

# CURRICULUM VITAE

## Curtis R. Youngs

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### I. EDUCATION

Post-doctoral studies, 1985-86, Louisiana State University

PhD in Animal Science, 1985, University of Minnesota

B.S. in Animal Science (granted with distinction), 1981, University of Minnesota

### II. PROFESSIONAL EXPERIENCE

April 2020 – present

Associate Director in Charge of Livestock and Animal Health Programs  
Center for Sustainable Rural Livelihoods  
College of Agriculture & Life Sciences, Iowa State University, Ames

February 2020 – present

M.E. Ensminger Endowed Chair of International Animal Agriculture  
College of Agriculture & Life Sciences, Iowa State University, Ames

July 1989 - present

Assistant, Associate, and Full Professor of Animal Science  
College of Agriculture & Life Sciences, Iowa State University, Ames

January 2001 – June 2009

Associate Professor of Veterinary Diagnostic Production Animal Medicine  
College of Veterinary Medicine, Iowa State University, Ames  
(Note: this was a *concurrent* secondary rank appointment)

June 1986 - June 1989

Assistant Professor of Animal Science  
College of Agriculture, University of Idaho, Moscow

January 1982 – May 1985

Graduate Research Assistant (Animal Science)  
University of Minnesota, St. Paul

## **II. PROFESSIONAL EXPERIENCE (continued)**

July 1981 – September 1981

Undergraduate research assistant (Animal Science)

University of Minnesota, St. Paul

Temporary research technician

Ohio Agricultural Research and Development Center, Wooster

June 1979 - September 1979

## **III. AWARDS AND HONORS**

Certificate of Appreciation, Consulate of the Republic of Kosovo, 2019

Honorary Member, Golden Key International Honour Society, 2019

Regents Award for Faculty Excellence, Iowa State University, 2018

Bouffault International Animal Agriculture Award, American Society of Animal Science, 2017

Honorary Member, Algerian Association of Experimental Animal Sciences, 2017

Outstanding Achievement in International Agriculture, College of Agriculture and Life Sciences, Iowa State University, 2017

20 Influential Farm Animal Veterinary Professors, Vet Tech Colleges, 2015

Outstanding Service in Student Recruitment and Retention Award, College of Agriculture & Life Sciences, Iowa State University, 2015

Excellence in College and University Teaching in the Food and Agricultural Sciences, North Central Region, USDA Higher Education Programs, 2014

Distinguished Teacher Award, American Society of Animal Science, 2014

W Robert Parks Honors Commendation for Faculty, ISU Honors Student Board, 2014

International Award of Merit, Gamma Sigma Delta, 2013

Faculty Row inductee, 2013

Outstanding Faculty Member, Iowa State University Greek Community, 2013

Fellow (Teaching), American Society of Animal Science, 2012

MAP-Works® Excellence Award for Academic Advising, 2012

Central Region Outstanding Teacher, North American Colleges and Teachers of Agriculture, 2012

Louis M. Thompson Distinguished Undergraduate Teacher, Iowa State University, 2012

Director's Award for Faculty, Iowa State University Multicultural Student Affairs Office, 2012

Mission Award for Teaching, Gamma Sigma Delta, 2011

Excellence in Honors Mentoring/Advising, Iowa State University Honors Program, 2011

Honorary Member, National Society of Leadership and Success, 2011

Influential Faculty Member in Fostering Academic Achievement, Collegiate Panhellenic Council, Iowa State University, 2011

### **III. AWARDS AND HONORS (cont'd)**

Inductee, Advising Academy, Iowa State University College of Agriculture and Life Sciences, 2011  
Faculty Recognition Award, Iowa State University Division of Student Affairs, 2009  
Student Scholars and Leaders Recognition, Iowa State University, 2009, 2007, 2004, 2003, 2002, 2000, 1999, 1998  
College of Agriculture Faculty of the Year, LINC (Leaders Inspiring Connections), 2005  
Outstanding Faculty Member, Iowa State University Collegiate Panhellenic Council, 2005, 2004, 2002  
Outstanding Service to Students, VEISHEA, 2004  
Most Effective Instructor, Academic Success Center, 2003  
Advisor Recognition, Iowa State University Student Activities Center, 2003, 2002  
Excellence in Academic Advising Award, Iowa State University Foundation, 2002  
Outstanding Adviser Award, Iowa State University College of Agriculture, 2002  
Event Dedication, Iowa State University Block & Bridle Club Little North American Showmanship Competition, 2002  
Outstanding Faculty Member, VEISHEA, 2000  
Outstanding Achievement in Teaching Award, Iowa State University College of Agriculture, 1999  
Teacher Fellow, National Association of Colleges and Teachers of Agriculture (NACTA), 1998  
Outstanding Teacher Award, Midwest Section of the American Society of Animal Science, 1998  
Honorary Member, Iowa State University Block & Bridle Club, 1992  
Outstanding Young Men of America, 1988  
University of Minnesota Outstanding Alumnus Under Age 40, 1987  
UMW Alumni Association Personal Achievement Award, 1987  
International Youth in Achievement, 1982

### **IV. PROFESSIONAL SOCIETY MEMBERSHIPS**

American Dairy Science Association (1995-1998; 2015-present)  
American Embryo Transfer Association (2000 – present)  
American Society of Animal Science (1982 – present)  
Association for Applied Animal Andrology (2012 – 2014)  
Gamma Sigma Delta Honor Society for Agriculture (1982 – present)  
International Embryo Transfer Society (1985 – present)  
National Academic Advising Association (2012 – 2014)  
North American College and Teachers of Agriculture (1985 – present)  
Society for Cryobiology (2019-present)

## V. PUBLICATIONS

### A. Peer-Reviewed

1. Benaissa, MH, N Mimoune, B Faye, Y Bentría, FZ Mimouni, **CR Youngs**, and R Kaidi. 2021. First serological evidence of BHV-1 virus in Algerian dromedary camels: Seroprevalence and associated risk factors. *Comparative Immunology, Microbiology, and Infectious Diseases* 76:101638, <https://doi.org/10.1016/j.cimid.2021.101638>
2. Ibishi L, A Musliu, B Mehmedi, A Rexhepi, **CR Youngs**, and B Behluli. 2021. Economic losses due to clinical lameness in dairy cattle. *Veterinarska Stanica* (accepted for publication May 10, 2021).
3. Valenzuela S, Benites RM, Moscoso J, **Youngs CR**, and Gomez-Quispe O. 2021. Impact of cria protection strategy on post-natal survival and growth of alpacas (*Vicugna pacos*). *Veterinary and Animal Science* 11:100162 <https://doi.org/10.1016/j.vas.2020.100162>
4. Whitaker BD, WR Lamberson, MF Smith, BS Walters, and **CR Youngs**. 2021. What best animal science teachers do. *Translational Animal Science* 5:1-6,txaa223, <https://doi.org/10.1093/tas/txaa223>
5. Benaissa MH, Y Bentría, N Mimoune, T Kernif, A Boukhelkhal, **CR Youngs**, R Kaidi, B Faye, and Y Halis. 2020. Seroprevalence and risk factors for *Trypanosoma evansi*, the causative agent of surra, in the dromedary camel (*Camelus dromedarius*) population in southeastern Algeria. *Onderstepoort Journal of Veterinary Research* 87(1), a1891. <https://doi.org/10.4102/ojvr.v87i1.1891>
6. Benaissa MH, N Mimoune, **CR Youngs**, R Kaidi, and B Faye. 2020. First report of *Chlamydophila abortus* infection in the dromedary camel (*Camelus dromedarius*) population in eastern Algeria. *Comparative Immunology, Microbiology and Infectious Diseases* 73 (2020) 101557, <https://doi.org/10.1016/j.cimid.2020.101557>
7. Lutz JC, SL Johnson, KJ Duprey, PJ Taylor, HW Vivanco, DP Salazar, MM Gonzales, and **CR Youngs**. 2020. Birth of a live cria after transfer of a vitrified-warmed alpaca (*Vicugna pacos*) preimplantation embryo. *Frontiers in Veterinary Science* 7:581877, <https://doi.org/10.3389/fvets.2020.581877>
8. Olagaray KE, BJ Bradford, LM Sordillom, JC Gandy, LK Mamedova, TH Swartz, TD Jackson, EK Persoon, CS Shugart, and **CR Youngs**. 2020. Postpartum meloxicam administration alters plasma haptoglobin, polyunsaturated fatty acid, and oxylipid concentrations in postpartum ewes. *Journal of Animal Science and Biotechnology* 11:68 <https://doi.org/10.1186/s40104-020-00473-y>

9. Belala R, L Briand-Amirat, A Martinot, C Thorin, S Michaud, S Desherces, **CR Youngs**, and D Bencharif. 2019. A comparison of liquid and lyophilized egg yolk plasma to low density lipoproteins for freezing of canine spermatozoa. *Reprod. Dom. Anim.* 54(8):1131-1138 <https://doi.org/10.1111/rda.13476>.
10. Elshazly AG and **CR Youngs**. 2019. Feasibility of utilizing advanced reproductive technologies for sheep breeding in Egypt. Part 1. Genetic and nutritional resources. *Egyptian Journal of Sheep & Goat Sciences* 14(1):39-52. [https://ejsgs.journals.ekb.eg/article\\_33235\\_c2fd1cc6b968bbc2124356222fc929cf.pdf](https://ejsgs.journals.ekb.eg/article_33235_c2fd1cc6b968bbc2124356222fc929cf.pdf)
11. Gómez-Quispe OE, GA Gutierrez-Reynoso, A Gallegos-Cardenas, FG Fumuso, M Asparrin, M Asparrin-Del Carpio, CW Jara, D Salazar-Ponce, M Miguel-Gonzales, **CR Youngs**, HW Vivanco. 2019. Motility and recovery of alpaca (*Vicugna pacos*) spermatozoa after centrifugation in a density gradient solution. *Iranian Journal of Veterinary Research* 20(2):96-104. [http://ijvr.shirazu.ac.ir/article\\_5257\\_80ac7e09a2bbc52a890720d283c01227.pdf](http://ijvr.shirazu.ac.ir/article_5257_80ac7e09a2bbc52a890720d283c01227.pdf)
12. Long JA, HD Blackburn, A Martin, FG Silversides, RL Taylor, Jr, and **CR Youngs**. 2019. Protecting Food Animal Gene Pools for future generations – a paper in the series on The Need for Agricultural Innovation to Sustainably Feed the World by 2050. *Council on Agricultural Science and Technology (CAST) Issue Paper 65*, 24 pages.
13. Degefa T, A Lemma, E Demissie, S Ali, A Funga, and **CR Youngs**. 2018. Superovulation response and *in vivo* embryo production potential of Boran cows in Ethiopia. *Ethiop. J. Agric. Sci.* 28(1):71-80.
14. **CR Youngs**. 2018. Embryo transfer technologies in pigs In (H. Niemann and C. Wryzenski, Eds.) *Animal Biotechnology 1: Reproductive Biotechnologies*, Springer, pp 167- 178.
15. Behluli B, A Musliu, K Sherifi, **CR Youngs**, and A Rexhepi. 2017. Risk factors for occurrence of displaced abomasum and their relation to nutritional management of Holstein dairy cattle. *Veterinarski Arhiv* 87(4):419-430. DOI: 10.24099/vet.arhiv.a60216
16. Benaissa MH, S Ansel, A Mohamed-Cherif, K Benfodil, D Khelef, **CR Youngs**, R Kaidi, and K Ait-Oudhia. 2017. Seroprevalence and risk factors for *Coxiella burnetii*, the causative agent of Q fever in the dromedary camel (*Camelus dromedarius*) population in Algeria. *Onderstepoort Journal of Veterinary Research* 84(1):a1461. <https://doi.org/10.4102/ojvr.v84i1.1461>
17. Benaissa MH, B Faye, **CR Youngs**, R Kaidi. 2016. Slaughterhouse survey of culled female camels (*Camelus dromedarius*) in southeast Algeria: Fetal wastage and pregnancy characteristics. *Emirates Journal of Food and Agriculture* 28(11):805-812. doi:10.9755/ejfa.2016-06-735.

18. Degefa T, A Lemma, J Jemal, G Mamo, A Tegegne, **CR Youngs**. 2016. Ovarian follicular dynamics in purebred and crossbred Boran cows in Ethiopia. *African Journal of Biotechnology* 15(33):1763-1770. DOI: 10.5897/AJB2016.15267
19. Degefa T, A Lemma, A Tegegne, **CR Youngs**. 2016. Effects of genotype and FSH dose on estrus and ovarian response of Boran and Boran x Holstein Friesian cows in Ethiopia. *Livestock Research for Rural Development* 28(9):article 169. <http://www.lrrd.org/lrrd28/9/dege28169.html>
20. Madison RJ, LE Evans, and **CR Youngs**. 2013. The effect of 2-hydroxypropyl- $\beta$ -cyclodextrin on post-thaw parameters of cryopreserved jack and stallion semen. *Journal of Equine Veterinary Science* 33(4):272-278. DOI: 10.1016/j.jevs.2012.07.021
21. Manthe BN and **CR Youngs**. 2013. An overview of vitamin requirements of the domestic horse. *Natural Sciences Education* 42(1):179-184.
22. **Youngs CR** and LE Evans. 2012. Reproductive ultrasonography: Application in farm animal species. In (DR Heldman, D Hoover, MB Wheeler, Eds). *Encyclopedia of Biotechnology in Agriculture and Food* DOI: 10.1081/E-EBAF-120047343.
23. **Youngs CR**. 2011. Cryopreservation of preimplantation embryos of cattle, sheep, and goats. *Journal of Visualized Experiments* 54 <http://www.jove.com/details.php?id=2764> doi: 10.3791/2764.
24. **Youngs CR**. 2011. Embryo cryopreservation in food animal species. In (DR Heldman, MB Wheeler, DG Hoover, Eds.) *Encyclopedia of Biotechnology in Agriculture and Food* DOI: 10.1081/E-EBAF-120047342.
25. **Youngs CR**, SP Leibo, and RA Godke. 2011. Embryo cryopreservation in domestic mammalian livestock species. In (D. Hemming, Ed.) *Animal Science Reviews 2010*, CABI, Oxfordshire, UK, pp. 245-256.
26. Jepsen RJ, LE Evans, and **CR Youngs**. 2010. Use of direct thaw insemination to establish pregnancies with frozen-thawed semen from a Standard jack. *Journal of Equine Veterinary Science* 30(11):651-656 doi:10.1016/j.jevs.2010.10.001
27. **Youngs CR** and RA Godke. 2010. Cattle embryo transfer. In (DR Heldman, MB Wheeler, DG Hoover, Eds.) *Encyclopedia of Biotechnology in Agriculture and Food* DOI: 10.1081/E-EBAF-120042308
28. **Youngs CR**, SP Leibo, and RA Godke. 2010. Embryo cryopreservation in domestic mammalian livestock species. *CAB Reviews: Perspectives in Agriculture, Veterinary Science, Nutrition and Natural Resources* Vol. 5, No. 60, 11 pages. doi:10.1079/PAVSNNR20105060

29. **Youngs CR** and AE Freeman. 2005. Breeding (animal). In *McGraw-Hill Encyclopedia of Science & Technology* <http://www.accessscience.com>, DOI 10.1036/1097-8542.095000.
30. Godke RA and **CR Youngs**. 2004. Biotechnology: Embryo Technology for Cattle. In (W. Pond, Ed.) *Encyclopedia of Animal Science* (on-line). Marcel Dekker, New York, NY, DOI:10.1081/E-EAS 120019483, pp. 136-138.
31. **Youngs CR**. 2001. Factors influencing the success of embryo transfer in the pig. *Theriogenology* 56:1311-1320.
32. Geshi M, **CR Youngs**, and T. Nagai. 1999. Addition of cysteamine to a serum-free maturation medium enhances in vitro development of IVM-IVF bovine oocytes. *J. Mamm. Ova Res.* 16:135-140.
33. Caamaño JN, ZY Ryoo, and **CR Youngs**. 1998. Promotion of development of bovine embryos produced in vitro by addition of cysteine and  $\beta$ -mercaptoethanol to a chemically defined culture system. *J. Dairy Sci.* 81:369-374.
34. Wilson ME, NJ Biensen, **CR Youngs** and SP Ford. 1998. Development of Meishan and Yorkshire littermate conceptuses in either a Meishan or Yorkshire uterine environment to day 90 of gestation and to term. *Biol. Reprod.* 58:905-910.
35. Caamaño JN, ZY Ryoo, JA Thomas, and **CR Youngs**. 1996.  $\beta$ -mercaptoethanol enhances blastocyst formation rate of bovine in vitro matured/in vitro fertilized embryos. *Biol. Reprod.* 55:1179-1184.
36. Kaminski MA, SP Ford, **CR Youngs**, and AJ Conley. 1996. Lack of effect of sex on pig embryonic development in vivo. *J. Reprod. Fertil.* 106:107-110.
37. Rivera RM, **CR Youngs**, and SP Ford. 1996. A comparison of the number of inner cell mass and trophectoderm cells of preimplantation Meishan and Yorkshire pig embryos at similar developmental stages. *J. Reprod. Fertil.* 106:111-116.
38. Weber PK and **CR Youngs**. 1994. Investigation of cryoprotectant toxicity to porcine embryos. *Theriogenology* 41:1291-1298.
39. **Youngs CR**, LK Christenson, and SP Ford. 1994. Investigations into the control of litter size in swine: III. A reciprocal embryo transfer study of early conceptus development. *J. Anim. Sci.* 72:725-731.
40. Ford SP and **CR Youngs**. 1993. Early embryonic development in the prolific Meishan pig. *J. Reprod. Fertil. Suppl.* 48: 271-278.
41. McGinnis LK, SC Duplantis Jr, and **CR Youngs**. 1993. Cryopreservation of sheep embryos using ethylene glycol. *Anim. Reprod. Sci.* 30:273-280.

42. **Youngs CR**, SP Ford, LK McGinnis, and LH Anderson. 1993. Investigations into the control of litter size in swine: I. Comparative studies on in vitro development of Meishan and Yorkshire preimplantation embryos. *J. Anim. Sci.* 71:1561-1565.
43. McGinnis LK and **CR Youngs**. 1992. In vitro development of ovine embryos in CZB medium. *Theriogenology* 37:559-569.
44. Pendleton RJ, **CR Youngs**, RW Rorie, SH Pool, MA Memon, and RA Godke. 1992. Follicle stimulating hormone versus pregnant mare serum gonadotropin for superovulation of dairy goats. *Small Rumin. Res.* 8:217-224.
45. Pendleton RJ, **CR Youngs**, RW Rorie, SH Pool, MA Memon, and RA Godke. 1992. Comparison of fluorogestone acetate sponges with norgestomet implants for induction of estrus and ovulation in anestrous dairy goats. *Small Rum. Res.* 8:269-273.
46. **Youngs CR** and PK Weber. 1992. A survey of Iowa sheep flocks for seroprevalence of *Brucella ovis*. *Sheep Res. J.* 8:73-76.
47. Rorie RW, RJ Pendleton, SH Pool, **CR Youngs**, and RA Godke. 1987. The viability of bovine 'half' embryos produced before and after liquid nitrogen (LN<sub>2</sub>) freezing. In *Future Aspects of Human in Vitro Fertilization* (W. Feichtinger and P. Kemeter, Eds.), Springer-Verlag, Heidelberg, West Germany, pp. 26-35.

#### **B. Invited papers (non-refereed)**

1. **Youngs CR**. 2016. Modern reproductive technologies to improve cattle production. *Ceiba* 54(1):31-40, DOI: 10.5377/ceiba.v54i1.2775
2. **Youngs CR**. 2015. Importance of animal production in global food security [Importancia de la producción animal en la seguridad alimentaria mundial]. *Proceedings of the 38th Annual Scientific Meeting of the Peruvian Association of Animal Production*, October 7-9, Ayacucho, Peru, pp. 14-17.
3. **Youngs CR** and KL Klemesrud. 2015. Update on bovine pregnancy testing technologies [Actualización sobre tecnologías de pruebas de gestación bovina]. *Proceedings of the 38th Annual Scientific Meeting of the Peruvian Association of Animal Production*, October 7-9, Ayacucho, Peru, pp. 23-28.
4. **Youngs CR**, HW Vivanco-Mackie, DP Salazar, M Miguel, M Asparrin. 2015. Recent research on the cryopreservation of preimplantation embryos from South American camelids [Investigaciones recientes sobre la criopreservación de embriones de preimplantación de camélidos sudamericanos]. *Proceedings of the 38th Annual Scientific Meeting of the*



- Peruvian Association of Animal Production, October 7-9, Ayacucho, Peru, pp. 18-22.
5. **Youngs CR.** 2014. Embryo development and survival in ruminant livestock species. In (G. Gutierrez and M Rothschild, Eds.). Proc. International Seminar on Advances in Animal Production in Latin America, November 5-7, 2014, Lima Peru, pp. 40-51
  6. **Youngs CR.** 2007. Embryo transfer in beef cattle. Proc. Applied Reproductive Strategies in Beef Cattle, September 11-12, Billings, MT, pp. 267-284.  
[http://beefrepro.unl.edu/proceedings/2007billings/18\\_bmt\\_et\\_youngs.pdf](http://beefrepro.unl.edu/proceedings/2007billings/18_bmt_et_youngs.pdf)
  7. **Youngs CR.** 2007. Methods for disease-free introduction of swine germplasm resources. Proc. American Association of Swine Veterinarians 38<sup>th</sup> Ann. Mtg. Seminar #9 Reproduction: Optimizing Genetics, Health, and Production, Orlando, FL, pp. 7-12.
  8. **Youngs CR.** 2001. Sheep and goat reproduction. Proc. Student American Veterinary Medical Association Symposium, March 8-10, Ames, IA, pp. 122-128.
  9. **Youngs CR.** 2001. Cattle breeding in the 21<sup>st</sup> century. Proc. 30<sup>th</sup> Ann. Cornbelt Cow-Calf Conference, February 24, Ottumwa, IA, pp. 1-9.
  10. **Youngs CR.** 1997. Genetic testing for susceptibility to scrapie disease. Proc. 115<sup>th</sup> Ann. Mtg. Iowa Veterinary Medical Association, Des Moines, IA, pp. 359-366.
  11. **Youngs CR.** 1996. Use of embryo transfer to identify a potential strategy for increased litter size in the pig. Proc. Symposium on Animal Biotechnology, March 12, Tsukuba, JAPAN, pp. 27-34.
  12. **Youngs CR.** 1993. Progress toward eradication of ovine progressive pneumonia from the Iowa State University teaching flock. Proc. 111<sup>th</sup> Ann. Mtg. Iowa Veterinary Medical Association, Des Moines, IA, pp. 51-54.
  13. **Youngs CR.** 1992. Utilization of norgestomet (Syncro Mate B®) implants for out of season breeding of sheep. Proc. Out of Season Breeding Symposium, Ames, IA, pp. 115-122.
  14. **Youngs CR** and DC Beitz. 1991. Current developments in transgenic research in domestic farm animals. In Recent Developments of Agricultural Biotechnology in the World, Tsukuba, JAPAN, pp. 2-15.
  15. **Youngs CR.** 1990. Nutrition of the ewe and its impact on flock health. Proc. 108<sup>th</sup> Ann. Mtg. Iowa Veterinary Medical Association, Des Moines, IA, pp. 151-157.

### **C. Books and chapters in books (non-refereed)**

1. Jahnke M, **CR Youngs**, RJ Mapletoft, and GA Bó. 2021. Superovulation in cattle. In (RM Hopper, Ed) *Bovine Reproduction*, 2<sup>nd</sup> edition (chapter 82, in press).
2. MM Jahnke, JK West, and **CR Youngs**. 2021. Evaluation of in vivo-derived bovine embryos. In (RM Hopper, Ed) *Bovine Reproduction*, 2nd edition (chapter 85, in press).
3. Jahnke MM, JK West, and **CR Youngs**. 2015. Evaluation of in vivo derived bovine embryos. In (RM Hopper, Ed) *Bovine Reproduction*, Wiley & Sons, Hoboken NJ, pp.733-748.
4. Godke RA, M Sansinena, and **CR Youngs**. 2014. Assisted reproductive technologies and embryo culture methods for farm animals. In (CA Pinkert, Ed.) *Transgenic Animal Technology: A Laboratory Handbook, 3<sup>rd</sup> Ed.*, Elsevier, London, pp. 581-638. <http://dx.doi.org/10.1016/B978-0-12-410490-7.00022-0>
5. Godke, RA and **CR Youngs**. 2011. Cattle: Embryo Technology. In (WG Pond and AW Bell, Eds). *Encyclopedia of Animal Science, 2<sup>nd</sup> Ed.* 1:193-195.
6. Godke RA, M Sansinena, and **CR Youngs**. 2002. Assisted reproductive technologies and embryo culture methods for farm animals. In (C.A. Pinkert, Ed.) *Transgenic Animal Technology: A Laboratory Handbook, 2nd Ed.* Academic Press, San Diego, CA, pp. 513-568.
7. **Youngs CR**, Ed. 2001. Proceedings of the International Conference Commemorating the 50<sup>th</sup> Anniversary of the First Successful Embryo Transfer in the Pig, Kiev, Ukraine. *Theriogenology* 56(8):1285-1376. (special issue).
8. Godke RA and **CR Youngs**, Eds. 1993. *Proceedings of the Symposium on Recent Developments in Embryo Biotechnology for Farm Animals*.
9. **Youngs CR**. 1992. Laparoscopic ovarian examination in sheep and goats. In (P.J. Dziuk and M.B. Wheeler, Eds) *Handbook of Methods for Study of Reproductive Physiology in Domestic Animals*, pp. II:D,1.
10. **Youngs CR**. 1992. Dissociative anesthesia for sheep and goats. In (P.J. Dziuk and M.B. Wheeler, Eds) *Handbook of Methods for Study of Reproductive Physiology in Domestic Animals*, pp. II:I,3.
11. **Youngs CR**. 1992. Nuclear staining of sheep and pig embryos. In (P.J. Dziuk and M.B. Wheeler, Eds) *Handbook of Methods for Study of Reproductive Physiology in Domestic Animals*, pp. V:B,4.

#### **D. Technical publications (non-refereed)**

1. **Youngs CR**. 2020. Structured class discussion within a learning management system to facilitate student learning (teaching tip). NACTA Journal [https://www.nactateachers.org/images/TeachingTips/2020/TT\\_2020-0221\\_FOR\\_WEB.pdf](https://www.nactateachers.org/images/TeachingTips/2020/TT_2020-0221_FOR_WEB.pdf)
2. **Youngs CR** and A Basha. 2018. International engagement to enhance global food security: An example in the republic of Kosova. *Iowa State University Animal Industry Report*, AS 664, ASL R3206, 4 pp., [http://lib.dr.iastate.edu/ans\\_air/vol664/iss1/4](http://lib.dr.iastate.edu/ans_air/vol664/iss1/4).
3. **Youngs CR**, SL Patten, CD Krebill, KL Klemesrud, ZA Thompson, BJ Duran, and JR Juarez. 2018. Preliminary evaluation of administration site of two manufacturer's reproductive hormones on induction of ovulation in postpartum dairy cows. *Iowa State University Animal Industry Report*, AS 664, ASL R3206, 3 pp., [http://lib.dr.iastate.edu/ans\\_air/vol664/iss1/32](http://lib.dr.iastate.edu/ans_air/vol664/iss1/32).
4. Degefa T, A Lemma, A Tegegne, and **CR Youngs**. 2016. Superovulation of Boran cattle in Ethiopia: A preliminary report. *Iowa State University Animal Industry Report*, AS 662, ASL R3067, [http://lib.dr.iastate.edu/ans\\_air/vol662/iss1/28](http://lib.dr.iastate.edu/ans_air/vol662/iss1/28)
5. Sommer MM and **CR Youngs**. 2016. Impact of embryo transfer technology on the production of artificial insemination sires for the US dairy cattle industry. *Iowa State University Animal Industry Report*, AS 662, ASL R3072, [http://lib.dr.iastate.edu/ans\\_air/vol662/iss1/33](http://lib.dr.iastate.edu/ans_air/vol662/iss1/33)
6. Vivanco, W, D Ponce, M Miguel, **C Youngs**, E Huamán, S. León, M Asparrin. 2014. Repeatability of the ovarian response and embryo production in superovulated Huacaya alpacas. *Spermova* 4(1):77-79.
7. **Youngs CR**, MD Kenealy, PL Spike, B Driscoll, H Swanbom, MS Retallick, M Gaul. 2012. Experiential learning opportunities for career preparation of animal science students. *Iowa State University Animal Industry Report*, AS Leaflet R2745, 4 pp.
8. **Youngs CR**, J Sun, D Whalen, G Arthur, MJ Gonzales. 2012. Exploration of MAP-Works® as a tool to facilitate success of first-year college of agriculture and life sciences students. *Iowa State University Animal Industry Report*, AS Leaflet R2746, 4 pp.
9. **Youngs CR**. 2011. Using topics in animal science as a platform to teach bioethics to university honors program students. *Iowa State University Animal Industry Report*, AS Leaflet R2666, 3 pp.

10. Benton J, PA Miller-Auwerda, **CR Youngs**, LE Evans. 2010. Induction of ovulation and LH response in cyclic mares treated with gonadorelin diacetate tetrahydrate. *Iowa State University Animal Industry Report*. AS Leaflet 2535, 3 pp.
11. **Youngs CR**. 2010. Book review: Illustrated anatomy of the bovine male and female reproductive tracts. *NACTA Journal* 54(3):53.
12. **Youngs CR**. 2010. Development of a course in embryo transfer and related technologies. *Iowa State University Animal Industry Report*, AS Leaflet R2574, 2 pp.
13. **Youngs CR**. 2007. IETS Foundation Update. *Embryo Transfer Newsletter* 25(2):19.
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#### **E. Peer-reviewed abstracts**

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#### **F. Abstracts (not peer-reviewed)**

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2. Bezugly N, **CR Youngs**, A Medvedovsky, and E Valigura. 1995. Osmotic composition of pig ova and embryos. *Proc. 11th Scientific Meeting of the European Embryo Transfer Association*, p. 128.
3. Ford SP and **CR Youngs**. 1993. Early embryonic development in the prolific Meishan pig. *Proc. 4th International Conference on Pig Reproduction*, p. 113.
4. Onishi A, LK McGinnis, and **CR Youngs**. 1993. Study on isolation of embryonic stem cells from the pig. *Proc. 87th Annual Mtg. Japanese Society of Zootechnical Science*, p. 310.
5. **Youngs CR**, LK McGinnis, and SP Ford. 1993. In vitro development of Chinese Meishan pig embryos. In (B.D. Bavister, Ed.) *Preimplantation Embryo Development*, Springer-Verlag, New York, p. 338.
6. **Youngs CR**, LK McGinnis, and SP Ford. 1991. In vitro development of Chinese Meishan pig embryos. *Proc. Symp. on Preimplantation Embryo Development*, p. 74.
7. Casey PL, DC DeVore, **CR Youngs**, and RA Godke. 1988. Using image analysis to evaluate different morphological stages of porcine embryos. *Proc. Louisiana Acad. of Sci.* 51:61.
8. Casey PL, KE Wiemer, DC DeVore, **CR Youngs**, and RA Godke. 1988. A comparison of morphological measurements of horse and pony embryos. *Proc. Louisiana Acad. of Sci.* 51:60.
9. Pendleton RJ, **CR Youngs**, RW Rorie, SH Pool, MA Memon, and RA Godke. 1987. Superovulation of crossbred dairy goat using follicle stimulating hormone. *Proc. IV International Conference on Goat Production and Disease*, March 8-13, Brasilia, Brazil, 2:1490-1491.



10. Rorie RW, RJ Pendleton, **CR Youngs**, MA Memon, and RA Godke. 1987  
Micromanipulation of goat embryos to produce genetically identical offspring.  
*Proc. IV International Conference on Goat Production and Disease*, March  
8-13, Brasilia, Brazil, 2:1491.
11. Kim HN, RW Rorie, **CR Youngs**, and RA Godke. 1986. Superovulation of beef  
donors with PMSG and anti-PMSG. *Proc. Louisiana Academy of Sciences*  
49:58.

### **G. Popular Press Articles (not peer-reviewed)**

1. **Youngs CR**. 2005. An update regarding bovine embryo transfer services in  
Iowa. *Iowa State Dairy Association Newsletter*, July issue, pp. 3-4.
2. **Youngs CR**. 2002. Synchronization of estrus in dairy cattle using prostaglandin  
F<sub>2α</sub> (Part I). *Iowa Jersey Today* 8(2):10.
3. **Youngs CR**. 2002. Synchronization of estrus in dairy cattle using prostaglandin  
F<sub>2α</sub> (Part II). *Iowa Jersey Today* 8(3):9-10.
4. **Youngs CR**. 2002. The magnificent seven hormones controlling reproduction in  
the cow (Part II). *Iowa Jersey Today* 8(1):5-6.
5. **Youngs CR**. 2001. The magnificent seven... hormones controlling reproduction  
in the cow (Part I). *Iowa Jersey Today* 7(3):6.
6. **Youngs CR**. 2001. A new millennium for the Jersey breed. *Iowa Jersey Today*  
7(2):5.
7. **Youngs CR**. 2001. Use of a vaginal mucus electrical resistance probe as a  
breeding tool for dairy cattle. *Swiss Valley Dairyman*, November issue, pp.  
6-7.
8. **Youngs CR**. 1999. Reproductive management for profitable sheep production.  
*The Shepherd* 44(5):16-20.
9. **Youngs CR**. 1999. Artificial insemination of sheep. *The Shepherd* 44(7):34-35.
10. **Youngs CR**. 1997. Statement concerning scrapie. *Hampshire Heartbeat* 5(3):2.
11. **Youngs CR**. 1996. Scrapie disease of sheep. *Lamb & Wool*, August issue, pp.  
2 & 6.
12. **Youngs CR**. 1996. Scrapie disease of sheep. *The Shepherd* 41(10):18-20.

13. Morrill DG and **CR Youngs**. 1995. ISU Sheep Teaching Farm. *Lamb & Wool*, March issue, p. 2.
14. **Youngs, CR**. 1995. Synchronized lambing: schedule the weekend and go to it! *The Shepherd*
15. **Youngs CR**. 1993. Improving sheep reproductive efficiency. *Sheep Breeder and Sheepman* 113(10):40,48-51.
16. **Youngs CR**. 1993. Out-of-season breeding technology. *Sheep!* 14(3):32-33.
17. **Youngs CR**. 1993. When should you breed your ewes? *Lamb & Wool*, July issue, pp. 1,4.
18. **Youngs CR**. 1993. Breeding season management. *Lamb & Wool*, September issue, pp. 1-2.
19. **Youngs CR**. 1993. When should you breed your ewes? *Jacob Sheep Breeders Association Newsletter* 4(3):24.
20. **Youngs CR**. 1991. Are injectable vitamins necessary for newborn lambs? *Lamb and Wool* 1(2):1.
21. **Youngs CR**. 1991. No evidence of ram epididymitis in Iowa sheep flocks. *Lamb and Wool* 1(8):1.
22. **Youngs CR**. 1991. Shearing ewes before lambing. *Lamb and Wool* 1(10):1,7.
23. **Youngs CR**. 1990. Methods of mastitis control in ewes. *The Shepherd* 35(1):38-39.
24. **Youngs CR**. 1990. Congenital defects in lambs associated with Cache Valley Virus. *The Shepherd* 35(3):47.
25. **Youngs CR**. 1990. Gene mapping in sheep. *The Shepherd* 35(6):28.
26. **Youngs CR**. 1990. Killing the scrapie agent. *The Shepherd* 35(9):29.
27. **Youngs CR**. 1989. *Brucella ovis* as a cause of ram epididymitis. *The Shepherd* 34(2):32.
28. **Youngs CR**. 1989. Scrapie: A contagious disease of sheep. *The Shepherd* 34(6):16-17.
29. **Youngs CR**. 1989. Nutritional factors affecting milk yield in ewes. *The Shepherd* 34(9):24-25.

30. **Youngs CR.** 1989. Economic aspects of pregnancy diagnosis in ewes. *The Shepherd* 34(11):42.
31. **Youngs CR.** 1988. Shearing before versus after lambing. *The Shepherd* 33(2):32-33.
32. **Youngs CR.** 1988. Cryopreservation of sheep embryos. *The Shepherd* 33(4):30-31.
33. **Youngs CR.** 1988. The use of sodium lauryl sulfate for foot rot control in sheep. *The Shepherd* 33(7):32.
34. **Youngs CR.** 1988. Laparoscopic artificial insemination in sheep. *The Shepherd* 33(9):34.
35. **Youngs CR.** 1988. Abortion in sheep caused by *Campylobacter jejuni*. *The Shepherd* 33(12):23.
36. **Youngs CR.** 1987. Scrapie disease in sheep. *The Shepherd* 32(2):26-27.
37. **Youngs CR.** 1987. Nuclear transplantation in sheep. *The Shepherd* 32(5):11.
38. **Youngs CR.** 1987. Selenium supplementation in sheep. *The Shepherd* 32(8):26.
39. **Youngs CR.** 1987. Resistance of sheep to internal parasites. *The Shepherd* 32(11):34.
40. Pendleton RJ, **CR Youngs**, RW Rorie, MA Memon, and RA Godke. 1987. The birth of split-embryo goat offspring in Louisiana. *Dairy Goat Journal* 65(1):58-59.
41. Pendleton RJ, **CR Youngs**, RW Rorie, SH Pool, MA Memon, and RA Godke. 1987. Offspring from frozen goat embryos born in Louisiana. *Dairy Goat Journal* 65(3):54,61.
42. **Youngs CR.** 1984. A new method to increase ovulation rate in sheep. *Sheep Canada Magazine* 9(4):15.

## VI. INVITED PRESENTATIONS

1. University of Prishtina, Prishtina, KOSOVO International Summer University program, Topic: The Impact of COVID-19 on Global Food Security (July 5-16, 2021; one of only 14 courses offered; taught virtually)

2. Instituto Nacional de Innovación Agraria (INIA), Lima, PERU, Topic: Cattle Reproductive Biotechnologies (July 1, 2021; presented virtually)
3. University of Prishtina, Prishtina, KOSOVO, Topic: Genetic improvement trends in the US dairy cattle industry (May 18, 2021)
4. International Embryo Transfer Society annual meeting, New York, New York, USA, Topic: Pregnancy from a vitrified-warmed alpaca preimplantation embryo (January 19, 2020)
5. Lebanese University, Beirut, LEBANON, Topics: bovine artificial insemination and bovine embryo transfer (May 20 – June 4, 2019)
6. LibanVet, Zahle, LEBANON, Topic: Bovine Embryo Transfer (May 20 – June 4, 2019)
7. Ethiopian Institute of Agricultural Research at Debre Zeit, ETHIOPIA, Topic: Use of livestock assisted reproductive technologies to enhance production of animal source foods (July 30, 2018)
8. Ethiopian Institute of Agricultural Research at Holetta, ETHIOPIA Topic: The Importance of Livestock in Attainment of Global Food Security (July 26, 2018)
9. Ethiopian Institute of Agricultural Research, Holetta, ETHIOPIA and Debre Zeit ETHIOPIA , Topic: Bovine ovum pick-up hands-on wet lab (July 24- August 3, 2018)
10. University of Prishtina KOSOVO International Summer University program, Topic: Global Food Security: Now and in the Year 2050 (July 7-22, 2018; one of only 15 courses offered)
11. LibanVet, Zahle, LEBANON, Topic: Reproductive Biotechnologies to Enhance Livestock Production (May 29, 2018)
12. La Molina University, Lima, PERU, Topic: Cryopreservation of Preimplantation Embryos from Cattle, Sheep, and Goats (short course: November 18-24, 2017)
13. Chengdu Research Base for Giant Panda Breeding, Chengdu (China) Topic: Aids for Detection of Estrus in Cattle: Potential Application to Breeding of the Giant Panda (*Ailuropoda melanoleuca*) (November 6, 2017)
14. Winrock International, Dhaka, BANGLADESH, Topic: Bovine Reproductive Technologies for Improvement of Milk Production from Dairy Cattle (June 14, 2017)

15. Rural Development Academy, Bogra, BANGLADESH, Topic: Opportunities for Students from Bangladesh to Study in US Universities (June 6, 2017)
16. Rural Development Academy, Bogra, BANGLADESH, Topic: The Role of Animal Biotechnologies in Global Food Security (June 5, 2017)
17. Group name?; Bogra, BANGLADESH, Topic: Importance of Animal Production in Global Food Security (June 1, 2017)
18. Université Houari Boumediene Alger, Algiers, ALGERIA, Topic: Regulation and Ethical Considerations in Animal Experiments: A US Perspective (May 18, 2017)
19. University Saad Dahlab of Blida 1, Blida, ALGERIA, Topic: Importance of Animal Production in Global Food Security (May 16, 2017)
20. University Saad Dahlab of Blida 1, Blida, ALGERIA, Topic: Opportunities for Algerian Students to Collaborate and Study in US Universities (May 16, 2017)
21. Centre National de l'Insemination Artificielle et de l'Amélioration Génétique (CNIAAG), Algiers, ALGERIA, Topic: Laboratory Practical in Bovine Artificial Insemination (May 15, 2017)
22. Institut National de la Vulgarisation Agricole, Algiers, ALGERIA, Topic: The Bovine Embryo Transfer Industry in the United States (May 15, 2017)
23. Institut National de la Vulgarisation Agricole, Algiers, ALGERIA, Topic: The Bovine Artificial Insemination Industry in the United States (May 15, 2017)
24. Group name?, Djelfa, ALGERIA, Topic: Actions to Reduce the Incidence of Antimicrobial Resistance (May 13, 2017)
25. Group name?, Ain Ouserra, ALGERIA, Topic: Sheep Reproductive Biotechnologies (May 12, 2017)
26. Group name?, Ain Ouserra, ALGERIA, Topic: Actions to Reduce the Incidence of Antimicrobial Resistance (May 12, 2017)
27. University Saad Dahlab of Blida 1, Blida, ALGERIA, Topic: Reproductive Biotechnologies to Enhance Livestock Production (May 11, 2017)
28. Instituto Nacional de Innovacion Agraria (INIA) Santa Ana Research Station, Huancayo, PERU, Topic: Cryopreservation of ruminant livestock embryos (March 23, 2016)

29. Ensminger School, The Future of Cattle Production in Central America, Zamorano University, Francisco Morazán, HONDURAS, Topic: Modern Reproductive Technologies to Improve Cattle Production (May 12, 2016).
30. Trakia University, Stara Zagora, BULGARIA, Topic: Reproductive Technologies to Enhance Dairy Cattle Production (May 20, 2016; First-ever US citizen to have travel to Europe funded by the Erasmus+ program)
31. US Department of Agriculture Foreign Agriculture Service, Borlaug Fellowship Program Mentors' Workshop held in Spokane, Washington. Topic: Lessons Learned from Mentoring of Borlaug Fellows from PERU, KOSOVO, ETHIOPIA, and ALGERIA (June 3, 2016).
32. Ross University School of Veterinary Medicine, Basseterre, ST. KITTS WEST INDIES, Topic: Veterinary Medical Loan Repayment Program (VMLRP): A debt relief option for part-time and full-time food animal practitioners (June 20, 2016).
33. Ross University School of Veterinary Medicine, Basseterre, ST. KITTS WEST INDIES, Topic: Bovine embryo transfer & related technologies: Current state of the art (June 21, 2016).
34. Ross University School of Veterinary Medicine, Basseterre, ST. KITTS WEST INDIES, Topic: Professionalism in veterinary medicine: Perspectives of a state veterinary medical board member (June 22, 2016).
35. University of Prishtina International Summer University, Prishtina, KOSOVO, Topic: "Global Food Security: Now and in the year 2050", One of only 11 courses selected in a global competitive process (July 4-15, 2016)
36. University of Iowa Provost's Global Forum (held in Des Moines, Iowa); Topic: The Role of Iowa in KOSOVO's Path to Independence" (October 15, 2016)
37. Peruvian Association of Animal Production Pre-Conference Workshop on Collection, Vitrification, and Transfer of Bovine Embryos, Ayacucho, PERU, Topic: Factors Influencing the Success of Bovine Embryo Transfer (October 5, 2015)
38. Peruvian Association of Animal Production Pre-Conference Wet Lab on Collection, Vitrification, and Transfer of Bovine Embryos, Ayacucho, PERU, Topic: Non-surgical Bovine Embryo Collection (October 6, 2015)
39. Peruvian Association of Animal Production annual conference, Ayacucho, PERU, Topic: Cryopreservation of Livestock Preimplantation Embryos: Principles and Applications. (October 7, 2015)

40. Peruvian Association of Animal Production annual conference, Ayacucho, PERU, Topic: Importance of Animal Production in Global Food Security. (October 7, 2015)
41. Peruvian Association of Animal Production annual conference, Ayacucho, PERU, Topic: Update on Bovine Pregnancy Testing Technologies. (October 8, 2015)
42. Peruvian Association of Animal Production annual conference, Ayacucho, PERU, Topic: Recent Research on the Cryopreservation of Preimplantation Embryos from South American Camelids. (October 9, 2015)
43. Topic: MAP-Works® role in larger strategic initiatives: Understanding utilization of MAP-Works® to improve engagement with first-year students. Mastering MAP-Works® Summer Conference.
44. University of Prishtina International Summer University, Prishtina, KOSOVO; Topic: Feeding the World in the Year 2050: The Potential Role of Kosovo and Other Balkan Nations”, (July 6-17, 2015; only global applicant selected to teach a workshop)
45. Scientific and Technical Research Center for Arid Areas (CRSTRA), Biskra, ALGERIA , Topics: Introduction to Iowa State University, Ruminant Livestock Reproductive Efficiency (May 13, 2015)
46. Scientific and Technical Research Center for Arid Areas (CRSTRA), Biskra, ALGERIA , Topic: Sheep Reproductive Technologies (May 13, 2015)
47. Biophysical Station of CRSTRA, Touggourt, ALGERIA, Topic: Developing a Successful Career as a Research Scientist (May 17, 2015)
48. University of Saad Dahlab, Veterinary Science Department, Blida, ALGERIA, Topics: Introduction to Iowa State University, Bovine Artificial Insemination Industry in the US (May 18, 2015)
49. University of Saad Dahlab, Veterinary Science Department, Blida, ALGERIA, Topic: Bovine Embryo Transfer Industry in the US (May 18, 2015)
50. University of Saad Dahlab, Veterinary Science Department, Blida, ALGERIA, Topic: An Overview of Veterinary Medicine in the US (May 18, 2015)
51. University of Saad Dahlab, Veterinary Science Department, Blida, ALGERIA, Topic: Sheep Reproductive Technologies (May 18, 2015)
52. Ensminger School, La Molina University, Lima, PERU, Topic: Embryo development and survival in ruminant livestock species (November 5, 2014)

53. University of Prishtina International Summer University, Prishtina, KOSOVO, Topic: Assisted Reproductive Technologies: Biological and Ethical Considerations (July 7-18, 2014; 2-week short course).
54. BarCamp Prishtina, Prishtina, KOSOVO, Topic: Paving the Road to Opportunity (July 16, 2014)
55. Iowa State University Center for Excellence in Learning and Teaching (CELT) Award-Winning Faculty Series, Ames, Iowa, Topic: Active Classroom = Engaged Students (February 13, 2014)
56. University of Prishtina International Summer University, Prishtina, KOSOVO, Topic: Reproductive Technologies for Livestock Genetic Improvement (July 22 – August 2, 2013, a 2-week short course)
57. University of Addis Ababa, Addis Ababa, ETHIOPIA, Topic: The Bovine Embryo Transfer Industry in the US: Prospects and Limitations for Technology Transfer in Ethiopia (June 13, 2013)
58. Ethiopian Institute of Agricultural Research, Holetta, ETHIOPIA, Topic: The Bovine Embryo Transfer Industry in the US: Prospects and Limitations for Technology Transfer to Developing Countries (June 12 2013)
59. University of Prishtina, Prishtina, KOSOVO, Topic: Assisted Reproductive Technologies for Dairy Cattle (May 30, 2013)
60. International Symposium on Advances in Dairy Cattle Production, Lima, PERU, Topic: Advances in Reproductive Technologies for Dairy Cattle (May 23, 2013)
61. International trade meeting with Ambassador to KOSOVO, Des Moines, Iowa (April 29, 2013)
62. World Congress of Regenerative Medicine & Stem Cell, Guangzhou, CHINA, Topic: Cryopreservation of Preimplantation Embryos from Livestock Species Used as Biomedical Research Models. (December 4, 2012)
63. Moderator, USDA FAS Borlaug Fellowship Program Roundtable Discussion, Des Moines, IA, (October 16, 2012)
64. Iowa & Kosovo State Partnership Program Workshop, Des Moines, IA, Topic: The Emergence of an Iowa-Kosovo Partnership to Enhance Livestock Productivity in Kosovo (August 17, 2012)
65. Mastering MAP-Works® Summer Conference, Indianapolis, Indiana. Topic: Establishing a MAP-Works® Users' Group for Faculty Academic Advisers (July 19, 2012)



66. Kosovo Veterinary Association, Prishtina, KOSOVO, Topic: An Overview of the Veterinary Medical Profession in the United States and Iowa (May 12, 2012)
67. MAP-Works® Webinar Series, national on-line event, Topic: How to Inspire Faculty to Use MAP-Works® (December 1, 2011)
68. Mastering MAP-Works® Summer Conference, Indianapolis, Indiana. Topic: How to Inspire Faculty: Letting Data Sell MAP-Works® (July 21, 2011)
69. Reproductive Management Workshop for Small Ruminants, Fargo, North Dakota, Topic: Embryo Transfer in Sheep and Goats (November 11, 2010)
70. American Pre-Veterinary Medicine Association regional symposium, Ames, Iowa, Topic: Bovine Embryo Transfer Technologies (November 1, 2008)
71. Peruvian Society for Animal Production, Lima, PERU, Topic: Advances in Animal Reproductive Technologies (October 17, 2008)
72. Peruvian Society for Animal Production, Lima, PERU, Topic: Accelerated and Out of Season Lambing Systems for Sheep (October 16, 2008)
73. Applied Reproductive Strategies in Beef Cattle conference, Billings, Montana, Topic: Embryo Transfer in Beef Cattle (September 12, 2007)
74. American Association of Swine Veterinarians 38<sup>th</sup> Annual Meeting, Seminar #9 Reproduction: Optimizing Genetics, Health, and Production, Orlando, Florida, Topic: Methods for Disease-Free Introduction of Swine Germplasm Resources (March 4, 2007)
75. Beef Seedstock Conference, Ames, Iowa, Topic: Reproductive Technologies in Our Future (December 2, 2004)
76. Iowa Dairy Goat Seminar, Ames, Iowa, Topic: Artificial Insemination of the Dairy Goat (November 1, 2003)
77. Upper Midwest Honors Council, Ames, Iowa, Topic: Genetically Modified Animals (April 5, 2003)
78. Student American Veterinary Medical Association conference, Ames, Iowa, Topic: Sheep and Goat Reproduction (March 9, 2001)
79. Cornbelt Cow-Calf 30<sup>th</sup> Annual Conference (regional conference), Ottumwa, Iowa, Topic: Cattle Breeding for the 21<sup>st</sup> Century (February 24, 2001)
80. Iowa Veterinary Medical Association 115th Annual Meeting, Des Moines, Iowa, Topic: Genetic Testing for Susceptibility to Scrapie Disease of Sheep (January 26, 1997)

81. Institute of Animal Science, Kharkov, UKRAINE, Topic: Advances in Cryopreservation of Porcine Embryos (August 8, 1996)
82. International Congress on Animal Reproduction, Sydney, AUSTRALIA, Topic: Differential Cell Staining of Porcine Embryos (July 3, 1996)
83. Symposium on Animal Biotechnology, Tsukuba, JAPAN, Topic: Use of Embryo Transfer to Identify a Potential Strategy for Increased Litter Size in the Pig (March 12, 1996)
84. International Embryo Transfer Society annual meeting, Salt Lake City, Utah, Topic: Embryo Transfer in the Pig (January 8, 1996)
85. STAFF Institute, Tokyo, JAPAN, Topic: Progress Toward Isolation of Embryonic Stem Cells from the Pig, Sheep, and Cow (February 10, 1995)
86. Kinki University, Nara, JAPAN, Topic: Progress Toward Isolation of Embryonic Stem Cells from the Pig, Sheep, and Cow (February 7, 1995)
87. Institute for Livestock Breeding , Kharkov, UKRAINE, Topic: Cryopreservation of Porcine Preimplantation Embryos: A Progress Report (May 20,1994)
88. Institute for Livestock Breeding , Kharkov, UKRAINE, Topic: An Introduction to Iowa State University (May 19,1994).
89. Nippon Institute for Biological Sciences, Tokyo, JAPAN, Topic: Progress Toward Isolation of Embryonic Stem Cells from Domestic Livestock Species (March 16, 1994)
90. Kagoshima University, Kagoshima, JAPAN, Topic: Prospects for Isolation of Embryonic Stem Cells from Livestock Species (March 12, 1993)
91. Iowa Veterinary Medical Association 111th Annual Meeting, Des Moines, Iowa, Topic: Progress Toward Eradication of Ovine Progressive Pneumonia from the Iowa State University Teaching Flock (January 23, 1993)
92. Out of Season Breeding Symposium (national conference), Ames, Iowa, Topic: Utilization of Norgestomet (Syncro Mate B®) Implants for Out Of Season Breeding of Sheep (June 19-20,1992)
93. Sheep Breeding and Feeding for Profit Symposium (regional conference), Waterloo, Iowa, Topic: Preparation for the Sheep Breeding Season (April 4, 1992)
94. Symposium: Recent Developments of Agricultural Biotechnology in the World, Tsukuba, JAPAN, Topic: Current Developments in Transgenic Research in Domestic Farm Animals (February 20, 1991)

95. Iowa Veterinary Medical Association 108th Annual Meeting, Des Moines, Iowa, Topic: Nutrition of the Ewe and Its Impact on Flock Health (January 29, 1990)
96. Midwest Sheep Reproduction Symposium, Waterloo, Iowa, Topic: Factors Influencing Reproductive Efficiency in Sheep (June 9, 1990)
97. Idaho Academy of Sciences, Moscow, Idaho, Topic: Embryo Splitting to Produce Identical Twins (April 2-4, 1987)

## VII. GRANTS RECEIVED

1. Can vaginal microbiota predict fertility of ewes? Iowa Sheep and Wool Promotion Board. (8/2018 – 5/2020)
2. Development of a study abroad course in Uganda for animal and dairy science students, Iowa State University Council on International Programs, (10/2018-6/2019)
3. Embryo Cryopreservation Research, donation from private individual, (8/2018-open ended).
4. Reproductive Technologies for Indigenous Pigs. United States Department of Agriculture (USDA) Foreign Agriculture Service (FAS) Borlaug Fellowship Program. (8/2017 – 9/2019)
5. ISU-Uganda Program Education and Training Center Site Visit, ISU Foreign Travel Grant. (8/2017-12/2017)
6. Effect of Postpartum Meloxicam Administration to Twin-Lambing Ewes on Ewe Metabolic Status and Lamb Growth. American Sheep Industry Association. (8/2017-7/2018).
7. Characterization of Ovarian Follicular Dynamics, Superovulatory Response, and Quality of In Vivo Produced Embryos from Unimproved Boran (*Bos indicus*) and Boran X Friesian Cattle in Ethiopia. Borlaug LEAP (Leadership Enhancement in Agriculture) Program. (9/2014-8/2015)
8. Artificial Insemination and Embryo Transfer Training- Algeria. United States Department of Agriculture (USDA) Foreign Agriculture Service (FAS) Borlaug Fellowship Program. (7/2014 – 7/2016)
9. Supporting the Establishment of an Agriculture Faculty. Georgian Technical University - Tbilisi, Republic of Georgia (co-investigator with S. Mickelson and others). (4/2014-12/2014)

10. Development of a Study Abroad Travel Course in Peru for Animal Science and Dairy Science Students. Iowa State University Council on International Programs. (2/2013-6/2013)
11. Development of Protocols for Slow Freezing and Vitrification of Alpaca Embryos in Peru. Morris Animal Foundation. (12/2012 – 11/2013)
12. Embryo Transfer Training - Ethiopia. United States Department of Agriculture (USDA) Foreign Agriculture Service (FAS) Borlaug Fellowship Program. (8/2012 – 12/2013)
13. Educational Seminar Funding for the 2012 National Goat Expo. United States Department of Agriculture (USDA) Rural Development. (12/2011 – 12/2012)
14. Embryo Transfer Training - Kosovo. United States Department of Agriculture (USDA) Foreign Agriculture Service (FAS) Borlaug Fellowship Program. (8/2011 – 6/2013)
15. Establishment of a MAP-Works® Users' Group for College of Agriculture and Life Sciences Advisers. Intramural grant from Associate Dean David Acker (co-investigator Denise Hix). (8/2011-6/2012)
16. Responses of Jersey Embryos to Cryoprotective Agents: Unlocking the Reasons for Reduced Cryotolerance of Jersey Preimplantation Embryos. AJCC Research Foundation (co-investigators J.K. West and M.M. Jahnke). (4/01/2007 - 6/30/2009)
17. Embryo Cryopreservation and Embryo Sexing Training – Peru. United States Department of Agriculture (USDA) Foreign Agriculture Service (FAS) Borlaug Fellowship Program. (4/01/2007 - 6/30/2008)
18. Strategies to Increase the Number of FSH-Receptive Follicles at the Initiation of Superovulation in Cattle. TransOva Genetics/IPRT, (1/01/2004-6/30/2005).
19. Transcervical Swine Artificial Insemination Using Frozen Semen and the Gourley Scope. Elite Visions/CATD, (12/98-6/99)
20. Analysis of the Sheep Prion Protein Gene. Iowa Sheep and Wool Promotion Board. (10/97-10/98).
21. Innovative Teaching Grant: Enhancement of AnS 334 Embryo Transfer Laboratory. Intramural grant from Associate Dean Eric Hoiberg. (1/97-6/97).

22. A Survey of Hampshire Sheep to Determine Frequencies of the Prion Protein Alleles. Iowa Sheep and Wool Promotion Board, (07/95-06/96).
23. Increasing Prolificacy in Sheep and Its Impact on Nutritional Needs. Iowa Sheep and Wool Promotion Board. (co-investigator D.G. Morrical) (07/94-06/95)
24. A Comparison of Cryopreservation Techniques for Goat Semen. Genzyme Transgenics Corporation, (10/93-12/94).
25. Effect of Vitamin E and A Supplementation on Embryonic and Fetal Loss in Ewes. Iowa Sheep and Wool Promotion Board (co-investigator D.G. Morrical) (10/93-6/95).
26. Identification, Isolation and Transfer of Genes Regulating Embryo Survival and Litter Size in the Pig. Japanese Ministry of Agriculture, Fisheries, and Forestry. (co-investigator S.P. Ford), (4/93-3/96).
27. Animal Biotechnology: Technology Transfer and Industrial Needs. United States Department of Agriculture (USDA) Cooperative State Research Service (CSRS). (04/92-03/93).
28. Determination of Fetal Loss Via Real-Time Ultrasound. Iowa Sheep and Wool Promotion Board. (co-investigator D.G. Morrical) (9/91-8/93).
29. Increasing Prolificacy in Sheep and Its Impact on Nutritional Needs. Iowa Sheep and Wool Promotion Board. (co-investigator D.G. Morrical) (08/91-08/92).
30. A Survey of Iowa Sheep Flocks for the Prevalence of Ram Epididymitis. Iowa Sheep and Wool Promotion Board (04/91 - 06/92).
31. Seroprevalence of Border Disease Virus and Other Pathogens Associated with Ewe Reproductive Performance. Iowa Sheep and Wool Promotion Board, (co-investigators P.G. Eness and T.P. Sanderson) (04/91 - 06/92).
32. Production of Useful Transgenic Farm Animals. Japanese Ministry of Agriculture, Fisheries, and Forestry, (co-investigators S.P. Ford, M. Nilsen-Hamilton, R.T. Hamilton) (9/90-3/93).
33. Development of Optimal In Vitro Embryo Culture Systems to Facilitate Gene Transfer Techniques in Swine. Iowa Pork Producers Association. (co-investigator S.P. Ford) (06/90-06/91).
34. Development of Vitrification Techniques for Cryopreservation of Porcine Embryos. Iowa State University Research Grants Program (05/90-12/91).
35. Increasing Prolificacy in Sheep and Its Impact on Nutritional Needs. Iowa Sheep and Wool Promotion Board. (co-investigator D.G. Morrical) (04/90-12/91).

36. Evaluation of Alternative Wool Marketing Methods. Iowa Sheep and Wool Promotion Board. (co-investigator D.G. Morrical) (11/89-12/90).
37. The Production of Gestationally Dated Ewes for Fetal Physiology Research. University of Washington, (1989).
38. The Use of Ethylene Glycol for Cryopreservation of Sheep Embryos. Washington Wool Growers Association, (1988).
39. The Use of Decoquinate Supplemented Trace Mineralized Salt for Control of Coccidiosis in Suckling Lambs. Washington Wool Growers Association. (co-investigator W.J. Foreyt) (1988).
40. Reproductive Efficiency in Columbia and Panama Sheep. USDA/ARS (Dubois). (1988).
41. The Use of an Image Analysis System for the Development of an Objective Method for Embryo Viability Assessment. University of Idaho Research Council. (1988).
42. Embryo Engineering to Enhance Idaho's Livestock Industry. State Board of Education Economic Development (1987).
43. Use of Pregnancy Specific Protein B (PSPB) to Determine Early Pregnancy and Fetal Numbers in Sheep. Washington Wool Growers Association (co-investigator R.G. Sasser) (1987).
44. The Efficacy of Totalon® for Anthelmintic Control in Sheep. Washington Wool Growers Association (1987).
45. The Splitting of Morula versus Blastocyst Stage Sheep Embryos for the Production of Monozygotic Twins. University of Idaho Research Council (1987).

#### **VIII. MENTORING OF VISITING SCIENTISTS, POST-DOCTORAL STUDENTS, PRE-DOCTORAL STUDENTS, AND RESEARCH TECHNICIANS**

1. Kayondo Fazhir, post-graduate student from Makerere University (Uganda), specialty: ruminant livestock production (9/2019-10/2019)
2. Xinyao Fan, pre-graduate student from Northeast Agricultural University (China), specialty: livestock and equine management (8/2019-10/2019; co-mentor with Nikki Ferwerda)

3. Ana Maria Gabriela Perez Ancaya, pre-graduate student from Universidad Peruana Cayetano Heredia (Peru), specialty: dairy cattle and poultry management (4/2019)
4. Mohammed Hocine Benaissa, visiting researcher from the Scientific and Technical Research Centre for Arid Areas (CRSTRA), Biska, Algeria, specialty: small ruminant reproduction (9/2014-1/2014).
5. Tamrat Degafa Geleto, visiting scientist from Ethiopian Institute of Agricultural Research, Debre Zeit Research Center; specialty: embryo transfer (9/2012-11/2012)
6. Behluli Behluli, visiting scientist from University of Prishtina (Kosovo); specialty: embryo transfer (9/2011-11/2011)
7. Amalia Gallegos Cardenas, visiting scientist from La Molina University (Peru); specialty: embryo cryopreservation and embryo sexing (6/2007-8/2007)
8. Jian Zhang, visiting researcher from Xinjiang Academy of Animal Science (China); specialty: embryo transfer (10/99-9/00)
9. Shoji Okutsu, visiting professor from Kagoshima University (Japan); specialty: embryo manipulation (3/98-12/98)
10. Galina V. Zhernoklyov, post-doctoral student from the Institute of Animal Science (Ukraine); specialty: embryo cryopreservation (9/97-12/97)
11. Almudena de Arriba Hervas, visiting scientist from the National Institute of Agricultural Investigations (Spain); specialty: pig reproduction (7/97-10/97)
12. Olexandre V. Medvedovsky, post-doctoral student from the Institute of Animal Science (Ukraine); specialty: embryo cryopreservation (2/97-7/97)
13. Masaya Geshi, post-doctoral student from Tohoku National Agricultural Experiment Station (Japan); specialty: reproductive biology (10/94-3/96)
14. Makoto Hirako, post-doctoral student from National Institute of Animal Industry (Japan); specialty: reproductive endocrinology (10/93-10/94)
15. Jae Woong Ryoo, post-doctoral student from Kyungpook National University (Korea); specialty: embryo manipulation (9/93-9/94)
16. Nickolay D. Bezugly, visiting scientist from the Institute for Livestock Breeding (Ukraine); specialty: embryo cryopreservation (9/93-12/93)
17. Yoshinori Tsuchiya, visiting scientist from National Institute of Animal Health (Japan); specialty: gene expression (10/92 - 9/93)

18. Kazunori Mizoshita, visiting scientist from Kagoshima Prefecture Institute of Animal Science (Japan); specialty: embryo transfer (8/92 - 3/93)
19. Akira Onishi, visiting scientist from National Institute of Animal Industry (Japan); specialty: embryo manipulation (9/91 - 7/92)
20. Ann Darling, technician from USDA-Miles City; specialty: embryo culture (3/90)

## IX. RESEARCH RESPONSIBILITIES

### A. GRADUATE STUDENT MENTORING Serving as major professor/co-major professor

#### Iowa State University

Mackenzie Cassas. MS degree in progress

Tyler Mark Grussing. 2018. Effects of Initial GnRH Removal from 5-d CO-Synch + CIDR Protocol on Ovarian Parameters and Fixed Time Artificial Insemination Pregnancy Rates in Beef Cattle. MS in Animal Physiology

Benjamin James Duran. 2018. Investigation into Factors Potentially Influencing the Success of Laparoscopic Artificial Insemination in Sheep, MS in Animal Science.

- Ben received a Graduate College Teaching Excellence Award (spring 2018)
- Ben received the Department of Animal Science Graduate Award for Outstanding Teaching (spring 2018)
- Ben was selected for a Wakonse Teaching Fellowship (May 2017)

Jennifer Anne Ingwerson. 2007. Induction of ovulation and LH response in cyclic mares treated with gonadorelin diacetate tetrahydrate. M.S. in Animal Physiology

Marianna deBarros Moreira. 2005. Strategies to Increase the Number of FSH-Receptive Follicles at the Initiation of Superovulation in Cattle. M.S. in Animal Physiology.

Kristin R. Sieren. 2001. The Use of BoviPure™ for the Separation of X and Y Chromosome-Bearing Bovine Sperm Cells. M.S. in Animal Science (Physiology of Reproduction).

Jennifer E. Armstrong. 1999. M.S. in Interdisciplinary Graduate Studies (non-thesis option).



- José Néstor Caamaño. 1999. Developmental Competence of Oocytes Recovered From Postpartum Cows Using Ultrasound-Guided Follicular Aspiration. PhD in Animal Science (Physiology of Reproduction).
- Michael L. Pugh. 1999. Use of a Vaginal Mucus Resistance Probe to Predict an Insemination Time for Altered Calf Sex Ratios in Beef and Dairy Heifers. M.S. in Animal Science (Animal Production).
- Greg A. Raasch. 1996. The Effect of Supplemental Vitamin E and A on Embryonic and Fetal Loss in Ewes. M.S. in Animal Science (Animal Production).
- José Néstor Caamaño. 1995. Effect of Antioxidants on In Vitro Development of IVM/IVF Bovine Embryos. M.S. in Animal Science (Physiology of Reproduction).
- Lynda K. McGinnis. 1990. In Vitro Culture of Ovine Embryos in CZB Medium. M.S. in Animal Science (Physiology of Reproduction).

University of Idaho

- Samuel Clay Duplantis, Jr. 1989. Bisection of the Bovine Embryo: A Comparison Between Splitting at the Morula and the Blastocyst Stage of Development. M.S. in Animal Science, University of Idaho
- Kriss Anne Hoffman. 1987. The Effect of Follicle Stimulating Hormone in Twice Daily Versus Once Daily Treatments on Norgestomet Synchronized Ewes. M.S. in Animal Science, University of Idaho.

Serving as committee member

- Sarah Jane Humke, PhD in Agricultural Education (in progress)
- Stacey Jo Geerdes. 2019. MS in Agricultural Education
- Colby Redifer. 2018. MS in Animal Science
- Muhammed Walugembe. 2017. PhD in Animal Science
- Elizabeth Ann Sample. 2017. M.S. in Agricultural Education
- Tamrat Degefa Geleto. 2016. PhD in Veterinary Science, Addis Ababa University
- Rungano “Stan” Dzikamunhenga, 2012. M.S. in Veterinary Microbiology & Preventive Medicine
- Gary W. Clark. 2010. M.S. in Agricultural Education
- Kristine A. Legler. 2010. M.S. in Agricultural Education
- Amy Moreno Keiffer. 2010. M.Ed. in Higher Education
- Gustavo Gutierrez. 2010. Ph.D. in Animal Breeding

James Johanson, Ph.D. in Animal Breeding (did not finish – took a teaching job)

Rebecca J. Jepsen, 2007. PhD in Veterinary Physiology

Russell T. Voigt. MS in Animal Production (did not finish - entered veterinary school)

Stephanie Danner. 2005. M.S. in Agricultural Education

Ann M. Carew. 2003. M.S. in Veterinary Microbiology

Arnold M. McClain, PhD in Agricultural Education & Studies (did not finish - died during graduate program)

Ricky L. Twedt. 1998. M.S. in Agricultural Education

Francisco I. Hernandez. 1996. PhD in Animal Science.

Domingo Carrion. 1995. Ph.D. in Animal Science.

Rocio M. Rivera. 1995. M.S. in Animal Science.

Kelly M. Powell. 1993. M.S. in Animal Ecology.

## B. EDITORIAL BOARDS – RESEARCH

Emirates Journal of Food and Agriculture (2016-present)

Egyptian Journal of Sheep & Goat Sciences (2013 – present)

◆ associate editor (2018-present)

Encyclopedia of Biotechnology in Agriculture and Food (2007 - present)

## X. TEACHING

### A. PRIMARY COURSE RESPONSIBILITIES

#### Iowa State University – current

AnS 333 Embryo Transfer and Related Technologies† (fall: 1995-present; spring: 1998-2009)

AnS 334 Embryo Transfer Laboratory† (fall: 1996 - present; spring: 1998-2005)

AnS 441 International Animal Agriculture (spring: 2017-present)

GLOBE 211 Feeding the World: Are We Making Progress (co-taught; fall 2020-present)

† denotes course I developed

#### Iowa State University - previous

AnS 210 Career Preparation in Animal Science (spring: 2013- 2014; fall 2012 - 2013)

AnS 229 Sheep Science† (spring: 2006-present)

AnS 311 Career Preparation in Animal Science (spring: 2010-2012; fall: 2010-2011)  
AnS 331 Animal Reproduction (spring: 2004, 2008-2009; fall: 2003-2008)  
AnS 331 Domestic Animal Reproduction (fall: 2009 – present; spring: 2010-present)  
AnS 332 Laboratory Methods in Animal Reproduction (fall 2014 – present)

Courses taught on an “as needed” basis- Iowa State University

AnS 490A Independent Study  
AnS 490H Independent Study - Honors  
AnS 497 Undergraduate Teaching Experiences in Animal Science  
AnS 590C Special Topics in Animal Production  
AnS 590F Special Topics in Reproductive Physiology  
AnS 590L Special Topics in Teaching  
AnS 699C Meat Animal Production Research  
AnS 699F Reproductive Physiology Research  
Hon 32X Assisted Reproductive Technologies: Biological and Ethical Considerations†  
USt 290H Special Problems - Honors (spring: 1990, 91, 93)

University of Idaho

AnSc 176 Sheep Management Laboratory† (spring 1989)  
AnSc 320 Animal Breeding (spring 1987-1989; cross-listed as Genetics 320)  
AnSc 322 Sheep Science (spring 1987-1989; cross-listed as Washington State University AS 476; course broadcast via microwave satellite to WSU)  
AnSc 415 Laboratory Methods for the Animal Sciences‡ (team taught; fall 1988)  
AnSc 499 Directed Study (fall and spring: 1986-1989)

† denotes course I developed

‡ denotes course I co-developed

**B. TEAM TEACHING ASSIGNMENTS**

Iowa State University

AnS 214 Basic Concepts of Animal Science (team taught; spring and fall: 1992-1997)  
AnS 224 Companion Animal Science (team taught; spring: 2003-2005)  
AnS 331 Animal Reproduction & Lactation (team taught; spring: 1990-1995, fall: 1990-1992, 1994, summer: 1993)  
AnS 331 Animal Reproduction (team taught: spring 2001 - fall 2004)  
AnS 352 Livestock Improvement Through Animal Breeding (team taught) (summer 1992)  
AnS 451X Biotechnology in Animal Science‡ (team taught) (fall: 1991)  
VCS481R/VDPAM 486 Small Ruminant Production Medicine (fall: 1998-2002)  
‡ denotes course I co-developed

University of Idaho

AnSc 222 Animal Reproduction and Breeding (team taught; spring 1988)  
AnSc 450 Proseminar (team taught; fall 1986)

University of Minnesota

AnSc 5232 Applied Meat Animal Breeding (team taught; spring 1984)

**C. EDITORIAL BOARDS/GRANT REVIEW PANELS – TEACHING**

Iowa State University

NACTA Journal (2010 – 2020)

USDA/NIFA Hispanic-Serving Institutions Education Grants Program (2010 – 2012)

USDA/NIFA 1890s Institutions Capacity Building Grants Program-Teaching (2012, 2014)

USDA/NIFA Veterinary Medical Loan Repayment Program (2012 - 2014)

**D. COMMITTEE SERVICE RELATED TO TEACHING**

Iowa State University

**University:**

Central Steering Committee, MAP-Works®

Assessment subcommittee

Faculty Involvement subcommittee, chair (2012-present)

High Failure Rate Task Force

Faculty Senate Curriculum Committee (fall 2011 – present)

**College:**

Academic Affairs (fall 2011 – spring 2013)

Advising Academy (fall 2011 – present)

Curriculum (fall 2005 – spring 2010; fall 2011 – spring 2015)

Chair (fall 2011-spring 2015)

Environmental-intensive requirement subcommittee, 1993

**Department of Animal Science:**

Academic quadrathlon, 1990-present

Academic support units, 1989-present

Advising committee (chair), 2011-present

American Society of Animal Science meeting registration, 1990

Animal science biotechnology course, 1990-91

ASAS/ADSA student competition selection, 1996

Assessment committee, 2005-2010

Awards and recognition committee, fall 2012-present

Departmental club liaison, 1990-91

Sheep teaching farm renovation, 1994  
Study abroad program planning, 2013-present  
Thomas Sutherland Graduate Excellence Award, 1997  
Undergraduate curriculum, 1989-2010  
4-H Round-Up, 2013-present

***Other - Hawkeye Community College (Waterloo, Iowa)***

Curriculum Advisory Board, Agriculture and Food Technology Program  
(1995-96)

University of Idaho

Department of Animal Science:

Academic quadrathlon, 1987-89  
Graduate curriculum committee, 1986-89  
Undergraduate curriculum committee, 1986-89

University of Minnesota

Graduate Studies Committee, Department of Animal Science, 1984-1985

**E. PROFESSIONAL SOCIETY SERVICE - TEACHING**

American Society of Animal Science (Midwest section)

Academic Quadrathlon Lab Practical (1991, 1993, 1995)  
Undergraduate student paper competition (2009)  
Graduate student paper competition (1997, 2013)  
Outstanding Teacher Award committee (1999-2000)  
Teaching Program committee (2002-2005)  
Chairman (2004-2005)

Gamma Sigma Delta (Iowa State University chapter):

departmental liaison (1995-1999)  
vice-president (1999-2000; 2012-2013)  
president (2000-2001; 2013-2014)  
membership selection committee (2009 – present)

International Embryo Transfer Society Foundation

Education committee chairperson (1999-2005)

NACTA (North American Colleges and Teachers of Agriculture)

conference planning committee (1996-1997)  
global engagement committee (2019-present)  
governmental affairs committee (1997-1998)  
state membership coordinator (1998-2000)  
teacher recognition committee (1999-2003)

## **XI. EXTENSION/OUTREACH EFFORTS**

No formal responsibilities in this area; however, have given more than 300 public service presentations and published more than 65 extension research reports and 40 popular press articles. Also provide service to the Iowa livestock industries in the area of reproductive physiology and sheep production and management. Appointed by Iowa Governor Terry Branstad to the Iowa Board of Veterinary Medicine (2012-2015 & 2015-2018). Re-appointed by Iowa Governor Kim Reynolds to the Iowa Board of Veterinary Medicine (2018-2021).

## **XII. INTERNATIONAL EFFORTS**

No formal responsibilities in this area until July 2014; however, established active collaborations in Japan (1991-1996), Ukraine (1993 - 2000), Peru (2007 - present), Kosovo (2011-present), Ethiopia (2012-present), and Algeria (2014-present).

Appointed as Associate Director in charge of Livestock and Animal Health Programs for the Center for Sustainable Rural Livelihoods based in the College of Agriculture & Life Sciences at Iowa State University in April 2020.

Appointed as ME Ensminger Endowed Chair in International Animal Agriculture in February 2020.

As mentioned earlier in CV (research section), have mentored 19 different visiting scientists and students from 10 different countries. Have also hosted lab and farm tours for a number of international visitors to Iowa State University.

Two major international activities not described elsewhere include:

1. Animal Science Curriculum Development Project, Georgian Technical University, Tblisi, REPUBLIC OF GEORGIA, August 2013 – July 2016
2. Development of a Bovine In Vitro Fertilization Laboratory, Fertica (private company) and Oteima University, David, PANAMA, March 13-22, 2009