



Faculty Member Profile

Steve A. Zinn

Professor

Phone number 860-486-0861

STEVEN.ZINN@uconn.edu

Background:

Dr. Zinn grew up in Southern New York and received his BS in Animal Science from Cornell University. He then worked as the Research Coordinator at the Cornell Dairy Teaching and Research Unit for 2.5 years. After that, he then received his MS and PhD degrees in Animal Science from Michigan State University. Following completion of a post doc at the Worcester Foundation for Experimental Biology, he joined the faculty of Animal Science at the University of Connecticut in 1990.

Awards & Achievements:

- 2008 - Selected as the new Editor-in-Chief of the Journal of Animal Science. This is the premier animal science journal. Previously, he had served as associate Editor of Physiology (2003-2005) and then Division Editor of Growth, Reproduction and Physiology (2005-2008).
- 2006 - Elected to a two-year term to the President's Athletic Advisory Committee
- 2003 - College of Agriculture and Natural Resources Research Excellence Award
- 2002 - UConn Agriculture and Natural Resources Alumni Association Award for Excellence in Teaching
- 2001 - 2002 First Year Experience Teaching Award
- 2001 - 2002 - Outstanding Undergraduate Faculty Advisor for the University of Connecticut
- 1994 - Northeast ADSA/ASAS Young Scientist Award

Courses Taught:

- [ANSC 222](#) Growth & Metabolism of Domestic Animals
- [ANSC 223W](#) Scientific Writing in Growth Biology and Metabolism of Domestic Livestock
- [ANSC 295](#) Senior Seminar
- [ANSC 344](#) Growth Physiology and Metabolism
- INTD 180 Study Skills
- [SAAS 094](#) Seminar

Research Interests:

My research interests are tissue-specific expression of growth factors during development in livestock and physiological mechanisms involved in efficiency of animal production. This work focuses primarily on the role of growth hormone (GH). We have focused on the genetic component of GH secretion, especially in response to growth hormone releasing factor (GRF). And if the magnitude of GH secretion can be utilized as a physiological predictor of genetic merit. We are also interested in the physiological role that GH has in milk production, growth, changes in body composition and feed utilization in cattle.

Genetic improvement in dairy cattle has increased rapidly since the development of progeny testing programs which effectively identify superior sires. However, such programs are time-consuming and expensive, since milk production data must be collected on a sire's daughters before an estimate of his genetic merit can be calculated. The total costs are eventually borne by the dairy industry, at an approximate cost of \$250,000 per bull desirable enough to join the active list. If alternative methods could be developed which were capable of evaluating genetic merit of dairy sires at a young age, substantial savings would be realized by the entire dairy industry. Growth hormone is involved in regulating energy partitioning, and exogenous GH administration increases milk yield in cows. In mature dairy bulls, GH pulse frequency has been reported to be negatively related to genetic merit for production, but sample size was rather restricted. We have collected data which shows that GRF stimulated greater GH response in superior than inferior sires. The strong possibility exists that GH response to GRF administration in young bulls may be a valuable indicator of genetic merit. The objectives of this project are to determine whether the GH response to a regimen of SRIF and GRF administration can be used to evaluate genetic merit in young dairy bulls, and to investigate the mechanism regulating differential response among bulls of differing genetic merit. To date, we have shown that genetically superior sires treated with growth hormone releasing factor secrete greater amounts of growth hormone than genetically inferior sires. We are currently investigating the genetic influence of somatostatin on growth hormone release in cattle.

Administration of exogenous growth hormone stimulates milk yield in dairy cattle and growth rate in cattle and pigs. We have shown that exogenous GH also stimulates milk production in beef cattle and enhances utilization of feed in growing beef animals. Currently we are investigating the effect on GH administration on insulin-like growth factors and their binding proteins in these growing beef animals. One major problem with the use of GH is the method of delivery. In previous experiments, cattle have been injected on a daily basis. Potential future experiments are to evaluate novel methods of delivery of GH to growing animals.

Recent Publications:

Richmond, J.P., T. Jeanniard du Dot, D.A.S. Rosen, and S.A. Zinn. 2006. Effect of prey composition on the endocrine response to nutrient restriction and re-alimentation in Steller sea lions (*Eumetopias jubatus*). *Proc. Comp. Nutr.* 6:136-141.

Velayudhan, B.T, K. E. Govoni, T. A. Hoagland, and S A. Zinn. Growth rate, feed efficiency and IGFBP-2 and -3 in beef cattle treated with exogenous bovine ST beginning at 200 d, 250 d and 300 d of age. *J. Anim. Sci* 83 (Suppl. 1): 283, 2005.

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. 82: 1646- 1655

Sciadone, M.P., L. Yao, M. Schaller, S. A. Zinn and H.C.Freake. 2004. Diethylenetriaminepentaacetic acid enhances thyroid hormone action by a transcriptional mechanism. Biological Trace Element Research (In Press).

Govoni, K.E., T.A. Hoagland and S.A. Zinn. 2003. The ontogeny of the somatotrophic axis in male and female Hereford calves from birth to one year of age. J. Anim. Sci. 81:2811-2817.

Baumgard, L.H., W. J. Weber, B. A. Crooker, G. W. Kazmer, S. A. Zinn, L. B. Hansen and H. Chester-Jones. 2002. Effects of Selection for Milk Yield on Growth Hormone Response to Growth Hormone Releasing Factor in Growing Holstein Calves. J. Dairy. Sci. 85: 2569-2540.

Freake, H.C., M. Schaller, A. Trzcienski and S.A. Zinn. 2002. Zinc chelation amplifies thyroid hormone action, but has variable effect on zinc efflux in cultured cells. Proc. Nutr. Sci. 61:47A.

Rausch, M.I., M.W. Tripp, K.E. Govoni, W. Zang, W.J. Weber, B.A. Crooker, T.A. Hoagland and S.A. Zinn. 2002. The response of body weight gain, somatotropin, insulin-like growth factor I and insulin-like growth factor binding proteins-2 and -3 to limit feeding and somatotropin supplementation in growing beef cattle. J. Anim. Sci. 80: 94-100.

Govoni, K.E., X.C. Tian, G.W. Kazmer, M.T. Taneja, B.P. Enright, A.L. Rivard, X. Yang and S.A. Zinn. 2001. Age-related changes of the somatotrophic axis in cloned Holstein cattle. Biol. Reprod. 66:1293-1298

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.

Rastani, R.R., S.M. Andrew, S.A. Zinn and C.J. Sniffen. 2001. Body composition and energy balance in Jersey and Holstein dairy cows during early lactation. J. Dairy Sci. 84:1201-1209.

Freake, H.C., K.E. Govoni, K. Guda, C. Huang and S.A. Zinn. 2001. Actions and interactions of thyroid hormone and zinc deficiency in the regulation of growth in rats. J. Nutr. 131: 1135-1141.

Giel, J.M., S.A. Zinn, C. Capacchione and S.L. Bushmich. 2000. Geriatric veterinary medicine: Attitudes and observations of small animal practitioners in the state of Connecticut. J. Veterinary Med. Education 27: 21-24.

Hobbies or Non-Academic Interests:

Auto racing

Favorite Links:

[Champ Car World Series](#)