

CURRICULUM VITAE

CHERYL SUZANNE ASA
Director of Research and
Director of the AZA Wildlife Contraception Center
Saint Louis Zoo
1 Government Drive
St. Louis, MO 63110, USA
314-768-5488; fax: -5454
asa@stlzoo.org

Education

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|------|-------|--------------------------------------------------------------------------|
| 1981 | Ph.D. | Endocrinology/Reproductive Physiology
University of Wisconsin-Madison |
| 1979 | M.S. | Endocrinology/Reproductive Physiology
University of Wisconsin-Madison |
| 1976 | B.A. | Zoology and Psychology double major
University of Wisconsin-Madison |

Research Experience

- 10/88-present Director of Research, Saint Louis Zoo: Basic and applied studies of reproductive systems, including behavior, contraception and assisted technology; field conservation studies, including species inventories and assessment of hunting sustainability.
- 10/85 - 8/88 Bureau of Land Management, Dept. of the Interior, contract: Fertility control of feral horses in Nevada and Oregon with Drs. D.B. Siniff and J.R. Tester, Dept. of Ecology, Evolution and Behavior, University of Minnesota, and Dr. E.D. Plotka, Marshfield Medical Foundation, Marshfield, WI
- 1/85 - 3/87 Comparative sperm ultrastructure using electron microscopy with Dr. D. Phillips, The Population Council, Rockefeller University, NY, with The New York Zoological Society.
- 10/81 - 12/84 Olfactory communication and reproductive physiology of wolves and dogs with Dr. L.D. Mech, U.S. Fish and Wildlife Service, and Dr. U.S. Seal, Dept. of Biochemistry, University of Minnesota, St. Paul.
- 8/81 - 9/81 Field research on the behavioral ecology of the Peruvian desert fox (*Dusicyon sechurae*) on the Sechuran Peninsula of Peru.
- 9/77 - 7/81 National Science Foundation Pre-doctoral Fellow and Ford Foundation Research Trainee, Endocrinology/Reproductive Physiology, with Dr. O.J. Ginther, Dept. Veterinary Science, and Dr. D.A. Goldfoot, Wisconsin Regional Primate Research Center, University of Wisconsin-Madison.
- 6/76 - 8/77 Graduate Research Assistant in Behavioral Endocrinology for Dr. D.A. Goldfoot, Wisconsin Regional Primate Research Center, University of Wisconsin-Madison.
- 6/75 - 5/76 Undergraduate Honors Research Assistant in embryology of the African clawed toad (*Xenopus laevis*) with Dr. M. Namenwirth, Developmental Biology, University of Wisconsin-Madison.

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Current University Affiliations

St. Louis University: Biology Dept., St. Louis, MO, Adjunct full professor
University of Massachusetts, Dept. Natural Resources Conservation, Adjunct professor
University of Missouri-St. Louis: Adjunct professor
University of the West Indies, Trinidad, Agriculture & Natural Sciences, External examiner
Utah State University, Logan: Dept of Wildland Resources, Adjunct professor
Washington University, Biology Dept., University College, St. Louis: Lecturer

Teaching Experience

2001-2006 Course administrator: Field methods in tropical ecology and conservation
1995-present Endocrinology, and Behavioral Endocrinology: Biology Dept., St. Louis Univ.
1994-present Animal Behavior: University College, Washington University, St. Louis.
1994-2006 Coordinator: Mesoamerican & Caribbean Zoo Assoc. Workshop Series
1991-1999 Course coordinator and lecturer: Zoo Biology and Conservation, Biology Dept.,
St. Louis University
1994-1997 Reproductive Physiology, Animal Behavior, Research Guidelines: AZA
Conservation Academy, St. Louis.
1/88 - 5/88 Animal Behavior: Lecture and lab, Biology Dept., University of South Carolina
7/88 National Science Foundation Summer Scholars Program, Univ. North Carolina

Past Graduate Students and Post-Doctoral Fellows

Patricia McDaniel, Master's Degree, Southeast Missouri State University, 1990
Patricia McDaniel, Ph.D., St. Louis University, 1994
Mariette Portugal, Master's Degree, St. Louis University, 1992
Lisa Marriner, Masters Degree, Southern Illinois University-Carbondale, 1992
Cynthia Brownfield, Master's Degree, St. Louis University, 1993
Kim Bishop, Master's Degree, Southern Illinois University-Carbondale, 1994
Monica Hall-Woods, Master's Degree, St. Louis University, 1997
Monica Hall-Woods, Ph.D., St. Louis University, 1999
Christine Smith, Master's Degree, Southern Illinois University-Carbondale, 1999
Carolina Valdespino, Ph.D., University of Missouri-St. Louis, 1999
Kathleen Hucker, Master's Degree, Southern Illinois University-Carbondale, 2001
Jody Martin de Camillo, Ph.D. Degree, St. Louis University, 2001
Annabel Musson, Master's Degree, Guelph University, Canada, 2002
Karen DeMatteo, Ph.D., St. Louis University 2004
Kellie Alsop, Master's Degree, St. Louis University 2005
Jason Chuei, Master's Degree, Institute of Zoology, London 2005
Mary Agnew, Master's Degree, St. Louis University 2005
Claudia Zindl, Master's Degree, University of Hannover, Germany 2006
Paule Gros, Post-Doc, Bosawas Project, Nicaragua, 2001-2004
Kimberly Williams-Guillén, Post-doc, Bosawas Project, Nicaragua, 2004-2005
Daniel Griffith, Post-doc, Bosawas Project, Nicaragua, 2005-2007
Denise Leonard, Ph.D., St. Louis University, 2008
Elizabeth Calkins, Master's Degree, University of Massachusetts, Amherst, 2009

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Professional Affiliations

American Association of Zoos and Aquariums (AZA)
AZA Biomaterials Banking Advisory Group: 2001-present
AZA Canid Taxon Advisory Group: 1997-present
AZA Contraception Advisory Group: Chair 1989 - present
AZA Cryopreservation Task Force: Chair 1989 - 1990
AZA Ethics Committee: 2002 - 2005
AZA Field Conservation Advisory Group: Chair 1999 - 2004
AZA Field Conservation Committee: 1999-2004
AZA Genome Resource Advisory Group: 1995 - 2002
AZA Equid Taxon Advisory Group: Coordinator 1991 - 1995, member 1996- present
AZA Mesoamerican and Caribbean Conservation Action Partnership: Chair 1994 - 2004
AZA Mexican Wolf Species Survival Plan: Reproduction Advisor 1998 - present
AZA Reproduction Scientific Advisory Group: 2002 - present
AZA Research Coordinators Advisory Group: 1990 - present
AZA Science and Technology Task Force: 1999- present
AZA Wildlife Contraception Center: Director 1999 - present
Alliance for Contraception for Cats and Dogs, International Advisory Council: 2007-
American Society of Mammalogists: 1979 - present
Animal Behavior Society: 1978 - present
International Center for Tropical Ecology (UMSL): Executive Advisory Board
IUCN/ Survival Service Commission, Conservation Breeding Specialist Group (CBSG)
IUCN/ Survival Service Commission, Equid Specialist Group: Reproduction Advisor
IUCN/ Survival Service Commission, Canid Specialist Group: Reproduction Advisor
Mesoamerican Society for Biology and Conservation: Founding member
St. Louis Academy of Science
St. Louis Research Council: Vice President 1991 - 1992; President 1992 - 1993
Sigma Xi Scientific Research Society: St. Louis University Chapter
Society for Conservation Biology
Society for the Study of Fertility
Society for the Study of Reproduction
Tyson Research Station, Washington University: Consultant
U.S. Fish & Wildlife Service Mexican Wolf Recovery Team Consultant
U.S. National Park Service Channel Island Fox Recovery Team: 1998-present
Zoo Biology: Associate Editor: 1993-present

Reviewer: Granting Agencies

AZA Conservation Endowment Fund (Scientific Review Panel)
Institute for Museum and Library Services
International Rhino Foundation
National Geographic
National Science Foundation
Scott Neotropic Fund

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Reviewer: Journals and Presses

Acta Theriologica

Animal Behaviour

Animal Reproduction Science

Behavioral Ecology and Sociobiology

Biology of Reproduction

Cambridge University Press

Contraception

General and Comparative Endocrinology

Hormones and Behavior

International Zoo Yearbook

Journal of Mammalogy

Journal of Zoology, London

Molecular Ecology

Quarterly Review of Biology

Reproduction

Reproduction, Fertility and Development

Theriogenology

Wildlife Research

Zoo Biology

Publications

Goldfoot, D.A., Essock-Vitale, S.M., Asa, C.S., Thornton, J.E., and Leshner, A.I. (1978)

Anosmia in female rhesus monkeys does not alter copulatory activity with cycling females. *Science* 199:1095-1096.

Asa, C.S., Goldfoot, D.A., and Ginther, O.J. (1979) Sociosexual behavior and the ovulatory cycle of ponies (*Equus caballus*) observed in harem groups. *Horm. Behav.* 13: 46-65.

Asa, C.S., Goldfoot, D.A., Garcia, M.C., and Ginther, O.J. (1980) Sexual behavior in ovariectomized and seasonally anovulatory mares. *Horm. Behav.* 14: 46-54.

Asa, C.S., Goldfoot, D.A., Garcia, M.C., and Ginther, O.J. (1980) Dexamethasone suppression of sexual behavior in the ovariectomized mare. *Horm. Behav.* 14: 55-64.

Asa, C.S. (1980) Sociosexual behavior in the domestic pony. In R.H. Denniston II (Ed.), *Symposium on the Ecology and Behavior of Wild and Feral Equids*. Univ. of Wyoming, Laramie. Pp. 58-70.

Asa, C.S., and Ginther, O.J. (1982) Glucocorticoid suppression of oestrus, follicles, LH and ovulation in the mare. *J. Reprod. Fert., Suppl.* 32: 247-251.

Asa, C.S., Goldfoot, D.A., and Ginther, O.J. (1983) Assessment of the sexual behavior of pregnant mares. *Horm. Behav.* 17: 405-413.

Asa, C.S., Robinson, J.A., and Ginther, O.J. (1983) Changes in plasma cortisol during the oestrous cycle of the mare. *J. Endocrinol.* 99: 329-334.

Asa, C.S., Goldfoot, D.A., and Ginther, O.J. (1984) The effect of estradiol and progesterone on the sexual behavior of ovariectomized mares. *Physiol. Behav.* 33: 681-686.

Asa, C.S., and Wallace, M.P. (1984) Diet and movement patterns of the Sechuran desert fox (*Dusicyon sechurae*). In D. Macdonald (Ed.), *IUCN/SSC Canid Specialist Publication*.

Raymer, J., Wiesler, D., Novotny, M., Asa, C.S., Seal, U.S., and Mech, L.D. (1984) Volatile

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- constituents of wolf (*Canis lupus*) urine as related to gender and season. *Experientia* 40: 707-709.
- Asa, C.S. (1985) The origin and history of usage of the domestic horse. The donkey. The mule. In G. Bateman (Ed.), *Companion Animals*. Equinox Ltd., Oxford, UK.
- Asa, C.S., Peterson, E.K., Seal, U.S., and Mech, L.D. (1985) Deposition of anal sac secretions by captive wolves (*Canis lupus*). *J. Mammal.* 66: 89-93.
- Asa, C.S., Mech, L.D., and Seal, U.S. (1985) The use of urine, faeces and anal-gland secretions by a captive wolf (*Canis lupus*) pack. *Anim. Behav.* 33: 1034-1036.
- Asa, C.S., Seal, U.S., Plotka, E.D., Letellier, M.A., and Mech, L.D. (1986) Effect of anosmia on reproduction in male and female wolves (*Canis lupus*). *Behav. Neural Biol.* 46: 272-284.
- Raymer, Weisler, D., Novotny, M., Asa, C.S., Seal, U.S., and Mech, L.D. (1985) Chemical investigations of wolf (*Canis lupus*) anal-sac secretions in relation to the breeding season. *J. Chem. Ecol.* 11: 593-608.
- Raymer, J., Weisler, D., Novotny, M., Asa, C.S., Seal, U.S., and Mech, L.D. (1986) Chemical scent constituents in the urine of wolf (*Canis lupus*) and their dependence on reproductive hormones. *J. Chem. Ecol.* 12: 297-314.
- Asa, C.S. (1986) Sexual behavior of mares. In S.L. Crowell-Davis (Ed.), *Veterinary Clinics of North America: Equine Practice* 2: 519-534.
- Asa, C.S. (1986) Reproductive behavior and physiology of ungulates and carnivores. In D. Crews (Ed.), *The Psychobiology of Reproductive Behavior: An Evolutionary Perspective*. Prentice Hall, Boston. Pp. 258-290.
- Asa, C.S., Phillips, D.M., and Stover, J. (1986) Ultrastructure of the spermatozoa of the crested tinamou. *J. Ultrastr. Molec. Struct. Res.* 94: 170-175.
- Asa, C.S. Seal, U.S., Letellier, M.A., and Plotka, E.D. (1987) Pinealectomy or superior cervical ganglionectomy do not alter reproduction in the wolf (*Canis lupus*). *Biol Reprod.* 37: 14-21.
- Asa, C.S., and Phillips, D.M. (1987) Ultrastructure of avian spermatozoa: A short review. In H. Mohri (Ed.), *New Horizons in Sperm Cell Research*. Japan Science Society Press, Tokyo/Gordon & Breach Scientific Publications, New York, NY. Pp. 365-373.
- Phillips, D.M., Asa, C.S., and Stover, J. (1987) Ultrastructure of the spermatozoa of the white-naped crane. *J. Submicrosc. Cytol.* 19: 489-494.
- Plotka, E.D., Seal, U.S., Eagle, T., Asa, C.S., Tester, J.R., and Siniff, D.B. (1987) Rapid, reversible immobilization of feral stallions using etorphine hydrochloride, xylazine hydrochloride and atropine sulfate. *J. Wildl. Dis.* 23: 471-478.
- Asa, C.S., and Phillips, D.M. (1988) Nuclear shaping in spermatids of the Thai leaf frog, *Megaphrys montana*. *Anat. Rec.* 220: 287-290.
- Cannell, P.F., Bakst, M.R., and Asa, C.S. (1988) Suggestions regarding alcoholic bird collections. *Condor* 90: 500-503.
- Phillips, D.M., and Asa, C.S. (1989) Development of spermatozoa in the rhea. *Anat. Rec.* 223: 276-282.
- Asa, C.S., Mech, L.D., Seal, U.S., and Plotka, E.D. (1990) The influence of social and endocrine factors in scent-marking by wolves (*Canis lupus*). *Horm. Behav.* 24: 497-509.
- Asa, C.S., and Wallace, M.P. (1990) Diet and activity pattern of the Sechuran desert fox (*Dusicyon sechurae*). *J. Mamm.* 71: 69-72.
- Asa, C.S. (1990) Biotelemetry in captive animal care and management. *Proc. Amer. Assoc. Zoo Vet.*, p. 153.

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- Porton, I., Asa, C.S., and Baker, A. (1990) Survey results on the use of birth control methods in primates and carnivores in North American zoos. *Amer. Assoc. Zool. Parks & Aquar. Proc.*: 489-497.
- Asa, C.S., and Porton, I. (1990) Primate contraception methods in use and in development. *Proc. Amer. Assoc. Zoo Vet.*, pp. 263-264.
- Phillips, D.M., and Asa, C.S. (1991) Strategies for formation of the midpiece. *Proc. Internat. Conf. Spermatology*, Sienna, Italy.
- Asa, C.S. (1991) Editor, Biotelemetry applications for captive animal care and research. *Amer. Assoc. Zool. Parks & Aquar. Symp.* 1, 59 pp.
- Asa, C.S., and Sarri, K. (1991) Assessment of telemetry for monitoring reproductive events related to changes in body temperature and activity rhythm in cheetahs and spider monkeys. *Amer. Assoc. Zool. Parks & Aquar. Symp.* 1: 49-57.
- Kreeger, T.J., Seal, U.S., Plotka, E.D., and Asa, C.S. (1991) Characterization of prolactin secretion in gray wolves (*Canis lupus*). *Can. J. Zool.* 69: 1366-1374.
- Adams, G.P., Plotka, E.D., Asa, C.S., and Ginther, O.J. (1991) Feasibility of characterizing reproductive events in large non-domestic species by transrectal ultrasonic imaging. *Zoo Biol.* 10: 247-259.
- Asa, C.S. (1991) Synchronization of ovulation in banteng (*Bos javanicus*) with PGF₂-alpha. *Proc. Ann. Mtg. Soc. Theriogenology*, pp. 351-353.
- Asa, C.S., and Porton, I. (1991) Concerns and prospects for contraception in carnivores. *Proc. Amer. Assoc. Zoo Vet.*, pp. 298-303.
- Asa, C.S., and Jenness, B. (1991) Cryopreservation of semen from banteng (*Bos javanicus*). *Proc. Wild Cattle Symp.*, Henry Doorly Zoo, Omaha, NB., pp. 27-32.
- Asa, C.S., Junge, R.E., Bircher, J.S., Noble, G., and Plotka, E.D. (1992) Assessing reproductive cycles and pregnancy in cheetahs (*Acinonyx jubatus*) by vaginal cytology. *Zoo Biol.* 11: 139-151.
- Asa, C.S. (1992) Clash of interests in population control of free-ranging animals. *Proc. Amer. Assoc. Zoo Vet.*, pp. 28-30.
- Asa, C.S. (1992) Contraceptive development and its application to captive and free-ranging wildlife. *Proc. Amer. Assoc. Zool. Parks & Aquar.*, pp. 71-75.
- Asa, C.S., Read, B., Houston, E.W., Gross, T., Parfet, J., and Boever, W.J. (1993) Serum estradiol and progesterone concentrations during the ovulatory cycle and pregnancy in banteng cattle, *Bos javanicus*. *Theriogenology* 39: 1367-1376.
- Eagle, T., Asa, C.S., Garrott, R., and Siniff, D.V. (1993) Efficacy of dominant male contraception to reduce reproduction in feral horses. *Wildl. Soc. Bull.* 21: 116-121.
- Asa, C.S., Houston, E.W., Plotka, E.D., Lynch, M., and Jenness, B. (1993) Patterns of serum estradiol and progesterone during the ovulatory cycle and pseudopregnancy in Rocky Mountain goats (*Oreamnos americanus*). *J. Zoo Wildl. Med.* 24: 190-195.
- Duncan, P., Ryder, O., Asa, C. and Feh, C. (1993) The nature and value of zebras, asses, and horses. In P. Duncan (Ed.), *Zebras, Asses and Horses: An Action Plan for the Conservation of Wild Equids*. IUCN: Gland, Switzerland, pp. 1-5.
- Asa, C.S. (1993) Relative contributions of urine and anal-sac secretions in scent marks of large felids. *Amer. Zool.* 33: 167-172.
- McDaniel, P.S., Janzow, F.T., Porton, I., and Asa, C.S. (1993) The reproductive and social dynamics of captive *Ateles geoffroyi* (black-handed spider monkey). *Amer. Zool.* 33: 173-

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179.

- Asa, C.S. (1993) Structure and function of the AAZPA Contraception Committee. Proc. Amer. Assoc. Zoo Vet., pp. 281-283.
- Asa, C.S., Fischer, F., Carrasco, E., and Puricelli, C. (1994) Correlation between urinary pregnanediol glucuronide and basal body temperature in female orangutans, *Pongo pygmaeus*. Amer. J. Primatol. 33: 275-281.
- Portugal, M.M., and Asa, C.S. (1995) Effects of chronic melengestrol acetate contraceptive treatment on perineal tumescence, body weight, and sociosexual behavior of Hamadryas baboons (*Papio hamadryas*). Zoo Biology 14: 251-259.
- Asa, C.S. (1995) Zoological Parks. In W.A. Nierenberg (ed.), The Encyclopedia of Environmental Biology, Vol. 3, pp. 587-594. Academic Press, San Diego.
- Asa, C.S., Zaneveld, L.J.D., Munson, L., Callahan, M., and Byers, A.P. (1995) Efficacy, safety and reversability of a bisdiamine as a male-directed oral contraceptive in gray wolves (*Canis lupus*). Proc. Amer. Assoc. Zoo Vet.: 396-397.
- Asa, C.S., Houston, E.W., Fischer, M.T., Bauman, J.E., Bauman, K.L., Hagberg, P.K., and Read B.W. (1996) Ovulatory cycles and anovulatory periods in the addax (*Addax nasomaculatus*). J. Reprod. Fert. 107: 119-124.
- Asa, C.S. (1996) Physiological and social aspects of reproduction of the wolf and their implications for contraception. In L. Carbyn, S.H. Fritts, and D.R. Seip (eds.), Ecology and Conservation of Wolves in a Changing World, pp. 283-286. Canadian Circumpolar Institute: Edmonton, Canada.
- Asa, C.S., and Mech, L.D. (1996) A review of the sensory organs in wolves and their importance to life history. In L. Carbyn, S.H. Fritts, and D.R. Seip (eds.), Ecology and Conservation of Wolves in a Changing World, pp. 287-291. Canadian Circumpolar Institute: Edmonton, Canada.
- Asa, C.S. (1996) The effects of contraceptives on behavior. In U.S. Seal, E.D. Plotka, & P.N. Cohn (Eds.), Contraception in Wildlife, Book 1, pp. 157-170. Edwin Mellen Press, Lewiston, NY.
- Asa, C.S. (1996) Reproductive physiology. In D.G. Kleiman, M.E. Allen, K.V. Thompson and S. Lumpkin (Eds.), Wild Mammals in Captivity, Vol. 1: Principles and Techniques of Captive Management, Sect. A: Captive Propagation, pp. 390-417. University of Chicago Press, Chicago.
- Hutchins, M., Thomas, P., and Asa, C.S. (1996) Pregnancy and parturition. In D.G. Kleiman, M.E. Allen, K.V. Thompson and S. Lumpkin (Eds.), Wild Mammals in Captivity, Vol. 1: Principles and Techniques of Captive Management, Sect. A: Captive Propagation, pp. 468-496. University of Chicago Press, Chicago.
- Asa, C.S., Porton, I., Plotka, E.D., and Baker, A. (1996) Contraception. In D.G. Kleiman, M.E. Allen, K.V. Thompson and S. Lumpkin (Eds.), Wild Mammals in Captivity, Vol. 1: Principles and Techniques of Captive Management, Sect. A: Captive Propagation, pp. 451-467. University of Chicago Press, Chicago.
- Asa, C.S., Silber, S.J., Porton, I., Fischer, F., Lenehan, K., Deters, M., Junge, R., Hicks, J. and Cohen, R.C. (1996) Follicle stimulation and ovum collection in the orangutan. In R.D. Nadler, B. Galdikas, L. Sheehan, and N. Rosen (eds.), The Neglected Ape, pp. 217-222. Plenum Press: New York.
- Asa, C.S., Zaneveld, L.J.D., Munson, L., Callahan, M., and Byers, A.P. (1996) Efficacy, safety

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- and reversibility of a bisdiamine as a male-directed oral contraceptive in gray wolves (*Canis lupus*). *J. Zoo Wildl. Med.* 27: 501-506.
- Asa, C.S. (1997) The development of contraceptive methods for captive wildlife. In Kreeger, T.J. (tech. coord.), *Contraception in Wildlife Management*, pp 235-240. Technical Bulletin 1853. Washington, DC.: U.S. Dept. of Agriculture, Animal and Plant Health Inspection Service.
- Asa, C.S. (1997) Hormonal and experiential factors in the expression of social and parental behavior in canids. In J.A. French and N.G. Solomon, Eds., *Cooperative Breeding in Mammals*, pp. 129-149. Cambridge University Press, Cambridge.
- Asa, C.S., and Valdespino, C. (1998) Canid reproductive biology: Integration of proximate mechanisms and ultimate causes. *Amer. Zool.* 38: 251-259.
- Asa, C.S., London, G.D., Wilson, C., Goellner, R.R., Haskell, N., and Roberts, G. (1998) Thermoregulatory behavior of captive American alligators (*Alligator mississippiensis*). *J. Herpetol.* 32: 191-197.
- Asa, C.S. (1998) Contraception. In M.E. Fowler and R.E. Miller (eds.), *Zoo and Wild Animal Medicine: Current Therapy*, Vol. 4, pp. 316-320. W.B. Saunders, Philadelphia.
- London, G.D., Bauman K.L., and Asa C.S. (1998) Time-lapse infrared videography for animal behavior observations. *Zoo Biol.* 17: 535-543.
- Asa, C.S., Bauman, K.L., Houston, E.W., Fischer, M.T., Junge, R.E., and Krisher, R.L. (1998) Transvaginal oocyte retrieval and in vitro maturation, fertilization and embryo culture in addax (*Addax nasomaculatus*). *Theriogenology* 49: 261.
- DeMatteo, K.E., Asa, C.S., Macek, M.S., and Snyder, T.L. (1998) Use of the common piping guan (*Pipile c. cumanensis*) as a model for short- and long-term preservation of Cracid semen. In D.M. Brooks, F. Olmos, and A.J. Begazo (eds.), *Biology and Conservation of the Piping Guan (Aves: Cracidae)*, pp. 33-34. Special Publication of the Cracid Specialist Group, no. 1.
- Asa, C.S. (1999) Dogs. In E. Knobil and J.D. Neill (eds.), *Encyclopedia of Reproduction*, pp. 902-909. Academic Press, NY.
- Hall-Woods, M., Asa, C.S., Bauman, K., Houston, E., Fischer, M., Junge, R., and Krisher, R. (1999) Timing of in vitro maturation of oocytes in addax (*Addax nasomaculatus*). *Theriogenology* 51: 286.
- Hall-Woods, M.L., Asa, C.S., Bauman, K.L., Houston, E.W., Fischer, M.T., Junge, R.E., and Krisher, R.L. (1999) In vitro embryo production in addax (*Addax nasomaculatus*), an endangered desert antelope. *Biol. Reprod.* 60, Suppl. 1: 178
- Martin de Camilo, J. E., and Asa, C.S., Ettling, J.A., Hampton, A..M., and Haskell, N. (1999) Comparative follicular dynamics between the Brazilian rainbow boa (*Epicrates cenchria cenchria*) and the ball python (*Python regius*). *Proc. Amer. Assoc. Zoo Vet.*, pp
- Asa, C.S. (1999) Male reproductive success in free-ranging feral horses. *Behav. Ecol. Sociobiol.* 47: 89-93.
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- Asa, C.S., Bauman, K.L., Fischer, M.T., Bauman, J.E., Houston, E.W., and Read, B.W. (2000) Effects of prostaglandin F_{2α} on ovarian cycle dynamics in addax, *Addax nasomaculatus*. *Biol. Reprod.* 62, Suppl. 1: 176.
- Hall-Woods, M.L., Krisher, R.L., Lane, M., Gardner, D.K., and Asa, C.S. (2000) Comparison of Gardner's G1/G2 sequential media and Buffalo rat liver (BRL) cell co-culture for bovine in-

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- vitro embryo production. *Biol. Reprod.* 62, Suppl. 1: 316.
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- Asa, C.S. (2000) Current methods of contraception in zoos. In D. Duffield and T. Robeck (eds.), *Proceedings Bottlenose Dolphin Breeding Workshop, San Diego, CA*, pp. 191-199.
- Bauman, K., Snyder, T., Asa, C. and Macek, M. (2000) The use of a telemetric egg for monitoring bird incubation. In *Biotelemetry 15, Proc. 15th International Symposium on Biotelemetry, Juneau, Alaska*. Published by the International Society on Biotelemetry.
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- Asa, C.S. (2001) Cryopreservation of Mexican gray wolf semen. *Proc. 1st Internatl. Symp. Assisted Reproductive Technology for the Conservation & Genetic Management of Wildlife, Omaha, NB*. Pp. 136-137.
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