rearing calves: an ethological analysis. *Appl. Anim. Behav. Sci.* 20:47-62.
- Friend, T. H., L. Taylor, G. R. Dellmeier, D. A. Knabe and L. A. Smith. 1988. Effect of confinement method on physiology and production of gestating gilts. *J. Anim. Sci.* 66:2906-2915.
- Taylor, L., T. H. Friend and L. A. Smith. 1988. Effect of housing on In Situ postures of gestating gilts. *Appl. Anim. Behav. Sci.* 19:265-272.
- Friend, T. H., G. R. Dellmeier and E. E. Gbur. 1987. Effects of changing housing on physiology of calves. *J. Dairy Sci.* 70:1595-1600.
- Taylor, L. and T. H. Friend. 1987. Effect of housing on open-field test behavior of gestating gilts. *App. Anim. Behav. Sci.* 83-93.
- Kopp, M. B., T. H. Friend and G. R. Dellmeier. 1986. Effect of feeding method on non-nutritive oral activities in Holstein calves. *J. Dairy Sci.* 3094-3099.
- Blakeman, N. E. and T. H. Friend. 1986. Visual discrimination at varying distances in Spanish goats. *Appl. Anim. Behav. Sci.* 16:279-283.
- Taylor, L. and T. H. Friend. 1986. Open-field test behavior of growing swine maintained on a concrete floor and a pasture. *Appl. Anim. Behav. Sci.* 16:143-148.
- Dellmeier, G. R., T. H. Friend and E. E. Gbur. 1985. Comparison of four methods of calf confinement. II. Behavior. *J. Anim. Sci.* 60:1102-1109.
- Friend, T. H., G. R. Dellmeier and E. E. Gbur. 1985. Comparison of four methods of calf confinement. I. Physiology. *J. Anim. Sci.* 60:1095-1101.
- Dellmeier, G. and T. Friend. 1984. Term paper design and evaluation when assignment emphasizes student choice. *NACTA J.* 28:4-7.
- Friend, T. H., D. A. Knabe and T. D. Tanksley, Jr. 1983. Behavior and performance of pigs grouped by three different methods at weaning. *J. Anim. Sci.* 57:1406-1411.
- Friend, T. H., G. Dellmeier and C. Long. 1982. Behavior and management of domestic animals. *NACTA J.* 26:15-18.
- McCall, C. A., G. D. Potter, T. H. Friend and R. S. Ingram. 1982. Learning abilities in yearling horses using the Hebb-Williams closed field maze. *J. Anim. Sci.* 53:928-933.
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- Friend, T. H., M. R. Irwin, A. J. Sharp, B. H. Ashby, G. D. Thompson and W. A. Bailey. 1981. Behavior of feeder calves in a railcar modified for feeding and watering in transit. *Int. J. Stud. of Anim. Prob.* 2:129-137.

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- Friend, T. H., F. C. Gwazdauskas and C. E. Polan. 1979. Change in adrenal response from free stall competition. *J. Dairy Sci.* 62:768-771.
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- Friend, T. H., C. E. Polan, F. C. Gwazdauskas and C. W. Heald. 1977. Adrenal glucocorticoid response to exogenous adrenocorticotropin mediated by density and social disruption in lactating cows. *J. Dairy Sci.* 60:1958-1963.
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