
BIOGRAPHICAL SKETCH

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NAME John J Parrish	POSITION TITLE Professor		
eRA COMMONS USER NAME jjparris			
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY
California State University, Fresno, CA	B.S.	1977	Animal Science
Cornell University, Ithaca, NY	Ph.D.	1983	Animal Science and Physiology
University of Wisconsin, Madison, WI	Post-Doc	1983-1988	Reproductive Physiology

B. Positions and Honors.

Positions and Employment

1973 - 1975: Worked in university milk processing plant. California State University, Fresno.
1975 - 1977: Assisted in management at university swine herd. California State University, Fresno.
1977 - 1983: Graduate Research Assistant, Department of Animal Science, Cornell University, Ithaca, NY.
1983 - 1985: Research Associate, Depart. of Meat and Animal Science, University of Wisconsin, Madison.
1986 - 1987: Project Associate, Depart. of Meat and Animal Science, University of Wisconsin, Madison.
1987 - 1988: Research Scientist, Depart. of Meat and Animal Science, University of Wisconsin, Madison.
1988 - 1995: Assistant Professor, Depart. of Meat and Animal Science, University of Wisconsin, Madison.
1995 - 2000: Associate Professor, Depart. of Animal Sciences, University of Wisconsin, Madison.
2000 – Present: Professor, Depart. of Animal Sciences, University of Wisconsin, Madison.

Other Experience, Awards and Professional Memberships

Sabbatical Leave, UW-Madison, 1996, 2007
USDA-NRI Reproductive Efficiency Panel Member, 1998, 1999, 2003, 2004, 2005
Scientific Advisor to National Association of Animal Breeders, 1998, 2006.
Local Arrangement Co-Chair of Society for the Study of Reproduction meeting in Madison, WI. July, 2000.
NIH Review Panel, Contraceptive Network Centers, 2006
NIH Review Panel, Reproduction, Andrology and Gynecology Study section, 2006, 2008
USDA-NRI Reproductive Physiology Panel member, 1998, 1999, 2003-2005
USDA-NCR57 and NCERA57 member 1988- present, President, 1992, 2008
Member Society for the Study of Reproduction, 1990-2009
Member of American Society of Animal Sciences (ASAS), 1998-2010
Member teaching committee ASAS 2005 – 2008, Chair 2008.
College of Agriculture and Life Sciences (CALs) Teaching Excellence Award, 1992, UW-Madison.
CALs Pound Research Award, 1996, UW-Madison
CALs, Jung Teaching Award, 2003
UW-Madison, Elected to Teaching Academy, 2009

C. Selected peer-reviewed publications

1. Parrish JJ. 2010. Biology and physiology of fertilization. In: Reproductive Toxicology Third Edition, Target organ Toxicology Series. (Hayes AW, Thomas JA, Gardner DE eds.) pp. 1-13.
2. Checura CM, Beg MA, Parrish JJ, Ginther OJ. 2010. Positive effect of FSH but not LH on early development of the dominant follicle in mares. *Reprod Fertil Dev.* 22(7):1092-9.
3. Khatib H, Monson RL, Huang W, Khatib R, Schutzkus V, Khateeb H, Parrish JJ. 2010. Short communication: Validation of in vitro fertility genes in a Holstein bull population. *J Dairy Sci.* 93(5):2244-9.
4. Checura CM, Beg MA, Parrish JJ, Ginther OJ. 2010. Functional relationships among intrafollicular insulin-like growth factor 1, circulatory gonadotropins, and development of the dominant follicle in mares. *Anim Reprod Sci.* 118(2-4):270-8.
5. Uzun A, Rodriguez-Osorio N, Kaya A, Wang H, Parrish JJ, Ilyin VA, Memili E. 2009. Functional genomics of HMG3a and SMARCA1 in early mammalian embryogenesis. *BMC Genomics.* 10:183.
6. Checura CM, Beg MA, Gastal EL, Gastal MO, Wilbank MC, Parrish JJ, Ginther OJ. 2008. Effect of suppression of FSH with a GnRH Antagonist (Acyline) Before and During Follicle Deviation in the Mare. *Reprod Domest Anim* 44:504-11.
7. Siddiqui MA, Bhattacharjee J, Das ZC, Islam MM, Islam MA, Haque MA, Parrish JJ, Shamsuddin M. 2008. Crossbred bull selection for bigger scrotum and shorter age at puberty with potentials for better quality semen. *Reprod Domest Anim.* 2008 Feb;43(1):74-9.
8. Jerde TJ, Mellon WS, Bjorling DE, Checura CM, Owusu-Ofori K, Parrish JJ, Nakada SY. 2008. Stretch induction of cyclooxygenase-2 expression in human urothelial cells is calcium- and protein kinase C zeta-dependent. *Mol Pharmacol.* 2008 Jan;73(1):18-26.
9. Sagirkaya H, Misirlioglu M, Kaya A, First NL, Parrish JJ, Memili E. 2007. Developmental potential of bovine oocytes cultured in different maturation and culture conditions. *Anim Reprod Sci.* 2007 Oct;101(3-4):225-40. Epub 2006 Oct 18.
10. Checura CM, Parrish JJ. 2006. The role of calcium in maturation and activation of horse oocytes. *Animal Reprod. Sci.* 94:340-342.
11. Misirlioglu M, Page GP, Sagirkaya H, Kaya A, Parrish JJ, First NL, Memili E. 2006. Dynamics of global transcriptome in bovine matured oocytes and preimplantation embryos. *Proc Natl Acad Sci U S A.* Dec 12;103(50):18905-10.
12. Parrish, J.J., L. Enwall, A. Kaya, C. Pawshe, M.A. Siddiqui, M. Shamusuddin. 2006. Sperm shape research: an update. 21st Meeting of the National Association of Animal Breeders, Columbia MO. p19-26.
13. Sagirkaya H, Misirlioglu M, Kaya A, First NL, Parrish JJ, Memili E. 2006. Developmental and molecular correlates of bovine preimplantation embryos. *Reproduction.* 131(5):895-904.
14. Reiman J. and J.J. Parrish. 2005. Characterizing equine sperm morphology using fourier harmonic analysis. *Wisconsin Undergraduate J. Sci.* 1:36-39.
15. Men H, Monson RL, Parrish JJ, Rutledge JJ. 2003. Degeneration of cryopreserved bovine oocytes via apoptosis during subsequent culture. *Cryobiology.* 47(1):73-81.
16. Men, H., J.J.Parrish and J.J.Rutledge. 2003. Detection of DNA damage in bovine metaphase II oocytes resulting from cryopreservation. *Molecular Reproduction and Development* 64:245-250.
17. Parrish, J.J., L. Geiger and A. Kaya. 2002. Microscope maintenance, care and use. 19th Meeting of the National Association of Animal Breeders, Columbia MO. pp. 52-55.
18. Fischer-Brown, A., R.L. Monson, J.J. Parrish and J.J. Rutledge. 2002. Cell allocation in bovine embryos cultured in two media under two oxygen concentrations. *Zygote* 10:341-348.
19. Sartori, R., R. Sartor-Bergfelt, S. A. Mertens, J.N. Guenther, J.J. Parrish and M.C. Wiltbank. 2002. Fertilization and early embryonic development in heifers and lactating cows in summer and lactating dry cows in winter. *J. Dairy Sci.* 85:2803-2812.

21. Ostermeier, G.C., G. A. Sargeant, B.S. Yandell, D.P. Evenson, and J.J. Parrish. 2001. The relationship of bull fertility to sperm nuclear shape. *J Androl.* 22(4):595-603.
22. Ostermeier, G.C., G. A. Sargeant, B. S. Yandell, and J. J. Parrish. 2001. The measurement of bovine sperm nuclear shape using Fourier harmonic amplitudes. *J. Androl.* 22(4):584-94.
23. Ostermeier, G.C., Sartor-Bergfelt, R, Susko-Parrish, J.L. and J. J. Parrish. 2000. Bull fertility and sperm nuclear shape. *AgBiotechNet* 2:1-6.
24. Salazar, P., J.K. Graham, J.J. Parrish, J. Susko-Parrish and E.L. Squires. 2000. Indirect determination of stallion sperm capacitation based on esterase release from spermatozoa challenged with lysophosphatidylcholine. *J. Reprod. Fertil. Supplement* 56: 407-414.
25. Kim, C, J.J. Parrish, P. Lunn . 1999. Characterization of antisperm antibodies in bulls and their effect on in vitro fertilization. *Biol. Reprod.* 60:1285-1291.
26. Parrish, J.J., J.L. Susko-Parrish and J.K. Graham. 1999. In vitro capacitation of bovine spermatozoa: Role of intracellular calcium. *Theriogenology* 51:461-472.
27. Parrish, J.J. and G.C. Ostermeier. 1998. Fourier harmonic analysis of sperm morphology. 17th Meeting of the National Association of Animal Breeders, Columbia Mo. pp. 25-31
28. Barry T.P., J.D. Riebe, J.J. Parrish, J.A. Malison. 1997. Effects of 17 α ,20-dihydroxy-4-pregnen-3-one on cortisol production by rainbow trout interrenal tissue in vitro. *Gen. Comp. Endo.* 107:172-181
29. Mahmoud, A. and J.J. Parrish. 1996. Effect of capacitation on lectin binding to bovine sperm: flow cytometric analysis. *Molec. Reprod. Develop.* 43:554-560.
30. Medeiros, C.M.O. and J.J. Parrish. 1996. Changes in lectin binding to bovine sperm during heparin-induced capacitation. *Molec. Reprod. Develop.* 44:25-532.
31. Parrish, J.J. , A. Krogenaes and J.L. Susko-Parrish. 1995. Effect of bovine sperm separation by swimup or percoll on success of in vitro fertilization and embryo development. *Theriogenology* 44:859-869.
32. *Vredenburg-Wilberg W.L. and J.J. Parrish. 1995. Intracellular pH of bovine sperm increases during capacitation. *Molec. Reprod. Dev.* 40:490-502.
33. Barry, T.P., J. A. Malison, J.A. Held and J.J. Parrish. 1995. Ontogeny of the cortisol stress response of Rainbow Trout. *Gen. Comp. Endo.* 97:57-65.
34. Del Campo, M.R., M.X. Donoso, J.J. Parrish and O.J. Ginther. 1995. Selection of follicles, preculture oocyte evaluation, and duration of culture for in vitro maturation of equine oocytes. *Theriogenology* 43:1141-1153.
35. Parrish J.J., J.L. Susko-Parrish, C. Uguz and First, N.L. 1994. Differences in the role of cAMP during capacitation of bovine sperm by heparin or oviduct fluid. *Biol. Reprod.* 51:1099-1108.
36. Uguz, C., W.L. Vredenburg and J.J. Parrish. 1994. Heparin-induced capacitation but not intracellular alkalinization of bovine sperm is inhibited by Rp-Adenosine-3'5'-cyclic monophosphothioate. *Biol. Reprod.* 51:1031-1039.
37. Parrish, J.J. and L. Eid. 1994. In vitro fertilization and its relationship to bull fertility. 15th Technical Conference on Artificial Insemination and Reproduction. National Association of Animal Breeders, Columbia Mo. pp. 68-73.
38. *Eid, L.N., S.P. Lorton and J.J. Parrish. 1994. Paternal influence of S-phase in the first cell cycle of the bovine embryo. *Biol. Reprod.* 51:1232-1237.
39. Johnston, L.A., J.J. Parrish, R. Monson, L. Leibfried-Rutledge, J.L. Susko-Parrish, D.L. Northey, J.J. Rutledge and L.G. Simmons. 1994. Oocyte maturation, fertilization and embryo development in vitro and in vivo in the gaur (*Bos gaurus*). *J. Reprod. Fert.* 100:131-136.
40. Parrish, J.J. and N.L. First. 1993. Fertilization. *Reproduction in Domesticated Animals.* G. King ed. Elsevier Press, New York, pp. 195-228.
41. Parrish, J.J., C.I. Kim and I.H. Bae. 1992. Current concepts of cell-cycle regulation and its relationship to oocyte maturation, fertilization and embryo development. *Theriogenology* 38:277-296.

42. Greer, R.C., R.B. Staigmiller and J.J. Parrish. 1992. Female traits, ovary and follicle characteristics, and the conditional probability of normal oocyte development after superovulation of beef cows. *J. Anim. Sci.* 70(1):263-272.
43. Parrish, J.J. and N.L. First. 1991. Bovine in vitro fertilization. In: *A Comparative Overview of Mammalian Fertilization* (Dunbar and O'Rand, eds) pp. 351-361.
44. Parrish, J.J. 1991. Application of in vitro fertilization to domestic animals. In: *The Biology and Chemistry of Mammalian Fertilization, Volume II*. P.M. Wassarman, ed. CRC Press, New York, pp. 111-132.
45. Leibfried-Rutledge, M.L., Critser, E.S., Parrish, J.J. and N.L. First. 1989. In vitro maturation and fertilization of bovine oocytes. *Theriogenology* 31:61-74.
46. Handrow, R. R., N. L. First and J. J. Parrish. 1989. Calcium requirement and uptake during capacitation of bovine sperm by heparin. *J. Exp. Zool.* 252:174-182.
47. Parrish, J.J. 1989. Capacitation of spermatozoa in vivo: Physiochemical and Molecular Mechanisms. *J. Mol. Androl.* 1:87-111.
48. Parrish, J. J., J. L. Susko-Parrish and N. L. First. 1989. Capacitation of bovine sperm by heparin: inhibitory effect of glucose and role of intracellular pH. *Biol. Reprod.* 41:683-699.
49. Parrish, J. J., J. L. Susko-Parrish, R. H. Handrow, R. L. Ax and N. L. First. 1989. Effects of sulfated glycoconjugates on capacitation and the acrosome reaction of bovine and hamster spermatozoa. *Gamete Res.* 24:403-413.
50. Parrish, J. J., J. L. Susko-Parrish, R. R. Handrow, M. M. Sims and N. L. First. 1989. Capacitation of bovine spermatozoa by oviduct fluid. *Biol. Reprod.* 40:1020-1025.
51. Sirard, M. A., J. J. Parrish, C. B. Ware, M. L. Leibfried-Rutledge and N. L. First. 1988. The culture of bovine oocytes to obtain developmentally competent embryos. *Biol. Reprod.* 39:546-552.
52. Parrish, J. J., J. L. Susko-Parrish, M. A. Winer and N. L. First. 1988. Capacitation of bovine sperm by heparin. *Biol. Reprod.* 38:1171-1180.
53. Parrish, J. J. and R. H. Foote. 1987. The relationship of bovine sperm separated by swimup to their motility, acrosome integrity of sperm, migration in polyacrylamide gel and fertility. *J. Andrology* 8:259-266.
54. Graham, J. K., R. H. Foote and J. J. Parrish. 1986. Effect of dilauroylphosphatidylcholine on the acrosome reaction and subsequent penetration of bull spermatozoa into zona-free hamster eggs. *Biol. Reprod.* 35:413-424.
55. Parrish, J. J. and R. H. Foote. 1986. Fertility of cooled and frozen rabbit sperm measured by competitive fertilization. *Biol. Reprod.* 35:253-257.
56. Parrish, J. J., J. L. Susko-Parrish, M. L. Leibfried-Rutledge, E. S. Critser, W. H. Eyestone and N. L. First. 1986. Bovine in vitro fertilization with frozen-thawed semen. *Theriogenology* 25:591-600.
57. Parrish, J. J. and R. H. Foote. 1985. Fertility differences among male rabbits determined by heterospermic insemination of fluorochrome labeled spermatozoa. *Biol. Reprod.* 33:940-949.
58. Parrish, J. J., J. L. Susko-Parrish and N. L. First. 1985. Effect of heparin and chondroitin sulfate on the acrosome reaction and fertility of bovine sperm in vitro. *Theriogenology* 24:537-549.
59. Hogue, D. E., J. J. Parrish, R. H. Foote, J. R. Stouffer, J. L. Anderson, G. S. Stoewsand, J. H. Telford, C. A. Bache, W. H. Gutenmann and D. J. Lesk. 1984. Toxicologic studies with male sheep on municipal sludge amended soil. *J. Toxicol. Environ. Health* 14:153-162.
60. Wall, R. J., D. A. Jerrard, J. J. Parrish and R. H. Foote. 1984. Optimization of procedures for separation of motile and nonmotile bull and rabbit spermatozoa with bovine serum albumin gradients. *Gamete Res.* 10:165-175.
61. Elwishy, A. B., M. A. Omar, J. J. Parrish and N. A. Hemeida. 1983. The foetal thyroid of the dromedary: Its relation to body weight and dimensions and to the weight of the dam's thyroid. *Vet. Res. Comm.* 6:289-296.

D. Research Support

Ongoing Research Support

Sexing Technologies Inc. – funds are used to investigate effects of sperm nuclear shape on ability of individual bulls to have x or y flow cytometry sortable sperm.

Alta Genetics Inc.; American Breeders Service, Global; Semex USA; Cooperative Resources International – Genex Cooperative Inc. – funds from these companies provide ongoing support for development of techniques to evaluate bull fertility and evaluation of semen quality.

Pig Improvement Company, ReproQuest Inc. – funds from these companies are used to develop techniques to evaluate boar fertility.

Pending Research Support

USDA-HEC \$91,680 2010-2013 Development of A Global Curriculum in Animal Science: Focus on Reproduction.

HATCH \$162,312 2011-2014 Association of bull stress to sperm nuclear shape and semen quality

Completed Research Support (last 3 years)

Hatch \$112,000 2006-2010 The effect of scrotal insulation on oxidative damage to sperm and testicular gene expression.

Babcock Inst. \$15,000 2007 Seasonal Infertility in Bangladesh Dairy Bulls