

# CURRICULUM VITAE

**Dr. Julie Morrow-Tesch**

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## I. CURRENT POSITION

Research Leader of the Agricultural Research Service Livestock Issues Research Unit. Responsibilities include initiating and developing a research program directed toward understanding the relationship between animal well-being and pre-harvest food safety.

## II. EDUCATION

### A. Universities:

University of Illinois, Urbana, Illinois      B.S.    1982

University of Nevada-Reno, Reno, Nevada      M.S.    1985

Texas Tech University, Lubbock, Texas      Ph.D.    1988

### B. Thesis Subjects:

M.S. - Spatial behavior and activity patterns of grazing cattle (Dr. D.E. Brown, advisor).

Ph.D. - Behavioral, physiological and environmental aspects of early piglet mortality (Dr. J.J. McGlone, advisor).

### C. Postdoctoral Work and Previous Employment:

July 1988 - January 1989, Texas Tech University. Developed immune assays for use in swine and cattle. Studied the effect of stress and genetics on animal health and immune function.

February 1989 - July 1989, Pharmacia LEO Therapeutics, Malmö, Sweden. Research was conducted to determine the effect of a neuroleptic agent on behavior and immune function in pigs.

September 1989 - October 1990, NIH Postdoctoral Fellow in Immunology, Boston University School of Medicine. Research was conducted to identify the effect of stress on early immune events using a mouse model.

January 1991 - August 1992, Postdoctoral Research Associate, Tarbox Postdoctoral Fellowship, Texas Tech University Health Sciences Center, Department of Clinical Neurology. Research was conducted to determine the effect of hormones of the hypothalamic-pituitary-adrenal axis on natural killer cell activity and behavior in restraint-stressed primates.

September 1992 - February 1994, Research Associate, USDA-ARS, Meat Animal Research Center, Clay Center, NE. Studies were conducted to determine the physiological and behavioral consequences of high environmental temperatures in cattle and central nervous system regulation of adaptation.

February 1994 – July 1996, Lead Scientist, Crop Production and Pathology Unit, West Lafayette, IN

July 1996 – January 1999, Research Leader of the Agricultural Research Service Livestock Behavior Research Unit. Responsibilities included initiating and developing a research program directed toward

understanding the relationship between animal behavior and well-being. Research areas included identification of internal states of animal cognition and perception and the development of behavioral and physiological indicators of well-being for food producing animals.

### III. PROFESSIONAL SOCIETIES

- A. American Society of Animal Science
- B. American Registry of Professional Animal Scientists
- C. Board Certification in Animal Behavior, American Registry of Professional Animal Scientists
- D. International Society for Applied Ethology
- E. Animal Behavior Society
- F. Scientists Center for Animal Welfare
- G. ARENA and PRIM&R
- H. International Society of Psychoneuroendocrinology
- I. American Association for the Advancement of Science
- J. Council for Agricultural Science and Technology
- K. Federation of American Societies of Food Animal Science
- L. Gamma Sigma Delta
- M. Sigma Xi
- N. North Central Regional Committee (NC-131) on animal behavior and care
- O. Western Regional Research Project (W -173) Stress Factors of Farm Animals and Their Effects on Performance

### IV. AWARDS

ARS Certificate of Merit and Cash Award (\$1000) for superior performance as research animal scientist, 1995

ARS Extra Effort Award, Certificate of Merit and Cash Award (\$2000) for outstanding leadership of animal well-being and transfer of this technology to producers and consumers, 1996

ARS Certificate of Merit and quality step increase for outstanding performance as Research Leader of the

Livestock Behavior Unit, 1996

ARS Certificate of Merit and Cash Award for outstanding performance as Research Leader of the Livestock Behavior Unit, 1997, 1998

## V. FIELD OF SPECIALIZATION

- A. Mechanisms of animal behavior
- B. Measurement of well-being in livestock
- C. Association between well-being and resistance to pathogens
- D. Psychoneuroimmunology

## V. COMMITTEE MEMBERSHIPS AND SERVICE ACTIVITIES

- A. Adjunct Assistant Professor, Texas Tech University, Dept. of Animal Sciences
- B. Member Federation of Animal Science Societies (FASS) Committee on Animal Care
- C. Adjunct Assistant Professor, Purdue University, Dept. of Animal Sciences
- D. Adjunct Assistant Professor, School of Veterinary Medicine, Purdue University
- E. ARPAS Editorial Review Board (1994-1997)
- F. Applied Animal Behavioural Science Editorial Review Board (1997-1999)
- G. Journal of Animal Science Editorial Review Board (Environment and Behavior Section; 1997-1999)
- H. ASAS Environment & Behavior Program Committee (1996-1998; Chairman 1998)
- I. Member, Purdue University Neuroscience Program
- J. Charter Member, ASAS Foundation
- K. American Registry of Professional Animal Scientists College of Behavior Charter Diplomate and member (Chairman 1998)
- L. Purdue University Center for Food Animal Productivity and Well-Being steering committee (1997 – 1999)
- M. International Society of Applied Animal Ethology US regional secretary (1997-2000)

## VI. TEACHING EXPERIENCE/GRADUATE STUDENT SUPERVISION

- A. Domestic Animal Physiology (T.A., UNR) 1983-84

B. Swine Production (T.A., TTU)	1985-86
C. Intro. to Animal Science (Instructor, TTU)	1986
D. Animal Genetics (T.A., TTU)	1987
E. Reproductive Physiology (T.A., TTU)	1987
F. Environmental Physiology (T.A., TTU)	1988
G. Graduate Seminar (Instructor, TTU)	1988
H. Immunobiology of Cancer (Lecturer, BUMS)	1990
I. Mind and Immunity (Instructor, BUMS)	1990
J. Large Animal Health Management (Lecturer, Purdue)	1994-97
K. Seminars in Animal Welfare and Human-Animal Interaction (Lecturer, Purdue)	1994-97
L. Animal Behavior (Lecturer, Purdue)	1995-96
M. Environmental Physiology of Domestic Animals (Lecturer, Purdue)	1995-98
N. Introduction to Animal Science (Lecturer, Purdue)	1996-97

I currently serve on the graduate committee for 7 students (4 Ph.D. and 3 M.S.).

## VII. INVITED TALKS

- A. Invited to participate in the National Pork Producers Animal Welfare Committee Meeting and present a seminar "Measuring Stress in Pigs". Des Moines, IA, January 30-31, 1995.
- B. Invited to present "The History and Future of Animal Welfare Issues and Their influence on Animal Well-Being Research" at the Indiana Veterinary Medical Association 111th Annual Meeting, Indianapolis, IN, February 1995.
- C. Invited to present seminar "Characterizing Stress: Measuring and interpreting immune and behavioral measures", at the W-173 Regional Project Program Planning Meeting, Clay Center, NE, May 3-6, 1995.
- D. Invited to present seminar "Stockmanship: Effects on Stress and Immune at the Iowa Pork Producers

Professional Swine Management Course, Des Moines IA, September 19-20, 1995.

- E. Invited speaker at Purdue University Neuroscience program annual retreat. "Animal Behavior: The View from An Applied Ethologist" October 9, 1995.
- F. Invited to present seminar "Animal Well-Being/Animal Rights" to the Indiana Institute of Agriculture, Food & Nutrition Leadership Class, November 30, 1995.
- G. Invited to present "Applied Animal behavior and Environmental Enrichment" at the Indiana State Veterinary Medical Association 112th Annual Meeting, February 10, 1996, Indianapolis, IN.
- H. Invited to present a paper "Environmental Enrichment for Ungulates: at the Central Region conference of the American Zoo and Aquarium Society Meeting, New Orleans, LA Feb 28, 1995
- I. Invited FFA Banquet Dinner Speaker, "Animal Welfare/Animal Rights" Lynn, Indiana, April 11, 1996.
- J. Invited speaker at University of Nebraska, Lincoln, "Physiological Assessment of Learning", April 17, 1996
- K. Invited speaker at USDA-ARS, US Meat Animal Reserch Center "Applied Ethology and Farm Management: Research Perspectives", April 16, 1996. Lecture was used as continuing education credit for animal caretakers at MARC.
- L. Invited dinner speaker at Tri State Dairy Nutrition Conference "Animal Well-being and Environmental Enrichment" May 14,1996.
- M. Invited to write summary article on environmental enrichment in pigs and cattle for the National Agriculture Library Animal Welfare Information Center Newsletter (publication date of July, 1997).
- N. Invited speaker for a University wide symposium on Animals in Our Lives sponsored by the Purdue University School of Veterinary Medicine and Gamma Sigma Delta "Animal Welfare vs Animal rights, why is

it an issue” September 3, 1996.

- O. At the request of NPS participated in the 30th Anniversary of the Animal Welfare Act and present information on research in the Livestock Behavior Research Unit. September 11-13, 1996, Washington, DC.
- P. Invited to review the second “Guide for the Care and Use of Agricultural Animals in Agricultural Research and Teaching”. September, 1996.
- Q. Invited to present seminar “Using Animal Behavior to Understand Animal Well-being” at the Annual Student American Veterinary Medical Association Symposium. March 14, 1997. Purdue University School of Veterinary Medicine, W. Lafayette, IN.
- R. Invited to participate in Workshop on the Guide for the Care and Use of Agricultural Animals (Western region meeting) as a speaker and panel member on “IACUC issues: Evaluating Teaching, Research and Extension”. March 19, 1997, San Diego, CA.
- S. Invited to present key note address “An Animal Well-Being Perspective” at the Seventh International Livestock Environment Symposium Minneapolis, MN, May 1997.
- T. Invited to participate on the organizing committee for the Agricultural Animal Guide Workshop (Eastern region meeting), present seminar “Advantages of Working Through your IACUC” and moderate a panel of professionals to discuss their roles in using the revised Guide for the Care and Use of Agricultural animals In Agricultural Research and Teaching. Indianapolis IN June 12-14, 1997.
- U. Invited to present seminar “A Video Database System for Studying Animal Behavior” at a special symposium of the Environment and Behavior Section of the American Society of Animal Science Meetings. July 28 - 31, 1997. Nashville, TN.
- V. Invited to be on the organizing committee for The Biology of Animal Stress Meeting, October 1998, Davis CA, and present a summary of the meeting.

W. Invited to present seminar at Agricultural Awareness Week, January, 1999, Texas Tech University.

X. Invited to present a seminar on animal well-being research to the Livestock Conservation Institute, March, 1999, Nashville, TN.

Y. Invited to present talk on tail docking of dairy cows to the Committee of Animal Welfare of the United States Animal Health Association, October, 1999, San Diego, CA.

## VIII. GRANTS

A. NIH Postdoctoral Fellowship in Immunology. 18,000; 10/1/89 to 9/30/90.

B. American Cancer Society Institutional Research Grant (Hubert Humphrey Cancer Center). "The effect of stress on macrophage regulation of dormant tumor cells in mice". 6,000; 12/1/89 to 11/30/90.

C. School of Veterinary Medicine Grant "Effect of environment on behavior and the systemic and mucosal immune response in calves". 4,600; 05/04/95 to 05/01/97.

D. Co-PI on USDA-NRI grant "Dynamic responses of feedlot cattle exposed to heat stress". Total grant 225,000, 09/98 to 08/01.

## IX. PUBLICATIONS

### A. Refereed Journal Articles

McGlone, J.J. and J.L. Morrow. 1987. INDIVIDUAL DIFFERENCES AMONG MATURE BOARS IN T-MAZE PREFERENCE FOR ESTROUS OR NONESTROUS SOWS. Appl. Anim. Behav. Sci. 17:77-82.

McGlone, J.J. and J.L. Morrow. 1988. REDUCTION OF PIG ANDROSTENONE. J. Anim. Sci. 66:880-884. AGONISTIC BEHAVIOR BY



McGlone, J.J., W.F. Stansbury, L.F. Tribble and J.L. Morrow. 1988. PHOTOPERIOD AND HEAT STRESS INFLUENCES AND PHOTOPERIOD EFFECTS ON NURSERY PIG PERFORMANCE. J. Anim. Sci. 66:1915-1919.

McGlone, J.J., C.K. Akins and J.L. Morrow. 1988 . PRELIMINARY STUDY ON SEXUAL BEHAVIOR OF SOCIALLY DOMINANT AND SUBORDINATE BOARS IN A SEMINATURAL ENVIRONMENT. Texas J. Agric. Nat. Resources 2:7-9.

Salak, J.L., J.J. McGlone, J.L. Morrow, R.J. Hurst and R.D. Green. 1989. GENETIC VARIABILITY IN MEASURES OF BEEF CATTLE IMMUNE RESPONSE. Texas J. Agric. Nat. Resources 3:54- 56.

Morrow, J.L. and J.J. McGlone. 1989. SENSORY SYSTEMS AND NIPPLE ATTACHMENT BEHAVIOR IN NEONATAL PIGS. Physiology & Behavior 47: 1-4.

Morrow-Tesch, J.L. and J.J. McGlone. 1990. SOURCES OF MATERNAL ODORS AND THE DEVELOPMENT OF ODOR PREFERENCES IN BABY PIGS. J. Anim. Sci. 68:3563-3572.

Morrow, J.L. and J.J. McGlone. 1990. SENSORY SYSTEMS AND NIPPLE ATTACHMENT BEHAVIOR IN NEONATAL PIGS. Physiol. Behav. 47:1-4.

McGlone, J.J. and J. Morrow-Tesch. 1990. PRODUCTIVITY AND BEHAVIOR OF SOWS IN LEVEL AND SLOPED FARROWING PENS AND CRATES. J. Anim. Sci. 68:82-87.

Morrow, J.L. and J.J. McGlone. 1990. SOURCES OF MATERNAL ODORS AND THE DEVELOPMENT OF ODOR PREFERENCES IN BABY PIGS. J. Anim. Sci. 68: 3563-2571

Jiang, C.G., J.L. Morrow-Tesch, D.I. Beller, E.M. Levy and P.H. Black. 1990. IMMUNOSUPPRESSION IN MICE INDUCED BY COLD WATER STRESS. Brain Behav. Immun. 4:278-291.

Morrow-Tesch, J.L., J.J. McGlone and R.L. Norman. 1993. CONSEQUENCES OF RESTRAINT STRESS ON NATURAL KILLER CELL ACTIVITY, BEHAVIOR AND HORMONE LEVELS

IN RHESUS MACAQUES. Psychoneuroendocrinology 18:383-395.

Hahn, G.L. and J. L. Morrow-Tesch. 1993. IMPROVING LIVESTOCK CARE AND WELL-BEING. Agricultural Engineering 74:14-17.

Morrow-Tesch, J.L. and G. Andersson. 1994. IMMUNOLOGICAL AND HEMATOLOGICAL CHARACTERIZATION OF THE WASTING PIG SYNDROME. J. Anim. Sci. 72:976-983.

Morrow-Tesch, J.L., McGlone, J.J. and J.L. Salak. 1994. HEAT AND SOCIAL STRESS EFFECTS ON PIG Immune Measures. J. Anim. Sci. 72:2599-2609.

Morrow-Tesch, J.L., N. Woollen, G.L. Hahn. 1996. RESPONSE OF GAMMA DELTA T-LYMPHOCYTES TO HEAT STRESS IN BOS TAURUS AND BOS INDICUS CROSSBRED CATTLE. Thermal Biology. 21:101-108.

Morrow-Tesch, J.L. 1997 ENVIRONMENTAL ENRICHMENT FOR DAIRY CALVES AND PIGS. Animal Welfare Information center newsletter. 7:3-12.

Bolinger, D., J.L. Albright, J. Morrow-Tesch, S.J. Kenyon and M.D. Cunningham. 1997. THE EFFECTS OF RESTRAINT USING SELF-LOCKING STANCHIONS ON DAIRY COWS IN RELATION TO BEHAVIOR, FEED INTAKE, PHYSIOLOGICAL PARAMETER, HEALTH, AND MILK YIELD. J. Dairy Sci. 80:2411-2417.

Morrow-Tesch, J. AN ANIMAL WELL-BEING PERSPECTIVE. 1997. The Professional Animal Scientist. 14: 11-15.

Morrow-Tesch, J., J.W. Dailey, and H. Jiang. A VIDEO DATABASE SYSTEM FOR STUDYING ANIMAL BEHAVIOR. J. Anim. Sci. 10: 2605 - 2608.

Jarvinen, M.K., J. Morrow-Tesch, J.J. McGlone and T.L. Powley. 1997. EFFECTS OF DIVERSE DEVELOPMENTAL ENVIRONMENTS ON NEURONAL MORPHOLOGY IN DOMESTIC PIGS (*Sus scrofa*). Brain Res. 107: 21 - 13.

Eicher, S.D., J.L. Morrow-Tesch, J.L. Albright, J.W. Dailey, C.R. Young and L.H. Stanker. 1999. TAIL-DOCKING INFLUENCES ON BEHAVIOR, IMMUNOLOGICAL AND ENDOCRINE RESPONSES IN DAIRY HEIFERS. *J. Dairy Sci.* 83:1456-1462.

Scott, K., Morrow, J.L. and Shea, M.M. 1999. INFLUENCE OF SOW GESTATION DIET ON PIGLET BEHAVIOR. *Journal of Animal Science.*

Morrow, J.L. 1999. CURRENT RESEARCH ON LIVESTOCK CARE: ARS NATIONAL PROGRAM 105-ANIMAL WELL-BEING AND STRESS CONTROL SYSTEMS. *Livestock conservation Institute Proceedings.*

Morrow, J.L., Mitloehner, F.M., Dailey, J.W., Wilson, S.C. and McGLone, J.J. 1999. DUST AND MICROBE LEVELS FROM INDOOR AND OUTDOOR PIG UNITS. *Journal of Animal Science.*

Scott, K.A., Shea, M.M. and Morrow, J.L. 1999. INFLUENCE OF SOW GESTATION DIET ON PIGLETS BEHAVIOR. *Journal of Animal Science.*

Johnson, A.K., Morrow, J.L., Wilson, S.C., Rachuonyo, H., Gentry, J.G. and McGlone, J.J. 1999. BEHAVIOR AND PERFORMANCE OF LACTATING NEWSHAM SOWS AND PIGLETS REARED INDOORS AND OUTDOORS. *Journal of Animal Science.*

Mitloehner, F.M., Morrow, J.L., Dailey, J.W. and McGlone, J.J. 1999. ALTERING FEEDING TIMES FOR FEELOT CATTLE REDUCED DUST-GENERATING BEHAVIORS. *Journal of Animal Science.*

Mitloehner, F.M., J. Morrow-Tesch, S.C. Wilson, J.W. Dailey, J.J. McGlone. 2000. BEHAVIORAL SAMPLING TECHNIQUES FOR FEEDLOT CATTLE. *Appl. Anim. Behav. Sci.* (submitted).

Johnson, A.K., Morrow, J.L. and J.J. McGlone. 2001. BEHAVIOR AND PERFORMANCE OF

LACTATING SOWS AND PIGLETS REARED INDOORS OR OUTDOORS. J. Anim. Sci. 79:2571-2579.

Mitlohner, F.M., Morrow, J.L., Dailey, J.W., Wilson, S.C., Galyean, M.L., Miller, M.F. and J.J. McGlone. 2001. SHADE AND WATER MISTING EFFECTS ON BEHAVIOR, PHYSIOLOGY, PERFORMANCE, AND CARCASS TRAITS OF HEAT-STRESSED FEEDLOT CATTLE. 79: 2327-2335.

Wilson, S.C., Morrow, J.L., Straus, D.C., Cooley, J.D., Wong, W.C., Mitlohner, F.M. and J.J. McGlone. 2002. AIRBORNE MICROBIAL FLORA IN A CATTLE FEEDLOT. Applied and Environmental Microbiology. 68: (7) 3238-3242.

## B. Abstracts at Professional Meetings

Frohning, V.L., D.E. Brown, J.L. Morrow, S.F. Hopkinson and T.P. Ringkob. 1984. EFFECTS OF AGGRESSION DURING SHIPMENT ON DARK-CUTTING INCIDENCE IN HOMOGENEOUS AND MIXED GROUPS OF SLAUGHTER BULLS. J. Anim. Sci. 59:241 (suppl. 1).

Morrow, J.L. and D.E. Brown. 1985. FACTORS AFFECTING SPATIAL BEHAVIOR AND ACTIVITY PATTERNS OF CATTLE ON A MOUNTAIN ASPEN-BUNCHGRASS HABITAT. 38th Annual Meeting Soc. Range Management. Salt Lake City, Utah. Abst. 183.

Morrow, J.L. and D.E. Brown. 1985. FACTORS AFFECTING GRAZING BEHAVIOR OF CATTLE ON A MOUNTAIN BIG SAGEBRUSH SITE. J. Anim. Sci. 61:210 (suppl. 1).

Morrow, J.L. and J.J. McGlone. 1986. T-MAZE PARADIGM DEMONSTRATES PREFERENCES AMONG INDIVIDUAL MATURE BOARS FOR ESTROUS OR NON-ESTROUS SOWS. J. Anim. Sci. 63:169 (suppl. 1).

McGlone, J.J. and J.L. Morrow. 1986. DOSE RESPONSE EFFECTS OF 5-ALPHA-ANDROST-16-EN-3-ONE ON NURSERY PIG AGONISTIC BEHAVIOR. J. Anim. Sci. 63:162 (suppl. 1).

Stansbury, W.F., J.J. McGlone, J.L. Morrow and L.F.

Tribble. 1986. SOW AND PIGLET

PERFORMANCE DURING HEAT STRESS: EFFECTS OF FLOOR TYPE, DRIPPERS, SNOOT COOLERS AND FAT. J. Anim. Sci. 63:176 (suppl. 1).

McGlone, J.J., W.F. Stansbury, J.L. Morrow and L.F. Tribble. 1987. EFFECTS OF PHOTOPERIOD, HEAT STRESS AND THEIR INTERACTION ON SOW AND LITTER PERFORMANCE. J. Anim. Sci. Southern Section (abst. 175).

McGlone, J.J., J.R. Clark, D.E. Hawkins and J.L. Morrow. 1987. LACK OF INFLUENCE OF DOMINANCE STATUS ON ATTAINMENT OF PUBERTY IN SWINE. J. Anim. Sci. Southern Section (abst. 144).

Morrow, J.L. and J.J. McGlone. 1987. PREFERENCE OF PIGLETS FOR ODORS FROM SOW FECES. J. Anim. Sci. 65:219 (suppl. 1).

Robbins, R.D., J.J. McGlone, J.L. Morrow and R.A. Long. 1987. HERITABILITY ESTIMATES OF CALF SOCIAL BEHAVIOR USING IDENTICAL TWINS. J. Anim. Sci. 65:231 (suppl. 1).

McGlone, J.J., E.W. Fugate, J.L. Morrow, J.R. Clark, C. Chitko and F. Blecha. 1988. REPRODUCTIVE PERFORMANCE AND IMMUNE FUNCTION OF TWO GENETIC TYPES OF GILTS IN FOUR GESTATION ENVIRONMENTS. J. Anim. Sci. 66:241 (suppl. 1).

McGlone, J.J. and J.L. Morrow. 1988. SLOPED AND LEVEL FARROWING CRATES AND PENS FOR LACTATING SOWS: PRODUCTIVITY AND BEHAVIOR DATA. J. Anim. Sci. 66:242 (suppl.1).

Morrow, J.L. and J.J. McGlone. 1988. SENSORY SYSTEMS AND NIPPLE ATTACHMENT BEHAVIOR IN NEONATAL PIGS. J. Anim. Sci. 66:243 (suppl. 1).

McGlone, J.J., C.M. Peterman, J.L. Morrow-Tesch, J.L. Salak and R.J. Hurst. 1989. HEAT

AND SOCIAL STRESS EFFECTS

ON PIG IMMUNE FUNCTION. J. Anim. Sci. 67:103 (suppl. 1).

Morrow-Tesch, J.L. and G. Andersson. 1992. IMMUNE INDICES FROM NORMAL AND WASTING PIGS AND THE EFFECT OF AMPEROZIDE. J. Anim. Sci. 70:155 (suppl. 1).

Morrow-Tesch, Julie L., John J. McGlone and Reid L. Norman. 1992. BEHAVIORAL, NEUROENDOCRINE AND IMMUNOLOGICAL CONSEQUENCES OF RESTRAINT STRESS IN NONHUMAN PRIMATES. Int. Soc. Psychoneuroendocrinology XXIII Proceedings (abst. 48).

Morrow-Tesch, J.L., G.L. Hahn and O. DeDios. 1993. PHYSIOLOGICAL RESPONSES OF STEERS TO CYCLIC THERMONEUTRAL AND HOT ENVIRONMENTAL TEMPERATURES. J. Anim. Sci. 71:117.

Morrow-Tesch, J.L., N. Woollen, M. Hoyt and L. Hahn. 1993. RESPONSE OF GAMMA DELTA T LYMPHOCYTES TO HEAT STRESS IN CATTLE. Proc. Autumn Immunol. Conf. Proceedings.

Morrow-Tesch, J.L., G.L. Hahn. 1994. IMMUNE RESPONSE OF CATTLE TO THERMAL STRESS. Int. ASAE Meetings.

Morrow-Tesch, J., N. Woollen and G.L. Hahn. 1994. ASSOCIATED RESPONSE OF HEAT SHOCK PROTEINS AND GAMMA DELTA T LYMPHOCYTES FOLLOWING HEAT STRESS IN STEERS. Am. Soc. Anim. Sci. 72: 323(suppl. 1).

Morrow-Tesch, J., J. J. McGlone and M. Jarvinen. 1994. EVALUATION OF DENDRITIC BRANCHING FROM PIGS IN DIVERSE ENVIRONMENTS. NATO Advanced Study Institute, Behavioral and Brain Research in Naturalistic and Semi-Naturalistic Settings: Possibilities and Perspectives, Maratea, Italy.

Jones, B., L. Horstman and J. Morrow-Tesch. 1995. A SURVEY OF BEEF CATTLE CASTRATION METHODS. 2nd North American Regional International Soc. Applied Ethol. Meeting.

Morrow-Tesch, J. 1995. EFFECTS OF ENVIRONMENTAL ENRICHMENT ON GROUP-HOUSED DAIRY CALVES. 2nd International Conference on Environmental Enrichment. Copenhagen,

Denmark.

Morrow-Tesch, J., HogenEsch, H. and Bowersock, T. 1996. ACTIVITY BUDGETS FOR GROUP-HOUSED CALVES WITH AND WITHOUT ENVIRONMENTAL ENRICHMENT DEVICES. J. Anim. Sci. 74(suppl. 1):132.

Bord, E.K., Morrow-Tesch, J.L., Dailey, J.W., Curtis, S.E., and Taylor, I.A. BEHAVIORAL RESPONSES OF PIGS TO SOCIALLY-FACILITATED FEED FRUSTRATION. 1996. J. Anim. Sci. 74(suppl. 1):130.

Jones, B.A. and Morrow-Tesch, J. 1996. TIME-BUDGETS FOR CALVES CASTRATED AT 2 TO 4 DAYS OF AGE. J. Anim. Sci. 74(suppl. 1): 132.

McGlone, J.M., Morrow-Tesch, J.L., Jarvinen, M.K., Fullwood, S. and Powley, T.L. PIG NEOCORTEX MORPHOLOGY, BEHAVIOR AND IMMUNITY. Soc. For Neuroscience 22(part 2):1196. 1996.

Arave, C.W., Shipka, M.L., Morrow-Tesch, J. and Albright, J. 1996. CHANGES IN SERUM CORTISOL FOLLOWING EXTENDED LOCK-UP TIME OF LACTATING COWS. J. Dairy Sci. 79:191.

Morrow-Tesch, J.L., Dailey, J.W., Murphy, C., Bord, E., Jones, B. Fulmer, B. and Smith, J. 1996. APPLICATIONS OF THE OBSERVER 3.0 IN THE USDA-ARS LIVESTOCK BEHAVIOR RESEARCH UNIT. Measuring Behavior '96 conference abstract. 1996.

Morrow-Tesch, J., Dailey, J. and Jiang, H. A. 1997. A VIDEO DATABASE SYSTEM FOR STUDYING ANIMAL BEHAVIOR. J. Anim. Sci. 75(suppl. 1):137.

Morrow-Tesch, J.L., McGlone, J.J., Blackshaw, J.K., Blackshaw, A.L., Fullwood, S. and Heup, M.A. 1997. BEHAVIOR OF FEEDLOT CATTLE IN A COMMERCIAL ENVIRONMENT THROUGHOUT THE YEAR. J. Anim. Sci. 75:157 (suppl. 1).

Eicher, S.D., Morrow-Tesch, J. and Albright, J.L. 1997. LYMPHOCYTE PHENOTYPE AND ACUTE PHASE PROTEIN RESPONSE TO TAIL-DOCKING IN DAIRY COWS. J. Dairy Sci.

McGlone, J.J., Morrow-Tesch, J.L., Blackshaw, J.K., Blackshow, A.L., Sarignac, C., Fullwood, S., Heup, M.A. and Dailey, J.W. 1997. BEHAVIOR OF FEEDLOT CATTLE IN A COMMERCIAL ENVIRONMENT. Int. Soc. Applied Ethology Proceedings pp. 186.

Morrow-Tesch, J. and B. Jones. 1997. BEHAVIORAL AND PHYSIOLOGICAL RESPONSES OF CALVES TO CASTRATION WHEN PERFORMED AT WEANING OR 3 WEEKS PRIOR TO WEANING. 9th Int. Congress in Anim. Hygiene Proceedings pp.

Eicher, S.D., J.L. Morrow-Tesch, J.L. Albright and R.E. Williams. 1998. PHYSIOLOGICAL AND BEHAVIORAL CHANGES OF TAIL-DOCKED COWS DURING FLY SEASON. J. Anim. Sci 76:101 (suppl. 1).

Wiggers, D.L., J.J. McGlone, J.L. Morrow-Tesch and J.W. Dailey. 1998. BEHAVIOR OF FEEDLOT CATTLE FED ONCE OR THREE TIMES PER DAY. J. Anim. Sci. 76:102 (suppl. 1).

Morrow-Tesch, J., J. Dailey and K. Scott. 1998. EFFECT OF SOCIAL AND PHYSICAL ENVIRONMENT ON DAIRY CALF BEHAVIOR AND PERFORMANCE. J. Anim. Sci. 76:104 (suppl. 1).

Scott, K.A., M. Shea-Moore and J. Morrow-Tesch. 1999. INFLUENCE OF SOW GESTATION DIET ON PIGLET BEHAVIOR. J. Anim. Sci. 77: (suppl. 1).

Mitloehner, F.M., J.L. Morrow-Tesch, J.W. Dailey and J.J. McGlone. 1999. ALTERING FEEDING TIMES FOR FEEDLOT CATTLE REDUCED DUST-GENERATING BEHAVIORS. J. Anim. Sci. 77: (suppl. 1).

Mitloehner, F.M. , J.L. Morrow-Tesch, J.W. Dailey and J.J. McGlone. 1999. EFFECTS OF WATER MISTING AND SHADE ON HEAT STRESS IN FEEDLOT CATTLE. J. Anim. Sci. 77: (suppl. 1).

Rachuonyo, H.A., J.L. Morrow-Tesch, J.G. Gentry, D.L. Anderson, S.C. Wilson, J.W. Dailey, H.T. Bird and J.J. McGlone. BEHAVIOR AND ENVIRONMENTAL IMPACT OF OUTDOOR GESTATING SOWS: EFFECT OF COLD WEATHER AND GRASS BURNING. J. Anim. Sci. 77: (suppl. 1).



A.K. Johnson, J.L. Morrow-Tesch, S.C. Wilson, H. Rachuonyo, J.G. Gentry and J.J. McGlone. 1999. BEHAVIOR AND PERFORMANCE OF LACTATING NEWSHAM SOWS AND PIGLETS REARED INDOORS OR OUTDOORS. J. Anim. Sci. 77: (suppl. 1).

J.L. Morrow-Tesch, F.M. Mitloehner, J.W. Dailey and S.C. Wilson. 1999. DUST AND MICROBE LEVELS FROM INDOOR AND OUTDOOR PIG UNITS. J. Anim. Sci. 77: (suppl. 1).

### C. Technical Writings

Morrow, J.L. and J.J. McGlone. 1986. MODULATION OF AGONISTIC BEHAVIOR BY ANDROSTENONE IN NURSERY PIGS. Texas Tech University Animal Science Research Report.

McGlone, J.J., J.L. Morrow and J.S. Stevenson. 1986. URINE CORTISOL LEVELS AND SUBMISSIVE BEHAVIOR. Texas Tech University Animal Science Research Report.

Morrow, J.L., J.J. McGlone, L.F. Tribble and W.F. Stansbury. 1987. EFFECT OF DL-alpha-TOCOPHEROL INJECTIONS ON PIGLET PERFORMANCE AND IMMUNITY. Texas Tech University Animal Science Research Report.

Morrow, J.L. and J.J. McGlone. 1987. PERFORMANCE AND BEHAVIOR OF SOWS AND PIGLETS IN FOUR FARROWING ENVIRONMENTS. Texas Tech University Animal Science Research Report.

Morrow, J.L. and J.J. McGlone. 1987. PREFERENCE OF PIGLETS FOR ODORS FROM SOW FECES. Texas Tech University Animal Science Research Report.

McGlone, J.J., J.L. Morrow and B.F. Craddock. 1987. EFFECTS OF ANDROSTENONE

McGlone, J.J., W.F. Stansbury, J.L. Morrow and L.F. Tribble. 1987. SOW MANAGEMENT DURING LACTATION: EFFECTS OF PHOTOPERIOD AND HEAT STRESS. Texas Tech University Animal Science Research Report.

Robbins, R.D., J.J. McGlone, J.L. Morrow and R.A. Long. 1987. HERITABILITY ESTIMATES OF OPEN FIELD BEHAVIORS USING SPLIT-EMBRYO IDENTICAL TWIN CALVES. Texas Tech University Animal Science Research Report.

Clark, J.R., J.J. McGlone, D.E. Hawkins and J.L. Morrow. 1987. LACK OF INFLUENCE OF DOMINANCE ON ATTAINMENT OF PUBERTY IN GILTS. Texas Tech University Animal Science Research Report.

McGlone, J.J., C. Akins and J. Morrow-Tesch. 1988. REPRODUCTIVE AND SOCIAL BEHAVIOR OF BOARS AND SOWS IN A SEMI-NATURAL ENVIRONMENT. Texas Tech University Animal Science Research Report.

McGlone, J.J., E. Fugate, J. Morrow-Tesch, R.J. Hurst, J.R. Clark and L.F. Tribble. 1988. REPRODUCTIVE PERFORMANCE AND IMMUNE FUNCTION OF GILTS IN CRATES, TETHERS, PENS AND PASTURES. Texas Tech University Animal Science Research Report.

McGlone, J.J., R.J. Hurst and J. Morrow-Tesch. 1988. PERFORMANCE AND LUNG LESIONS OF PIGS FED LINCOMYCIN, ASP-250 OR NO ANTIBIOTIC DURING NURSERY AND GROWING PHASES. Texas Tech University Animal Science Research Report.

Morrow-Tesch, J. and J.J. McGlone. 1988. SOURCES OF MATERNAL ODORS AND ATTRACTION TO THESE ODORS BY PIGLETS. Texas Tech University Animal Science Research Report.

Morrow-Tesch, J. and J.J. McGlone. 1988. ATTRACTION OF PIGLETS TO NOVEL ODORS. Texas Tech University Animal Science Research Report.

Morrow-Tesch, J. and J.J. McGlone. 1988. PIGLET AVERSION TO RADIANT AND CONVECTIVE HEAT SOURCES. Texas Tech University Animal Science Research Report.

Morrow-Tesch, J. and J.J. McGlone. 1988. SENSORY SYSTEMS AND NIPPLE ATTACHMENT IN PIGLETS. Texas Tech University Animal Science Research Report.

Morrow-Tesch, J., J.J. McGlone and R.J. Hurst. 1989. GENETICS OF IMMUNE FUNCTION IN GROWING PIGS. Texas Tech University Animal Science Research Report.

Morrow-Tesch, J., J.J. McGlone and R.J. Hurst. 1989. GENETICS OF IMMUNE FUNCTION IN HYBRID AND CROSSBRED PIGS. Texas Tech University Animal Science Research Report.

Endlich, G.G., McGlone, J.M., Blackshaw, J.K., Morrow-Tesch, J.L., Dailey, J.W. 1996. Environmental Enrichment for feedlot cattle. Texas Tech University Animal Science Research Report.

J.J. McGlone, Blackshaw, J.K., Blackshaw, A.W., Sarignac, C., Fullwood, S., Heup, M.A, Morrow-Tesch, J.L., Dailey, J.W. 1996. Behavior of feedlot cattle in a commercial yard. Texas Tech University Animal Science Research Report.