

Carrol Christian Platz, Jr., Assistant Professor in Research

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Qualifications:

- Research Assistant Professor in cell biology at Baylor College of Medicine in animal reproduction and semen cryopreservation (Animal models of human disease).
- Founder and President, International Canine Semen Banks.
- Founder and President, International Animal Semen Banks, LLC.
- Founder and President, P-T Electronics (Development and manufacture of electrical equipment for semen collection in domestic and wild animals).
- Semen collections, evaluations in over 300 species of domestic and wild animals, including mammals, birds, and reptiles.
- Author/co-author of 48 peer reviewed scientific articles and abstracts on animal reproduction.

EDUCATION:

Institution:	Degree	Year	Field
University of Oregon	B.S.	1967	General Science
University of Oregon	B.S.	1968	Biology
Portland State University	--	1969-1971 (Grad)	Chemistry\Biology

Major Research Interests: Reproductive Physiology, Bio-Electronics, Biochemistry, Semen Cryobiology

Publications: Authored/co-authored 48 peer reviewed scientific articles and abstracts in scientific journals.

Goodrowe KL, Mastromonaco GF, Walker SL, Bateman HL, Ryckman DP, Platz CC Jr, Waddell WT. In vitro maintenance, cooling and cryopreservation of red wolf (*Canis rufus*) spermatozoa. J Reprod Fertil Suppl. 2001;57:387-92.

Platz, Jr., CC, Waddell, W, Smith, R, Jones, M, Behrns, S and Templeton, J., Semen collection in wild Canidae using electroejaculation. Ann. Mtg. AAZV, Omaha, Nebraska, 2000.

Goodrowe, KL, Hay, MA, Platz, Jr., CC, Behrns, SK, Jones, MT, and Waddell, WT. Characteristics of fresh and frozen-thawed red wolf (*Canis rufus*) spermatozoa. An. Reprod. Sci. 1998;53:299-308.

Koehler, J.K., Platz, Jr., C.C., Waddell, W., Jones, M., and Behrns, S.: Semen parameters and electron microscope observations of the red wolf, *Canis rufus*. *J. Reprod. Fert.* In preparation, 1998.

Goodrowe, K.L., Hay, M.A., Platz, Jr., C.C., Behrns, S.K., Jones, M.H. and Waddell, W.T.: Characteristics of Fresh and Frozen-Thawed Red Wolf (*Canis rufus*) Spermatozoa. *An. Repro. Sci.*, Vol. 53, pp. 299-308, 1998.

Koehler, J., Platz, Jr., C., Waddell, W., Jones, M., Smith, R., and Behrns, S.: Spermophagy in semen in the red wolf, *Canis rufus*. *Mol. Reprod. and Devel.*, Vol. 37, pp. 457-461, 1994.

Marks, S., Dupuis, J., Mickelsen, D., Memon, M., Platz, C.: Conception by use of postmortem epididymal semen extraction in a dog. *JAVMA*, Vol. 204, No. 10, pp. 1639-1640, May 15, 1994.

Koehler, J., Waddell, W., Jones, M., Smith, R., and Platz, Jr., C.: Pyospermia and spermophagy in semen of the red wolf. Proc. 51st Annual Meeting of the Microscopy Society of America. G.W. Bailey and C.L. Rieder, Eds., pp. 332-333, 1993.

Platz, C.: Frozen and fresh-cooled canine semen: Its use, success, and future. *Kal Kan Forum*, 9:2:1990.

Quinn, H., Blasedel, T., and Platz, C.: Successful artificial insemination in the checkered garter snake, *Thamnophis marcianus*. *Int. Zoo Yrbk*, 28:1989.

Wood, F., Platz, C., Critchley, K., and Wood, J.: Semen collection by electroejaculation in the green turtle, *Chelonia mydas*. *Brit. J. Herpet.*, pp. 200-202, 1982.

Platz, C., Wildt, D., Howard, J., and Bush, M.: Electroejaculation, semen analysis and freezing in the giant panda (*Ailuropoda melanoleuca*). *J. Reprod. Fert.*, 67:9-12, 1983.

Bowen, M.J., Platz, C.C., Jr., Brown, C.D., and Kraemer, D.C.: Induction of oestrus and successful artificial insemination in the cougar, *Felis concolor*. 1982. Pp. 166-168 in Annual **Proceedings of the American Association of Zoo Veterinarians** and in Annual Proceedings - American Association of Zoo Veterinarians., Pp. 104-105, 1981.

Platz, C., Bowen, J., Crider, N., Densmore, M., Wiley, E., and Kraemer, D.: Cryopreservation of electroejaculated and epididymal spermatozoa in the white tail deer. Ann. Mtg. AAZV, New Orleans, Louisiana, Nov. 6-12, 1982.

Platz, C., Wildt, D., Howard, J., Seager, S., and Bush, M.: Semen collection evaluation, and freezing in the giant panda. 7th Ann. Mtg. Amer. Soc. Androl., Hilton Head, South Carolina, February 23-26, 1982.

Wildt, D., Platz, C., Seager, S., and Bush, M.: Induction of ovarian activity in the cheetah (*Acinonyx jubatus*). *Biol. Reprod.*, 24:217-222, 1981.

Seager, S., Gilmartin, W., Moore, L., Platz, C. & Kirby, V. (1981) Semen collection (electroejaculation), evaluation and freezing in the Atlantic bottlenosed dolphin (*Tursiops truncatus*). Proc. Am. Ass. Zoo Vet.

Seager, S., Demorest, N., Wildt, D. E., and Platz, Jr., C.C., First captive breeding of Mexican wolf. International Zoo News, 28(4):32 and American Association of Zoo Veterinarians, Atlanta. 1981. Pages 1075- 1078 in **Proceedings** of the International Congress on Animal Reproduction and Fertility.

Tash, J., Platz, C., and Means, A., Immunofluorescent localization of protein kinase inhibitor and its relation to protein phosphorylation in mammalian sperm. Soc. Study Reprod. Ann, Mtg., Aug., 1980.

Platz, C., Wildt, D., Bridges, C., Seager, S., and Whitlock, B., Electroejaculation and semen analysis in a male lowland gorilla, *Gorilla gorilla gorilla*. Primates, 21:1:130-132, January, 1980.

Platz, C., Mengden, G., Quinn, H., Wood, F., and Wood, J., Semen collection, evaluation and freezing attempts in the green sea turtle, Galapagos tortoise, and Red-eared pond turtle. Proc. AAZV, Ann. Mtg., Oct. 18-24, 1980, Arlington, Virginia.

Platz, C., Quinn, H., and Mengden, G., Semen collection and analysis in endangered chelonians. 21st Ann. Mtg. Soc. Study Amphib. and Rept., 12-16, 1979, Knoxville, Tennessee.

Guthrie, S.C., Seager, S.J., Platz, C.C., and Wildt, D.W., The domestic cat as an animal model for reproduction in endangered wild cats, Presented at the Texas Branch American Assoc. for Lab. Anim. Sci., College Station, Texas, May 16-18, 1979.

Mengden, G., Platz, C., Hubbard, R., and Quinn, H., Semen collection, freezing and artificial insemination in snakes, in Reproductive Biology and Diseases of Captive Reptiles, ed. by J.B. Murphy and J.T. Collins, pp. 71-78, 1979.

Guthrie, S., Seager, S., Platz, C., and Wildt, D., The domestic cat as an animal model for reproduction in endangered wild cats. Ann. Mtg. Tex. Br. AALAS, May 16-18-1979.

Wildt, D., Platz, C., Chakraborty, P., and Seager, S., Oestrous and ovarian activity in a female jaguar (*Panthera onca*), J. Reprod. Fert. 56:555-558, 1979.

Platz, C., Seager, S., and Bush, M., Collection and analysis of semen from a black rhinoceros. JAVMA, 175:9:1002-1004, 1979.

Platz, C., Wildt, D., Bridges, C., and Seager, S., Fertility analysis in the lowland gorilla and Siamang gibbon using electroejaculation. Ann. Proc. AAZV. Denver, Colorado, pp. 88-90a, 1979.

Platz, C., and Seager, S., Semen freezing in the dog. 15th Ann. Mtg. Soc. Cryobiol., p. 17, August 6-10-, 1978, Tokyo, Japan.

Seager, S., Wildt, D., and Platz, C., Semen collection and freezing in selected endangered captive wild animals. 15th Ann. Mtg. Soc. Cryobiol., p. 17, August 6-10-, 1978, Tokyo, Japan.

Platz, C., Wildt, D., and Seager, S., Pregnancies in the domestic cat using artificial insemination with previously frozen spermatozoa. J. Reprod. Fert. 52:279-282, 1978.

Seager, S., Platz, C., Templeton, J., and McCulloch, W., Semen freezing in the canine and feline. 115th Ann. Mtg. AVMA, Dallas, Texas, July, 1978.

Seager, S., Wildt, D., and Platz, C., Artificial breeding of non-primates. Symp. Zool. Soc. Lond. 43:207-218, 1978.

Platz, C., Chakraborty, P., Wildt, D., and Seager, S., Comparison of semen extenders for freezing canine semen. ASAS, Southern Section, Houston, Texas, February 5-8, 1978.

Platz, C. and Seager, S., Semen Collection by Electroejaculation in the Domestic Cat. J. Am. Vet. Med. Assoc., Vol. 173, No. 10, Pp 1353-1355, 1978.

Seager, S., and Platz, C., Artificial insemination and frozen semen in the dog. Vet. Cl. N. Amer., John D. Rhoades, ed., pp. 757-764, November, 1977.

Kinney, G., Seager, S., Platz, C., and Wildt, D., Natural and gonadotropin induced reproductive cyclicity in the domestic cat. AALAS, Houston, Texas, May 18-20, 1977.

Platz, C., and Seager, S., Successful Pregnancies using concentrated frozen beagle semen. Lab. Anim. Sci., Vol. 27, No. 6, 1013-6, December, 1977.

Seager, S., Platz, C., and Templeton, J., Semen freezing in the canine and feline. 114th Ann. Mtg. AVMA, Atlanta, Georgia, July, 1976.

Platz, C., Follis, T., Demorest, N., and Seager, S., Semen collection, freezing and insemination in the domestic cat. Proc. VIIIth Int. Congr. Anim. Repro. Artif. Insem., Vol. IV, pp. 1053-1056, 1976.

Platz, C., Demorest, N., and Seager, S., Artificial insemination of fresh and frozen semen in a program in breeding captive wild mammals. Proceedings of the American Association of Zoological Parks and Aquariums, Brownsville, Texas, pp. 84-86, 1976.

Seager, S., and Platz, C., Semen collection and freezing in captive wild mammals. Proc. VIIth Int. Congr. Anim. Rep. Art. Insem., Vol. IV, 1075-1078, 1976.

Platz, C., Edmonds, C., Naifeh, J., Walker, M., Seager, S., and Norman, J., Evaluation of semen from baboons exposed to long-term radiation from implanted nuclear fuel sources. American Society of Artificial Organs Abstracts, 5:23, 1976.

Seager, S., Platz, C., and Hodge, W., Successful pregnancy using frozen semen in the wolf. International Zoo Yearbook, 15:140-143, 1975.

Seager, S., Platz, C., and Fletcher, W., Conception rates and related data using frozen dog semen. Journal of Reproduction and Fertility, 45:189-192, 1975.

Seager, S., Platz, C., and Templeton, J., Canine genetics and frozen semen. Transplantation Proceedings, 7:4:571-573, 1975.

Platz, C., and Seager, S., Qualitative and quantitative methods for canine and feline semen analysis. Proceedings of the American Association for Laboratory Animal Science, 1974.

Seager, S., Platz, C., Stewart, A., and Fletcher, W., Collection, deep freezing and insemination of canine semen. (16mm) color, sound film presented at the 22nd Annual Session of American Association of Laboratory Animal Science, 1971.

Publications in progress:

Kraemer, D., Simpson, T., Bensen, S., and Platz, C., Estrous synchronization and detection in the Texas White Tailed Deer.

Platz, C., Simpson, T., Benson, S., McAllen, J., McCrady, J., and Kraemer, D., Successful use of frozen epididymal spermatozoa in the white tailed deer.

Platz, C., Alford, P., Crider, N., Bowen, J., and Kraemer, D., Fertility evaluation using zona free hamster eggs in electroejaculated frozen and fresh chimpanzee spermatozoa.

Platz, C., Alford, P., Bowen, J., and Kraemer, D., Fertility evaluation of frozen epididymal spermatozoa using zona free hamster egg tests.

Articles written for general audiences

Platz, C., et al., Successful preservation of sperm cells postmortem in the Canine, in preparation, 2011.

Platz, Jr., CC, et. al., Death, is it really the final frontier??, personal communication, Dykes, Sharon, Bulldog Review, September, 2009.

Watkins, Jo, Champions on Ice: Preserving the Past, Ensuring the Future, in *Mushing*, January/February, 2004, pp 17-24.

Linger, Margaret, Two Continue Study of Animals' Fertility, . *The Denver Post, At the Zoo*, April 26, 1980.

Principal or Co-Investigator on the following funded research grants:

- Propagation of the Maned Wolf by artificial breeding. 1990-91 - Smithsonian Institute.
- Propagation of the Red Wolf by artificial breeding. 1989-2003- U.S. Fish and Wildlife Service.
- Determining the Reproductive Cycles of the Male and Female African Lion - International Museum Institute - 1987 to 1990.
- American White Tailed Deer Association - Artificial Breeding in Deer - 1981-1983.
- Reproductive Biology in Endangered Hoofed Stock - 1978-1981.
- Frozen semen bank: Animal models of human disease - 1978-1982
- Frozen semen in the racing greyhound: National Greyhound Association - 1978-1980.

Privately funded studies

- Artificial Breeding in the Lowland Gorilla - 1988 to 1995 - Woodland Park Zoo, Seattle, Washington; The Gorilla Foundation, Woodside, California: Point Defiance Zoo, Tacoma, Washington.
- Semen evaluation and freezing in the gyrfalcon - 2010 - Collaborative project with Pacific Northwest Falcons, Prineville, Oregon.

Lecturer/Instructor at the following institutions

Portland Community College, Veterinary technician program (Dr. Phil Cochrane)

Oregon State University College of Veterinary Medicine (Dr. Michele Kutzler)

Texas A&M University College of Veterinary Medicine

Instructor at the Texas Department of Rehabilitation, Alvin, Texas.

Instructor to veterinarians and veterinary technicians in semen collection, analysis, freezing and artificial insemination in the dog and cat at Texas A&M University and Washington State University workshops and mini lecture series.

Instructor to over 85 veterinarians in canine semen collection, evaluation, freezing and artificial insemination and the set-up and operations for a canine semen bank.

Scientific consultant to the following organizations

Texas A&M University College of Veterinary Medicine (Dr. Garry Addams and Dr. Joe Templeton); Stanford University Department of Comparative Medicine (Dr. Linda Cork and Dr. Emmanuel Mignot); Woodland Park Zoo, Seattle, WA (Dr. Darin Collins); Point Defiance Zoo, Tacoma, WA (Dr. Karen Goodrowe); National Zoological Gardens, Washington, D.C. (Dr. David Wildt); U.S. Fish and Wildlife Service; Henry Doorly Zoo, Omaha, NE; Smithsonian Institute, Washington, D.C.; Albuquerque Zoo, NM; San Diego Zoo, CA; Denver Zoo, CO; Hermann Park Zoo, Houston, TX; Gladys Porter Zoo, Brownsville, TX; The Gorilla Foundation, Woodside, CA; Denver Zoo, Denver, CO; Springfield Zoo, Springfield, IL; Little Rock Zoo, AR; Kansas City Zoo, MO; San Antonio Zoo, TX; Dallas Zoo, TX; Fort Worth Zoo, TX; St. Louis Zoo, MO; Chicago Zoo, IL; Lincoln Park Zoo, IL; Los Angeles Zoo, CA; Japanese Deer Park, San Francisco, CA; King's Dominion, Richmond, VA; Olympic Game Farm, Sequim, WA; Washinton Park Zoo, Portland, OR; Cincinnati Zoo, OH; Oregon Regional Primate Research Center, Beaverton, OR (Dr. John Fanton); Wildlife Safari, Winston, OR (Dr. Modesto McClean); SW Foundation for Biomedical Research (Dr. Pat Frost), San Antonio, TX; Cayman Island Turtle Farm, British West Indies (Drs. Jim and Fern Wood); SW Primate Research Foundation, San Antonio, TX; Oregon State University School of Veterinary Medicine, Corvallis, OR (Dr. Michele Kutzler).

EMPLOYMENT HISTORY:

March, 1983 to present: Founder and President, International Canine Semen Bank, International Animal Semen Bank, P-T Electronics, Sandy, Oregon; International workshops with veterinarians in training and set-up of canine semen banks at over 45 clinics worldwide; Establishment of mobile laboratory circuits at various kennel club shows and dog kennels. Directed the veterinary training workshops in the use of electroejaculation in domestic and wild animals with zoo and clinic veterinarians.

January 1980 to March, 1983: Appointed Assistant Professor in Research, Department of Cell Biology and Institute of Comparative Medicine, Baylor College of Medicine and Department of Veterinary Physiology and Pharmacology, College of Veterinary Medicine, Texas A&M University. Performed research in semen cryopreservation in the canine, feline, and other domestic and wild animals.

July 1974 to January 1980: Research Associate, Institute of Comparative Medicine, Baylor College of Medicine, Houston, Texas. Similar research as above.

1973 to June 1974: Research Associate in the Department of Surgery, University of Oregon Health Sciences Center, Portland, Oregon. Similar research as above.

May 1971 to December 1972: Research Assistant in the Department of Surgery, University of Oregon Health Sciences Center, Portland, Oregon. Similar research as

above as well as working with human infertility clinics in providing semen cryopreservation services for human clients.

May 1970 to April 1971: Research Assistant in the Department of Biochemistry, University of Oregon Health Sciences Center, Portland, Oregon. Performed research in the use of radioactive isotopes in determining the binding sites in transfer RNA.

March 1968 to April 1970: Research Assistant in the Department of Biochemical Research, Providence Hospital, Portland, Oregon. Performed research in the purification of eye lens proteins in rabbit and bovine.

JOB DESCRIPTION:

February 1984 to Present:

Development and implementation of commercial canine semen freezing and storage program. Training and supply of equipment to veterinarians, researchers, and Federal agencies for domestic and wild feline semen collection, evaluation, freezing, artificial induction of estrus/ovulation and artificial insemination. Set up and training of artificial inseminators for the canine in the U.S. and overseas. Presentation of semen preservation program in the canine and various species of domestic and wild animals at scientific meetings, kennel club meetings. Preparation and submission of scientific, lay and professional manuscripts for publication. Supervision, development and operation of mobile semen freezing laboratories. Research and development of techniques to successfully preserve peregrine falcon semen.

January, 1980 to January 1984: Collection, analysis and semen cryopreservation in domestic dog and cat, captive wild mammals, reptiles and birds; sperm morphology studies; development and testing of in vitro fertility tests in dog, cat, addax, bovine, equine, lowland gorilla, marmoset and chimpanzee, consisting of sperm migration in bovine cervical mucus and sperm penetration of zona-free hamster eggs. Radioimmunoassay of serum hormones LH, progesterone, estrogen, prolactin, as well as studies in exogenous administration of FSH, LH, and prostaglandin F₂ alpha in the dog and cat to determine effect on ovarian activity. Report writing for quarterly and monthly reports to granting agencies, preparation of grant proposals, preparation and submission of abstracts and full papers to scientific journals, presentation of research results at scientific meetings and workshops related to reproductive biology in cattle, pigs dogs, cats, and captive wild mammals. Design and implementation of research projects. Responsible for training and supervision of laboratory technicians in various research studies. Consultant to the Cayman Island Turtle Farm, British West Indies, the Hermann Park Zoo, Houston, Texas, The San Diego Wild Animal Park, Escondido, California.

July, 1974 to January, 1980: Similar to above. In addition, assisted with fiberoptic laparoscopy in dogs, cats, and captive wild mammals, birds, and reptiles. Responsible for organization of semen workshop at the American Association of Laboratory Animal Science national meeting in November, 1976, involving techniques for obtaining dog, cat,

rabbit, rat, squirrel monkey and mouse semen. Instructor for Texas Department of Rehabilitation, Cayman Island Turtle Farm, B.W.I., San Diego wild Animal Park, San Diego, Ca., National Zoological Gardens, Washington, D.C., and Southwest Primate Research Foundation, San Antonio, Tx..

1971 to 1974: Similar to the above. Basic research in development of optimal semen cryopreservative solutions. Developed and implemented techniques for human semen analysis, freezing, storage, and retrieval for human semen bank at University of Oregon Health Sciences Center.

1970 to 1971: Yeast transfer RNA binding site determinations. Radioisotope binding assays for transfer RNA (yeast and ovine). Column and thin-layer chromatography. X-ray radiography; enzyme digestion; high speed centrifugation; responsible for training and supervision of medical school students in performing radioisotope binding assays in tRNA (yeast). Responsible for record-keeping, preparation of buffer and stock solutions.

1968 to 1970: Eye lens protein investigation into identification and purification of alpha, beta, and gamma protein fractions of rabbit and bovine eye lens. Column, thin-layer and paper chromatography; polyacrylamide gel, cellulose acetate and paper electrophoresis, both high and low voltage; amino acid analysis; immunoelectrophoresis, immunodiffusion on cellulose acetate and administered injections into guinea pigs and chickens, and harvested serum to determine titer for immunochemical research; determination of protein nitrogen using Micro-Kjeldahl apparatus. Preparation of chemical reagents for commercial sales.

ACCOMPLISHMENTS:

Design, development, manufacture and sale of electric stimulators and rectal/penile probes currently in use worldwide for electroejaculation of domestic and wild mammals, reptiles and birds by research institutions, zoos, game parks, government agencies, and veterinarians.

Produced litter of 4 beagle puppies from frozen semen collected and stored 37-plus years prior to insemination.

Two Bottle-nose dolphin calves produced from ICSB frozen Dolphin semen using our procedures in Holland in 2007.

Produced first pregnancy/litter from fresh-cooled canine semen shipped to our laboratory, then frozen/artificially inseminated.

Produced first pregnancy using pelleted semen from frozen mammoth jackass semen.

Obtained first pregnancy and offspring using frozen semen in the domestic cat.

Obtained first pregnancy and offspring using frozen epididymal spermatozoa in the white tail deer.

Obtained first pregnancy in the African lion using artificial insemination of freshly collected semen.

Obtained first pregnancy and offspring from electroejaculation and artificial insemination of semen in snakes.

Developed first successful apparatus and techniques to obtain spermatozoa from the green sea turtle, Galapagos tortoise and red-eared pond turtle, several species of snakes, non-human primates, hoofed stock, carnivores and omnivores.

First froze and artificially inseminated semen in the endangered Canadian timber wolf to produce live, healthy wolf cubs.

Produced first offspring in the domestic canine from frozen epididymal sperm cells.

Produced first litter in the domestic dog using frozen sperm cells recovered from the epididymis of a dog that had died 27 hours prior to sperm harvest and freezing.

Produced first Red wolf puppies from semen obtained by electroejaculation.

Developed and implemented human semen bank at the University of Oregon Health Sciences Center in Portland, Oregon.

Equipment personally competent with and trained in using:

Beckman amino acid analyzer

Beckman DU, DB, Coleman, Bausch and Lomb and Gilford spectrophotometers

Beckman and ISCO scanning densitometers.

Various peristaltic pumps, fraction collectors (Gilford, Buchler, LKB, SMI), and flash evaporators.

Photodensitometer-recorder and drop-counter systems.

Refrigerated centrifuges (Beckman, IEC)

Micro-Kjeldahl apparatus

Packard Model 2650 Tri-Carb scintillation spectrometer

Packard Model 5130 Auto Gamma Scintillation Counter

Beckman L-2 ultracentrifuge

Refrigerated fraction collectors

Gilford Auto-Scan recorder

Sartorius, Mettler, and Cahn Microbalances

Bausch and Lomb, Wilde, American Optical, Olympus, and Zeiss phase contrast and bright field microscopes and photomicroscopes.

Napco and other water baths, drying ovens and CO₂ incubators.

Wolf and Storz fiber-optic laparoscopes and accessory equipment for biopsy, electrocautery and photography.

LKB automatic pipetting station
Hewlett-Packard Model 9830A programmable calculator
Word Processors and Computers: Balcones, Osborne, MicroTech, MacIntosh plus,
MacIntosh SE, IBM and compatible systems.
Eppendorf, Selectapette, Pipetman, Oxford pipette systems
PTE electroejaculator

THE END