



# Faculty Member Profile

**Thomas A. Hoagland**

**Professor**

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## **Awards Received:**

- 2003 - Gamma Sigma Delta Senior Faculty Award

## **Courses Taught:**

ANSC 273	Livestock Management
ANSC 283	Livestock & Carcass Evaluation
ANSC 288/088 Advanced Livestock Evaluation	
SAAS 004	Anatomy & Physiology of Domestic Animals
SAAS 007	Animal Breeding and Genetics
SAAS 040	Animal Food Products
SAAS 068	Management Skills & Prac-Sheep
SAAS 069	Management Skills & Prac-Swine
SAAG 090	Agricultural Calculations
SAAS 070	Livestock Production
SAAS 083	Livestock & Carcass Evaluation

## **Research Interests:**

In conjunction with the biotechnology center and the transgenic animal facility, I have started a new research effort. I have attempted to produce swine with functional human genes. The incorporation of these genes in swine would improve the acceptance of swine tissue in human bodies. Xeno-transplantation would be improved. Also, I have become proficient at trans-vaginal ovum recovery. The ultimate fate of ova obtained with this method would be in-vitro fertilization, micro-injection of genes and re-implantation. If a system could be developed like this, it would greatly improve on the ability to make transgenic animals.

My long term research interest has lied in improving reproductive efficiency in farm animals. To obtain this goal, I have focused on control of ovary and testis function. My interest in the ovary is with steroid hormone production in the granulosa and luteal tissue.

In the male, my efforts have been as a member of a group effort to understand the control of testis size. This has lead us to investigate the hormonal control of the compensatory hypertrophy that occurs after unilateral castration in several species. Recently, we have focused on the composition of tissue growth in the testis. Namely, we have attempted to enumerate Sertoli cell numbers in testis of different sizes.

I have also attempted to improve the ability of beef cattle and swine to grow through innovative modern biological methods.

### **Recent Publications:**

Marylin Garcia, Mary Anne Roshni Amalaradjou, Manoj Kumar Mohan Nair, Thirunavukkarasu Annamalai, Suman Surendranath, Seok Lee, Thomas Hoagland, Cameron Faustman, and Kumar Venkitanarayanan. 2007. Inactivation Listeria monocytogenes on frankfurters by monocaprylin alone or in combination with acetic acid. J. Food Prot (in press).

Chameroy K, Nadeau J, Bushmich S, Dinger J, Hoagland T, Saxton A. 2006. The Effects of Age, Breed, Gender and Use on Gastric Ulceration in the Horse. Journal of Equine Veterinary Science Volume 26: 207-211.

Rezamand, P., S. M. Andrew, and T. A. Hoagland. 2006. The feeding value of extruded corn grain in a corn-silage based ration for high producing Holstein cows during mid-lactation (manuscript accepted, Journal of Dairy Science; JDS-06-0438-R2).

Chameroy K, Nadeau J, Bushmich S, Dinger J, Hoagland T, Saxton A. 2004. The Effects of Age, Breed, Gender and Use on Gastric Ulceration in the Horse. 2006.

Nair, M.K.M., Joy, J., Vasudevan, P., Hinckley, L., Hoagland, T., and Venkitanarayanan, K. (2005). Antibacterial effect of caprylic acid and monocaprylin on major bacterial mastitis pathogens. Journal of Dairy Science 88:3488-3495.

Thirunavukkarasu Annamalai, Manoj Kumar Mohan Nair, Patrick Marek, Pradeep Vasudevan, David Schreiber, Randall Knight, Thomas Hoagland, and Kumar Venkitanarayanan. 2005. In vitro inactivation of enterohemorrhagic Escherichia coli O157:H7 in bovine rumen fluid by caprylic acid. J. of Food Protection 67:884-888.

Nair, Manoj Kumar Mohan, Hanem Abouelezz, Thomas Hoagland and Kumar Venkitanarayanan. 2005. Antibacterial effect of monocaprylin on Escherichia coli o157:H7 in apple juice. Journal of food protection 68:1895-1899.

Govoni, K.E., T.A. Hoagland and S.A. Zinn. 2004. The ontogeny of the somatotrophic axis in Hereford calves from birth to one year of age and its response to administration of exogenous bovine somatotropin. J. Anim. Sci. (In Press)

Thirunavukkarasu Annamalai, Manoj Kumar Mohan Nair, Patrick Marek, Pradeep Vasudevan, David Schreiber, Randall Knight, Thomas Hoagland, and Kumar Venkitanarayanan. 2004. In vitro inactivation

of enterohemorrhagic *Escherichia coli* O157:H7 in bovine rumen fluid by caprylic acid. *Journal of Food Protection* 67:884-888.

Manoj Kumar Mohan Nair, Pradeep Vasudevan, Thomas Hoagland, and Kumar Venkitanarayanan. 2004. Inactivation of *E. coli* O157:H7 and *L. monocytogenes* in milk by caprylic and monocaprylin. *Food Microbiology*. 21:611-616.

Jang-Won Lee, Shin-Chih Wu, X. Cindy Tian, Michele Barber, Thomas Hoagland, John Riesen, Winston T.K. Cheng and Xiangzhong Yang. 2004. Production of cloned pigs by whole cell intracytoplasmic microinjection. *Biology of Reproduction*.

Annamalai, T., P. Vasudevan, P. Marek, T. Hoagland, K. Venkitanarayanan. 2003. Heat inactivation of *Escherichia coli* O157:H7 in apple cider in the presence of glycerol monolaurate and a synthetic antimicrobial peptide, PR-26. *Journal of food processing and preservation*. Vol 27 (1) 37-47 2003.

Marek, P., M.K.M. Nair, T. Hoagland, K. Venkitanarayanan. 2003. Survival and growth characteristics of *Escherichia coli* O15:H7 in pasturized and unpasteurized cheddar cheese whey. 2003. *International Journal of food microbiology*. Accepted.

Costa, C., L.Zhao, W. Burton, C. Rosas, K.R. Bondioli, B.L. Williams, T.A. Hoagland, A.P. Dalmaso and W.L. Fodor. 2002. Transgenic pigs designed to express human CD59 and H-transferase to avoid humoral xenograft rejection. *Xenotransplantation* 9:45-57.

Tang, J., C. Faustman, S. Lee, T.A. Hoagland. 2002. The effect of glutathione on oxymyoglobin oxidation. Accepted for publication by the *Journal of Food Chemistry* 51: 1691-1695.

Vasudevan, P., P. Parek, S. Daigle, T. Hoagland, K.S. Venkitanarayanan. 2002. Effect of chilling and freezing on survival of *Vibrio parahaemolyticus* on fish fillets. Accepted for publication by the *Journal of Food Safety*.

Vasudevan, P., T. Annamalai, L. Sartori, T. Hoagland, K. Venkitanarayanan. 2002. Behavior of Enterococcal *Escherichia coli* in bottled spring and mineral water. *Journal of Food Protection* 66 497-500.

Phillips, A.L., C. Faustman, M.P. Lynch, K.E. Govoni, T.A. Hoagland and S.A. Zinn. 2001. Effect of dietary alpha-tocopherol supplementation on color and lipid stability in pork. *Meat Science* 58: 389-393.

Rausch, M.I., M.W. Tripp, K.E. Govoni, W. Zang, W. Weber, B.A. Crooker, T.A. Hoagland, S.A. Zinn. 2001. Limit feeding and somatotropin supplementation in growing beef cattle. *J. Animal Science* 80: 94-100.

Thirunavukkarasu, A., K. Venkitanarayanan, T. Hoagland, and M. I. Khan. 2001. Inactivation of *Escherichia coli* O157:H7 and *Listeria monocytogenes* by PR-26, a synthetic antibacterial peptide. *Journal of Food Protection*, 64(12), 1929-1934.

### **Hobbies or Non-Academic Interests:**

Chairperson of the Chaplin Board of Education  
Treasurer of the Hampton/Chaplin Little League