

CURRICULUM VITAE

RANDALL SCOTT PRATHER

Division of Animal Sciences
920 East Campus Drive, E125D Animal Science Research Center
University of Missouri-Columbia
Columbia, Missouri 65211-5300
Office Phones (573) 882-6414/6391
E-Mail PratherR@Missouri.Edu
FAX 573-884-7827
Lab Phone (573) 882-4241
Married 36 years; 7 children, ages 18 to 29

CAREER OBJECTIVE

To genetically engineer swine for production agriculture and biomedicine, and to improve reproductive efficiency in domestic animals by performing directed research in developmental biology and reproductive physiology, by focusing on the molecular, cellular and physiological events surrounding ovulation, fertilization and preimplantation embryonic development.

EDUCATION

Postdoctoral Fellow, University of Wisconsin-Madison, Dr. N.L. First & Dr. G.P. Schatten.

Doctorate of Philosophy, Endocrinology-Reproductive Physiology, University of Wisconsin-Madison, May, '87.

Master of Science, Animal Science and Industry (Reproductive Physiology), Kansas State University, May, '84.

Bachelor of Science, Agriculture (Animal Science and Industry), Kansas State University, May, '82.

High School Diploma, Garnett High School, Garnett, Kansas, May, '78.

TRAINING AND RESEARCH EXPERIENCE

November '11-Present: **Director**, National Swine Resource and Research Center, University of Missouri-Columbia.

September '06-Present; **Curators' Distinguished Professor**, University of Missouri System.

November '04-Present; **Associate Leader**, Food for the 21st Century Reproductive Biology Cluster, University of Missouri-Columbia.

September '03-November '11; **Co-Director**, National Swine Resource and Research Center, University of Missouri-Columbia.

September '01-Present; **Distinguished Professor of Reproductive Biotechnology**, University of Missouri-Columbia.

September '99-August '01; **Professor**, Department of Animal Sciences, University of Missouri-Columbia.

September '95-August '99; **Associate Professor**, Department of Animal Sciences, University of Missouri-Columbia.

June '89-August '95; **Assistant Professor**, Department of Animal Sciences, University of Missouri-Columbia.

June '88-June '89; **Postdoctoral Research Assistant**, Dept. Meat & Animal Science, University of Wisconsin-Madison.

March '87-June '88; **Postdoctoral Research Assistant**, Dept. Zoology, Dept. of Meat & Animal Science, University of Wisconsin-Madison.

June '84-February '87; **Research Assistant**, Department of Meat and Animal Science, University of Wisconsin-Madison.

June '82-May '84; **Temporary Assistant Instructor**, Department of Surgery and Medicine, College of Veterinary Medicine, Kansas State University, Manhattan, Kansas.

January '82; **Basic Milker's School**, Kansas State University, Manhattan, Kansas.

'75-'84; **Farm Manager and Worker**, Osage Farms Inc., Garnett, Kansas.

RESEARCH INTERESTS

1. Mechanisms of Oocyte Activation
2. Transcriptional Regulation of Differentiation
3. *In Vitro* Production of Embryos
4. Nuclear Reprogramming After Nuclear Transfer
5. Transgenic Animal Production
6. Genomic Studies in Reproduction

WEB SITES

Unearthed – Porcine Reproductive and Respiratory Syndrome Virus Resistant Pigs. <https://unearthedmag.wordpress.com/2016/05/13/gene-editing-holds-promise-as-animal-disease-prevention-of-the-future/>

MIZZOU – Porcine Reproductive and Respiratory Syndrome Virus Resistant Pigs. <http://munews.missouri.edu/news-releases/2015/1208-pigs-that-are-resistant-to-incurable-disease-developed-at-university-of-missouri/>, and <https://vimeo.com/187064068/415c816ef5>

National Hog Farmer - Porcine Reproductive and Respiratory Syndrome Virus Resistant Pigs. <http://nationalhogfarmer.com/animal-well-being/genetic-breakthrough-creates-prrs-resistant-pigs>

North American Porcine Reproductive and Respiratory Syndrome Symposium, Chicago, IL Dec 5, '15. <https://www.youtube.com/watch?v=vYLkeBUJU0>

New Pig Model of Cancer- http://www.eurekalert.org/pub_releases/2015-07/uoc-npm072915.php

North American Porcine Reproductive and Respiratory Syndrome Symposium, Chicago, IL Dec 6, '14. <http://www.youtube.com/watch?v=KLgHvTTITXE>

McGill University, Honorary Doctorate Address, Montreal, Canada, June 2, '14. http://www.youtube.com/watch?v=pBr1d8_VKoc

National Hog Farmer. Story on Porcine Reproductive and Respiratory Syndrome resistance to virus. July 24, '13.
<http://nationalhogfarmer.com/health/finding-cure-prrs>

Syndicate Mizzou: A Bacon of Hope. Jan 20, '09.
<http://syndicatemizzou.org/articles/show/97>

National Swine Resource and Research Center Website.
<http://nsrrc.missouri.edu/>

Prather's Home Page. <http://animalsciences.missouri.edu/faculty/prather/>

Discover Magazine story on Omega 3 Pigs. December 21, '06.
<http://www.columbiamissourian.com/stories/2006/12/21/omega-3-pork-hits-discovers-top-list/>

Columbia Missourian story on Omega-3 pigs. March 29, '06.
<http://www.columbiamissourian.com/stories/2006/03/29/eat-like-a-pig-without-looking-like-one/>

The New York Times story on Omega 3 Pigs. March 26, '06.
<http://www.nytimes.com/2006/03/26/health/26cnd-pig.html>

Breaking ground for construction of the National Swine Resource and Research Center. May 5, '05.
<http://www.columbiamissourian.com/stories/2005/05/05/mu-breaks-ground-for-research-facility/>

Cryopreservation Technique for Pig Embryos. Columbia Missourian. May 4, '04.
<http://www.columbiamissourian.com/stories/2006/05/04/new-pig-embryo-technique-aids-disease-research/>

Swine Genome Project at the University of Missouri.
<http://swine.rnet.missouri.edu/>

Bovine Genome Project at the University of Missouri.
<http://bovine.rnet.missouri.edu/>

Ovine Genome Project at the University of Missouri.
<http://genome.rnet.missouri.edu/Ovine/>

The Daily Show- Omega 3 Pigs, March 26, '06. <http://www.cc.com/video-clips/yrv8of/the-daily-show-with-jon-stewart-what-are-we-doing-to-pigs---fatty-acids>

National Public Radio story on Omega 3 Pigs. March 26, '03.
<http://www.npr.org/templates/story/story.php?storyId=5300300>

CNN story on the First Knockout Pigs for Xenotransplantation. Jan. 3 '02.
<http://www.cnn.com/2002/HEALTH/01/03/pig.cloning/index.html>

PROFESSIONAL MEMBERSHIP

International Xenotransplantation Association (IXA) '13-Present.
American Association for the Advancement of Science '89-Present.
Society for the Study of Reproduction '84-Present.
International Embryo Transfer Society '83-'09, '11-Present.
American Society of Animal Scientists '83,'94-'98.
Society for the Study of Fertility '94-'99.
Society of Developmental Biologists '86-'92.

American Scientific Affiliation '86-'91.
Sigma Xi '87-'96.

AWARDS/HONORS

- **Roger L. Mitchell Fellow.** College of Agriculture Food & Natural Resources, University of Missouri. April 14, '16.
- **American Association for the Advancement of Science Fellow,** November '15. Induction Feb 13, '16. Washington DC.
- Mizzou Chapter of the **National Academy of Inventors.** University of Missouri. April 30, '15.
- **Doctorate in Science, *honoris causa.*** McGill University, Montreal, Canada. June 2, '14.
- Fredrick Blackmar Mumford Outstanding Faculty Award.** College of Agriculture Food and Natural Resources. University of Missouri. April 10, '14.
- **Distinguished Faculty Alumni Award.** The University of Missouri Alumni Association. Columbia, MO October 12, '12.
- **Distinguished Agriscience Scientist Award.** Christopher Columbus Fellowship Foundation, <http://www.agriscienceawards.com/recent-winners.php>. Washington DC. July 12, '11.
- **Faculty Alumni Award.** The University of Missouri Alumni Association. Columbia, MO October 10, '08.
- **Research Award,** Society for the Study of Reproduction. Kailua-Kona, Hawaii May 27, '08. http://www.ssr.org/Documents/2008-05-25_008awardees.pdf
- **21st Century Corps of Discovery Lecture.** University of Missouri-Chancellor's Award. '07. <http://chancellor.missouri.edu/discovery/past-lectures.php>
- **Discover Magazine Top 100 Science Stories** in '06. Our Omega-3 pigs ranked number 38.
- **President's Award for Research and Creativity,** University of Missouri System. May 4, '06.
- American Physiology Society,** Walter Randall Award for Biomedical Ethics, April 4, 2006. San Francisco, CA.
- **National Geographic Magazine,** Photo and story on transgenic pigs expressing the enhanced green fluorescent protein. July '05, page 18.
- **Presidential Faculty Entrepreneur of the Year Award,** University of Missouri System. March 5, '03.
- **Animal Molecular and Cell Biology Distinguished Lecturer,** University of Florida. May 3, '03.
- **Popular Science's Medical Tech Grand Award Winner.** The best of what's new- Knockout pigs- The most significant advance in medical technology for the year 2002.
- **Discover Magazine Top 100 Science Stories** in 2002. Our alpha 1,3 galactosyltransferase knock-out pigs ranked number 36.

- **Missouri's Excellence in Life Science Award** for Excellence in Life Science Research for '02. Missouri Biotechnology Association (MOBIO), November 14, 2002.
- **Distinguished Professor of Reproductive Biotechnology**, September 1, '01, University of Missouri-Columbia.
- **Outstanding Research Award**, American Society of Animal Science-Midwestern Section, March 19,'97.
- **Researcher of the Year**, Junior Faculty, College of Agriculture, Food & Natural Resources, University of Missouri, October 1, '96.
- **Junior Faculty Research Award**, Gamma Sigma Delta University of Missouri, March 27,'96.
- **Finalist-Student Competition**, International Embryo Transfer Society; '84, '85, '86.
- **Counselor, Kansas Boy's State**, Lawrence, KS. '78.
- **Delegate, Kansas Boy's State**, Lawrence, KS, '77.

MISCELLANEOUS

- Swine in Biomedical Research-** Organizing Committee. September 21-25, '17. Baltimore, MD.
- Strategic Planning**, ORIP NIH- Panel Member. North Bethesda, MD. July 9 '15.
- External Advisory Board-** R24 awarded to Christopher Tuggle, Iowa State University. Summer '15 to present.
- Chair** – Animal Models Impacting Human Disease: 10th Comparative Medicine Resource Directors Meeting. Session on the Impact of CRISPR/Cas9 Mutagenesis on Resources of Various Species. Bethesda, MD Aug 12-13, '14
- External Advisory Committee-** NRSP8- Swine sub-committee. Fall '13 to present.
- International Organizing Committee-** 10th International Conference on Pig Reproduction. Chair of the Local Organizing Committee.'13-'17. June,'17. Columbia, Missouri.
- Swine in Biomedical Research-** Organizing Committee. July 6-8, '14. Raleigh, NC.
- Swine in Biomedical Research**– Program Committee. July 6-8, '14. Raleigh, NC.
- International Organizing Committee-** 9th International Conference on Pig Reproduction. Treasurer.'09-'13. June,'13.Olsztyn, Poland. Also chaired a session.
- Swine in Biomedical Research-** Organizing Committee. Chicago, IL, July 17-19, '11. Also provided Welcoming Remarks and served as Session Moderator.
- Chairman** –International Embryo Transfer Society, Session VI Molecular Networks as Sensors and Drivers of Fertility. Orlando, FL, Jan 10, '11.
- International Organizing Committee** – Swine Genome Sequencing Consortium, Sanger Auditorium, November 2-4, '09. Hinxton, UK.

Consultant – Exemplar Genetics, Sioux Center, IA. 2/3/2009-2/2/2010;
9/1/2010-8/31/2011

Swine in Biomedical Research- Organizing Committee. San Diego, April 2-3, '08.

International Embryo Transfer Society- Chaired a session entitled 'Societal Needs' at the annual meeting. January 5-9, '08.

International Organizing Committee- 8th International Conference on Pig Reproduction. Treasurer. '05-'09. June 1-3, '09 Banff, Canada.

Swine in Biomedical Research- Organization Committee- Meeting held in Chicago in January '05.

USDA/NRICGP Reproductive Biology of Animals - Grant Review Panel May 31-April 4, '03. Washington D.C.

USDA/NRICGP Reproductive Biology of Animals - Grant Review Panel May 13-16, '02. Washington D.C.

Abstract Session Chair. International Embryo Transfer Society. Co-Chaired the review of 65 abstracts on cloning with Brett White at the University of Nebraska. Fall '01.

International Organizing Committee- 7th International Conference on Pig Reproduction. Treasurer. June '00-'05. The Netherlands.

International Organizing Committee- 6th International Conference on Pig Reproduction. June 3-6, '01. Columbia, MO.

Editorial Board- *Xenotransplantation*. Blackwell Publishing. May '02-Present.

Executive Editor- *Molecular Reproduction & Development*. Wiley-Liss, Inc. March '07 - Present.

Associate Editor- *Molecular Reproduction & Development*. Wiley-Liss, Inc. November '99-February '07.

Board of Editors- Cloning, now re-titled *Cloning & Stem Cells*, now re-titled *Cellular Reprogramming*. Mary Ann Liebert, Inc. Publishers. September '98-Present.

Editorial Advisory Board- *Animal Reproduction Science*. Elsevier Science. January '00- December '01.

Organizing Committee- Nuclear Transfer and Transgenesis. June 18-21, '00. Park City, Utah.

Chairman- Session on: Stem Cells. Nuclear Transfer and Embryonic Stem Cells. April 15-17, '98. Monash University, Australia.

Physiology Committee - Midwest Section of the American Association of Animal Scientists/ American Dairy Science Association, '96-'98. Chairman '97-'98.

Research Awards Committee- Midwest Section of the American Association of Animal Scientists/ American Dairy Science Association, '97-'00.

Co-Chair- Session on: Embryo transfer in pigs. Annual Meeting of the International Embryo Transfer Society, Salt Lake City, Utah, January 8, '96.

Chairman- Session on: Activation of the oocyte. Annual Meeting of the International Embryo Transfer Society, Salt Lake City, Utah, January 9, '96.

Director - Transgenic Animal Facility, in the Animal Sciences Research Center, '90-'94.

USDA/NRICGP Reproductive Biology of Animals - Grant Review Panel June 1-4, '93. Washington D.C.

Local Organizing Committee - 4th International Conference on Pig Reproduction, Columbia, MO, May 23-26, '93.

Local Organizing Committee– 22nd Annual Meeting of the Society for the Study of Reproduction, Columbia, MO, Aug. 6-9, '89.

Education Committee, International Embryo Transfer Society '91-'92, '97-'99.

Ad Hoc Reviewer

Journals

- Animal Biotechnology: '04, '05, '06, '07, '10, '13, '14, '16;
- Animal Genetics: '95, '07, '10;
- American Journal of Transplantation: '03;
- Animal Reproduction Science: '97, '98, '99, '02, '03, '04, '05, '06, '07, '08, '09, '13;
- Biology of Reproduction: '88, '89, '90, '91, '92, '93, '94, '95, '96, '97, '98, '99, '00, '01, '02, '03, '04, '05, '06, '07, '08, '09, '10, '11, '12, '13, '14, '15, '16;
- Biology Open: '13;
- BMC Biotechnology: '12;
- BMC Genomics: '13;
- Cellular Reprogramming: '13, '14;
- Developmental Biology: '89, '90, '91, '92, '93, '94, '95, '00, '06;
- Developmental Dynamics: '06, '11;
- Differentiation: '95;
- DNA and Cell Biology: '03;
- Domestic Animal Endocrinology: '99;
- Epigenetics: '10, '11;
- Gamete Research: '89;
- Genome: '00;
- Journal of the American Association for Laboratory Animal Science: '09;
- Journal of Animal Science: '91, '94, '95, '98, '06, '10;
- Journal of Experimental Zoology: '91, '92, '93, '94;
- Journal of Reproduction & Fertility: '89, '90, '91, '92, '95, '97, '98, '99 '00, '12, '13;
- Life Sciences: '11;
- Microbiology: '13;
- Microscopy Research and Technique: '99;
- Molecular Reproduction & Development: '89, '90, '91, '92, '93, '94, '95, '96, '97, '98, '99;
- Nature Reviews Genetics: '00;
- Nature Biotechnology: '01, '05, '08;
- PLoS ONE: '15;

- Proceedings of the National Academy of Science: '96, '97, '00, '01, '03, '04, '05, '07, '08, '09, '10, '12;
- Reproduction: '00, '01, '05, '06, '07, '08, '12, '13, '14;
- Reproduction in Domestic Animals: '09, '10;
- Reproduction, Fertility and Development: '97, '98, '99, '00, '01, '02, '03, '04, '05, '08, '09, '11, '13;
- Reproduction Nutrition Development: '95;
- Reproductive Biology and Endocrinology: '13;
- Scientific Reports: '16;
- Science: '00, '01;
- Systems Biology for Reproductive Medicine: '09;
- Theriogenology: '89, '90, '91, '92, '93, '94, '95, '96, '97, '98, '99, '00, '01, '02, '03, '04, '06, '07, '10, '11, '13, '15;
- Toxicologic Pathology: '15;
- Transgenic Research: '05, '06, '07, '09, '10, '11, '13, '14, '16;
- Transplantation: '06;
- Xenotransplantation: '01, '02, '06;
- Zygote: '97, '98.

Grant Proposals

- Austrian Science Fund: '97, '98;
- Biotechnology and Biological Sciences Research Council, UK: '97, '98;
- Global Research Network Program- Korea Research Foundation: '08.
- International Foundation for Science: '97;
- Juvenile Diabetes Research Foundation: '09;
- Lincoln University AES-Jefferson City Mo: '99;
- Massachusetts Agricultural Experiment Station: '95;
- Medical Research Council of Canada: '93;
- Missouri Agricultural Experiment Station (Lincoln University): '97;
- National Institutes of Health, NIAID, Innovation grant program: approaches in HIV vaccine research: '98;
- National Institutes of Health, NICHD, REB: '99; NICHD, ZHD1, '00; NINDS, NSD-B, '02; CSR ZRG1 BDA-A, '09; CSR ZRG1 IDM-L, '09; CSR ZRG1 EMNR-Q, '11; CSR ZRG1 EMNR-E, '12; CSR SEP, '14.
- National Science Foundation: '94, '06;
- Natural Sciences and Engineering Research Council of Canada: '93, '08;
- North Carolina Biotechnology Center: '97;
- The Israel Science Foundation: '99, '02;
- The Volcani Center, ARO: '16
- Ohio Cancer Research Associates: '97;
- USDA CSREES Small Business Innovation Research Program: '90, '91, '98, '99, '02;
- USDA CSRS CRGO Animal Growth & Development: '90;
- USDA CSRS CRGO Animal Science - Reproductive Physiology: '90;
- USDA CSRS NRI CGP Animal Science - Reproductive Biology of Animals: '91, '92, '95, '96, '97, '99, '01, '04, '05;

- USDA CSRS NRI CGP Animal Science - Animal Molecular Genetics: '92, '99, '00;
- USDA CSRS NRI CGP Animal Science - Cellular Growth...: '92, '95, '96;
- USDA CSRS NRI CGP Improving Animal Growth: '98;
- USDA CSREES Biotechnology Risk Assessment: '04;
- USDA- NIFA Multistate Research Project: '14;
- University of Louisville, CTS Innovative Research proposal: '10.
- University of Wisconsin Sea Grant College Program: '97.

Site Visit

- University of Illinois- Review of swine research and teaching facilities, September 15-17, 2014.

Team Captain - Kansas State University, Animal Science and Industry Academic Quadrathlon. 2nd place team: '82.

FUNDING (Total Costs)

As Principal Investigator or Co-Investigator (Subcontracts as PI/PD)

2016-2017; **National Pork Board**, Porcine cytomegalovirus real-time PCR validation for diagnostic use. S. Schommer, PI, R.S. Prather, Co-I. \$45,874

2015-2017; Genus plc. PRRSV resistant pigs. R.S. Prather, K.D. Wells, K.M. Whitworth, PI's. \$ 701,844

2015-2017; **Amgen, Inc.** Preclinical Model Development. R.S. Prather & K. Wells PI's. \$ 300,000

2014-2016; **National Institutes of Health** – R21. Subcontract from the University of Pittsburgh – Dr. Robert Nicholls, PI, Development of a Swine Model of Prader-Willi Syndrome. R.S. Prather & K. Wells PI's on the subcontract. \$423,203 total \$ 150,708

2014-2015; **National Institutes of Health** – U42 Administrative Supplement. CRISPR/Cas9 to create animal models of human disease: The NSRRC. R.S. Prather & Kevin Wells, PI's \$ 230,957

2014-2015; **Howard Hughes Medical Institute**/ Univ. Iowa. Somatic cell nuclear transfer and related work for Iowa via HHMI. R.S. Prather \$ 20,000

2014; **Auburn University**. Fertilization of pig oocytes in the presence of specific pig serum. R.S. Prather \$ 25,836

2014-2018; **National Institutes of Health** – R01. Modification of donor cell metabolism to mimic blastomere metabolism for improved somatic cell nuclear transfer. R.S. Prather, J.A. Green, K. Wells PIs. \$1,133,088

2014; **Genus**. Genetic engineering of PRRSV resistant pigs for Genus. R.S. Prather & K. Wells, PIs \$ 111,694

2013-2018; **National Institutes of Health**- U42. National Swine Resource and Research Center. PI, R.S. Prather, Co-Is Drs. Bryda, Schommer, Walters & Wells. \$7,146,890

2013-2016; **United States Department of Agriculture AFRI**. ZFN-mediated inactivation of porcine interleukin 1 β as a model to study endometrial receptivity and conceptus attachment. PDs J.J. Whyte, R.D. Geisert, R.S. Prather. \$ 497,696

2013-2014; **Genus**. Genetic engineering of PRRSV resistant pigs for Genus. R.S. Prather & K. Wells, PIs \$ 207,610

2013; **Genus**. Genetic engineering of PRRSV resistant pigs for Genus. R.S. Prather & K. Wells, PIs \$ 51,851

2012-2013; **National Institutes of Health** – P01, subcontract from the University of Iowa. PPG- Airway physiology and pathophysiology in a porcine CF model. R.S. Prather, PI \$ 45,874

2012-2014; **National Institutes of Health** – R21, A large animal model of SMA. M. Lorson, PI, C. Lorson, K. Wells, R.S. Prather, Co-I's. \$ 416,625.

2012-2017; **National Institutes of Health**, R01 Dual Use – Induced Pluripotent Stem Cells from Swine: Application to Genetic Modification. RM Roberts, T Ezashi, RS Prather, KD Wells, BPV Telugu. \$1,984,446

2011-2012. **Iowa State University**. Cloning of DMD swine for Dr. Jason Ross. R.S. Prather, PI on the subcontract \$12,911

2011-2014. **Christopher Columbus Foundation**. CD163 modified pigs. R.S. Prather, PI \$25,000

2010-2014. **Korea – Kon-Kuk University**. Development of patient-specific organs by using multiple zinc finger nucleases. R.S. Prather, PI \$500,000

2010-2011. **University of British Columbia**. Maintenance of transgenic boars for the Juvenile Diabetes Research Foundation. R.S. Prather, PI \$ 6,435

2010. **University of Louisville** (Dr. Henry Kaplan). Green pigs for eye research. R.S. Prather, PI \$10,835.

2009; **Juvenile Diabetes Research Foundation**. Subcontract from the University of British Columbia. Tim Kieffer. R.S. Prather, PI on Subcontract \$62,461.

2009-2011; **National Institutes of Health**, U42 Administrative Supplement. National Swine Resource and Research Center. L.K. Riley, J.K. Critser, R.S. Prather and K.D. Wells. \$ 932,481.

2009-2011; **National Institutes of Health**, R21. High throughput cryopreservation of swine embryos. R.S. Prather, PI. \$ 372,115.

2009-2010. **Agricultural Research Service**, Swine genomics and biodefense countermeasures discovery. L. K Riley, M.A. McIntosh PIs, R.S. Prather Co-I. \$ 173,000.

2009-2011. **National Institutes of Health**, R21. Large animal model of spinal muscle atrophy. M.A. Lorson, PI, C.L. Lorson, R.S. Prather, K. D. Wells, Co-PIs. \$411,125.

2007-2008. **National Institutes of Health**. R13. Swine in Biomedical Research. Conference Grant. L. Riley, J. Critser & R.S. Prather, PI's. \$30,000.

2008-2013. **National Institutes of Health**. U42. Competitive Renewal of the National Swine Resource and Research Center. L. Riley, J. Critser & R.S. Prather, PI's. \$8,274,384.

2007-2008. **Hematech, Inc.** Production of pigs/fetuses for Hematech. R.S. Prather, PI. \$ 40,000

2007-2008. **United States Department of Agriculture.** NRI. Swine in Biomedical Research. Conference Grant. L. Riley, J. Critser & R.S. Prather, PI's. \$ 10,000

2007-2011. **National Institutes of Health.** Production of transgenic pigs by nuclear transplantation. Competitive renewal of R01. R.S. Prather, PI, Gordon Springer, Co-PI. \$1,162,175

2006-2009. **United States Department of Agriculture.** ARS. 1 year. Program for the prevention of animal infectious diseases and advanced technologies for vaccines and diagnostics. Knockout of sialoadhesin in swine. Direct costs only. R.S. Prather, PD. \$ 244,000

2006-2009. **United States Department of Agriculture.** NRI. 2 Years. Development of Defined Conditions for Pig Embryo Culture. R.S. Prather, PD. \$284,153

2005-2008. **United States Department of Agriculture.** Development of ovine expressed sequence tags for the study of female reproduction. J.A. Green, R.S. Prather, D.H. Keisler, M.F. Smith, G.K. Springer, J.F. Taylor, C. Elsik PDs. \$560,629

2005. **United States Department of Agriculture.** ARS. 7th International Conference on Pig Reproduction. Direct costs only. R.S. Prather, PD. \$ 2,500

2005-2009. **United States Department of Agriculture.** USDA National Needs Graduate Fellowships. M.C. Lucy R.S. Prather, W.R. Lamberson, J.F. Taylor, D.J. Patterson, M.F. Smith, H.A. Garverick, D.H. Keisler, T.J. Safranski, E. Antoniou, J.A. Green, E.B. Rucker, P. Sutovsky, PDs. Direct costs only. \$ 69,000

2005-2008. **United States Department of Agriculture NRI.** 2 years. Transcriptional Profiling of Nuclear Transfer-Derived Embryos to Improve Development After Nuclear Transfer. R.S. Prather, PI, P. Sutovsky & J. Green, Co-PDs \$499,939

2005. **United States Department of Agriculture.** 41.0 Animal Reproduction. International Conference on Pig Reproduction. R.S. Prather, PD. Direct costs only. \$ 5,000

2005-2006. **Monsanto Company.** Fertilization Experiments with Osteopontin. R.S. Prather, PI. \$ 125,000

2005. **United States Department of Agriculture.** Plant and Animal Systems. International Conference on Pig Reproduction. R.S. Prather, PD. Direct costs only. \$ 5,000

2004. **Immerge BioTherapeutics, Inc.** Construction of Knockout Miniature Swine. R.S. Prather, PI. \$ 55,013

2004-2005. **National Institutes of Health.** NCRR K13 RR020283. Swine in biomedical research conference. Larry Schook, Univ. IL. PI, Co-PIs Chris Counter, Duke U.; Eric Forsberg, Infigen; Merete Fredholm, Danish Vet. & Ag. Univ.; T. Mohankumar, Washington U.; Steven Niemi, Mass. General

Hospital; Randall Prather, Univ. MO; and Hirosh Yasue, Japanese Nat. Inst. of Agrobiolol. Sci. \$ 22,500

2003-2009; **National Institutes of Health**. NCRR. R24. eNOS: Metabolism & vascular biology in health & disease. M.H. Laughlin PI, E.B. Rucker Co-PI, R.S. Prather, F.W. Booth, D.K. Bowles, J.R. Turk Co-Is. \$3,526,324

2003-2008; **National Institutes of Health**, NCRR U42. 5 years. Operation of the National Swine Research and Resource Center, Co-PIs: , L. Riley, J.K. Critser, R.S. Prather, E.B. Rucker. \$7,024,385

2003-2005; **National Institutes of Health**, NCRR C06. 2 years. Construction of the National Swine Research and Resource Center. J.S. Coleman, PI, J.K. Critser, R.S. Prather, L.K. Riley, J. Herigon, E.B. Rucker, D. Spellman, J. Wawrzyniak, Co-PIs \$2,848,226

2003-2005; **University of Missouri**; Match for the above C06 to construct the National Swine Research and Resource Center. J.K. Critser, L. Riley, R.S. Prather, E.B. Rucker. \$5,458,530

2002-2005; **United States Department of Agriculture NRI**. 2 years. Bovine ESTs: Focus on female reproduction. RS Prather, PI, Co-PIs: E. Antoniou, H.A. Garverick, JA Green, MC Lucy, RM Roberts, MF Smith, RS Youngquist. \$ 990,000

2002-2007; **National Institutes of Health**, NCRR R01. 5 years. Production of transgenic pigs by nuclear transplantation. Competitive Renewal. RS Prather, PI, E Antoniou, Co-PI. \$1,034,867

2002-2003; **Ximerex, Inc.** 1 year. Construction of transgenic pigs for Ximerex by Nuclear Transfer. RS Prather, PI. \$ 133,834

2001; **United States Department of Agriculture**, NRI. 6 months. 6th International Conference on Pig Reproduction. RS Prather, PI, BN Day, Co-PI. \$ 5,000

2001-2002; **National Institutes of Health**. NCRR R01, 1 year. Production of transgenic swine by nuclear transplantation. RS Prather PI, Supplemental request to maintain genetic lines. \$ 18,161

2001-2003; **BioTransplant, Inc/Immerge BioTherapeutics**., 2 years. Production of α -1,3-galactosyltransferase deficient pigs by nuclear transplantation. RS Prather PI (SBIR Phase II, NIH NCRR subcontract) \$ 345,686

2000; **BioTransplant, Inc.**, 6 mo. Production of α -1,3-galactosyltransferase deficient pigs by nuclear transplantation. RS Prather PI, BN Day Co-PI (SBIR Phase I, NIH NCRR subcontract) \$ 45,652

1999-2004; **Monsanto**, 5 years. Agricultural Genomes: Animal Genome Project: Microarrays of Reproductive Significance. RS Prather & BN Day PIs, MC Lucy, MF Smith, JA Green, Co-PIs. \$2,500,000

1999-2004; **Monsanto**, 5 years. Swine Reproduction. BN Day & RS Prather PIs, MF Smith, Co-PI. \$2,500,000

1999-2002; **United States Department of Agriculture NRI**. 3 years. Development of Resources for Functional Genomics in the Pig. Joint project

between CK Tuggle and MF Rothschild at Iowa State, MB Soares and TL Casavant at the University of Iowa, D Pomp at the University of Nebraska, WD Beavis at the National Center for Genomics Research, and RS Prather, BN Day, MC Lucy, WR Lamberson, JA Green. \$124,575 to MU. \$ 700,000

1999-2000; **BioTransplant, Inc.** 1 year. Production of transgenic mini-swine for xenotransplantation. RS Prather PI, BN Day Co-PI \$ 119,755

1998-2001; **National Institutes of Health.** NCRR R01, 3 years. Production of transgenic swine by nuclear transplantation. RS Prather PI, BN Day Co-PI \$ 595,205

1998-1999; **BioTransplant, Inc.**, 1 year. Production of transgenic mini-swine by nuclear transplantation. RS Prather PI, BN Day Co-PI \$ 113,803

1996-2000; **National Institutes of Health** NICHD U01. 4 years. Markers for predicting developmental competence. RS Prather, PI; BN Day & RM Roberts Co-PIs. \$ 883,426

1996-1999; **National Institutes of Health** NCRR R01. 3 years. An improved method for making transgenic animals. RS Prather PI, BN Day Co-PI. \$ 520,769

1996-1998; **United States Department of Agriculture** NRI, 2 years. Cdc25c and Cyclin B levels at the onset of transcription. PI \$ 128,496

1996; **BioTransplant, Inc.** 6 months. Non-ES cell mediated gene targeting in the mini swine, via BioTransplant, Inc. subcontract. RS Prather PI, BN Day Co-PI. (NIH NCRR SBIR subcontract). \$ 36,455

1995-1997; **United States Department of Agriculture** NRI, 2 years. Role of a G-protein coupled receptor in pig oocyte activation. PI \$ 98,000

1994-1995; **University of Missouri Research Council**, 4 mo. Imprinting of genes in domestic pig embryos. PI. \$ 2,834

1994-1995; **BioTransplant, Inc.**, 1 year. Activation and development of mini-pig oocytes and embryos, continued. PI. \$ 234,379

1993-1994; **BioTransplant, Inc.**, 1 year. Activation and development of mini-pig oocytes and embryos. PI. \$ 304,601

1992-1995; **United States Department of Agriculture** NRI, 3 years. Mechanisms of parthenogenic activation in pigs. PI. \$ 151,108

1991-1992; **National Pork Producers Council**, 1 year. Artificial activation of *in vitro* matured porcine oocytes for cloning embryos. PI. \$ 5,467

1990-1992; **United States Department of Agriculture** NRI, 2 years. Nuclear changes after nuclear transfer for cloning pigs. A continuation of 1988-1990, Multiplication of porcine embryos by nuclear transfer. PI. \$ 150,000

1990-1991; **University of Missouri Research Council**, 1 year. Amino acid transport in early pig embryos. Experiments evaluate kinetics of amino acid transport in early pig embryos. PI. \$ 6,222

1988-1990; **National Institutes of Health** Postdoctoral Fellowship, 2 1/2 years. Nuclear lamins in early embryogenesis (Awarded, but not accepted). PI. \$ 60,000

1988-1990; **United States Department of Agriculture** CGP, 2 years.

Multiplication of porcine embryos by nuclear transfer. PI. \$ 200,000

Total as PI or Co-PI \$57,947,287

As Major User/ Contributor/Collaborator

2016-2017; **National Institutes of Health** – P01. Subcontract from the University of Iowa. PPG- Gene therapy for cystic fibrosis lung disease. R.S. Prather, PI \$ 45,604 to MU. \$2,219,200

2015-2016; **National Institutes of Health** – P01. Subcontract from the University of Iowa. PPG- Gene therapy for cystic fibrosis lung disease. R.S. Prather, PI \$ 115,981 to MU. \$2,216,878

2015-2020; **National Institutes of Health** – R01 Subcontract from The Mayo Clinic. Development of immunodeficient FAH-/- pigs. R.S. Prather, PI \$262,698 to MU. \$1,827,655

2014-2019; **National Institutes of Health** – P01. Subcontract from the University of Iowa. PPG- Gene therapy for cystic fibrosis lung disease. R.S. Prather, PI \$ 167,794 to MU. \$2,159,794

2009-2014. **National Institutes of Health** subcontract from the University of Iowa. Cystic fibrosis lung disease. R. S. Prather, PI on the subcontract. \$366,128 to MU. \$11,374,870

2010-2013. **National Institutes of Health** subcontract from the University of Iowa. Iowa Phase II Clinical Trials of Novel Therapies for Lung Diseases. L. Durairaj, PI at UI. R. S. Prather, PI on the subcontract. \$250,699 to MU. \$5,316,755

2008-2013: **National Institutes of Health** subcontract from the University of Iowa. PPG – Airway Physiology and Pathophysiology in a Porcine CF Model, to PI M. Welsh. R. S. Prather, Consultant. \$76,970 to MU. \$11,362,245

2007-2010. **The Discovery Eye Foundation**. Functional reconstruction of the outer retina. Michael Young, PI, Harvard; Henry Klassen, UC-Irvine; Robert S. Langer, MIT; Erik Scherfig, University of Copenhagen-Denmark; Karin Warfvinge, Lund University, Sweden; Erin Lavik, Yale University. Henry Kaplan, University of Louisville, KY. Subcontract to the University of Missouri, R. S. Prather, PI. \$99,190. Total funding \$5,989,793.

2004-2009. **National Institutes of Health**. NHLBI P01. Subcontract from the University of Iowa. Gene Therapy for Cystic Fibrosis Lung Disease. M.J. Welsh, PI UI. R.S. Prather, PI on subcontract. \$639,194 to MU. \$8,424,151

2007-2009; **Fight SMA**, The development of a swine model of Spinal Muscle Atrophy. Monique Lorson, PI. \$ 172,748

2005-2008; **National Science Foundation**, NSF Major Instrumentation grant. University of Missouri Prime fund match. Acquisition of Instrumentation for Plant and Animal Genome Mapping and High Throughput Genotyping. H. T. Nguyen, PI. \$860,000

2000; **National Science Foundation**, Minority Graduate Education Proposal. PI is Provost Dr. Brady Deaton. \$2,401,784

1999: **University of Missouri Research Board**, Establish Genomics

Core Facility. PI, Don Riddle	\$ 98,000
1998; National Science Foundation , Match for a new scanning electron microscope. PI is Dr. Heide Schatten.	\$ 273,000
1996-1999; United States Department of Agriculture , Food and Agricultural Sciences National Needs Graduate Fellowships-Animal Biotechnology Project. Funding for four highly qualified graduate students to work in the Department of Animal Sciences with the PI's or collaborators.	\$ 216,000
1994-1997; United States Department of Agriculture , Food and Agricultural Sciences National Needs Graduate Fellowships-Animal Biotechnology Project. Funding for three highly qualified graduate students to work in the Department of Animal Sciences with the PI's or collaborators.	\$ 163,000
1992-1995; United States Department of Agriculture NRI , 3 years. Transgenic expression in bovine blastocysts derived by <i>in vitro</i> procedures. R. M. Roberts PI, R.S. Prather Co-PI .	\$ 200,000
1992-1995; United States Department of Agriculture , Food and Agricultural Sciences National Needs Graduate Fellowships-Animal Biotechnology Project. Funding for three highly qualified graduate students to work in the Department of Animal Sciences with the PI's or collaborators.	\$ 162,000
1990-1993; United States Department of Agriculture , Food and Agricultural Sciences National Needs Graduate Fellowships-Animal Biotechnology Project. Funding for two highly qualified graduate students to work in the Department of Animal Sciences with the PI's or collaborators.	\$ 96,000
Total as Major User/Contributor/Collaborator	\$55,533,873

Awards Total \$113,482,160

Pig Improvement Company , Research on Swine Reproduction, R.S. Prather and B.N. Day, 1998.	\$ 5,000
Struther's , Research on Swine Reproduction, R.S. Prather and B.N. Day, 1999	\$ 8,000
Korea NLRI -RDA . Swine Reproduction, B.N. Day and R.S. Prather, 1999-2001.	\$111,000
BioTransplant, Inc. Micromanipulator, microscope and isolation table. R.S. Prather, 2001.	\$ 39,761
Circle A Ranch , 50 Angus heifers, 2002	\$100,500
Immerge Biotherapeutics . 2004	\$ 15,500
Immerge Biotherapeutics . 2004. Nutringer Nursery Units	\$ 10,000
Total Gifts	\$289,761

Total Dollars Awarded \$ 113,770,921

Other

2007-2009; **United States Department of Agriculture NRI**, Regulation of the development of IVF and SCNT embryos by MicroRNAs. Postdoctoral Fellowship to Dr. Jason Ross. R.S. Prather – mentor. \$124,939.

PUBLICATIONS

16 Patents (10 U.S. Patents)
300 Peer-Reviewed Manuscripts (47 invited)
37 Invited Review Papers/Book Chapters (not peer-reviewed)
103,181 Genome Sequence Data Base Submissions (GenBank)
356 Abstracts

Journal Cover/Vision Illustrations

Developmental Biology 1990 Vol. 138 #2
Journal of Animal Science 1996 Vol. 74 #9
Animal Biotechnology 2001 Vol. 12 #2
Biology of Reproduction 2004 Vol. 70 #6
Reproduction 2005 Vol. 129 #4
Reproduction, Fertility and Development 2005 Vol. 17 #8
Molecular Reproduction and Development 2006 Vol. 73 #9
Stem Cells and Development 2006 Vol. 15 #4
Biology of Reproduction 2007 Vol. 77 #5
Molecular Reproduction and Development 2008 Vol. 75 #2
Journal of Cellular Physiology 2008 Vol. 217 #2
Reproduction, Fertility and Development 2009 Vol. 21 #7
Science Translational Medicine Online issue April 28 2010
Molecular Reproduction and Development 2010: Visions 77:565
Molecular Reproduction and Development 2010: 77 #9
Science Translational Medicine Online issue March 16 2011
Biology of Reproduction September 2014 Vol. 91 #3

Manuscript Honors

- 1. Paper of the Week:** Journal of Biological Chemistry 2007, April 20.
- 2. Top 10 downloaded reviews** from Reproduction in 2009 – Holt, Pickard & Prather. 2004. Wildlife conservation and reproductive cloning. Reproduction 127:317-324. PMID 15016951.
- 3. Top 10 downloaded reviews** from Reproduction in 2010 – Holt, Pickard & Prather. 2004. Wildlife conservation and reproductive cloning. Reproduction 127:317-324. PMID 15016951.
- 4. Designated “Highly accessed”** by BioMed Central- Walters et al. 2012. Completion of the swine genome will simplify the production of swine as a large animal biomedical model. BMC Medical Genomics 5:55.
- 5. Scopus reports an h-index of 56** on January 2, '17, and 12,052 citations.

6. **Google Scholar reports an h-index of 65** on January 3, '17, and 17,731 citations; the i10-index is 256.

Patents

1. **R.S. Prather**, F. Barnes, J. Robl, N.L. First & V.F. Simmon, "Multiplying Bovine Embryos"; U.S. Patent #4,994,384 (issued February 19, '91).
2. J. Li, A. Rieke, B. Day & **R.S. Prather**, "Method of Effecting Embryo Transplant"; U.S. Patent #5,558,636 (issued September 24, '96).
3. J. Li, A. Rieke, B. Day & **R.S. Prather**, "A System for Effecting Embryo Transplant"; U.S. Patent #5,656,010 (issued August 12, '97).
4. J. Li, A. Rieke, B. Day & **R.S. Prather**, "A System for Introducing a Fluid into the Uterus of an Animal"; U.S. Patent #5,916,144 (issued June 29, '99).
5. J. Li, A. Rieke, B. Day & **R.S. Prather**, "A System for Introducing a Fluid into the Uterus of an Animal"; Australia Patent #713,345 (issued March 16, '00).
6. J. Li, A. Rieke, B. Day & **R.S. Prather**, "A method for Introducing a Fluid into the Uterus of an Animal"; Australia Patent #717,684 (issued July 13, '00).
7. Z. Machaty & **R.S. Prather**, "Complete Activation of Mammalian Oocytes". U.S. Patent #6,211,429 (issued April 3, 01).
8. J. Li, A. Rieke, B. Day & **R.S. Prather**, "A System for Introducing a Fluid into the Uterus of an Animal"; Canada Patent #2,220,550 (issued April 17, '01).
9. **Prather, R.S.**, B.N. Day & R. Hawley. "Knockout swine and methods for making the same" U.S. Patent #7,547,816 (issued June 16, '09).
10. Welsh, M.J., C. Rogers, **R.S. Prather**, J. Engelhardt, Z. Yan. "Method of identifying compounds using a transgenic pig model of cystic fibrosis", Provisional patent filed March 30, '07, U.S. Patent #7,989,657 (issued Aug. 2, '11).
11. **Prather, R.S.**, "Improvement of fertilization and development of in vitro produced embryos", Provisional Patent filed June 25, '04.
12. **Prather, R.S.**, R. Li, C.N. Murphy, L. Spate. "High throughput cryopreservation of swine embryos". U.S. Patent # 8,852,078 (issued October 7, '14).
13. Welsh, M.J., C.S. Rogers, **R.S. Prather**, J. Engelhardt, Z. Yan. "Transgenic porcine models of cystic fibrosis" U.S. #8,618,352 (issued December 31, '13).
14. Welsh, M.J., C.S. Rogers, **R.S. Prather**, J. Engelhardt, Z. Yan. "Transgenic pig models of cystic fibrosis" U.S. #8,912,386 (issued December 16, '14).
15. Welsh, M.J., C. Rogers, **R.S. Prather**, J. Engelhardt, Y. Ziyang. "Transgenic animal models of disease", filed March 5, '08. Australia. PCT/US2008/002886. WO 2008/121199 A2. (Issued October 10, '13).

16. **Prather, R.S.**, B.N. Day & R. Hawley. "Knockout swine and methods for making the same" Canada #2,471,035 (issued May 13, '14).
17. Lee, K., **R.S. Prather**. 2015 "Artificial oocyte activation" U. S. Patent application #20,150,150,153.
18. **Prather, R.S.**, K.D. Wells, K.M. Whitworth "Porcine reproductive and respiratory syndrome virus resistant animals", Provisional Patent filed May 16, '11. U. S. Patent application #20140096275
19. Kim, J.H., D.N. Kwon, J.Y. Park, K. Lee, **R.S. Prather**, J.H. Kim, M.J. Kang, M.J. "CMP-Acetylneuraminic acid hydroxylase targeting vector, transgenic animal for xenotransplantation introduced with the vector, and method of manufacturing the same", Provisional Patent filed April 30, '13. PCT/KR2013/007592. US Patent Application #20,160,102,319.
20. **Prather, R.S.**, K.D. Wells, K.M. Whitworth. "Pathogen-resistant animals having modified CD163 genes" Provisional Patent filed August 6, '15. PCT/US2015/044113

Peer-Reviewed

1. **Prather, R.S.** and N.L. First. 1986. Reprogramming of murine blastocoele formation. J. Exp. Zool. 237:347-350. PMID 3701291.
2. **Prather, R.S.** and N.L. First. 1986. Effect of cytochalasin B and demecolcine on freeze-thaw survival of murine embryos *in vitro*. J. Exp. Zool. 239:37-40. PMID 3746227.
3. **Prather, R.S.**, F.L. Barnes, M.L. Sims, J.M. Robl, W.H. Eyestone, and N.L. First.1987. Nuclear transplantation in the bovine embryo: assessment of donor nuclei and recipient oocyte. Biol. Reprod. 37:859-866. PMID 3689854.
4. Robl, J.M., **R. Prather**, F. Barnes, W. Eyestone, D. Northey, B. Gilligan, and N.L. First.1987. Nuclear transplantation in bovine embryos. J. Anim. Sci. 64:642-647. PMID 3689854.
5. **Prather, R.S.** and N.L. First. 1987. Developmental fate of highly asynchronous chimeric mouse embryos. J. Exp. Zool. 242:27-33. PMID 3598511.
6. **Prather, R.S.**, M.F. Spire and R.R. Schalles. 1987. Evaluation of cryopreservation techniques for bovine embryos. Theriogenology 28:195-204. PMID 16726304.
7. **Prather, R.S.** and N.L. First. 1988. Chimerization of highly asynchronous murine blastomeres: developmental alteration? Gamete Res.19:567-576. PMID 2461888.
8. **Prather, R.S.** 1988. Reproductive biotechnology: an animal scientist's perspective. J. American Scientific Affiliation. 40:138-142. PMID 16047422.
9. **Prather, R.S.** and N.L. First. 1988. A review of early murine development and its application to domestic animals. J. Anim. Sci. 66:2626-2635. PMID 3058673.

10. Dean, W.L., A.C. Seufert, G.A. Schultz, **R.S. Prather**, C. Simerly, G. Schatten, D.R. Pilch and W.F. Marzluff. 1989. The small nuclear RNAs for pre-mRNA splicing are coordinately regulated during oocyte maturation and early embryogenesis in the mouse. *Development* 106:325-334. PMID 2531654.
11. **Prather, R.S.**, M.M. Sims, G.G. Maul, N.L. First and G. Schatten. 1989. Nuclear lamin antigens are developmentally regulated during porcine and bovine embryogenesis. *Biol. Reprod.* 41:123-132. PMID 2478200.
12. **Prather, R.S.**, M.M. Sims and N.L. First. 1989. Nuclear transplantation in early pig embryos. *Biol. Reprod.* 41:414-418. PMID 2590712.
13. **Prather, R.**, C. Simerly, G. Schatten, D.R. Pilch, S.M. Lobo, W.F. Marzluff, W.L. Dean and G.A. Schultz. 1990. U3 snRNPs and nucleolar development during oocyte maturation, fertilization and early embryogenesis in the mouse: U3 snRNA and snRNPs are not regulated coordinate with other snRNAs and snRNPs. *Dev. Biol.* 138:247-255. PMID 2138575.
14. **Prather, R.S.**, M.M. Sims and N.L. First. 1990. Nuclear transplantation in the pig embryo: nuclear swelling. *J. Exp. Zool.* 255:355-358. PMID 2394976.
15. Jarrell, V.L., B.N. Day and **R.S. Prather**. 1991. The transition from maternal control of development to zygotic control of development occurs during the 4-cell stage in the domestic pig, *Sus scrofa*: quantitative and qualitative aspects of protein synthesis. *Biol. Reprod.* 44:62-68. PMID 2015352.
16. Hagen, D.R., **R.S. Prather**, M.M. Sims and N.L. First. 1991. Development of one-cell porcine embryos to the blastocyst stage in simple media. *J. Anim. Sci.* 69:1147-1150. PMID 2061246.
17. **Prather, R.S.**, J. Kubiak, G.G. Maul, N.L. First and G. Schatten. 1991. The association of nuclear lamins A and C is regulated by the developmental stage of the mouse oocyte or embryonic cytoplasm. *J. Exp. Zool.* 257:110-114. PMID 1702459.
18. Kubiak, J.Z., **R.S. Prather**, G.G. Maul and G. Schatten. 1991. Cytoplasmic modification of the nuclear lamina during pronuclear-like transformation of mouse blastomere nuclei. *Mech. Devel.* 35:103-111. PMID 1760374.
19. Hagen, D.R., **R.S. Prather** and N.L. First. 1991. Response of porcine oocytes to electrical and chemical activation during maturation *in vitro*. *Mol. Reprod. & Dev.* 28:70-73. PMID 1994982.
20. **Prather, R.S.**, P.A. Eichen, D.K. Nicks and M.S. Peters. 1991. Artificial activation of porcine oocytes matured *in vitro*. *Mol. Reprod. & Dev.* 28:405-409. PMID 2064783.
21. **Prather, R.S.**, M.M. Sims and N.L. First. 1991. Culture of porcine embryos from one- and two-cell to blastocyst in sheep oviducts. *Theriogenology* 35:1147-1151.
22. Schoenbeck, R.A., M.S. Peters, L.F. Rickords, T.T. Stumpf and **R.S. Prather**. 1992. Characterization of DNA synthesis and the transition from

- maternal to embryonic control in the 4-cell porcine embryo. *Biol. Reprod.* 47:1118-1125. PMID 1493177.
23. Boice, M.L., P.A. Mavrogianis, C.N. Murphy, **R.S. Prather** and B. N. Day. 1992. Immunocytochemical analysis of the association of bovine oviduct-specific secretory glycoproteins with early embryos. *J. Exp. Zool.* 263:225-229. PMID 1500886.
 24. **Prather, R.S.** and G. Schatten. 1992. Construction of the nuclear matrix at the transition from maternal to zygotic control of development in the mouse: an immunocytochemical study. *Mol. Reprod. & Dev.* 32:203-208. PMID 1497870.
 25. **Prather, R.S.** and L.F. Rickords. 1992. Developmental regulation of a snRNP core protein epitope during pig embryogenesis and after nuclear transfer for cloning. *Mol. Reprod. & Dev.* 33:119-123. PMID 1384573.
 26. **Prather, R.S.**, M.S. Peters and L.J. Van Winkle. 1993. Alanine and leucine transport in unfertilized pig oocytes and early blastocysts. *Mol. Reprod. & Dev.* 34:250-254. PMID 8471246.
 27. **Prather, R.S.**, M.S. Peters and L.J. Van Winkle. 1993. Aspartic and glutamic acid transport in unfertilized pig oocytes and blastocysts. *Mol. Reprod. & Dev.* 36:49-52. PMID 8104429.
 28. **Prather, R.S.** and N.L. First. 1993. Cell-to-cell coupling in early bovine embryos. *Theriogenology* 39:561-567. PMID 16727235.
 29. Schoenbeck, R.A., M.S. Peters, L.F. Rickords, T.T. Stumpf, S.L. Terlouw and **R.S. Prather**. 1993. Diacylglycerol enhanced electrical activation of porcine oocytes matured *in vitro*. *Theriogenology* 40:257-266. PMID 16727311.
 30. Macháty, Z., M.A. Mayes and **R.S. Prather**. 1995. Activation of the G protein in porcine oocytes. *Biol. Reprod.* 52:753-758. PMID 7779997.
 31. Mayes, M.A., P.A. Stogsdill and **R.S. Prather**. 1995. Parthenogenetic activation of pig oocytes by protein kinase inhibition. *Biol. Reprod.* 53:270-275. PMID 7492678.
 32. Tilton, S.L., R.O. Bates, B.N. Day and **R.S. Prather**. 1995. Evaluation of response to hormonal therapy in prepubertal gilts of different genetic lines. *J. Anim. Sci.* 73:3062-3068. PMID 8617678.
 33. Nussbaum, D.J. and **R.S. Prather**. 1995. Effects of protein synthesis inhibitors on porcine oocyte activation. *Mol. Reprod. & Dev.* 41:70-75. PMID 7619508.
 34. Parry, T.W. and **R.S. Prather**. 1995. Protein reprogramming after nuclear transfer? *Reproduction, Nutrition Development* 35:313-318. PMID 7612169.
 35. **Prather, R.S.**, M.L. Boice, J. Gibson, K. Hoffman and T.W. Parry. 1995. *In vitro* development of embryos from Sinclair miniature pigs. *Theriogenology* 43:1001-1007. PMID 16727687.
 36. Macháty, Z., M.A. Mayes, H. Funahashi, B.N. Day and **R.S. Prather**. 1996. Effects of injecting *in vitro* matured porcine oocytes with CaCl₂. *Biol. Reprod.* 54:316-322. PMID 8788181.

37. Li, J. A. Rieke, B.N. Day, and **R.S. Prather**. 1996. A tool and technique for non-surgical embryo transfer in pigs. *J. Anim. Sci.* 74:2263-2268. PMID 8880431.
38. **Prather, R.S.**, J. Gibson, and T.W. Parry. 1996. Artificial activation of oocytes from Sinclair miniature pigs. *J. Applied Anim. Res.* 10:125-134.
39. Kim, N.-H., H. Funahashi, L.R. Abeydeera, S.-J. Moon, **R.S. Prather** and B.N. Day. 1996. Effects of oviductal fluid on sperm penetration and cortical granule exocytosis during *in vitro* fertilization of porcine oocytes. *J. Reprod. Fert.* 107:79-86. PMID 8699438.
40. Kim, N.-H., H. Funahashi, **R.S. Prather**, G. Schatten, B.N. Day. 1996. Microtubule and microfilament dynamics in porcine oocytes during meiotic maturation. *Mol. Reprod. & Dev.* 43:248-255. PMID 8824923.
41. Kim, N.-H., S.-J. Moon, **R.S. Prather** and B.N. Day. 1996. Cytoskeletal alteration in aged porcine oocytes and parthenogenesis. *Mol. Reprod. & Dev.* 43:513-518. PMID 9052943.
42. **Prather, R.S.**, T.T. Stumpf, R.A. Schoenbeck, K.E. Hoffman, and J. Li. 1996. Characterization of DNA synthesis during the 2-cell stage and the production of tetraploid chimeric pig embryos. *Mol. Reprod. & Dev.* 45:38-42. PMID 8873067.
43. Funahashi, H., Z. Macháty, **R.S. Prather**, and B.N. Day. 1996. γ -Glutamyl transpeptidase of spermatozoa may reduce oocyte glutathione content at fertilization in pigs. *Mol. Reprod. & Dev.* 45:485-490. PMID 896287.
44. Jolliff, W.J., and **R.S. Prather**. 1997. Parthenogenetic development of *in vitro* matured, *in vivo* cultured porcine oocytes beyond blastocyst. *Biol. Reprod.* 56:544-548. PMID 9116159.
45. Macháty, Z., H. Funahashi, B.N. Day and **R.S. Prather**. 1997. Developmental changes in the intracellular calcium release mechanisms in porcine oocytes. *Biol. Reprod.* 56:921-930. PMID 9096874.
46. Macháty, Z., M.A. Mayes, L. Kovacs, P. Balatti, J.-H. Kim, and **R.S. Prather**. 1997. Activation of porcine oocytes via an exogenously introduced rat muscarinic M1 receptor. *Biol. Reprod.* 57:85-91. PMID 9209084.
47. Macháty, Z., W.-H. Wang, B.N. Day, and **R.S. Prather**. 1997. Complete activation of porcine oocytes induced by the sulphhydryl reagent, thimerosal. *Biol. Reprod.* 57:1123-1127. PMID 9369179.
48. **Prather, R.S.**, Mayes, M.A. and C.N. Murphy. 1997. Parthenogenetic activation of pig oocytes by extended exposure to low levels of broad-spectrum protein kinase inhibitors. *Reprod. Fert. Dev.* 9:539-544. PMID 9418984.
49. **Prather, R.S.**, J. Gibson, K. Hoffman and T.W. Parry. 1997. Reproductive measurements in Sinclair and NIH miniature pigs: a retrospective analysis. *Theriogenology* 47:233-440. PMID 16727996.
50. Wang, W.-H., Z. Macháty, L.R. Abeydeera, **R.S. Prather** and B.N. Day. 1998. Parthenogenetic activation of pig oocytes with calcium ionophore

- and the establishment of the zona block to sperm penetration after activation. *Biol. Reprod.* 58:1357-1366. PMID 9623593.
51. Abeydeera, L.R., W.-H. Wang, **R.S. Prather**, and B.N. Day. 1998. Maturation in vitro of pig oocytes in protein-free culture media: Fertilization and subsequent embryo development in vitro. *Biol. Reprod.* 58:1316-1320. PMID 9603270.
 52. Macháty, Z., B.N. Day, **R.S. Prather**. 1998. Development of early pig embryos in vitro and in vivo. *Biol. Reprod.* 59:451-455. PMID 9687321.
 53. Kim, J.-H., Z. Macháty, R.A. Cabot, Y.-M. Han, H.-J. Do, and **R.S. Prather**. 1998. Development of pig oocytes activated by stimulation of an exogenous G-protein coupled receptor. *Biol. Reprod.* 59:655-660. PMID 9716566.
 54. Wang, W.-H., L.R. Abeydeera, **R.S. Prather** and B.N. Day. 1998. Morphological comparison of ovulated and in vitro matured porcine oocytes, with particular reference to polyspermy after in vitro fertilization. *Mol. Reprod. & Dev.* 49:308-316. PMID 9491383.
 55. Wang, W.-H., L.A. Abeydeera, **R.S. Prather** and B.N. Day. 1998. Functional analysis of activation of porcine oocytes by spermatozoa, calcium ionophore and electrical pulse. *Mol. Reprod. Dev.* 51:346-353. PMID 9771656.
 56. Abeydeera, L.A., W.-H. Wang, T.C. Cantley, A. Rieke, **R.S. Prather**, and B.N. Day. 1998. Presence of epidermal growth factor during in vitro maturation of pig oocytes and embryo culture can modulate blastocyst development after in vitro fertilization. *Mol. Reprod. & Dev.* 51:395-401. PMID 9820198.
 57. Abeydeera, L.A., W.-H. Wang, T.C. Cantley, **R.S. Prather**, and B.N. Day. 1998. Presence of β -mercaptoethanol can increase the glutathione content of pig oocytes matured in vitro and the rate of blastocyst development after in vitro fertilization. *Theriogenology* 50:747-756. PMID 10734449.
 58. Tao, T., Z. Macháty, A.C. Boquest, B.N. Day and **R.S. Prather**. 1999. Development of pig embryos reconstructed by microinjection of cultured fetal fibroblast cells into in vitro matured oocytes. *Anim. Reprod. Sci.* 56:133-141. PMID 10463400.
 59. Boquest, A.C., B.N. Day, and **R.S. Prather**. 1999. Flow cytometric cell cycle analysis of cultured porcine fetal fibroblast cells used for nuclear transfer. *Biol. Reprod.* 60:1013-1019. PMID 10084979.
 60. Wang, W.-H., L.R. Abeydeera, Y.-M. Han, **R.S. Prather**, and B.N. Day. 1999. Morphologic evaluation and actin distribution in porcine embryos produced in vitro and in vivo. *Biol. Reprod.* 60:1020-1028. PMID 10084980.
 61. Han, Y.-M., L.R. Abeydeera, J.-H. Kim, B.N. Day, H.-B. Moon, and **R.S. Prather**. 1999. Growth retardation of inner cell mass cells in polyspermic pig embryos produced in vitro. *Biol. Reprod.* 60:1110-1113. PMID 10208971.

62. Macháty, Z., W.-H. Wang, B.N. Day and **R.S. Prather**. 1999. Calcium release and subsequent development induced by modification of sulfhydryl groups in porcine oocytes. *Biol. Reprod.* 60:1384-1391. PMID 10330097.
63. Green, K.M., J.H. Kim, W.-H. Wang, B.N. Day, and **R.S. Prather**. 1999. The effect of myosin light chain kinase, protein kinase A and protein kinase C inhibition on porcine oocyte activation. *Biol. Reprod.* 61:111-119. PMID 10377036.
64. Kim, J.-H., H.-J. Do, W.-H. Wang, Z. Macháty, Y.-M. Han, B.N. Day and **R.S. Prather**. 1999. A protein tyrosine phosphatase inhibitor, sodium orthovanadate, causes parthenogenetic activation of pig oocytes via an increase in protein tyrosine kinase activity. *Biol. Reprod.* 61:900-905. PMID 10491622.
65. Han, Y.-M, L.R. Abeydeera, W.-H. Wang, A.L. Petersen, J.-H. Kim, C. Murphy, B.N. Day, and **R.S. Prather**. 1999. Pronuclear location before the first cell division determines ploidy of polyspermic pig embryos. *Biol. Reprod.* 61:1340-1346. PMID 10529283.
66. Anderson, J.E., R.L. Matteri, L.R. Abeydeera, B.N. Day and **R.S. Prather**. 1999. Cyclin B1 transcript quantitation over the maternal to zygotic transition in both in vitro and in vitro derived 4-cell porcine embryos. *Biol. Reprod.* 61:1460-1467. PMID 10569990.
67. **Prather. R.S.**, A.C. Boquest, and B.N. Day. 1999. Cell cycle analysis of cultured porcine mammary cells. *Cloning* 1:17-24. PMID 16218827.
68. Tao, T., A.C. Boquest, Z. Macháty, A.L. Petersen, B.N. Day and **R.S. Prather**. 1999. Development of pig embryos by nuclear transfer of cultured fetal fibroblast cells. *Cloning* 1:55-62. PMID 16218830.
69. Macháty, Z., L.F. Rickords and **R.S. Prather**. 1999. Parthenogenetic activation of porcine oocytes following nuclear transfer. *Cloning* 1:101-109. PMID 16218835.
70. Holm, P, G. Vajta, Z. Macháty, M. Schmidt, **R.S. Prather**, T. Greve. 1999. Open pulled straw (OPS) vitrification of porcine blastocysts: simple procedure yielding excellent in vitro survival, but so far no piglets following transfer. *CryoLetters* 20:307-310.
71. Wang, W.-H., Z. Macháty, N. Ruddock, L.R. Abeydeera, **R.S. Prather**, and B.N. Day. 1999. Activation of porcine oocytes with calcium ionophore: effects of extracellular calcium. *Mol. Reprod. Dev.* 53:99-107. PMID 10230822.
72. Vajta, G, C. Murphy, Z. Macháty, **R.S. Prather**, T. Greve, and H. Callesen. 1999. In-straw dilution of in vitro produced bovine blastocysts after vitrification with the open pulled straw (OPS) method. *Vet. Record.* 144:180-181. PMID 10084980.
73. Wang, W.-H., Z. Macháty, L.R. Abeydeera, **R.S. Prather**, and B.N. Day. 1999. Time course of cortical and zona reactions of pig oocytes upon intracellular calcium increase induced by thimerosal. *Zygote* 7:79-86. PMID 10216920.

74. Abeydeera, L.R., W.-H. Wang, T.C. Cantley, **R.S. Prather**, and B.N. Day. 1999. Glutathione content and embryo development after in vitro fertilization of pig oocytes matured in the presence of a thiol compound and various concentrations of cysteine. *Zygote* 7:203-210. PMID 10533703.
75. Wang, W.H., L.R. Abeydeera, **R.S. Prather** and B.N. Day. 2000. Polymerization of non-filamentous actin into microfilaments is an important process for porcine oocyte maturation and early embryo development. *Biol. Reprod.* 62:1177-1183. PMID 10775164.
76. Ruddock, N.T., Z. Macháty, M. Milanick and **R.S. Prather**. 2000. Mechanism of intracellular pH increase during parthenogenetic activation of in vitro matured porcine oocytes. *Biol. Reprod.* 63:488-492. PMID 10906054.
77. Kühholzer, B., T. Tao, Z. Macháty, B. Hawley, J. Greenstein, B.N. Day and **R.S. Prather**. 2000. Production of transgenic porcine blastocysts by nuclear transfer. *Mol. Reprod. Dev.* 56:145-148. PMID 10813845.
78. Macháty, Z., A. Bonk, B. Kühholzer and **R.S. Prather**. 2000. Porcine oocyte activation induced by a cytosolic sperm factor. *Mol. Reprod. Dev.* 57:290-295. PMID 11013437.
79. Ruddock, N.T., Z. Macháty and **R.S. Prather**. 2000. Intracellular pH increases accompany parthenogenetic activation of porcine, bovine and murine oocytes. *Reprod. Fertil. & Develop.* 12:201-207. PMID 11302430.
80. Sun, Q.-Y., L. Lai, **R.S. Prather** and H. Schatten. 2000. Antioxidants stimulate meiosis resumption, but inhibit MAP kinase phosphorylation and further cell cycle progression in porcine oocytes. *Reprod. Fertil. & Develop.* 12:383-389. PMID 11545177.
81. Abeydeera, L.R. W.H. Wang, T.C. Cantley, A. Rieke, **R.S. Prather** and B.N. Day. 2000. Development and viability of pig oocytes matured in a protein-free medium containing epidermal growth factor. *Theriogenology* 54(5):787-797. PMID 11101038.
82. Tao, T., Z. Macháty, L.R. Abeydeera, B.N. Day, and **R.S. Prather**. 2000. Optimization of porcine oocyte activation following nuclear transfer. *Zygote* 8: 69-77. PMID 10840876.
83. Wang, W.H., L.R. Abeydeera, **R.S. Prather**, B.N. Day. 2000. Actin filament distribution in blocked and developing pig embryos. *Zygote* 8: 353-358. PMID 11108556.
84. Park, K.-W., H -T. Cheong, L. Lai, G.-S. Im, B. Kúhholzer, A. Bonk, M. Samuel, A. Rieke, B.N. Day, C.N. Murphy, D.B. Carter, **R.S. Prather**. 2001. Production of nuclear transfer-derived swine that express the enhanced green fluorescent protein. *Anim. Biotech.* 12:(2) 173-181. PMID 11808633.
85. Cabot, R., B. Kühholzer, A.W. Chan, L. Lai, K.W. Park, K.Y. Chong, G. Schatten, C.N. Murphy, L.R. Abeydeera, B.N. Day, **R.S. Prather**. 2001. Production of transgenic piglets derived from in vitro matured oocytes infected with a replication deficient retroviral vector. *Anim. Biotech.* 12:(2) 205-214. PMID 11808636.

86. Shi, X.W., C.J. Fitzsimmons, C. Genêt, **R.S. Prather**, K. Whitworth, J.A. Green, C. K. Tuggle. 2001. High-resolution radiation hybrid mapping of human chromosome 17 genes to the pig genome extends gene order conservation with pig chromosome 12 and limited synteny with pig chromosome 2. *Animal Genetics* 32:205-209. PMID 11531699.
87. Kühholzer, B. and **R.S. Prather**. 2001. Synchronization of porcine fetal fibroblast cells with topoisomerase-inhibitor Hoechst 33342. *Anim. Repro. Sci.* 66:109-116. PMID 11343846
88. Park, K.-W., B. Kühholzer, L. Lai, Z. Macháty, Q.-Y. Sun, B.N. Day, and **R.S. Prather**. 2001. Development and expression of the green fluorescent protein in porcine embryos derived from nuclear transfer of transgenic granulosa-derived cells. *Anim. Repro. Sci.* 68:111-120. PMID 11600279.
89. Sun, Q.-Y., L. Lai, K.-W. Park, B. Kühholzer, **R.S. Prather** and H. Schatten. 2001. Dynamic events are differently mediated by microfilaments and microtubules during porcine maturation and fertilization. *Biol. Reprod.* 64:879-889. PMID 11207204.
90. Kühholzer, B., R.J. Hawley, L. Lai, D. Kolber-Simonds, **R.S. Prather**. 2001. Clonal lines of transgenic fibroblast cells derived from the same fetus result in different development when used for nuclear transfer in pigs. *Biol. Reprod.* 64:1695-1698. PMID 11369597.
91. Lai, L., T. Tao, Z. Macháty, B. Kühholzer, K.W. Park, B.N. Day, and **R.S. Prather**. 2001. Feasibility of producing porcine nuclear transfer embryos by using G2/M stage fibroblasts as donors. *Biol. Reprod.* 65:1558-1564. PMID 11673275.
92. Park, K.-W., L. Lai, H.-T. Cheong, G.-S. Im, Q.-Y. Sun, G. Wu, B.N. Day, and **R.S. Prather**. 2001. Developmental potential of nuclear transfer embryos derived from transgenic fetal fibroblasts infected with the gene for the green fluorescent protein: comparison of different fusion/activation conditions. *Biol. Reprod.* 65:1681-1685. PMID 11717128.
93. Jiang, H., N.J. Bivens, J.E. Ries, K.M. Whitworth, J.A. Green, L.J. Forrester, G.K. Springer, B.A. Didion, N. Mathialagan, **R.S. Prather** and M.C. Lucy. 2001. Constructing cDNA libraries with fewer clones that contain long poly(dA) tails. *BioTechniques* 31:38-42. PMID 11464518.
94. Macháty, Z., J. Thompson, B.N. Day and **R.S. Prather**. 2001. Inhibitors of mitochondrial ATP production at the time of compaction improve development of in vitro produced porcine embryos. *Mol. Reprod. Dev.* 58:39-43. PMID 11144218.
95. Sun, Q.-Y., L. Lai, A. Bonk, **R.S. Prather** and H. Schatten. 2001. Cytoplasmic changes in relation to nuclear maturation and early embryo development potential of porcine oocytes: effects of gonadotropins, cumulus cells, follicular sizes and protein synthesis inhibition. *Mol. Reprod. Dev.* 59:192-198. PMID 11389554.
96. Ruddock, N.T., Z. Macháty and **R.S. Prather**. 2001. Porcine activation: importance of intracellular increases in calcium and pH. *Mol. Reprod. Dev.* 59:227-234. PMID 11389559.

97. Anderson, J.E., R.L. Matteri, L.R. Abeydeera, B.N. Day and **R.S. Prather**. 2001. Degradation of maternal cdc25c during the maternal to zygotic transition is dependent upon embryonic transcription. *Mol. Reprod. Dev.* 60:181-188. PMID 11553916.
98. Wei, Z., K.-W. Park, B.N. Day and **R.S. Prather**. 2001. The effect of epidermal growth factor on preimplantation development and its receptor expression in porcine embryos. *Mol. Reprod. Dev.* 60:457-462. PMID 11746956.
99. Sun, Q.-Y., L. Lai, G. Wu, K.-W. Park, B. Day, **R.S. Prather**, and H. Schatten. 2001. Microtubule assembly after treatment of pig oocytes with taxol: correlation with chromosomes, gamma-tubulin and MAP kinase. *Mol. Reprod. Dev.* 60:481-490. PMID 11746959.
100. Sun Q.-Y., G.M. Wu, L. Lai, K.-W. Park, B. Day, **R.S. Prather** and H. Schatten. 2001. Translocation of active mitochondria during porcine oocyte maturation, fertilization and early embryo development in vitro. *Reproduction* 122:155-163. PMID 11425340.
101. Do, H.J., J.H. Kim, L.R. Abeydeera, Y.M. Han, J. Green, R.M. Roberts, R.L. Matteri, B.N. Day, and **R.S. Prather**. 2001. Expression of pregnancy-associated glycoprotein 1 and 2 genes in in vitro-, in vivo- and parthenogenetically-derived preimplantation pig embryos. *Zygote* 9:245-250. PMID 11508744.
102. Abeydeera, L.R., W.-H. Wang, **R.S. Prather**, B.N. Day. 2001. Effect of incubation temperature on in vitro maturation of porcine oocytes: nuclear maturation, fertilization and developmental competence. *Zygote* 9:331-337. PMID 11771900.
103. Lai, L., Q. Sun, G. Wu, C.N. Murphy, B. Kühholzer, K.-W. Park, A.J. Bonk, B.N. Day, and **R.S. Prather**. 2001. Development of porcine embryos and offspring after ICSI with liposome transfected or non-transfected sperm into in vitro matured oocytes. *Zygote* 9:339-346. PMID 11771901.
104. Sun, Q.-Y, G.-M. Wu, L. Lai, A. Bonk, R. Cabot, K.-W. Park, B.N. Day, **R.S. Prather**, H. Schatten. 2002. Regulation of mitogen-activated protein kinase phosphorylation, microtubule organization, chromatin behavior, and cell cycle progression by protein phosphatases during pig oocyte maturation and fertilization in vitro. *Biol. Reprod.* 66:580-588. PMID 11870061.
105. Machaty, Z., J.J. Ramsoondar, A.J. Bonk, K.R. Bondioli, and **R.S. Prather**. 2002. Capacitative calcium entry mechanism in porcine oocytes. *Biol. Reprod.* 66:667-674. PMID 11870073.
106. Park, K.-W., L. Lai, H.-T. Cheong, R. Cabot, Q.-Y. Sun, G. Wu, E.B. Rucker, D. Durtschi, A. Bonk, M. Samuel, A. Rieke, B.N. Day, C.N. Murphy, D.B. Carter, **R.S. Prather**. 2002. Mosaic Gene Expression in Nuclear Transfer-Derived embryos and the Production of Cloned Transgenic Pigs from Ear-derived Fibroblasts. *Biol. Reprod.* 66:1001-1005. PMID 11906919.
107. Wu, G.-M., Q.-Y. Sun, J. Mao, L. Lai, T.C. McCauley, K.-W. Park, **R.S. Prather**, B.A. Didion, and B.N. Day. 2002. High developmental competence

- of pig oocytes after meiotic inhibition with a specific MPF kinase inhibitor, butyrolactone I. *Biol. Reprod.* 67:170-177. PMID 12080014.
108. Cabot, R.A., M. Hannink, **R.S. Prather**. 2002. CRM1 –mediated nuclear export is present during mammalian embryogenesis, but is not required for early cleavage. *Biol. Reprod.* 67:814-819. PMID 12193389.
 109. Z. Macháty, J.J. Ramsoondar, A.J. Bonk, **R.S. Prather**, K.R. Bondioli. 2002. The Na⁺/Ca²⁺ exchanger in porcine oocytes. *Biol. Reprod.* 67:1133-1139. PMID 12297528.
 110. Mao, J., G. Wu, M.F. Smith, **R.S. Prather**, B.A. Didion, B.N. Day. 2002. Effects of culture medium, serum type and various concentrations of FSH on porcine preantral follicular development and antrum formation in vitro. *Biol. Reprod.* 67:1197-1203. PMID 12297536.
 111. Carter, D.B., L. Lai, K.-W. Park, M. Samuel, J.C. Lattimer, K.R. Jordan, D.M. Estes, C. Besch-Williford, **R.S. Prather**. 2002. Phenotyping of transgenic cloned piglets. *Cloning & Stem Cells* 4:131-145. PMID 12171705.
 112. Cheong, H.-T., K.-W. Park, G.-S. Im, L. Lai, Q.-Y. Sun, B.N. Day, **R.S. Prather**. 2002. Effect of elevated calcium concentration in fusion/activation medium on the fusion and development of porcine fetal fibroblast cell nuclear transfer embryos. *Mol. Reprod. & Dev.* 61:488-492. PMID 11891920.
 113. Lai, L., K.-W. Park, H.-T. Cheong, B. Kühholzer, M. Samuel, A. Bonk, G.-S. Im, A. Rieke, B.N. Day, C.N. Murphy, D.B. Carter, **R.S. Prather**. 2002. A transgenic pig expressing the green fluorescent protein produced by nuclear transfer using colchicine-treated fibroblasts as donor cells. *Mol. Reprod. Dev.* 62:300-306. PMID 12112592.
 114. Lai, L., D. Kolber-Simonds, K.-W. Park, H.-T. Cheong, J.L. Greenstein, G.-S. Im, M. Samuel, A. Bonk, A. Rieke, B.N. Day, C.N. Murphy, D.B. Carter, R.J. Hawley, **R.S. Prather**. 2002. Production of α -1, 3-galactosyltransferase-knockout inbred miniature swine by nuclear transfer cloning. *Science* 295:1089-1092. Published online January 3, 2002; 10.1126/science.1068228 (Science Express Reports). PMID 11778012.
 115. Bonk, A.J., J.E. Anderson, L.R. Abeydeera, B.N. Day, and **R.S. Prather**. 2002. Cyclin B1 levels in the porcine 4-cell stage embryo. *Zygote* 10:79-84. PMID 11964095.
 116. Hao, Y.H., L. Lai, J. Mao, G.S. Im, A. Bonk and **R.S. Prather**. 2003. Apoptosis and in vitro development of preimplantation porcine embryos derived in vitro or by nuclear transfer. *Biol. Reprod.* 69:501-507. PMID 12700186.
 117. Tuggle, C.K., J.A. Green, C. Fitzsimmons, R. Woods, **R.S. Prather**, S. Malchenko, M.B. Soares, D. Tack, N. Robinson, B. O'Leary, T. Scheets, T. Casavant, D. Pomp, J.B. Edeal, Y. Zhang, M.F. Rothschild, K. Garwood, W. Beavis. 2003. EST-based gene discovery in pig: virtual expression patterns and comparative mapping to human. *Mammalian Genome* 14: 565-579. PMID 12925889.

118. Cabot, R.A., **R.S. Prather**. 2003. Cleavage stage porcine embryos have differing developmental requirements for karyopherins $\alpha 2$ and $\alpha 3$. *Mol. Reprod. Dev.* 64:292-301. PMID 12548662.
119. Jiang, L., D.B. Carter, J. Xu, X. Yang, **R.S. Prather**, X.C. Tian. 2004. Telomere lengths in cloned transgenic pigs. *Biol. Reprod.* 70:1589-1593. PMID 14749296.
120. Hao, Y., L. Lai, J. Mao, G.S. Im, A. Bonk and **R.S. Prather**. 2004. Apoptosis in parthenogenetic preimplantation porcine embryos. *Biol. Reprod.* 70:1644-1649. PMID 14766725.
121. Thompson, W.E., E. Asselin, A. Branch, J.K. Stiles, P. Sutovsky, L. Lai, G.S. Im, **R.S. Prather**, S.C. Isom, E.B. Rucker, B.K. Tsang. 2004. Regulated expression and potential role of prohibitin gene product during follicular development and atresia in the mammalian ovary. *Biol. Reprod.* 71: 282-290. PMID 15028627.
122. Whitworth, K., G.K. Springer, L.J. Forrester, W.G. Spollen, J. Ries, W.R. Lamberson, N. Bivens, C.N. Murphy, N. Mathialagan, J.A. Green, and **R.S. Prather**. 2004. Developmental expression of 2,489 genes during pig embryogenesis: an EST project. *Biol. Reprod.* 71:1230-1243. PMID 15175238
123. Jiang, H. , N. Bivens, J. Ries, R. Woods, K.M. Whitworth, J.A. Green, L.J. Forrester, G.K. Springer, N. Mathialagan, C. Agca, **R.S. Prather**, M.C. Lucy. 2004. Large-scale generation and analysis of expression sequence tags from porcine ovary. *Biol. Reprod.* 71:1991-2002. PMID 15306552.
124. Mao, J., M.F. Smith, E.B. Rucker, G. Wu, T.C. McCauley, T.C. Cantley, **R.S. Prather**, B.A. Didion, and B.N. Day. 2004. Effect of epidermal growth factor and insulin-like growth factor I on porcine preantral follicular growth, antrum formation, and stimulation of granulosa cell proliferation, and suppression of apoptosis, in vitro. *J. Anim. Sci.* 82:1967-1975. PMID 15309943.
125. Martinez, E.A., J.N. Caamano, M.A. Gil, A. Rieke, T.C. McCauley, T.C. Cantley, J.M. Vazquez, J. Roca, J.L. Vazquez, C.N. Murphy, B.A. Didion, **R.S. Prather**, B.N. Day. 2004. Successful non-surgical deep uterine embryo transfer in pigs. *Theriogenology* 61:137-146. PMID 14643868.
126. Im, G.-S., L. Lai, Z. Liu, Y. Hao, D. Wax, A. Bonk, **R.S. Prather**. 2004. In vitro development of preimplantation porcine nuclear transfer embryos cultured in different media and gas atmospheres. *Theriogenology.* 61:1125-1135. PMID 15037000.
127. Wu, G.-M., L. Lai, J. Mao, T.C. McCauley, J.N. Caamano, T. Cantley, A. Rieke, C. Murphy, **R.S. Prather**, B.A. Didion and B.N. Day. 2004. Birth of piglets by in vitro fertilization of zona-free porcine oocytes. *Theriogenology* 62:1544-1556. PMID 15451262.
128. Sutovsky, P. and **R.S. Prather**. 2004. Nuclear remodeling after SCNT: A contractor's nightmare. *Trends in Biotechnology* 22:205-208. PMID 15109802

129. Kolber-Simonds, D.* ,L. Lai* , S.R. Watt* , M. Denaro* , S. Arn, M.L. Augenstein, J. Betthausen, D.B. Carter, J.L. Greenstein, Y. Hao, G.-S. Im, Z. Liu, G.D. Mell, C.N. Murphy, K.-W. Park, A. Rieke, D. Ryan, D.H. Sachs, E.J. Forsberg, **R.S. Prather**, and R.J. Hawley. 2004. Alpha-1,3-galactosyltransferase null pigs via nuclear transfer with fibroblasts bearing loss of heterozygosity mutations. *Proc. Natl. Acad. Sci. U.S.A.* 101:7335-7340. PMID 15123792.
130. Whitworth, K.W., C. Agca, J-G. Kim, R.V. Patel, G.K. Springer, N. Bivens, L.J. Forrester, N. Mathialagan, J.A. Green, **R.S. Prather**. 2005. Transcriptional profiling of pig embryogenesis by using a 15K member unigene set specific for the pig. *Biol. Reprod.* 72:1437-1451. PMID 15703372.
131. Carroll, J.A., D.B. Carter, S.W. Korte, **R.S. Prather**. 2005. Evaluation of the innate immune response in cloned pigs following a lipopolysaccharide challenge. *Dom Anim Endo* 29:564-572. PMID 16153505.
132. Im, G.-S., B.-S. Yang, L. Lai, Z. Liu, Y. Hao, **R.S. Prather**. 2005. Fragmentation and development of preimplantation porcine embryos derived by parthenogenetic activation and nuclear transfer. *Mol. Reprod. Dev.* 71:159-165. PMID 15791600.
133. Sutovsky, P., G. Manandhar, J. Laurincik, J. Letko, J.N. Caamano, B.N. Day, L. Lai, **R.S. Prather**, K. Sharpe-Timms, R. Zimmer, and M. Sutovsky. 2005. Expression and proteasomal degradation of the Major Vault Protein (MVP) in the mammalian oocyte and zygote. *Reproduction* 129: 269-282. PMID 15749954.
134. Vajta, G., P. Maddox-Hyttel, C.T. Skou, T.R. Tecirlioglu, T.T. Peura, L. Lai, C.N. Murphy, **R.S. Prather**, P.M. Kragh, H. Callesen. 2005. Highly efficient and reliable chemically assisted enucleation method for handmade cloning (HMC) in cattle. *Reproduction, Fertility & Development* 17:791-797. PMID 16476206.
135. Mao, J., G.-M. Wu, **R.S. Prather**, M.F. Smith, T. Cantley, A. Rieke, B.A. Didion, B.N. Day. 2005. Effect of methyl- β -cyclodextrin treatment of pig spermatozoa on in vitro fertilization and embryo development in the absence or present of caffeine. *Theriogenology* 64:1913-1927. PMID 15919108.
136. Li, R., L. Lai, D. Wax, Y. Hao, C. Murphy, A. Rieke, M. Samuel, M. Linville, S. Korte, R.W. Evans, J.R. Turk, J.X. Kang, W.T. Witt, Y. Dai, **R.S. Prather**. 2006. Cloned transgenic swine via in vitro production and cryopreservation. *Biology of Reproduction* 75:226-230. PMID 16672718.
137. Hao, Y., N. Mathialagan, E. Walters, J. Mao, L. Lai, D. Becker, W. Li, J. Critser, **R.S. Prather**. 2006. Osteopontin reduces polyspermy during IVF of porcine oocytes. *Biology of Reproduction* 75:726-733. PMID 16870945.
138. Katayama, M, Z. Zhong, L. Lai, P. Sutovsky, **R.S. Prather**, H. Schatten. 2006. Mitochondria distribution and microtubule organization in fertilized and cloned porcine embryos: implications for developmental potential. *Developmental Biology* 299:206-220. PMID 16945363.

139. Liu, Z.H., H. Schatten, Y. H. Hao, L.X. Lai, D. Wax, M. Samuel, Z.S. Zhong, Q.Y. Sun, **R.S. Prather**. 2006. The nuclear mitotic apparatus (NuMA) protein is contributed by the donor cell nucleus in cloned porcine embryos. *Frontiers in Biosciences* 11:1945-1957. PMID 16368570.
140. Hao, Y., L. Lai, G.-S. Im, Z. Liu, D. Wax, M. Samuel, C.N. Murphy, P. Sutovsky, **R.S. Prather**. 2006. Developmental competence of porcine parthenogenetic embryos relative to embryonic chromosomal abnormalities. *Mol. Reprod. Dev.* 73:77-82. PMID 16224773.
141. Yong, H.Y., Y. Hao, L. Lai, R. Li, C.N. Murphy, A. Rieke, D. Wax, M. Samuel, **R.S. Prather**. 2006. Production of a transgenic piglet by a new sperm injection technique in which no chemical or physical treatments are used for oocytes or sperm. *Mol. Reprod. & Dev.* 73:595-599. PMID 16489622.
142. Im, G.-S., J.-S. Seo, I.-S. Hwang, D.-H. Kim, S.-W. Kim, B.-C. Yang, B.-S. Yang, L. Lai, **R.S. Prather**. 2006. Development and apoptosis of pre-implantation porcine nuclear transfer embryos activated with different combination of chemicals. *Mol. Reprod. Dev.* 73:1094-1101. PMID 16736258.
143. Bjerregaard, B., H.G. Pedersen, A.S. Jakobsen, L.F. Rickords, L. Lai, H.T. Cheong, M. Samuel, **R.S. Prather**, F. Strejcek, Z. Rasmussen, J. Laurincik, K. Schellander, H. Niemann, P. Maddox-Hyttel, P.D. Thomsen. 2006. Activation of ribosomal RNA genes among cells of in vitro produced and cloned porcine embryos. *Mol. Reprod. & Dev.* 74:35-41. PMID 16941707.
144. Lai, L., J.X. Kang, R. Li, J. Wang, W. Witt, H.Y. Yong, Y. Hao, D.M. Wax, C.N. Murphy, A. Rieke, M. Samuel, M. Linville, S. Korte, R. Evans, T. Starzl, **R.S. Prather**, Y. Dai. 2006. *Fat-1* transgenic pigs produce a high level of omega-3 fatty acids. *Nature Biotechnology* 24:435-437. PMID 16672718.
145. Agca, C., J.E. Ries, S.J. Kolath, J.-H. Kim, L.J. Forrester, E. Antoniou, K.M. Whitworth, N. Mathialagan, G.K. Springer, **R.S. Prather**, M.C. Lucy. 2006. Luteinization of porcine preovulatory follicles leads to systematic changes in follicular gene expression. *Reproduction* 132:133-145. PMID 16816339.
146. Manandhar, G., D. Feng, Y.-J. Yi, L. Lai, T. Ezashi, J. Letko, J. Laurincik, M. Sutovsky, **R.S. Prather**, H. Schatten, P. Sutovsky. 2006. Centrosomal protein Centrin is not detectable during early pre-implantation development but reappears during the late blastocyst stage in porcine embryos. *Reproduction* 132:423-434. PMID 16940283.
147. Price, E.M., **R.S. Prather**, C.M. Foley. 2006. Multipotent adult progenitor cell lines originating from green fluorescent protein transgenic swine. *Stem Cells and Development* 15:507-522. PMID 16978055.
148. Hao, Y.H., H.Y. Yong, C.N. Murphy, D. Wax, M. Samuel, A. Rieke, L. Lai, Z. Liu, D.C. Durtschi, V.R. Welbern, E.M. Price, R.M. McAllister, J.R. Turk, M.H. Laughlin, **R.S. Prather**, E.B. Rucker. 2006. Production of endothelial nitric oxide synthase (eNOS) over-expressing piglets. *Transgenic Research* 15:739-750. PMID 17080303.
149. Yi, Y.J., G. Manandhar, M. Sutovsky, R. Li, V. Jonakova, R. Oko, C.S. Park, **R.S. Prather**, P. Sutovsky. 2007. Ubiquitin C-Terminal hydrolase-activity is

- involved in sperm acrosomal function and anti-polyspermy defense. *Biol. Reprod.* 77:780-793. PMID 17671268.
150. Zhong, Z., L. Spate, Y. Hao, R. Li, L. Lai, M. Katayama, D. Wax, K. Whitworth, Q.-Y. Sun, **R.S. Prather**, H. Schatten. 2007. Remodeling of centrosomes in intraspecies and interspecies nuclear transfer porcine embryos. *Cell Cycle* 6:1510-1521. PMID 17581281.
 151. Jiang, L., P. Jobst, L. Lai, M. Samuel, D. Ayers, **R.S. Prather**, X.C. Tian. 2007. Expression of growth-regulating imprinted genes in deceased and surviving cloned pigs. *Cloning and Stem Cells* 9:97-106. PMID 17386017.
 152. Ross, J.W., M.D. Ashworth, F.J. White, G.A. Johnson, P.J. Ayoubi, U. E. DeSilva, K.M. Whitworth, J.A. Green, **R.S. Prather**, R.D. Geisert. 2007. Identification and analysis of molecular markers following endocrine disruption of pregnancy in the pig. *Endocrinology* 148:4761-4773. PMID 17640989.
 153. Bonk, A.J., H.-T. Cheong, R. Li, L. Lai, Y. Hao, Z. Liu, M. Samuel, E.A. Ferguson, K.M. Whitworth, C.N. Murphy, E. Antoniou, **R.S. Prather**. 2007. Correlation of developmental differences to the methylation profiles of nuclear transfer donor cells. *Epigenetics* 2:3, 179-186. PMID 17965590.
 154. Wu, A.C.H., P. Sutovsky, G. Manandhar, W. Xu, M. Katayama, B.N. Day, Q.-W. Park, **R.S. Prather**, R. Oko. 2007. PAWP, A sperm specific WW-domain binding protein involved in pronuclear development during mammalian fertilization. *Journal of Biological Chemistry* 282:12,164-12,175. PMID 17289678.
 155. Isom, S.C., **R.S. Prather**, E.B. Rucker III. 2007. Heat stress-induced apoptosis in porcine in vitro fertilized and parthenogenetic preimplantation-stage embryos. *Mol. Reprod. Dev.* 74:574-581. PMID 17034050.
 156. Martin, L.M., C. Besch-Williford, L. Lai, H.-T. Cheong, G.-S. Im, K.-W. Park, C. Murphy, D. Keisler, M. Eilersieck, H. Schatten, J.A. Green, **R.S. Prather**. 2007. Morphologic and histologic comparisons between in vivo and nuclear transfer derived porcine embryos. *Mol. Reprod. Dev.* 74:952-960. PMID 17219435.
 157. Im, G.-S., M. Samuel, L. Lai, Y. Hao, **R.S. Prather**. 2007. Development and calcium level changes in pre-implantation porcine nuclear transfer embryos activated with 6-DMAP after fusion. *Mol. Reprod. Dev.* 74:1158-1164. PMID 17366547.
 158. Li, R., K. Whitworth, L. Lai, D. Wax, L. Spate, C.N. Murphy, A. Rieke, S.C. Isom, Y. Hao, Z. Zhong, M. Katayama, H. Schatten, **R.S. Prather**. 2007. Concentration and composition of free amino acids and osmolalities of porcine oviductal and uterine fluid and their effects on development of porcine parthenogenetic and IVF embryos. *Mol. Reprod. Dev.* 74:1228-1235. PMID: PMC2559967.
 159. Caamaño, J.N., A. Rodriguez, A. Salas, M. Muñoz, C. Diez, **R.S. Prather**, E. Gómez. 2008. Flow cytometric cell cycle analysis of cultured brown bear fibroblasts. *Cell Biology International* 32:855-859. PMID 18396424.

160. Liu, Z., T. Jiangtian, Z. Zhong, W. Zhenkun, S. Jun, Y. Zhi, G. Li, M. Haikun, K. Qingran, S. Shuang, L. Yutian, W. Hongbin, **R.S. Prather**. 2008. Green fluorescent protein (GFP) transgenic pig produced by somatic cell nuclear transfer. *Chinese Science Bulletin*. 53:1035-1039.
161. Rogers, C.S., Y. Hao, T. Rokhlina, M. Samuel, D.A. Stoltz, Y. Li, E. Petroff, D.W. Vermeer, A.C. Kabel, Z. Yan, L. Spate, D. Wax, C.N. Murphy, A. Rieke, K. Whitworth, M.L. Linville, S.W. Korte, J.F. Engelhardt, M.J. Welsh, **R.S. Prather**. 2008. Production of CFTR null and $\Delta F508$ heterozygous pigs by AAV-mediated gene targeting and somatic cell nuclear transfer. *Journal of Clinical Investigation* 118:1571-1577. PMID 19324337.
162. Klassen, H., K. Warfvinge, P.H. Schwartz, J.F. Kiilgaard, N. Shamie, C. Zhang, M. Samuel, E. Scherfig, **R.S. Prather**, M.J. Young. 2008. Isolation of multiple progenitor cell types from GFP-transgenic pigs and transplantation to the retina of allorecipients. *Cloning & Stem Cells* 10:391-402. PMID 18729769.
163. Lorson, M.A., L. Spate, K. Wells, **R.S. Prather**, C.L. Lorson. 2008. The identification and characterization of the porcine (*sus scrofa*) survival motor neuron (*SMN1*) gene. *Developmental Dynamics* 237:2268-2278.PMCID: PMC2556073.
164. Antelman, J., G. Manandhar, Y.-J. Yi, R. Li, K. Whitworth, J.A. Green, **R.S. Prather**, P. Sutovsky. 2008. Expression of mitochondrial transcription factor A (TFAM) during porcine gametogenesis and preimplantation embryo development. *J. Cellular Physiology*. 217:529-543. PMID 18636550.
165. Zhong, Z., Y. Hao, R. Li, L. Spate, D. Wax, Q.-Y. Sun, **R.S. Prather**, H. Schatten. 2008. Mitochondria distribution and translocation in cloned porcine embryos: an analysis with fluorescence and transmission electron microscopy. *Microsc Microanal*. 14:418-432. PMID 18793486.
166. Bonk, A.J., R. Li, L. Lai, Y. Hao, Z. Liu, M. Samuel, E.A. Ferguson, K.M. Whitworth, C.N. Murphy, E. Antoniou, **R.S. Prather**. 2008. Aberrant DNA methylation in porcine in vitro-, parthenogenetic-, and somatic cell nuclear transfer-produced embryos. *Mol. Reprod. Dev.* 75:250-264. PMCID: PMC2488202.
167. Jiang, L., L. Lai, M. Samuel, **R.S. Prather**, X. Yang, X.C. Tian. 2008. Expression of X-linked genes in deceased neonates and surviving cloned female pigs. *Mol. Reprod. Dev.* 75:265-273.PMCID: PMC2494708.
168. Hao, Y., C. Murphy, L. Spate, D. Wax, Z. Zhong, M. Samuel, N. Mathialagan, H. Schatten, **R.S. Prather**. 2008. Osteopontin improves in vitro development of porcine embryos and decreases apoptosis. *Mol. Reprod. Dev.* 75:291-298.PMID 17874454.
169. McHughes, C.E., G.K. Springer, L. Spate, R. Li, R. Woods, M. Green, S.W. Korte, C.N. Murphy, J.A. Green, **R.S. Prather**. 2008. Identification and quantification of differentially represented transcripts in preimplantation bovine embryos. *Mol. Reprod. Dev.* 76:48-60. PMID 18449894.
170. Rogers, C.S., D.A. Stoltz, D.K. Meyerholz, L.S. Ostedgaard, T. Rokhlina, P. Taft, M.P. Rogan, A.A. Pezzulo, P.H. Karp, O.A. Itani, A.C. Kabel, C.L.

- Wohlford-Lenane, G.J. Davis, T. L. Smith, M. Samuel, D. Wax, C.N. Murphy, A. Rieke, K. Whitworth, A. Uc, T.D. Starner, K.A. Brogden, J. Shilyansky, P. McCray, Jr., J. Zabner, **R.S. Prather**, M.J. Welsh. 2008. Disruption of the CFTR gene produces a model of cystic fibrosis in newborn piglets. *Science* 321:1837-1841.PMCID: PMC2570747.
171. Li, R., C.N. Murphy, L. Spate, D. Wax, S.C. Isom, A. Rieke, E. Walters, M. Samuel, **R.S. Prather**. 2009. Production of piglets after cryopreservation by using a centrifugation-based method for delipitation without micromanipulation. *Biology of Reproduction*80:563-571.PMCID: PMC2755258.
172. Zhao, J., Y. Hao, J.W. Ross, L.D. Spate, E.M. Walters, M.S. Samuel, A. Rieke, C.N. Murphy, **R.S. Prather**. 2009. Significant improvement in cloning efficiency of an inbred miniature pig by Scriptaid treatment after somatic cell nuclear transfer. *Biology of Reproduction* 81:525-530.PMCID: PMC2731980.
173. Hao, Y., D. Wax, Z. Zhong, C.N. Murphy, L. Spate, M. Samuel, A. Rieke, P. Dyce, J. Li, **R.S. Prather**. 2009. Porcine skin-derived stem cells can serve as donor cells for nuclear transfer. *Cloning and Stem Cells* 11:101-110 PMCID: PMC2936952.
174. Zhao, M., S.C. Isom, H. Lin, Y. Hao, J. Zhao, J. Whyte, K.B. Dobbs, Y. Zhang, **R.S. Prather**. 2009. Tracing the stemness of GFP transgenic porcine skin derived progenitors (pSKP) back to specific marker gene expression. *Cloning and Stem Cells* 11:111-122 PMCID: PMC2936941.
175. Miao, Y.L., Q.Y. Sun, X. Zhang, J.-G. Zhao, M.T. Zhao, L. Spate, **R.S. Prather**, H. Schatten. 2009. Centrosome abnormalities in porcine oocytes during aging. *Environmental and Molecular Mutagenesis* 50:666-671. PMID 19593801
176. Telugu, B.P.V.L., L. Spate, **R.S. Prather**, J.A. Green. 2009. Acid peptidase activity released from in vitro produced porcine embryos. *Mol. Reprod. Dev.* 76:417-428.PMID 18937336
177. Isom, S.C., L. Lai, **R.S. Prather**, E.B. Rucker III. 2009. Heat shock of porcine zygotes immediately after oocyte activation increase viability. *Mol. Reprod. Dev.* 76:548-554. PMID 18951378
178. Whitworth, K.M., R. Li, L.D. Spate, D.M. Wax, A. Rieke, J. Whyte, G. Manandhar, J.A. Green, P. Sutovsky, **R.S. Prather**. 2009. Method of oocyte activation affects cloning efficiency in pigs. *Mol. Reprod. Dev.* 76:490-500.PMID 19090011
179. Isom, S.C., **R.S. Prather**, E.B. Rucker, III. 2009. The enhanced developmental potential of heat stressed porcine parthenogenetic embryos is associated with accelerated inactivation of the MAP kinase signaling cascade. *Reproduction, Fertility and Development* *Reproduction, Fertility and Development* 21:892-900. PMID 19698293
180. Bauer, B.K., S.C. Isom, L.D. Spate, K.M. Whitworth, W.G. Spollen, S.M. Blake, G.K. Springer, C.N. Murphy, **R.S. Prather**. 2010. Transcriptional profiling by deep sequencing identifies differences in mRNA transcript

- abundance in in vivo vs. in vitro cultured porcine blastocyst stage embryos. *Biology of Reproduction* 83:791-798. PMID: 20668257
181. Zhao, M.T., M.W. Bennett, X. Zhang, L. Spate, K.M. Whitworth, C.N. Murphy, A. Rieke, Y. Zhang, **R.S. Prather**. 2010. Contribution to neural and mesodermal lineages by porcine skin-derived progenitors (SKPs) in vivo. *Cell Cycle* 9:2040-2041.PMCID: PMC2921557.
 182. Zhao, J., Y. Hao, J.W. Ross, L.D. Spate, E.M. Walters, M.S. Samuel, A. Rieke, C.N. Murphy, **R.S. Prather**. 2010. Histone deacetylase inhibitors improve *in vitro* and *in vivo* developmental competence of somatic nuclei nuclear transfer porcine embryos. *Cellular Reprogramming* 12: 75-83.PMCID: PMC2842950.
 183. Zhao, M.-T., K.M. Whitworth, X. Zhang, J. Zhao, Y.-L. Miao, Y. Zhang, **R.S. Prather**. 2010. Deciphering the mesodermal potency of porcine skin derived progenitors (SKP) by microarray analysis. *Cellular Reprogramming* 12:161-173.PMCID: PMC2860391.
 184. Zhao, M.-T., K.M. Whitworth, H. Lin, X. Zhang, S.C. Isom, K. Dobbs, B. Bauer, Y. Zhang, **R.S. Prather**. 2010. Porcine skin derived progenitor (SKP) spheres and neurospheres: distinct "stemness" identified by microarray analysis. *Cellular Reprogramming* 12:329-345.PMCID: PMC2916231.
 185. Park, J., S.L. Marjani, L. Lai, M. Samuel, D. Wax, S.R. Davis, R.S. Bruno, **R.S. Prather**, X. Yang, X.C. Tian. 2010. Altered gene expression profiles in the brain, kidney, and lung of deceased neonatal cloned pigs. *Cellular Reprogramming* 12:589-597. PMID: PMC2998943
 186. Zhang, X., Y.L. Miao, J.-G. Zhao, L. Spate, M.W. Bennett, C.N. Murphy, H. Schatten, **R.S. Prather**. 2010. Oocytes denuded prior to maturation can develop to the blastocyst stage if provided a cumulus cell-derived co-culture system. *Journal of Animal Science* 88:2604-2610. PMID 20382876
 187. Spate, L.D., K.M. Whitworth, K.A. Walker, B.K. Bauer, C.N. Murphy, **R.S. Prather**. 2010. Low density lipoprotein receptor message and protein during swine embryogenesis: LDL may partially substitute for bovine serum albumin in vitro. *Molecular Reproduction & Development* 77:298.PMID 20017142
 188. Dobbs, K.B., W.G. Spollen, G.K. Springer, **R.S. Prather**. 2010. The role of cytoplasmic polyadenylation element sequence mRNA abundance in porcine embryogenesis and parthenogenetic development. *Molecular Reproduction & Development* 77:699-709. PMID 20626047
 189. Isom, S.C., W.G. Spollen, S.M. Blake, B.K. Bauer, G.K. Springer, **R.S. Prather**. 2010. Transcriptional profiling of day 12 porcine embryonic disc and trophectoderm samples using ultra-deep sequencing technologies.. *Molecular Reproduction and Development* 77:812-819. PMID: 20722012
 190. Whitworth, K.M., L.D. Spate, R. Li, A. Rieke, P. Sutovsky, J.A. Green, **R.S. Prather**. 2010. Activation method does not alter abnormal placental gene expression and development in cloned pigs. *Molecular Reproduction and Development* 77:1016-1030.PMID 20925087

191. Rogan, M., L. Reznikov, A. Pezzulo, N. Gansemer, M. Samuel, **R.S. Prather**, J. Zabner, D. Fredricks, P.B. McCray, Jr., M. Welsh, D. Stoltz. 2010. Pigs and humans with cystic fibrosis have reduced IGF-1 levels at birth. *Proceedings of the National Academy of Sciences, U.S.A* 107:20571-20575.PMCID: PMC2996661
192. Powell, M.D., G. Manandhar, L. Spate, M. Sutovsky, S. Zimmerman, S. Sachdev, M. Hannink, J.A. Green, **R.S. Prather**, P. Sutovsky. 2010. Discovery of putative oocyte quality markers by comparative ExacTag proteomics. *Proteomics Clin. Appl.* 4:337-351.PMCID: PMC3040761
193. Ross, J.W., J.J. Whyte, J. Zhao, M. Samuel, K.D. Wells, **R.S. Prather**. 2010. Optimization of square-wave electroporation for transfection of porcine fetal fibroblasts. *Transgenic Research* 19:611-620.PMCID: PMC2894267.
194. Stoltz, D., D.K. Meyerholz, A.A. Pezzulo, S. Ramachandran, M.P. Rogan, G.J. Davis, R.A. Hanfland, C. Wohlford-Lenane, C.L. Dohrn, J.A. Bartlett, G.A. Nelson, IV, E.H. Chang, P.J. Taft, P.S. Ludwig, M. Estin, E.E. Hornick, J.L. Launspach, M. Samuel, T. Rokhlina, P.H. Karp, L.S. Ostedgaard, A. Uc, T.D. Starner, A.R. Horswill, K. A. Brogden, **R.S. Prather**, S.S. Richter, J. Shilyansky, P.B. McCray, Jr., J. Zabner, M.J. Welsh. 2010. Cystic fibrosis pigs develop lung disease and exhibit defective bacterial eradication at birth. *Science Translational Medicine*2:29ra31.PMCID: PMC2889616.
195. Park, J., L. Lai, M. Samuel, D. Wax, R.S. Bruno, R. French, **R.S. Prather**, X. Yang, X.C. Tian. 2011. Altered gene expression profiles in the brain, kidney, and lung of one-month old live cloned pigs. *Cellular Reprogramming* 13:215-223. PMCID: PMC3104288
196. Whitworth, K.M., J. Zhao, L.D. Spate, R. Li, **R.S. Prather**. 2011. Scriptaid corrects gene expression of a few aberrantly reprogrammed transcripts in nuclear transfer pig blastocyst stage embryos. *Cellular Reprogramming* 13:191-204. PMID: 21548827
197. Richards, M.P., P. Kathirvel, Y. Gong, A. Lopez-Hernandez, E. Walters, **R.S. Prather**. 2011. Long chain omega-3 fatty acid levels in loin muscle from transgenic (fat-1 gene) pigs and effects on lipid oxidation during storage. *Food Biotechnology* 25:103-114.
198. Telugu, B.P.V.L., T. Ezashi, S. Sinha, A.P. Alexenko, L. Spate, **R.S. Prather**, R.M. Roberts. 2011. Leukemia inhibitory factor (LIF)-dependent, pluripotent stem cells established from inner cell mass of porcine embryos. *Journal of Biological Chemistry* 286: 28948-28953. PMCID: PMC3190702
199. Whyte, J.J., J. Zhao, K.D. Wells, M. Samuel, K.M. Whitworth, E. Walters, M.H. Laughlin, **R.S. Prather**. 2011. Gene targeting with zinc finger nucleases to produce cloned eGFP knockout pigs. *Molecular Reproduction and Development* 78:2.PMID: 21268178
200. Ostedgaard, L.S., D.K. Meyerholz, J.-H. Chen, A.A. Pezzulo, P.H. Karp, T. Rokhlina, S.E. Ernst, R.A. Hanfland, L. Reznikov, P.S. Ludwig, M.P. Rogan, G.J. Davis, C.L. Dohrn, P.J. Taft, M.V. Rector, E. Hornick, P. Nassar, M. Samuel, S.S. Richter, A. Uc, J. Shilyasky, **R.S. Prather**, P.B. McCray, Jr., J.

- Zabner, M.J. Welsh, and D.A. Stoltz. 2011. The $\Delta F508$ mutation causes CFTR misprocessing and cystic fibrosis-like disease in pigs. *Science Translational Medicine* 3: 74ra24. PMID: PMC3119077
201. Men, H. C. Zhao, S. Wei, C.N. Murphy, Y. Liu, E.M. Walters, M.S. Samuel, **R.S. Prather**, J.K. Critser. 2011. Birth of piglets from in vitro produced, zona-intact porcine embryos vitrified in a closed system. *Theriogenology* 76:280-289. PMID: PMC3115500
 202. Whyte, J.J., M. Samuel, E. Mahan, J. Padilla, G.H. Simmons, A. Arce, S.B. Bender, K. Whitworth, Y.H. Hao, C.N. Murphy, E.M. Walters, **R.S. Prather**, M.H. Laughlin. 2011. Vascular endothelium-specific overexpression of human catalase in cloned pigs. *Transgenic Research* 5:989-1001. PMID: PMC 3286124
 203. Lorson, M., L.D. Spate, M.S. Samuel, C.N. Murphy, C. Lorson, **R.S. Prather**, K. Wells. 2011. Disruption of the survival motor neuron (SMN) gene in pigs using ssDNA. *Transgenic Research* 20:1293-1304. PMID: 21350916
 204. Yang, C.-X., Z.-Q. Du, E.C. Wright, M.F. Rothschild, **R.S. Prather**, J.W. Ross. 2012. Small RNA profile of the cumulus oocyte complex and early embryos in the pig. *Biol. Reprod.* 87:117 PMID: 22933518.
 205. Yang, X., J. Mao, E.M. Walters, L.D. Spate, M. Zhao, J. Teson, K. Lee, **R.S. Prather**. 2012. Xenopus egg extract reduced global DNA methylation of donor cells and enhanced somatic cell nuclear transfer embryo development in pigs. *BioResearch Open Access* 1:79-87. doi: 10.1089/biores.2012.0214. PMID: 23515109
 206. Walters, E.M., E. Wolf, J. Whyte, J. Mao, S. Renner, H. Nagashima, E. Kobayashi, J. Zhao, K.D. Wells, J.K. Critser, L.K. Riley, **R.S. Prather**. 2012. Completion of the swine genome will simplify the production of swine as a large animal biomedical model. *BMC Medical Genomics*. 5:55. PMID: PMC3499190
 207. Mao, J., K. Tessanne, K.M. Whitworth, L.D. Spate, E.M. Walters, M.S. Samuel, C.N. Murphy, L. Tracy, J. Zhao, **R.S. Prather**. 2012. Effects of Combined Treatment of MG132 and Scriptaid on Early and Term Development of Porcine Somatic Cell Nuclear Transfer Embryos. *Cellular Reprogramming* 14: 385-389. PMID: PMC3459054
 208. Miao, Y.-L, X. Zhang, J.-G. Zhao, L. Spate, M.-T. Zhao, C.N. Murphy, **R.S. Prather**, Q.-Y. Sun, H. Schatten. 2012. Effects of griseofulvin on in vitro porcine oocyte maturation and embryo development. *Environmental and Molecular Mutagenesis* 53:561-566. PMID: 22829310.
 209. Ross, J.W., J.F. Castro, J. Zhao, M. Samuel, E. Walters, C. Rios, P. Bray-Ward, B.W. Jones, R.E. Marc, W. Wang, L. Zhou, J.M. Noel, M. McCall, P. DeMarco, **R.S. Prather**, H.J. Kaplan. 2012. Generation of an inbred miniature pig model of retinitis pigmentosa. *Investigative Ophthalmology & Visual Sciences* 31:501-507. PMID: 22247487
 210. Isom, S.C., R. Li, K.M. Whitworth, **R.S. Prather**. 2012. Timing of first embryonic cleavage is a positive indicator of the in vitro developmental

- potential of porcine embryos derived from in vitro fertilization, somatic cell nuclear transfer and parthenogenesis *Mol. Reprod. and Dev.* 79:197-207. PMID: 22213403
211. Redel, B.K., A.N. Brown, L.D. Spate, K.M. Whitworth, J.A. Green, **R.S. Prather**. 2012. Glycolysis in preimplantation development is partially controlled by the Warburg Effect. *Mol. Reprod. and Dev.* 79:262-271. PMID: 22213464
 212. Spate, L.D., B.K. Redel, A.N. Brown, C.N. Murphy, **R.S. Prather**. 2012. Replacement of bovine serum albumin with N-methyl-D-aspartic acid and homocysteine improves development over no bovine serum albumin, but doesn't translate into piglets. *Mol. Reprod. and Dev.* 79:310. PMID: 22407887
 213. Krisher, R.L., **R.S. Prather**. 2012. A role for the Warburg Effect in preimplantation embryo development: metabolic modification to support rapid proliferation. *Mol. Reprod. and Dev.* 79:311-320. PMID 22431437
 214. Klassen, H., J.F. Kiilgaard, K. Warfvinge, M.S. Samuel, **R.S. Prather**, F. Wong, R.M. Petters, M. LaCour, M.J. Young. 2012. Photoreceptor differentiation following transplantation of allogeneic retinal progenitor cells to the dystrophic rhodopsin Pro347Leu transgenic pig. *Stem Cells International* doi:10.1155/2012/939801. Article ID 939801, 9 pages. PMID 22567027
 215. Zhao, M.-T., X. Yang, K. Lee, J. Mao, J.M. Teson, K.M. Whitworth, M.S. Samuel, L. Spate, C.N. Murphy, **R.S. Prather**. 2012. The in vivo developmental potential of porcine skin-derived progenitors (SKPs). *Stem Cells and Development* 21:2682-2688. PMID 22482370
 216. Mao, J., K.M. Whitworth, L.D. Spate, E.M. Walters, J. Zhao, **R.S. Prather**. 2012. Regulation of oocyte mitochondria DNA copy number by follicular fluid, EGF, and neuregulin 1 during in vitro maturation affects embryo development in pigs. *Theriogenology* 78:887-897. PMID 22626782
 217. Zhao, M.-T., R.M. Rivera, **R.S. Prather**. 2013. Locus-specific DNA methylation reprogramming during early porcine embryogenesis. *Biology of Reproduction* 88:48 doi:10.1095/biolreprod.112.104471. PMID: 23303676
 218. Stoltz, D.A., T. Rokhlina, S.E. Ernst, A.A. Pezzulo, L.S Ostedgaard, P.H. Karp, M.S. Samuel, L.R. Reznikov, M.V. Rector, N.D. Gansemer, D.C. Bouzek, M.H. Alaiwa, M.J. Hoegger, P.S. Ludwig, P.J. Taft, T.J. Wallen, C. Wohlford-Lenane, J.D. McMenimen, J.-H. Chen, K.L Bogan, R.J. Adam. E.E. Hornick, G.A. Nelson, IV, E.A. Hoffman, E.H. Chang, J. Zabner, P.B. McCray, Jr., **R.S. Prather**, D.K. Meyerholz, M.J. Welsh. 2013. Intestinal CFTR expression alleviates the meconium ileus phenotype in cystic fibrosis pigs. *J. Clinical Investigation* 123:2685-2693. doi: 10.1172/JCI68867 PMID: 23676501
 219. Beaton, B.P., J. Mao, C.N. Murphy, M.S. Samuel, **R.S. Prather**, K.D. Wells. 2013. Use of single stranded targeting DNA or negative selection does not further increase efficiency of a *GGTA1* promoter trap. *Journal of Molecular*

- Cloning & Genetic Recombination 2:1 doi: 10.4172/2325-9787.1000101. PMID: 25309937
220. Morrill, B., L. Cox, A. Ward, S. Heywood, **R.S. Prather**, S.C. Isom. 2013. Targeted DNA methylation analysis by high throughput sequencing in porcine peri-implantation embryos. *Journal of Reproduction and Development* June 24;59(3): 314-320. Epub 2013 Feb 22. PMID: 23428632.
 221. **Prather, R.S.**, R.R.R. Rowland, C. Ewen, B. Tribble, M. Kerrigan, B. Bawa, J.M. Teson, J. Mao, K. Lee, M.S. Samuel, K.M. Whitworth, C.N. Murphy, T. Egen, J.A. Green. 2013. *SIGLEC1* is not the only attachment/internalization receptor for porcine reproductive and respiratory syndrome virus. *Journal of Virology* 87;9538-9546. doi: 10.1128/JVI.00177-13. Epub 2013 Jun 19. PMID: 23785195
 222. Lee, K., B.K. Redel, J. Teson, L.D. Spate, K.-W. Park, E. Walters, M. Samuel, C.N. Murphy, **R.S. Prather**. 2013. Piglets produced from cloned blastocysts cultured in vitro with GM-CSF. *Molecular Reproduction and Development* 80:145-154. PMID 23239239.
 223. Spate L.D., Murphy, C.N., **R.S. Prather**. 2013. High-Throughput Vitrification of *in vivo* Produced Porcine Embryos. *PLoS ONE* 8 6 e65545. doi: 10.1371/journal.pone.0065545. Print 2013. PMID: 23762391
 224. Isom, S.C., J.R. Stevens, R. Li, W.G. Spollen, L. Cox, L.D. Spate, **R.S. Prather**. 2013. Transcriptional profiling of peri-attachment porcine embryos by RNA-Seq. *Physiological Genomics* 45:577-589. doi: 10.1152/physiolgenomics.00094.2012. Epub 2013 May 21. PMID: 23695885.
 225. Miles, E., C. O’Gorman, J. Zhao, M. Samuel, E. Walters, Y.-J. Yi, M. Sutovsky, **R.S. Prather**, K. Wells, P. Sutovsky. 2013. Transgenic Pig Carrying Green Fluorescent Proteasomes. *Proceedings of the National Academy of Sciences* 110:6334-6339. doi: 10.1073/pnas.1220910110. Epub 2013 Apr 2. PMID: 23550158
 226. Kwon, D.-N., K. Lee, M.-J. Kang, J.J. Whyte, A.N. Brown, J.-H. Kim, M.S. Samuel, J. Mao, K.-w. Park, C.N. Murphy, **R.S. Prather**, J.-H. Kim. 2013. Production of biallelic CMP-Neu5Ac hydroxylase knock-out pigs. *Scientific Reports* 3:1981. doi: 10.1038/srep01981. PMID 23760311
 227. Lee, K., J. Teson, K. Whitworth, L.D. Spate, K.-W. Park, C.N. Murphy, **R.S. Prather**. 2014. Dynamics of the TET family in porcine preimplantation embryos is related to the zygotic genome. *Developmental Biology* 386: 86-95. [Dx.doi.org/10.1016/j.ydbio.2013.11.024](https://doi.org/10.1016/j.ydbio.2013.11.024). PMID 24315853.
 228. Lee, K., C. Wang, L.D. Spate, C.N. Murphy, **R.S. Prather**, Z. Machaty. 2014. Gynogenetic activation of pig oocytes. *Cellular Reprogramming* 16:121-129. doi: 10.1089/cell.2013.0074. PMID: 24661186
 229. Yuan, Y., K. Lee, K.W. Park, L. Spate, **R.S. Prather**, K. Wells, R. Michael Roberts. 2014. Cell cycle synchronization of leukemia inhibitory factor (LIF)-dependent porcine induced pluripotent stem cells and the generation

- of cloned embryos. *Cell Cycle* 13:1265-1276. doi: 10.4161/cc.28176. Epub 2014 Feb 17. PMID: 24621508
230. Spate, L.D., A. Brown, B.K. Redel, K.M. Whitworth, C.N. Murphy, **R.S. Prather**. 2014. Dickkopf-related protein 1 inhibits the WNT signaling pathway and improves pig oocyte maturation. *PLoS ONE*. doi: 10.1271/journal.pone.0095114. PMID: 24739947
231. Hamm, J., K. Tessanne, C.N. Murphy, **R.S. Prather**. 2014. Transcriptional regulators TRIM28, SETDB1 and TP53 are aberrantly expressed in porcine embryos produced by in vitro fertilization in comparison to in vivo derived and nuclear transfer derived embryos. *Molecular Reproduction and Development* 81:552-566. doi: 10.1002/mrd.22324. Epub 2014 Apr 16. PMID: 24659575.
232. Zhao, M.T., J.J. Whyte, G.M. Hopkins, M.D. Kirk, **R.S. Prather**. 2014. Methylated DNA immunoprecipitation and high-throughput sequencing (MeDIP-seq) by using low amounts of genomic DNA. *Cellular Reprogramming* 16:175-184. doi: 10.1089/cell.2014.0002. Epub 2014 Apr 28. PMID: 24773292
233. Lee, K., D.-N. Kwon, T. Ezashi, Y.J. Choi, C. Park, A.C. Ericsson, A.N. Brown, M.S. Samuel, K.-W. Park, E. Walters, D.Y. Kim, J.-H. Kim, C.L. Franklin, C.N. Murphy, R.M. Roberts, **R.S. Prather**, J.-H. Kim. 2014. Engraftment of human iPS cells and allogeneic porcine cells into pigs with inactivated *RAG2* and accompanying severe combined immunodeficiency. *Proc. Natl. Acad. Sci. USA* 111:7,260-7,265. doi:10.1073/pnas.1406376111. PMID 24799706.
234. Whitworth, K.M., K. Lee, J.A. Benne, B.P. Beaton, L.D. Spate, S.L. Murphy, M.S. Samuel, J. Mao, C. O’Gorman, E.M. Walters, C.N. Murphy, J.P. Driver, A. Mileham, D. McLaren, K.D. Wells, **R.S. Prather**. 2014. Use of the CRISPR/Cas9 system to produce genetically engineered pigs from in vitro derived oocytes and embryos. *Biology of Reproduction*. doi: 10.1095/biolreprod.114.121723. Epub 2014 Aug 6. 91:78, 1-13. PMID: 25100712.
235. Li, G., Q. Jia, J. Zhao, X. Li, M. Yu, M.S. Samuel, S. Zhao, **R.S. Prather**, C. Li. 2014. Dysregulation of genome-wide gene expression and DNA methylation in abnormal cloned piglets. *BMC Genomics* 15:811. Sep 24;15:811. doi: 10.1186/1471-2164-15-811. PMID: 25253444.
236. Mao, J., M.-T. Zhao, K.M. Whitworth, L.D. Spate, E.M. Walters, C. O’Gorman, K. Lee, M.S. Samuel, C.N. Murphy, **R.S. Prather**. 2015. Oxamflatin treatment enhances cloned porcine embryo development and nuclear reprogramming. *Cellular Reprogramming* 17:28-40. doi: 10.1089/cell.2014.0075. Epub 2014 Dec 30. PMID: 2548976
237. Huang, J., H. Zhang, X. Wang, K. Dobbs, J. Yao, G. Qin, K.M. Whitworth, E.M. Walters, **R.S. Prather**, J. Zhao. 2015. Preimplantation porcine embryo development impairment by histone demethylase KDM5B knockdown and disturbance of bi-valent H3K4me3-H3K27me3 modifications. *Biol. Reprod.*

- 92: 72. doi: 10.1095/biolreprod.114.122762. Epub 2015 Jan 21. PMID: 25609834
238. Redel, B.R., K. Tessanne, L.D. Spate, C.N. Murphy, **R.S. Prather**. 2015. Arginine increases development of in vitro produced embryos and affects the PRMT-DDAH-NO axis. *Reproduction, Fertility & Development* 27:655-666. Mar 13. doi: 10.1071/RD14293. PMID: 25765074
239. Spate, L.D., A.N. Brown, B.K. Redel, K.M. Whitworth, **R.S. Prather**. 2015. PS48 can replace bovine serum albumin in pig embryo culture medium, and improve in vitro embryo development by phosphorylating AKT. *Mol Reprod Dev* 82:315-320. doi: 10.1002/mrd.22474. Epub 2015 Mar 16. PMID: 25776657.
240. Park, J., L. Lai, M. Samuel, D. Wax, **R.S. Prather**, X. Tian. 2015. Disruption of mitochondrion-to-nucleus interaction in deceased cloned piglets. *PLoS ONE* 10(6);E0129378. doi: 10.1371/journal.pone.0129378. PMID 26067091.
241. Schook, L.B., T.V. Collares, W. Hu, Y. Lian, F.M. Rodrigues, L.A. Rund, K.M. Schachtschneider, F. K. Seixas, K. Singh, K.D. Wells, E.M. Walters, **R.S. Prather**, C.M. Counter. 2015. A genetic porcine model of cancer. *PLoS ONE* doi:10.1371/journal.pone.0128864. PMID: 26132737.
242. Men, H., L.D. Spate, C.N. Murphy, **R.S. Prather** 2015. Cryopreservation of in vitro-produced early stage porcine embryos in sealed straws. *BioResearch Open Access* 4:258-265. Doi: 10.1089/biores.2015.0012. PMID: 26309801.
243. Lee, K., A. Davis, L. Zhang, L.D. Spate, K-W. Park, M.S. Samuel, E.M. Walters, C.N. Murphy, Z. Machaty, **R.S. Prather**. 2015. Pig oocyte activation utilizing a Zn²⁺ chelator, TPEN. *Theriogenology* 84:1024-1032. doi:10.1016/j.theriogenology.2015.05.036 PMID: 26143360.
244. Whitworth, K.M., J. Mao, K. Lee, W.G. Spollen, M.S. Samuel, E.M. Walters, L.D. Spate, **R.S. Prather**. 2015. Transcriptome analysis of pig in vivo, in vitro fertilized and nuclear transfer blastocyst stage embryos treated with histone deacetylase inhibitors post-fusion and activation reveals changes in the lysosomal pathway. *Cellular Reprogramming* 17:243-258. Doi 10.1089/cell.2015.0022. PMCID: PMC4529055.
245. Zhao, J., W. Xu, J.W. Ross, E.M. Walters, S.P. Butler, J.J. Whyte, L. Kelso, M. Fatemi, N.C. Vanderslice, K. Giroux, L.D. Spate, M.S. Samuel, C.N. Murphy, K.D. Wells, **R.S. Prather**, N. Masiello, W.H. Velander. 2015. Engineering protein processing of the mammary gland to produce abundant hemophilia B therapy in milk. *Scientific Reports* 5:14176 DOI: 10.1038/srep14176. PMID 26387706
246. Beaton, B.P., Y.-J. Choi, D.-N. Kim, J.-H. Kim, M.S. Samuel, J.A. Benne, K.D. Wells, K. Lee, J.-H. Kim, **R.S. Prather**. 2015. Inclusion of homologous DNA in nuclease-mediated gene targeting facilitates a higher incidence of bi-allelically modified cells. *Xenotransplantation* (18 SEP 2015 | DOI: 10.1111/xen.12194). 22:379-390. PMID 26381494

247. Whitworth, K.M, R.R.R. Rowland, C.L. Ewen, B.R. Tribble, M.A. Kerrigan, A.G. Cino-Ozuna, M.S. Samuel, J.E. Lightner, D.G. McLaren, A. Mileham, K.D. Wells, **R.S. Prather**. 2016. Gene edited pigs are protected from porcine reproductive and respiratory syndrome virus. *Nature Biotechnology* (7 DEC 2015 | DOI: 10.1038/nbt.3434). 34:20-22. PMID 26641533.
248. Redel, B.K., L.D. Spate, K. Lee, J. Mao, K.M. Whitworth, **R.S. Prather**. 2016. Glycine supplementation in vitro enhances porcine preimplantation embryo cell number and decreases apoptosis but does not lead to live births. *Molecular Reproduction & Development* Doi:10.1002/mrd.22618. Epub 2016 Feb 8. 83:246-258. PMID 26824641.
249. Choi, Y.-J., K. Lee, D.-N. Kwon, C. Park, A.N. Brown, M. Samuel, K.-W. Park, J.-H. Kim, C.N. Murphy, **R.S. Prather**, J.-H. Kim. 2016. Partial loss of interleukin 2 receptor gamma function in pigs provides mechanistic insights for the study of human immunodeficiency syndrome. *Oncotarget Journal* July 24. doi:10.18632/oncotarget.10812. PMID 27463006.
250. Whitworth, K.M., J.A. Benne, L.D. Spate, S.L. Murphy, M.S. Samuel, C.N. Murphy, J.A Richt, E. Walters, **R.S. Prather**, K.D. Wells. Zygote injection of CRISPR/Cas9 RNA successfully modifies the target gene without delaying blastocyst development or altering the sex ratio in pigs. *Transgenic Research*, Oct 15 (Epub) PMID 27744533.
251. Wells, K.D., R. Bardot, K.M. Whitworth, B.R. Tribble, Y. Fang, A. Mileham, M.A. Kerrigan, M.S. Samuel, **R.S. Prather**, R.R.R. Rowland. 2016. Substitution of porcine CD163 SRCR domain 5 with a CD163-like homolog confers resistance to genotype 1 but not genotype 2 porcine reproductive and respiratory syndrome viruses. *Journal of Virology* 01521-16 Nov 9 (Epub). PMID 27847356
252. Popescu, L, N.N. Gaudreault, K.M. Whitworth, M. Murgia, J.C. Nietfeld, M. Samuel, A. Mileham, K.D. Wells, **R.S. Prather**, R.R.R. Rowland. 2017. Genetically edited pigs lacking CD163 show no resistance following infection with the African swine fever (ASF) Georgia 07 virus. *Virology* 501:102-106 doi: 10.1016/j.virol.2016.11.012 PMID 27898335
253. Yang, J., S. Menges, P. Gu, R. Tongbai, M. Samuel, **R.S. Prather**, H. Klassen. 2017. Porcine neural progenitor cells derived from tissue at different gestational ages can be distinguished by global transcriptome. *Cell Transplantation* accepted 12/15/2016.

Peer-Reviewed /Invited Review Papers

1. **Prather, R.S.**, L. Hagemann, N.L. First. 1989. Preimplantation mammalian aggregation and injection chimeras. *Gamete Res.* 22:233-247. PMID 2651266.
2. **Prather, R.S.** 1990. Nuclear transplantation as a method for cloning embryos. *Proc. Soc. Exp. Biol. & Med.* 195:7-12. PMID 2204926.
3. **Prather, R.S.** 1991. Nuclear transplantation and embryo cloning in mammals. *ILAR News* 33:62-68.

4. First, N.L., **R.S. Prather**. 1991. Genomic potential in mammals. *Differentiation* 48:1-8. PMID 1743429.
5. **Prather, R.S.**, J.M. Robl. 1991. Cloning by nuclear transfer and splitting in laboratory and domestic animals. In: *Animal Applications of Research in Mammalian Development* (R.A. Pedersen, A. McLaren, N.L. First, eds.) The Cold Spring Harbor Laboratory Press, pp 205-232.
6. **Prather, R.S.**, T.T. Stumpf and L.F. Rickords. 1992. Nuclear transplantation as a method of producing genetically identical livestock. *Animal Biotechnology* 3:67-79.
7. **Prather, R.S.** 1996. Progress in cloning mammalian embryos. *Proc. Soc. Exp. Biol. & Med.* 212:38-43. PMID 8618949.
8. **Prather, R.S.**, B.N. Day. 1998. Practical aspects of in vitro production of pig embryos. *Theriogenology* 49:23-32. PMID 10732118.
9. Macháty, Z., **R.S. Prather**. 1998. Strategies for activating nuclear transfer oocytes. *Reproduction, Fertility & Development.* 10:599-613. PMID 10612466.
10. **Prather, R.S.**, T. Tao, Z. Macháty. 1999. Development of the techniques for nuclear transfer in pigs. *Theriogenology* 51:487-498. PMID 10729107.
11. Kúhholzer, B. and **R.S. Prather**. 2000. Advances in livestock nuclear transfer. *Proc. Soc. Exp. Biol. & Med.* 224:240-245. PMID 10964258.
12. **Prather, R.S.**, B. Kúhholzer, L. Lai and K.-W. Park. 2000. Changes in the structure of nuclei after transfer to oocytes. *Cloning* 2: 117-122. PMID 16218847.
13. **Prather, R.S.** 2001. Basic mechanisms of fertilization and parthenogenesis in the pig. *Reproduction Supplement* 58: 105-112. PMID 11980183.
14. Lai, L., **R.S. Prather**. 2002. Progress in producing knockout pigs for xenotransplantation by nuclear transfer. *Annals of Medicine* 34:501-506. PMID 12553489.
15. **Prather, R.S.**, R.J. Hawley, D.B. Carter, L. Lai, J.L. Greenstein. 2003. Transgenic swine for biomedicine and agriculture. *Theriogenology* 59:115-125. PMID 12499023.
16. Lai, L. and **R.S. Prather**. 2003. Genetic modification of pigs by nuclear transfer. *Repro. Biol. & Endo.* 1:82-87. PMID 14613542.
17. Lai, L., **R.S. Prather**. 2003. Production of cloned pigs by using somatic cells as donors. *Cloning & Stem Cells* 5:233-242. PMID 14733743.
18. Whitworth, K., G.K. Springer, L.J. Forrester, W.G. Spollen, J. Ries, C.N. Murphy, N. Mathialagan, B.A. Didion, J.A. Green, **R.S. Prather**. 2003. Characterization of cDNA Libraries Developed from Porcine Oocytes and Embryos to Determine Differential Expression Patterns. In: *Mammalian Embryo Genomics, Organization for Economic Co-Operation and Development, Paris, France*, pp 29-36.
19. Holt, W.V., A.R. Pickard, **R.S. Prather**. 2004. Wildlife conservation and reproductive cloning. *Reproduction* 127:317-324. PMID 15016951.
20. Platt, J.L., **R.S. Prather**. 2004. Animal organ donors- human health applications. *CAST Issue Paper* 26: 1-8.

21. Lai, L., **R.S. Prather**. 2004. Cloning pigs as donors for organ transfers in humans: promises and challenges. *IEEE Engineering in Medicine and Biology*. 23:37-42. PMID 15264467.
22. Lai, L., **R.S. Prather**. 2004. Biotechnology: Cloning animals. In: *Encyclopedia of Animal Science* (W.G. Pond and A.W. Bell, Eds), Marcel Dekker, New York, NY.
23. **Prather, R.S.**, P. Sutovsky, J.A. Green. 2004. Nuclear remodeling and reprogramming in transgenic pig production. *Soc. Exp. Biol. & Med.* 229:1120-1126. PMID 15564438.
24. Schatten, H., **R.S. Prather**, Q.-Y. Sun. 2005. The significance of mitochondria for embryo development in cloned farm animals. *Mitochondrion* 5:303-321. PMID 16150655.
25. Green, J.A., J.-G. Kim, K.M. Whitworth, C. Agca, **R.S. Prather**. 2006. The use of microarrays to define functionally-related genes that are differentially expressed in the cycling pig uterus. In: *Control of Pig Reproduction VII, Reproduction Supplement 62*. Eds C.J. Ashworth and R. Kraeling. Nottingham University Press, Nottingham, UK. *Soc. Reprod. Fertil.* 62:163-176. PMID 16866316.
26. **Prather, R.S.** 2006. Cloned transgenic heart-healthy pork? *Transgenic Research* 15: 405-407. PMID 16906441.
27. **Prather, R.S.** 2007. Nuclear remodeling and nuclear reprogramming for making transgenic pigs by nuclear transfer. *Adv. Exp. Med. Biol.* 591:1-13. PMID 17176551.
28. Rogers, C.S., W.M. Abraham, K.A. Brogden, J.F. Engelhardt, J. Fisher, P.B. McCray, G. McLennan, D.K. Meyerholz, L.S. Ostedgaard, **R.S. Prather**, D.A. Stolz, J. Zabner, M.J. Welsh. 2008. The porcine lung as a potential model for cystic fibrosis. *Am. J. Phys. Lung Cell. Mol. Physiol.* 295:L240-L263. PMID 18487356.
29. **Prather, R.S.**, M. Shen, Y. Dai. 2008. Genetically modified pigs for medicine and agriculture. *Biotechnology & Genetic Engineering Reviews* 25:245-266.
30. Tian, X.C., J. Park, R. Bruno, R. French, L. Jiang, **R.S. Prather**. 2009. Altered gene expression in cloned piglets. *Reprod. Fertil. & Devel.* 21:60-66. PMID 19152746.
31. **Prather, R.S.**, J.W. Ross, S.C. Isom, J.A. Green. 2009. Transcriptional, post-transcriptional and epigenetic control of porcine oocyte maturation and embryogenesis. *International Conference on Pig Reproduction* 66:165-176. PMID 19848279
32. Welsh, M.J., C.S. Rogers, D.A. Stoltz, D.K. Meyerholz, **R.S. Prather**. 2009. Development of a porcine model of cystic fibrosis. *Transactions of the American Clinical and Climatological Association* 120:149-162. PMID: PMC2744522
33. Ross, J.W., **R.S. Prather**, J.J. Whyte, J. Zhao. 2009. Cloning and transgenics: progress and new approaches in domestic animals. CAB

Reviews: Perspectives in Agriculture, Veterinary Science, Nutrition and Natural Resources4:13

34. Ross, J.W., **R.S. Prather**. 2010. Transgenics and modern reproductive technologies. In: *The Genetics of the Pig*. 2nd Edition. Edited by M.F. Rothschild and A. Ruvinsky. CAB International pp 242-262.
35. Zhao, J., J.J. Whyte, **R.S. Prather**. 2010. The effect of epigenetic regulation during swine embryogenesis and on cloning by nuclear transfer. *Cell & Tissue Research* 341:13-21. DOI 10.1007/s00441-010-1000-x.PMID: 20563602
36. Whitworth, K.M., **R.S. Prather**. 2010. Somatic cell nuclear transfer efficiency- Remodeling and reprogramming: How can it be improved? *Molecular Reproduction & Development* 77:1001-1015.PMID 20931660
37. Zhao, M.-T., **R.S. Prather**. 2011. The multi-potentiality of skin-derived stem cells in pigs. *Theriogenology* 75:1372-1380. PMCID: PMC2975041
38. Whyte, J.J., **R.S. Prather**. 2011. Genetic modifications of pigs for medicine and agriculture. *Molecular Reproduction and Development* 78:879-891. PMCID: PMC3522184
39. Whyte, J.J., **R.S. Prather**. 2012. Zinc-finger nucleases to create custom-designed modifications in the swine (*sus scrofa*) genome. *J. Animal Science* 90:1111-1117. PMID 22038991. Free Article
40. Men, H., E.M. Walters, H. Nagashima, **R.S. Prather**.2012. Emerging applications of sperm, embryo and somatic cell cryopreservation in maintenance, relocation and rederivation of swine genetics. *Theriogenology* 78:1720-1729. PMCID: PMC3472131. Free PMC Article
41. Walters, E.M., **R.S. Prather**. 2013. Advancing swine models for human health and disease. *Missouri Medicine* 110:140-143. PMID 23829105
42. **Prather, R.S.**, A. Brown, L.D. Spate, B.K. Redel, K.M. Whitworth, J.J. Whyte. 2013. Transcriptional profiling of oocyte maturation and embryonic development elucidates metabolism and control of development. In: *Control of Pig Reproduction, Volume IX* (H. Rodriguez-Martinez, N.M. Soede and W.L. Flowers, eds). *Society for Reproduction and Fertility* 68: 71-83.
43. **Prather, R.S.**, B.K. Redel, K.M. Whitworth, M.-T. Zhao. 2014. Genomic profiling to improve embryogenesis in the pig. *Animal Reproduction Science* DOI information: 10.1016/j.anireprosci.2014.04.017. PMID 24878355
44. Schatten, H., Q.-Y. Sun, **R.S. Prather**. 2014. The impact of mitochondrial function/dysfunction on IVF and new treatment possibilities for infertility. *Reproductive Biology and Endocrinology*. 12:111.
45. Krisher, R.L., A. Heuberger, M. Paczkowski, J. Stevens, C. Popsil, L.D. Spate, **R.S. Prather**, R.G. Sturmey, J.R. Herrick, W.B. Schoolcraft. 2015. Applying metabolomics analyses to the practice of embryology: Physiology, development and ART. *Reprod. Fertil. Devel.* 27:602-620. Mar 13. doi: 10.1071/RD14359. PMID: 25763765.
46. Redel, B.K., **R.S. Prather**. 2016. Meganucleases revolutionize the production of genetically engineered pigs for the study of human diseases.

Special Swine issue (T. Monticello & W. Haschek-Hock, eds) of Toxicologic Pathology (DOI | 10.1177/0192623315613160) 1-6.

47. Walters, E.M., K.D. Wells, E.C. Bryda, S. Schommer, **R.S. Prather**. 2016. Swine models, genomic tools and services to enhance our understanding of human health and diseases. *Lab Animal*. (accepted 12/6/2016).

Other Scientific Correspondence

1. **Prather, R.S.** 2000. Perspectives: Cloning. Pigs is pigs. *Science* 289:1886-1887. PMID 11012362.
2. Schatten, G., **R. Prather**, I. Wilmut. 2003. Cloning claim is science fiction, not science. *Science* 299:344.
3. **Prather, R.S.** 2007. Targeted genetic modification: xenotransplantation and beyond. *Cloning and Stem Cells* 9:17-19. PMID 17386008.
4. **Prather, R.S.** 2009. Meet the editors. *Molecular Reproduction and Development* 11:76. PMID 19280587
5. Critser, J.K., M.H. Laughlin, **R.S. Prather**, L.K. Riley. 2009. Proceedings of The Conference on Swine in Biomedical Research. *ILAR News* 50:89-94. PMID 19106456.
6. **Prather, R.S.** 2010. Whatever happened to the "cell-block" during mammalian embryogenesis? *Molecular Reproduction and Development* 77:i. PMID 2033756.
7. McCracken, J., **R. Prather**, G. Seidel. 2010. In Memoriam Xiangzhong "Jerry" Yang 1959-2009. *Biology of Reproduction* 82: 802 DOI: 10.1095/bioreprod.110.083675.
8. **Prather, R.S.** 2012. John Bertrand Gurdon, Nobel Laureate. *Molecular Reproduction and Development* 79: Fm iii. DOI: 10.1002/mrd.22132. PMID 23165437.
9. **Prather, R.S.** 2013. Pig genomics for biomedicine. *News & Views. Nature Biotechnology* 7;31(2):122-124. doi: 10.1038/nbt.2490. PMID: 23392511.
10. **Prather, R.S.**, E.M. Walters, K.D. Wells. 2015. Proceedings of The Conference on "Swine in Biomedical Research 2014". *Lab Animal* 44:9. PMID 25526048.

Invited Review Papers and Book Chapters

1. **Prather, R.S.**, F.L. Barnes, and N.L. First. 1987. Nuclear transfer in the domestic species. In: *Application of egg- and embryo technologies to domestic animals*. Department of Obstetrics and Gynecology, The Royale Veterinary and Agricultural University, Copenhagen, Denmark pp 27-29.
2. First, N.L. and **R.S. Prather**. 1987. *Advances in animal biotechnology*. International Symposium on Genetics for the Biological Efficiency of Production, Aug. 24-28, 1987. Piracicaba Brazil.
3. **Prather, R.S.** and G. Schatten. 1988. *Studies in Fertilization*. Proc. 12th NAAB Tech. Conf. on A.I. and Reprod. pp. 94-96.

4. **Prather, R.S.**, N.L. First 1988. Nuclear transplantation in early mammalian embryos. In: The American Fertility Society Regional Postgraduate Course. Hands-on IVF, Cryopreservation and Micromanipulation, April 25-29 Madison, Wisconsin pp. 53-61.
5. **Prather, R.S.** 1989. Nuclear transplantation in mammals and amphibians: nuclear equivalence, species specificity? In: The Molecular Biology of Fertilization (H. Schatten, G. Schatten eds.), Academic Press, Orlando. pp 323-340.
6. Stricker, S., **R. Prather**, C. Simerly, H. Schatten and G. Schatten. 1989. Nuclear architectural changes during fertilization and development. In: The Cellular Biology of Fertilization (H. Schatten, G. Schatten, eds.), Academic Press, Orlando. pp 225-250.
7. **Prather, R.S.** and N.L. First. 1990. The cloning of embryos. 3rd International Conference on Pig Reproduction. J. Reprod. Fert. Suppl. 40:227-234. PMID 2192040.
8. **Prather, R.S.** and N.L. First. 1990. Cloning embryos by nuclear transfer. 2nd Symposium on Genetic Engineering of Animals, Ithaca, NY. J. Reprod. Fert. Suppl. 41:125-143. PMID 2213705.
9. **Prather, R.S.** and N.L. First. 1990. Nuclear Transfer. In: Advances in *in vitro* Fertilization and Assisted Reproductive Technologies (S. Mashiach, Z. Ben-Rafael, N. Laufer, J.G. Schenker, ed). Plenum Press, New York. pp. 929-938.
10. **Prather, R.S.** and N.L. First. 1990. Nuclear transfer in mammals. Int. Rev. Cytol. 120:169-190. PMID 2406212.
11. First, N.L. and **R.S. Prather**. 1991. Production of embryos by oocyte cytoplasm-blastomere fusion in domestic animals. 3rd International Ruminant Reproduction Symposium, Nice, France. J. Reprod. Fert. Suppl. 43:245-254. PMID 1843343.
12. **Prather, R.S.** 1993. Nuclear control of preimplantation development in the domestic pig. 4th International Conference on Pig Reproduction. J. Reprod. Fert. Suppl. 48:17-29. PMID 7511691.
13. Robl, J.M., C.R. Long, **R.S. Prather** and R.T. Duby. 1995. Non-rodent transgenic strategies. In: Strategies for Transgenic Animals (G Monastersky & JM Robl, ed). American Society for Microbiology 57-72.
14. **Prather, R.S.**, J.-H. Kim, Z. Machaty. 1997. Artificial activation of pig oocytes arrested at meiotic metaphase II. Korean Society of Animal Reproduction. Korean J. Anim. Reprod. 20:395-412.
15. **Prather, R.S.** 1998. Cloning mammals by nuclear transfer. In: Encyclopedia of Reproduction (E. Knobil & J.D. Neill, ed). Academic Press Volume 1: 638-644.
16. **Prather, R.S.** 1999. Cloning and transgenic animal production: A technological revolution. Institute for Theological Encounter with Science and Technology. Loyola University, Chicago, IL Aug 1-5.
17. Day, B.N., L.R. Abeydeera and **R.S. Prather**. 2000. Recent progress in pig embryo production through *in vitro* maturation and fertilization techniques.

- In: LA Johnson & HD Guthrie (ed), Boar Semen Preservation IV, Allen Press, Kansas 81-92.
18. **Prather, R.S.** 2000. Nuclear modifications and reprogramming after nuclear transfer. In: Contemporary Endocrinology: Assisted Reproduction and Nuclear Transfer in Mammals (D.P. Wolf & M. Zelinski-Wooten, ed). Humana Press p227-238.
 19. Tuggle, C.K., **R.S. Prather**, M.B. Soares, T. Casavant, D. Pomp, M.F. Rothschild, W. Beavis. 2001. Gene discovery and functional genomics in the pig. National Swine Improvement Federation Proceedings. <http://www.nsif.com/01proc/tuggle.htm>
 20. **Prather, R.S.** 2002. Nuclear transfer in swine. In: Principles of Cloning (J.B. Cibelli, R. Lanza, K. Campbell & M.D. West, ed). Academic Press p 367-374.
 21. Critser, J.K., L.K. Riley and **R.S. Prather**. 2003. Application of nuclear transfer technology to conservation. In: Reproduction and Integrated Conservation Science Eds. W.V. Holt, A.R. Pickard, J.C. Roger & D. E. Wildt. Cambridge University Press. Cambridge, UK. p 195-208.
 22. Im, G.-I. and **R.S. Prather**. 2003. Genetic modification in swine for biomedicine and agriculture. Korea Conference on Innovative Science and Technology. p. 61-72.
 23. **Prather, R.S.** and D. Gerrard. 2003. Use of cloning and transgenesis in pigs. Reciprocal Meat Conference Proceedings: Columbia, Missouri. Reciprocal Meat Conference.
 24. Lai, L. and **R.S Prather**. 2004. A method for producing cloned pigs by using somatic cells as donors. In: Methods in Molecular Medicine (H. Schatten, ed). Humana Press 254: 149-164. PMID 154041761. DOI: 10.1081/E-EAS-120019482.
 25. **Prather, R.S.** 2004. Genetic modification of swine for medicine and agriculture. Proceedings of the American Embryo Transfer Association. Tampa, FL. October 14-16.
 26. **Prather, R.S.** 2005. Transgenic approaches to developing swine models. American Association of Laboratory Animal Sciences annual meeting (proceedings published by Sinclair Research Center, Columbia, MO). pp 11-13.
 27. **Prather, R. S.** and M.F. Smith. 2006. Reproductive Biotechnologies. In: Biotechnology Patent Law Technology, R. Brungs & M. Postiglione, eds. ITEST Faith Science Press, St. Louis, MO. pp 1-13.
 28. Dai, Y. and **R.S. Prather**. 2006. Omega-3 pigs. ISB News Report <http://www.isb.vt.edu/news/2006/news06.jun.htm#jun0604> .
 29. **Prather, R.S.** 2006. Nuclear Remodeling and Nuclear Reprogramming for Making Transgenic Pigs by Nuclear Transfer. In: Somatic Cell Nuclear Transfer (Peter Sutovsky, ed.), Landes Bioscience, Georgetown, TX. pp 1-13.

30. Lai, L. and **R.S. Prather**. 2007. Animal Cloning. In: Comparative Reproductive Biology (H. Schatten and G.M. Constantinescu, eds.) Blackwell Publishing, Ames, Iowa. pp 237-262.
31. **Prather, R.S.**, S. Clay Isom, J. Zhao, J.J. Whyte. 2010. Genetic Modification of Swine for Agriculture and Medicine. 9th World Congress on Genetics Applied to Livestock Production, Aug. 1-6, Leipzig, Germany.
32. **Prather, R.S.**, M. Lorson, J.W. Ross, J. Whyte, E. Walters. 2013. Genetically engineered pig models for human diseases. In: Annual Review of Animal Biosciences, Vol. 1 (L. Andersson, D.E. Bauman, W.C. Brown, H.A. Lewin, S.J. O'Brien, E.A. Ostrander, R.M. Roberts, L.J. Saif, G.E. Seidel, Jr., A. Xu, Eds.). Annual Reviews, Palo Alto, CA. 1:203-219.
33. Lee, K., **R.S. Prather**. 2013. Cloning pigs by somatic cell nuclear transfer. Chapter 19. In: Principles of Cloning, 2nd edition (J. Cibelli, J. Gurdon, I. Wilmut, R. Jaenisch, R. Lanza, M. West, K. Campbell, eds). Academic Press. Pp 245-254.
34. Lee, K., **R.S. Prather**. 2013. Advancements in somatic cell nuclear transfer and future perspectives. In: Animal Frontiers, Fertility Issue (M Nilsson, W. Flowers, eds). Pp 56-61.
35. Tessanne, K., K. Lee, **R.S. Prather**. 2014. Genetically modified organisms in meat animal production. In: C Devine & M. Dikeman, editors-in-chief. Encyclopedia of Meat Sciences 2e, Vol. 1. Oxford: Elsevier; pp 92-96.
36. Schatten, H., Q.-Y. Sun, **R.S. Prather**. 2014. Mitochondrial Differentiation in Early Embryo Cells and Pluripotent Stem Cells, in Cell and Molecular Biology and Imaging of Stem Cells (ed H. Schatten), John Wiley & Sons, Inc, Hoboken, New Jersey. doi: 10.1002/9781118285602.ch11 247-258.
37. Mordhorst, B.R., **R.S. Prather**. 2016. The pig as a model for human reproduction. In: Animal Models and Human Reproduction (eds H. Schatten & G. Constantinescu) John Wiley & Sons, Inc. (submitted 3/5/2015).
38. Redel, B.R., C. O'Gorman, **R.S. Prather**, K.M. Whitworth. 2016. Gene editing to create agricultural and biomedical swine models. In: Genome Editing & Engineering (K. Appasani, Ed.) Cambridge University Press.

103,189 Genome Sequence Data Base Submissions (GenBank)

- | | |
|----------|---|
| L47772 | Anderson, J.A., R.L. Matteri, R.S. Prather . 1995. Partial cDNA encoding a TCP-1 related protein expressed in day 17 porcine embryo. |
| L48205 | Anderson, J.A., R.L. Matteri, R.S. Prather . 1995. Partial cDNA encoding a porcine cyclin B homologue. |
| U58370 | Matteri, R.L., J.A. Anderson, R.S. Prather . 1996. Partial cDNA sequence of the porcine IGF-I receptor. |
| U58650 | Matteri, R.L., J.A. Anderson, R.S. Prather . 1996. Partial cDNA sequence of the porcine IGF-II receptor. |
| AF124218 | Ruddock, N.T., R. L. Matteri, R.S. Prather . 1999. Na ⁺ /H ⁺ exchanger, isoform 4 (NHE4). |

AF123280 Ruddock, N.T., R. L. Matteri, **R.S. Prather**. 1999. cDNA sequence of Na⁺/H⁺ exchanger, isoform 3 (NHE3).

AF184171 Ruddock, N.T., R. L. Matteri, **R.S. Prather**. 1999. cDNA sequence of Na⁺/H⁺ exchanger, isoform 2.

AF210153 Cabot, R.A., R.L. Matteri, **R.S. Prather**. 1999. *Sus scrofa* nuclear export factor CRM1 mRNA, partial cds.

AF260664 Ruddock, N.T., R.L. Matteri, **R.S. Prather**. 2000. *Sus scrofa* NHE5, sodium-proton exchanger, isoform 5 mRNA, partial cds.

AY010068 VanVickle, S.J., R.A. Cabot, **R.S. Prather**. 2000. Porcine karyopherin (importin) alpha 6 (Kpna6) mRNA from cDNA clone, partial cds.

AY010067 VanVickle, S.J., R.A. Cabot, **R.S. Prather**. 2000. Porcine karyopherin (importin) alpha 4 (Kpna4) mRNA from cDNA clone, partial cds.

AY010069 VanVickle, S.J., R.A. Cabot, **R.S. Prather**. 2000. Porcine karyopherin (importin) alpha 3 (Kpna3) mRNA from cDNA clone, partial cds.

AY010065 VanVickle, S.J., R.A. Cabot, **R.S. Prather**. 2000. Porcine karyopherin (importin) alpha 2 (Kpna2) mRNA from cDNA clone, partial cds.

AY010066 VanVickle, S.J., R.A. Cabot, **R.S. Prather**. 2000. Porcine karyopherin (importin) alpha 1 (Kpna1) mRNA from cDNA clone, partial cds.

BF701840-4551 Tuggle, C., R. Woods, J.A. Green, **R.S. Prather**. 2000. USDA funded EST Project. *Sus scrofa* cDNAs. 2,712 sequences submitted.

BF711266-3604 Tuggle, C., R. Woods, J.A. Green, **R.S. Prather**. 2001. USDA funded EST Project. *Sus scrofa* cDNAs. 2,339 sequences submitted.

AY034475-477 Wei, Z., J.A. Green, **R.S. Prather**. 2001. *Sus Scrofa* embryonic proteinase inhibitor 1, 2, and 3 (EPI-1, EPI-2, EPI-3), respectively.

AF421152 Cabot, R.A., **R.S. Prather**. 2001. Porcine karyopherin (importin) alpha 5 (Kpna5) mRNA from cDNA clone, partial cds.

BG322266-71 Tuggle, C., R. Woods, J.A. Green, **R.S. Prather**. 2001. USDA funded EST Project. *Sus scrofa* cDNAs. 46 sequences submitted.

BI404564-5235 Tuggle, C., R. Woods, J.A. Green, **R.S. Prather**. 2001. USDA funded EST Project. *Sus scrofa* cDNAs. 672 sequences submitted.

AF420483 Machaty, Z., J.J. Ramsoondar, A.J. Bonk, K.R. Bondioli, **R.S. Prather**. 2002. *Sus scrofa* oocyte transient receptor potential channel mRNA, partial cds.

AF535216 Rucker, E.B. III, G. Cooper, D. Durtschi, **R.S. Prather**, M.H. Laughlin. 2002. Endothelial NOS from Yucatan Pig Genomic DNA.

- CK726476-30336 **Prather, R.S.**, Antoniou E., Garverick H.A., Green J.A., Lucy M.C., Roberts R.M., Smith M.F., Youngquist R.S. 2004. USDA Grant NRI-2002-03476: Bovine ESTs: Focus on Female Reproduction. 3,861 sequences.
- CK778935-80235 **Prather, R.S.**, Antoniou E., Garverick H.A., Green J.A., Lucy M.C., Roberts R.M., Smith M.F., Youngquist R.S. 2004. USDA Grant NRI-2002-03476: Bovine ESTs: Focus on Female Reproduction. 1,301 sequences.
- CK816249-7253 **Prather, R.S.**, Antoniou E., Garverick H.A., Green J.A., Lucy M.C., Roberts R.M., Smith M.F., Youngquist R.S. 2004. USDA Grant NRI-2002-03476: Bovine ESTs: Focus on Female Reproduction. 1,005 sequences.
- CK983044-3154 **Prather, R.S.**, Antoniou E., Garverick H.A., Green J.A., Lucy M.C., Roberts R.M., Smith M.F., Youngquist R.S. 2004. USDA Grant NRI-2002-03476: Bovine ESTs: Focus on Female Reproduction. 111 sequences.
- CN024942-33007 Whitworth, K., G.K. Springer, L.J. Forrester, W.G. Spollen, J. Ries, W.R. Lamberson, N. Bivens, C.N. Murphy, N. Mathialagan, J.A. Green, **R.S. Prather**. 2004. Developmental expression of 2,489 genes during pig embryogenesis: An EST project. 8,066 sequences.
- CN653841-4882 **Prather, R.S.**, Antoniou E., Garverick H.A., Green J.A., Lucy M.C., Roberts R.M., Smith M.F., Youngquist R.S. 2004. USDA Grant NRI-2002-03476: Bovine ESTs: Focus on Female Reproduction. 1,042 sequences.
- CN997955-CO000943 **Prather, R.S.**, Antoniou E., Garverick H.A., Green J.A., Lucy M.C., Roberts R.M., Smith M.F., Youngquist R.S. 2004. USDA Grant NRI-2002-03476: Bovine ESTs: Focus on Female Reproduction. 2,988 sequences.
- CO727060-9165 **Prather, R.S.**, Antoniou E., Garverick H.A., Green J.A., Lucy M.C., Roberts R.M., Smith M.F., Youngquist R.S. 2004. USDA Grant NRI-2002-03476: Bovine ESTs: Focus on Female Reproduction. 2,106 sequences.
- CO936965-48408 Whitworth, K.M., Springer, G.K., Bivens, N.J., Ries, J.E., Woods, R.J., Spollen, W.G., Forrester, L.J., Mathialagan, N., **Prather, R.S.**, Green, J.A. 2004. Large-scale Generation and Analysis of Expressed Sequence Tags from porcine conceptuses and fetuses. 11,444 sequences.
- CO948409-56968 Jiang, H., Whitworth, K.M., Bivens, N.J., Ries, J.E., Woods, R.J., Forrester, L.J., Springer, G.K., Mathialagan, N., Agca, C., **Prather, R.S.**, Lucy, M.C. 2004. Large-scale Generation and Analysis of Expressed Sequence Tags from Porcine Ovary. 8,560 sequences.
- CO986156-95036 Kim, J., Whitworth, K.M., Springer, G.K., Bivens, N.J., Ries, J.E., Woods, R.J., Spollen, W.G., Forrester, L.J., Mathialagan, N.,

- Prather, R.S.**, Green, J.A. 2004. Large-scale Generation and Analysis of Expressed Sequence Tags from Porcine endometrium and oviduct. 8,881 sequences.
- CV100863-2245 Woods, R.J., Whitworth, K.M., Springer, G.K., Forrester, L.J., Spollen, W.G., Ries, J.E., Bivens, N.J., Murphy, C.N., Mathialagan, N., Agca, C., Green, J.A., **Prather, R.S.** 2004. Large-scale Generation and Analysis of Expressed Sequence Tags from Porcine Cryopreserved Blastocyst Stage Embryos. 1,383 sequences.
- CV974020-84840 **Prather, R.S.**, Antoniou E., Garverick H.A., Green J.A., Lucy M.C., Roberts R.M., Smith M.F., Youngquist R.S. 2004. USDA Grant NRI-2002-03476: Bovine ESTs: Focus on Female Reproduction. 10,821 sequences.
- CX948071-55444 **Prather, R.S.**, Antoniou E., Garverick H.A., Green J.A., Lucy M.C., Roberts R.M., Smith M.F., Youngquist R.S. 2005. USDA Grant NRI-2002-03476: Bovine ESTs: Focus on Female Reproduction. 7,374 sequences.
- DD1177680-7 Day, B.N., **Prather, R.S.**, Hawley, R.J., 2005. Knockout swine and method for making the same. 9 sequences.
- DN636932-43531 **Prather, R.S.**, Antoniou E., Garverick H.A., Green J.A., Lucy M.C., Roberts R.M., Smith M.F., Youngquist R.S. 2005. USDA Grant NRI-2002-03476: Bovine ESTs: Focus on Female Reproduction. 6,600 sequences.
- DN818238-23872 **Prather, R.S.**, Antoniou E., Garverick H.A., Green J.A., Lucy M.C., Roberts R.M., Smith M.F., Youngquist R.S. 2005. USDA Grant NRI-2002-03476: Bovine ESTs: Focus on Female Reproduction. 5,635 sequences.
- DN984173-5068 **Prather, R.S.**, Antoniou E., Garverick H.A., Green J.A., Lucy M.C., Roberts R.M., Smith M.F., Youngquist R.S. 2005. USDA Grant NRI-2002-03476: Bovine ESTs: Focus on Female Reproduction. 896 sequences.
- DQ011859 Manandhar, G., Feng, D, Yi, Y.J, Lai, L., Letko, J., Laurincik, J., Sutovsky, M., **Prather, R.S.**, Schatten, H., Sutovsky, P. 2005. *Sus scrofa* centrin 2 mRNA, partial cds.
- DQ066552 Manandhar, G., Feng, D, Yi, Y.J, Lai, L., Letko, J., Laurincik, J., Sutovsky, M., Salisbury, J.L., **Prather, R.S.**, Schatten, H., Sutovsky, P. 2005. *Sus scrofa* centrin 3 mRNA, partial cds.
- DR749126-9203 **Prather, R.S.**, Antoniou E., Garverick H.A., Green J.A., Lucy M.C., Roberts R.M., Smith M.F., Youngquist R.S. 2005. USDA Grant NRI-2002-03476: Bovine ESTs: Focus on Female Reproduction. 78 sequences.
- DQ441590 McHughes, C.E., Rucker, E.B. III, **Prather, R.S.**, Welbern, V.R. 2006. *Sus scrofa* sialoadhesin (SN) gene, exons 1 through 7 and partial cds.

DQ915200-5250 **Prather, R.**, A.J. Bonk, E.A. Ferguson, S.C. Isom. 2006. Sus scrofa CpG methylation island genomic sequence. 51 sequences.

EF185170-5205 **Prather, R.**, A.J. Bonk, E.A. Ferguson, S.C. Isom. 2006. Sus scrofa CpG methylation island genomic sequence. 36 sequences.

EF189709-9710 **Prather, R.**, A.J. Bonk, E.A. Ferguson, S.C. Isom. 2006. Sus scrofa CpG methylation island genomic sequence. 2 sequences.

AF322215 Wu, A.T., Sutovsky, P., Manandhar, G., Xu, W., Katayama, M., Day, B.N., Park, K.W., Yi, Y.J., Xi, Y.W., **Prather, R.S.** and Oko, R. 2007. Bos taurus PAWP mRNA, complete cds.

AF393575 Wu, A.T., Sutovsky, P., Manandhar, G., Xu, W., Katayama, M., Day, B.N., Park, K.W., Yi, Y.J., Xi, Y.W., **Prather, R.S.** and Oko, R. 2007. Homo sapiens PAWP mRNA, complete cds.

NM_001130211 Antelman, J., G. Manadhar, Y.J. Yi, R. Li, K.M. Whitworth, M. Sutovsky, C. Agca, **R.S. Prather**, P. Sutovsky. 2008. Sus scrofa transcription factor A, mitochondrial (TFAM), nuclear gene encoding mitochondrial protein, mRNA.

NM_001130735 Lorson, M.A., L.D. Spate, **R.S. Prather** and C.L. Lorson. 2008. Sus scrofa survival of motor neuron 1, telomeric (SMN1), mRNA.

EU791616 Lorson, M.A., L.D. Spate, **R.S. Prather** and C.L. Lorson. 2008. Sus scrofa survival of motor neuron (SMN1) mRNA, complete cds.

EU851166 Lorson, M.A., L.D. Spate, **R.S. Prather** and C.L. Lorson. 2008. Sus scrofa survival motor neuron 1 (SMN1) gene, complete cds.

GT640367-2429 Whitworth, K., G.K. Springer, L.J. Forrester, W.G. Spollen, J. Ries, W.R. Lamberson, N. Bivens, C.N. Murphy, N. Mathialigan, J.A. Green, **R.S. Prather**. 2009. Sus Scrofa Metaphase II oocyte. 2,063 sequences.

GT642432-4759 Green, J., C. Elsik, D. Kiesler, **R. Prather**, M. Smith, G. Springer, J. Taylor. 2009. Ovine ESTs. 2,328 sequences.

GT873354-83109 Green, J., C. Elsik, D. Kiesler, **R. Prather**, M. Smith, G. Springer, J. Taylor. 2009. Ovine ESTs. 9,756 sequences.

GW424391-5382 **Prather, R.S.**, Antoniou E., Garverick H.A., Green J.A., Lucy M.C., Roberts R.M., Smith M.F., Youngquist R.S. 2010. USDA Grant NRI-2002-03476: Bovine ESTs: Focus on Female Reproduction. 992 sequences

NM_214346.1 **Prather, R.S.**, Rowland RR, Ewen C, Tribble B, Kerrigan M, Bawa B, Teson JM, Mao J, Lee K, Samuel MS, Whitworth KM, Murphy CN, Egen T and Green JA. 2013. An intact sialoadhesin (Sn/SIGLEC1/CD169) is not required for attachment/internalization of the porcine reproductive and respiratory syndrome virus.

NM_001130735.1 Lorson MA, Spate LD, **Prather RS** and Lorson CL. 2014 Identification and characterization of the porcine (Sus scrofa) survival motor neuron (SMN1) gene: an animal model for therapeutic studies.

Deep Sequencing Submissions

Sus scrofa in vitro and in vivo matured oocyte transcriptomes. 2014.
2640035-2640040.

Extension/Popular Press Publications

1. Allee, G.L., Po-Heng Hsu and **R.S. Prather**. 1981. Soybean protein in milk replacer diets for baby pigs. Swine Day Report of Progress. 406, Ks. Ag. Exp. Station. pp. 5-7.
2. **Prather, R.S.** and M.S. Peters. 1990. Cloning cattle by nuclear transfer. 21st Annual University of Missouri Beef Cow-Calf Clinic, July 24. pp. 38-40.
3. **Prather, R.S.**, M.S. Peters, L.F. Rickords, R.A. Schoenbeck, T.T. Stumpf. 1993. Artificial activation of *in vitro* matured unfertilized porcine eggs for cloning embryos. National Pork Producers Council Research Investment Report. pp. 219-222.
4. **Prather, R.S.**, A. Rieke, B.N. Day. 1997. Non-surgical embryo transfer in pigs: introduction of new animals with little risk of disease transmission. Swine Reproduction Symposium. University of Missouri-Columbia. October 20-21, 1997.
5. **Prather, R.S.**, A. Rieke, B.N. Day. 1997. Non-surgical embryo transfer in pigs: introduction of new animals with little risk of disease transmission. A.I.- A tool for profitable pork production. University of Missouri-Columbia. March 10-11, 1997.
6. **Prather, R.S.** 1997. Summary of research program on early development of pig embryos. Animal Sciences Departmental Report, University of Missouri-Columbia 59-61.
7. **Prather, R.S.** and B.N. Day. 1998. Development of technologies for the production and manipulation of early pig embryos. Animal Sciences Departmental Report. University of Missouri-Columbia pp 37-39.
8. **Prather, R.S.** A. Rieke, B.N. Day. 1998. Non-surgical embryo transfer in pigs: introduction of new genetics with little risk of disease transmission. Animal Sciences Departmental Report. University of Missouri-Columbia pp 43-45.
9. **Prather, R.S.**, A. Rieke, and B.N. Day, 1998. Non-surgical embryo transfer in pigs: Introduction of new genetics with little risk of disease transmission. Embryo Transfer Newsletter September, pp 14-16.
10. Macháty, Z., B.N. Day, **R.S. Prather**. 1999. Development of early pig embryos in vitro and in vivo. Animal Sciences Departmental Report. University of Missouri-Columbia. pp 139-142.
11. Perry, G.A. **R.S. Prather**, M.F. Smith. 1999. In vitro meiotic competence of oocytes collected from porcine antral follicles. Animal Sciences Departmental Report. University of Missouri-Columbia. pp 143-147.

12. Abeydeera, L.R., **R.S. Prather**, B.N. Day. 1999. Epidermal growth factor can increase the developmental competence of pig oocytes. Animal Sciences Departmental Report. University of Missouri-Columbia. pp 148-150.
13. Tuggle, C.K., S. Malchenko, R. Woods, K. Whitworth, J.A. Green, **R. Prather**, C.A. Roberts, C.J. Fitzsimmons, T. Casavant, M.B. Soares. 2000. Development of new placental and fetal ESTs for gene discovery in pig production, ISU Swine Research Report. ASL-R668, pp104-107.
14. Shi, X.W., C.J. Fitzsimmons, C.K. Tuggle, C. Genet, **R. Prather**, K. Whitworth, J.A. Green. 2000. High-resolution radiation hybrid mapping of human chromosome 17 genes to the pig genome extends gene order conservation with pig chromosome 12 and limited synteny with pig chromosome 2, ISU Swine Research Report. ASL-R668, pp 96-100.
15. Macháty, Z., A.J. Bonk, B. Kuhholzer, **R.S. Prather**. 2000. Activation of pig eggs induced by an extract from boar sperm. Animal Sciences Departmental Report. University of Missouri-Columbia.
16. Jiang, H., N.J. Bivens, J.E. Ries, K.M. Whitworth, J.A. Green, L.J. Forrester, G.K. Springer, , **R.S. Prather** and M.C. Lucy. 2002. Constructing cDNA libraries with fewer clones that contain long poly(dA) tails. University of Missouri Molecular Biology Newsletter March/April pp 4-5.
17. **Prather, R.S.** 2002. Transgenic pigs. Q.A. Science, Euromedia Associates LTD.
18. **Prather, R. S.** 2004. Genetically Modified Pigs: Medicine and Agriculture. Missouri Pork Association's annual magazine.
19. **Prather, R.S.** 2016. PRRS-resistant gene editing shows promise to industry. National Hog Farmer April pp 38-41.
20. Whitworth, K.M., **R.S. Prather**. 2016. Genetic Engineering-Gene Editing 101. National Hog Farmer August pp 23-28.
21. **Prather, R.S.**, K.M. Whitworth. 2016. Genetic editing for resistance to porcine reproductive and respiratory syndrome virus. Boar Stud Managers Conference, Aug 4, St. Louis MO. P 68.

Abstracts

1. **Prather, R.S.**, M.F. Spire. 1984. The effect of hydrogen ion concentration on the freeze-thaw survival of mouse embryos. Theriogenology 21:255.
2. **Prather, R.S.**, M.F. Spire, R.R. Schalles.1984. Incorporation of norgestomet into a superovulation regime. Theriogenology 21:256.
3. **Prather, R.S.**, N.L. First. 1985. Effect of cytochalasin B and demecolcine on freeze-thaw survival of murine embryos. Cryobiology 22(6):619.
4. **Prather, R.S.**, N.L. First. 1985. Cryopreservation of isolated murine blastomeres. Theriogenology 23:219.
5. **Prather, R.S.**, F.L. Barnes, J.M. Robl, N.L. First. 1986. Multiplication of bovine embryos. Biol. Reprod. 34 Suppl (1): 192.

6. **Prather, R.S.**, N.L. First. 1986. Developmental fate of highly asynchronous chimeric mouse embryos. *Theriogenology* 25:185.
7. Robl, J.M., **R. Prather**, W. Eyestone, F. Barnes, D. Northey, B. Gilligan, N.L. First. 1986. Nuclear transplantation in bovine embryos. *Theriogenology* 25:189.
8. Barnes, F.L., **R.S. Prather**, J.M. Robl, N.L. First. 1987. Multiplication of bovine embryos. *Theriogenology* 27:209.
9. **Prather, R.S.**, N. First, G. Maul, G. Schatten. 1988. Distribution of and changes in nuclear lamin antigens during early bovine and porcine embryogenesis. 4th International Congress of Cell Biology. Montreal, Canada, Aug.14-19. p 413.
10. **Prather, R.S.**, G.G. Maul N. Chaly, D.L. Brown, G. Schatten. 1988. Construction of the nuclear matrix during early murine embryogenesis and its alpha-amanitin sensitivity. 4th International Congress of Cell Biology. Montreal, Canada, Aug.14-19. p 328.
11. Howard, C., G. Coffe, H. Schatten, M. Walter, H. Biessman, **R. Prather**, G. Schatten.1988. Isolation and characterization of the sea urchin centrosome. 4thInternational Congress of Cell Biology. Montreal, Canada, Aug. 14-19. p 146.
12. **Prather, R.S.**, M.L. Sims, N.L. First 1988. Nuclear transplantation in the porcine embryo. *Theriogenology* 29:290.
13. Hagen, D.R., **R.S. Prather**, N.L. First.1989. Electrical activation of *in vitro* matured pig oocytes. *J. Anim. Sci.* 72 Suppl(1):376.
14. Hagen, D.R., **R.S. Prather**, M.M. Sims, N.L. First. 1989. Development of pig embryos to the blastocyst (BL) in sheep and pig oviducts and co-culture *in vitro*. *J. Anim. Sci.* 72 Suppl(1):209-210.
15. **Prather, R.S.**, M.M. Sims, N.L. First. 1989. Nuclear transfer in pig embryos. 3rd International Conference on Pig Reproduction. University of Nottingham, U.K. April 11-14. p 43.
16. First, N.L., **R.S. Prather**. 1989. Nuclear Transfer. 6th World Congress, *In vitro* Fertilization and Alternate Assisted Reproduction, Jerusalem, Israel.
17. **Prather, R.S.**, N.L. First. 1989. Cloning embryos by nuclear transfer. Second Symposium on Genetic Engineering in Animals. Cornell University, Ithaca, NY, June 25-28.
18. Jarrell, V.L., B.N. Day, **R.S. Prather**. 1990. Synthesis of protein in pig oocytes and embryos. *Biol. Reprod.* 42 Suppl(1):53.
19. Nicks, D.K., **R.S. Prather**. 1991. Methionine transport in pig oocytes and early blastocysts. *Biol. Reprod.* 44 Suppl(1): 155.
20. **Prather, R.S.**, P.A. Eichen, D.K. Nicks, M.S. Peters. 1991. Activation of porcine oocytes matured *in vitro*. *Theriogenology* 35:258.
21. Schoenbeck, R.A., M.S. Peters, L.F. Rickords, **R.S. Prather**. 1992. Combined second messenger induced activation of porcine oocytes. *Biol. Reprod. Suppl(1):81*.

22. Rickords, L.F., M.S. Peters, T.T. Stumpf, **R.S. Prather**. 1992. Effect of the protein kinase C inhibitor staurosporine on oocyte activation of *in vitro* matured porcine oocytes. Biol. Reprod. Suppl(1):82.
23. Stumpf, T.T., R.A. Schoenbeck, **R.S. Prather**. 1992. DNA synthesis during the porcine embryo two-cell stage. Biol. Reprod. Suppl(1):71.
24. Schoenbeck, R.A., **R.S. Prather**. 1992. Second messenger enhanced activation of porcine oocytes. Midwest Animal Science Meetings. Des Moines, IA. p 74.
25. Boice, M.L., M.F. Smith, **R.S. Prather**, B.N. Day. 1992. Hormonal control of bovine oviductal glycoproteins. Midwest Animal Science Meetings. Des Moines, IA. p 78.
26. **Prather, R.S.**, T.T. Stumpf, L.F. Rickords. 1992. Reprogramming the nucleus and synchronizing it with the cytoplasm. International Symposium on: 'Cloning Mammals by Nuclear Transplantation', Fort Collins, CO, January 15, 1992. pp 26-27.
27. Boice, M.L., P.A. Mavrogianis, C.N. Murphy, H.G. Verhage, **R.S. Prather**, B.N. Day. 1992. Immunocytochemical analysis of the association of bovine oviduct-specific secretory glycoproteins with early embryos. Theriogenology 37:194.
28. Terlouw, S.L., **R.S. Prather**, B.N. Day. 1992. *In vitro* development of nuclear transplant pig embryos. Theriogenology 37:194.
29. Stumpf, T.T., S.L. Terlouw, H. Funahashi, **R.S. Prather**, B.N. Day. 1993. Premature chromosomal condensation of nuclei transplanted into *in vitro* matured porcine oocytes. Biol. Reprod. Suppl 48:175.
30. Stumpf, T.T., S.L. Terlouw, H. Funahashi, **R.S. Prather**, B.N. Day. 1993. Processing of nuclei transplanted into *in vitro* matured porcine oocytes. Theriogenology 39:322.
31. Rickords, L.F., M.S. Peters, R.A. Schoenbeck, T.T. Stumpf, **R.S. Prather**. 1993. Okadaic acid increases rate of activation of electrically activated *in vitro* matured porcine oocytes. Theriogenology 39:296.
32. Schoenbeck, R.A., M.S. Peters, L.F. Rickords, T.T. Stumpf, **R.S. Prather**. 1993. DNA synthesis and the transition from maternal to embryonic control in the 4-cell porcine embryo. Theriogenology 39:305.
33. Terlouw, S.L., T.T. Stumpf, H. Funahashi, **R.S. Prather**, B.N. Day. 1993. Pig oocyte activation and processing of transplanted nuclei. Theriogenology 39:329.
34. Mayes, M.A., P.L. Stogsdill, T.W. Parry, D.A. Kinden, **R.S. Prather**. 1994. Reprogramming of nucleoli after nuclear transfer of pig blastomeres into enucleated oocytes. Dev. Biol. 163:542.
35. Parry, T.W., **R.S. Prather**. 1994. Protein reprogramming after nuclear transfer? J. Anim. Sci. 72(suppl 1): 175.
36. Jolliff, W.J., **R.S. Prather**. 1994. Parthenogenetic development of *in vitro* matured porcine oocytes to blastocyst. Biol. Reprod. 50: Suppl (1)125.
37. Nussbaum, D.J., **R.S. Prather**. 1994. Effects of protein synthesis inhibition on porcine oocytes. J. Anim. Sci. 72(suppl 2):74.

38. Rickords, L.F., **R.S. Prather**, D.J. Kovar. 1995. Staurosporine induces pronuclear formation but does not elicit a rise in intracellular calcium in mouse oocytes. *Biol. Reprod.* 52: (Suppl 1)470.
39. Funahashi, F., Z. Machaty, **R.S. Prather**, B.N. Day. 1995. γ -Glutamyltranspeptidase (GTT) of spermatozoa may reduce oocyte glutathione (GSH) content at sperm penetration. *Biol. Reprod.* 52: (Suppl 1)334.
40. Machaty, Z., M.A. Mayes, **R.S. Prather**. 1995. Effects of injecting calcium into porcine oocytes. *Biol. Reprod.* 52: (Suppl 1)260.
41. Li, J., A. Rieke, B.N. Day, **R.S. Prather**. 1995. Technical breakthrough in non-surgical porcine embryo transfer. *Biol. Reprod.* 52: (Suppl 1)281.
42. Kim, N.H., H. Funahashi, **R.S. Prather** and B.N. Day. 1995. Cytoskeletal reorganization in porcine oocytes after chemical activation. Midwest Animal Science Meetings.
43. Kim, N.H., **R.S. Prather**, G. Schatten and B.N. Day. 1995. Microtubule and microfilament dynamics of porcine oocytes during *in vitro* maturation. *Theriogenology* 43:249.
44. Machaty, Z., M.A. Mayes, **R.S. Prather**. 1995. Activation of the G protein in porcine oocytes. *Theriogenology* 43:271.
45. Mayes, M.A., C.N. Murphy, **R.S. Prather**. 1996. Parthenogenetic activation of pig oocytes by extended exposure to low levels of broad spectrum protein kinase inhibitors. *Biol. Reprod.* 54: (Suppl 1)71.
46. Li, J., L.R. Abeydeera, R.L. Matteri, B.N. Day, **R.S. Prather**. 1996. Transcriptional activities of IGF-2, IGF-1R and IGF-2R in porcine preimplantation embryos. *Biol. Reprod.* 54: (Suppl 1)74.
47. Machaty, Z., L. Kovacs and **R.S. Prather**. 1996. Activation of the porcine egg through an exogenous G protein-coupled receptor. *Biol. Reprod.* 54: (Suppl 1)168.
48. Machaty, Z., L.F. Rickords, W.J. Jolliff, **R.S. Prather**. 1996. Receptors involved in calcium signaling in porcine eggs. *Dev. Biol.* 175:382.
49. Machaty, Z., M.A. Mayes, **R.S. Prather**. 1996. Inositol 1,4,5-triphosphate induces parthenogenesis in porcine oocytes. *Theriogenology* 45:155.
50. Li, J., **R.S. Prather**, C.L. Markert. 1996. Decondensation of hamster chromosomes in the pronuclei of 1-cell stage mouse embryos following chromosome microinjection. *Theriogenology* 45:346.
51. **Prather, R.S.** 1997. Cloning Mammals: Theory, Practice & Potential. Cloning and Biotechnology: Opportunities, Challenges and Choices. November 13, 1997. University of Nebraska-Lincoln.
52. Whitworth, K. M., **R.S. Prather**. 1997. Cumulative effect of myosin light chain kinase, protein kinase A and protein kinase C inhibition on porcine oocyte activation and appearance of the 22 kDa protein. *Biol. Reprod.* 56: (Suppl 1)210.
53. Abeydeera, L.R., W. Wang, **R.S. Prather**, B.N. Day. 1997. *In vitro* penetration and subsequent development of pig oocytes matured in serum-free culture media. *Biol. Reprod.* 56: (Suppl 1)215.

54. Machàty, Z., B.N. Day, **R.S. Prather**. 1997. Thimerosal induces full activation of pig oocytes. *Biol. Reprod.* 56: (Suppl 1)233.
55. **Prather, R.S.** 1997. Nuclear and cytoplasmic modifications after nuclear transfer. *Mammalian Cloning: Implications for Science and Society*, Crystal Gateway Marriott Hotel, Arlington, VA. June 26-27.
56. Wang, W.H., L.R. Abeydeera, T.C. Cantley, A. Rieke, **R.S. Prather**, B.N. Day. 1997. Morphological comparison of pig oocytes matured in vivo and *in vitro*. 5th International Conference on Pig Reproduction, Kerkrade, The Netherlands, June 2-4. p. 141.
57. Machàty, Z., B.N. Day, **R.S. Prather**. 1997. Cell numbers of pig embryos developed *in vitro* versus in vivo. 5th International Conference on Pig Reproduction, Kerkrade, The Netherlands, June 24. p. 145.
58. Kim, J.-H., Z. Machàty, R. Cabot, **R.S. Prather**. 1997. Pig oocyte activation by stimulation of an exogenous G protein coupled receptor. 5th International Conference on Pig Reproduction, Kerkrade, The Netherlands, June 2-4. p. 143.
59. Whitworth, K.M., **R.S. Prather**. 1997. Parthenogenetic activation of pig oocytes by myosin light chain kinase inhibition. *Midwest Animal Science Meetings* p 86.
60. Abeydeera, L.R., W.H. Wang, T.C. Cantley, **R.S. Prather**, B.N. Day. 1998. Glutathione content and embryo development after in vitro fertilization of pig oocytes matured with various concentrations of cysteine and a thiol compound. *Biol. Reprod.* 58: (suppl 1)92.
61. Anderson, J.E., R.L. Matteri, **R.S. Prather**. 1998. Cyclin B1 transcript levels during the transition from maternal to zygotic control of development in porcine embryos. *Biol. Reprod.* 58: (Suppl 1)72.
62. Ruddock, N., W.H. Wang, Z. Machàty, B.N. Day, **R.S. Prather**. 1998. Intracellular pH changes accompany parthenogenetic activation in the porcine oocyte. *Biol. Reprod.* 58: (Suppl 1)275.
63. Han, Y.M., L.R. Abeydeera, J.H. Kim, A. Petersen, B.N. Day, **R.S. Prather**. 1998. In vivo development and ploidy of poly-pronuclear pig eggs. *Biol. Reprod.* 58: (Suppl 1)394.
64. Wang, W.H., L.R. Abeydeera, Y.M. Han, **R.S. Prather**, B.N. Day. 1998. Morphological evaluation and actin cytoskeleton distribution of porcine embryos produced in vitro and in vivo. *Biol. Reprod.* 58: (Suppl 1)74.
65. Machàty, Z., **R.S. Prather**. 1998. Capacitive calcium entry in porcine oocytes. *Biol. Reprod.* 58: (Suppl 1)274.
66. Funahashi, H., Z. Machaty, W.H. Wang, TC Cantley, **R.S. Prather**, B.N. Day. 1998. Intracellular calcium release and cortical reaction after thimerosal-treatment of porcine oocytes matured in vitro or ovulated. *Biol. Reprod.* 58(Suppl 1):472.
67. Vajta, G, C. Murphy, **R.S. Prather**, Z. Machàty, T. Greve, H. Callesen. 1998. In-straw dilution of in vitro produced bovine blastocysts after vitrification with the open pulled straw (OPS) method. *International Congress on Animal Reproduction*, Milan, Italy.

68. Wang, H.W., Z. Machàty, N. Ruddock, L.R. Abeydeera, A. Boquest, **R.S. Prather**, B.N. Day. 1998. Activation of pig oocytes with calcium ionophore in calcium-free medium. *Midwestern Animal Science Meetings P74 #180*.
69. Abeydeera, L.R., W.H. Wang, **R.S. Prather**, B.N. Day 1998. Effect of the source of different hormonal supplements on nuclear maturation, fertilization and development in vitro of pig oocytes matured in a protein-free medium. *Midwestern Animal Science Meetings*.
70. Overström, E.W., A. Baguisi, M. Mayes, **R.S. Prather**. 1998. Differential expression of E-cadherin and Na⁺/K⁺ ATPase proteins in parthenogenetic pig embryos. *Theriogenology* 49:189.
71. Kim, J.H., Z. Machàty, R. Cabot, Y.M. Han, **R.S. Prather**. 1998. Pig oocyte activation by stimulation of an exogenous G protein coupled receptor. *Theriogenology* 49:154.
72. Machàty, Z., **R.S. Prather**. 1998. Characteristics of thimerosal-induced activation of porcine oocytes. *Theriogenology* 49:156.
73. Han, Y.M., L.R. Abeydeera, A. Petersen, J.H. Kim, C.N. Murphy, **R.S. Prather**. 1998. Preimplantation development of polyspermic pig eggs derived from in vitro maturation and fertilization. *Theriogenology* 49:284.
74. Ruddock, N.T., Z. Machàty, W.H. Wang, **R.S. Prather**. 1999. Species-specific differences in intracellular pH changes during parthenogenetic activation. *Theriogenology* 51:364.
75. Han, Y.M., W.H. Wang, L.R. Abeydeera, J.H. Kim, B.N. Day, **R.S. Prather**. 1999. How do poly-spermic pig eggs develop in vitro and in vivo? *Theriogenology* 51:184.
76. Abeydeera, L.R., W.H. Wang, T.C. Cantley, A. Rieke, **R.S. Prather**, B.N. Day. 1999. Epidermal growth factor can enhance the developmental competence after in vitro fertilization of pig oocytes matured under protein-free culture conditions. *Theriogenology* 51:365.
77. Perry, G. A., **R.S. Prather**, M.F. Smith. 1999. In vitro meiotic competence of oocytes collected from porcine antral follicles. *MidWest Section of the American Society of Animal Scientists*. 77 (Suppl 1):73.
78. Abeydeera, L.R., W.H. Wang, **R.S. Prather**, B.N. Day. 1999. Effect of incubation temperature on in vitro maturation of pig oocytes: subsequent fertilization and development. *MidWest Section of the American Society of Animal Scientists*. 77 (suppl 1):74
79. Tao, T., Z. Machàty, A. Boquest, B. Kúhholzer, B. Day, **R. Prather**. 1999. Production of pig embryos by intracytoplasmic injection of cultured fetal fibroblast cells. *Biol. Reprod.* 60 Suppl 1:268.
80. Perry, G.A., **R.S. Prather**, K.D. Alsup, L.M. Falch, M.F. Smith. 1999. Protein synthesis and secretion by preantral, early antral, and antral porcine follicles. *Biol. Reprod.* 60 Suppl 1:110.
81. Machàty, Z., N.T. Ruddock, **R.S. Prather**. 1999. Sodium/calcium exchange in porcine oocytes. *Biol. Reprod.* 60 Suppl 1:105.

82. Cabot, R.A., M.H. Hannink, **R.S. Prather**. 1999. Leptomycin B arrests bovine and porcine embryo development at the major turn-on of the embryonic genome. *Biol. Reprod.* 60 Suppl 1:192.
83. Kim, J.H., H.J Do, W.H. Wang, Y.M. Han, B.N. Day, **R.S. Prather**. 1999. Induction of pig oocyte activation via an increase in tyrosine kinase activity. *Biol. Reprod.* 60 Suppl 1:107.
84. Do, H.J., J.H. Kim, L.R. Abeydeera, Y.M. Han, J. Green, R.M. Roberts, R.L. Matteri, B.N. Day, **R.S. Prather**. 1999. Expression of pregnancy-associated glycoprotein 1 and 2 genes in in vitro and parthenogenetically derived pig blastocysts. *Biol. Reprod.* 60 Suppl 1:250.
85. Ruddock, N.T., Z. Macháty, **R.S. Prather**. 1999. Intracellular pH changes during parthenogenetic activation of porcine oocytes are sodium-independent when using 200 uM thimerosal or calcium ionophore, and sodium-dependent when using 7% ethanol. *Biol. Reprod.* 60 Suppl 1:105.
86. Abeydeera, L.R., **R.S. Prather**, B.N. Day. 1999. Developmental ability of in vitro derived pig embryos in four different culture media. *Biol. Reprod.* 60 Suppl 1:128.
87. Anderson, J.E., R.L. Matteri, L.R. Abeydeera, B.N. Day, **R.S. Prather**. 1999. Are cyclin B1 transcripts produced by the in vitro derived 4-cell stage porcine embryo? *Biol. Reprod.* 60 Suppl 1:129.
88. Day, B.N., L.R. Abeydeera, **R.S. Prather**. 1999. Recent progress in pig embryo production through in vitro maturation and fertilization techniques. IV International Congress on Boar Sperm Preservation, Aug 8-11, Beltsville, MD.
89. Kúhholzer, B., Z. Macháty, T. Tao, L. Lai, B.N. Day, **R.S. Prather**. 2000. Porcine nuclear transfer embryos derived from fetal fibroblasts synchronized in the G0 versus the G1-stage. *Theriogenology* 53:229.
90. Macháty, Z., L.R. Abeydeera, J. Thompson, B.N. Day, **R.S. Prather**. 2000. Inhibition of oxidative phosphorylation and its effect on porcine embryonic development. *Theriogenology* 53:277.
91. Lai, L., T. Tao, Z. Macháty, B. Kúhholzer, B.N. Day, **R.S. Prather**. 2000. Feasibility of production of nuclear transfer pigs by using G2/M stage fibroblasts as donors. *Theriogenology* 53:231.
92. Ruddock, N.T., **R.S. Prather**. 2000. Intracellular pH changes during parthenogenetic activation of porcine oocytes: bicarbonate dependence, and H2DIDS and bafilomycin A1 sensitivity. *Theriogenology* 53:441.
93. Tuggle, C.K., K. Whitworth, J.A. Green, **R. Prather**, M.F. Rothschild, D. Pomp, L. Messer, C. Roberts, T. Casavant, M.B. Soares. 2000. Gene discovery in porcine reproduction: physical mapping of 19 genes and ESTs. *Plant and Animal Genome VIII* .p 201.
94. **Prather, R.S.** 2000. Development of Embryo-Technologies in Swine. Missouri Veterinary Medical Association.
95. **Prather, R.S.**, N.T. Ruddock, Z. Macháty. 2000. Parthenogenetic activation of swine oocytes. *International Congress on Animal Reproduction*. W11:2.

96. Macháty, Z., A.J. Bonk, B. Kühholzer, **R.S. Prather**. 2000. Microinjection of a crude sperm extract activates porcine oocytes. *International Congress on Animal Reproduction*. 18:10.
97. Kühholzer, B., M. Schoenfeld, **R.S. Prather**. 2000. Reversible synchronization of porcine fetal fibroblast cells with a topoisomerase II inhibitor. *Biol. Reprod. Suppl* 62 1:317.
98. Lai, L., B. Kühholzer, T. Tao, K.-W. Park, B.N. Day, **R.S. Prather**. 2000. Porcine nuclear transfer embryos derived from injection of G2/M stage fibroblasts into preactivated in vitro matured oocytes. *Biol. Reprod. Suppl* 62 1:192.
99. Wei, Z.-X., J.A. Green, R.M. Roberts, **R.S. Prather**. 2000. Identification of a novel Kunitz-type proteinase inhibitor expressed by early porcine embryos. *Biol. Reprod. Suppl* 62 1:312.
100. Park, K.W., B. Kühholzer, L. Lai, Z. Macháty, B.N. Day, **R.S. Prather**. 2000. Development of porcine nuclear transfer embryos derived from granulosa cells. *Biol. Reprod. Suppl* 62 1:321.
101. Ruddock, N.T., **R.S. Prather**. 2000. Parthenogenetic activation of porcine oocytes: importance of calcium and pH. *Biol. Reprod. Suppl* 62 1:216.
102. **Prather, R.S.**, B. Kühholzer, L. Lai, K.W. Park. 2000. Changes in the structure of nuclei after transfer to oocytes. *Genetically Engineering and Cloning Animals*, Park City, Utah. June 18-20.
103. **Prather, R.S.**, L.R. Abeydeera, B.N. Day, M.L. Leibfried-Rutledge. 2000. A preliminary study on comparison of two different in vitro maturation systems for pig oocytes on subsequent embryo development. *Cloning* 2:159.
104. Shi, X.W., C.J. Fitzsimmons, **R. Prather**, K. Whitworth, J.A. Green, C.K. Tuggle. 2000. High-resolution physical mapping confirms similar gene order with an inversion between human 17 (Hsap17) and porcine chromosome 12 (Sscr12). *International Conference on Animal Genetics*, Minneapolis, MN July 22-26.
105. Tuggle, C.K., C.J. Fitzsimmons, R. Woods, K. Whitworth, J.A. Green, **R. Prather**, C. A. Roberts, T. Casavant, M. B. Soares. 2000. Development of new placental and fetal ESTs for gene discovery in pig reproduction. *International Conference on Animal Genetics*. Minneapolis, MN July 22-26. #A065
106. Van Vickle, S.J., R.A. Cabot, **R.S. Prather**. 2000. Cloning and sequencing of five importin alpha homologues in pigs. 11th Undergraduate Science Research at MU, August 3.
107. Critser, J.K., **R.S. Prather**. 2000. The application and relevance of nuclear transfer technology to conservation. *London Symposium on Conservation*.
108. Kühholzer, B., R.J. Hawley, L. Lai, **R.S. Prather**. 2001. Nuclear transfer using different sub-clones of porcine fetal fibroblast cells result in different in vitro development. *Therio*. 55:276.

109. Park, K.-W., B. Kúhholzer, L. Lai, B.N. Day, **R.S. Prather**. 2001. Development of porcine nuclear transfer embryos derived from mural granulosa cells. *Therio*. 55:282.
110. Lai, L., K.-W. Park, B. Kúhholzer, Q. Sun, R.A. Cabot, **R.S. Prather**. 2001. Early in vitro development of fertilized nuclear transfer pig oocytes. *IETS Therio*. 55:277.
111. Cabot, R.A., M. Hannink, **R.S. Prather**. 2001. Nuclear trafficking in porcine oocytes. *Theriogenology* 55:466.
112. Tuggle, C.K., J. Green, C. Fitzsimmons, R. Woods, **R.S. Prather**, S. Malchenko, M.B. Soares, C.A. Roberts, K. Pedretti, T. Casavant, C. Harger, Y. Zhang, M.F. Rothschild. 2001. Update on development of resources for functional genomics in the pig. *Plant and Animal Genome IX*. W208.
113. Tuggle, C.K., J.A. Green, C. Fitzsimmons, R. Woods, **R.S. Prather**, S. Malchenko, M.B. Soares, C.A. Roberts, K. Pedretti, T. Casavant, C. Harger, Y. Zhang, M.F. Rothschild. 2001. Development of resources for functional genomics in the pig: production of 14 cDNA libraries and sequencing of over 7,000 clones from female reproductive tissues. *Plant and Animal Genome IX*. P67.
114. Cheong, H.T., K.W. Park, G.S. Im, L. Lai, Q.Y. Sun, B.N. Day, **R.S. Prather**. 2001. Effect of elevated Calcium concentration in fusion medium on the fusion and development of porcine fetal fibroblast cell nuclear transfer. 6th International Conference on Pig Reproduction, June 3-6, Columbia, MO, USA. P 144.
115. Macháty, M., J. J. Ramsoondar, A.J. Bonk, K.R. Bondioli, **R.S. Prather**. 2001. The presence of trp in porcine oocytes. 6th International Conference on Pig Reproduction, June 3-6, Columbia, MO, USA. P 45.
116. Mao, J., M.F. Smith, R.S. Prather, B.A. Didion, **R.S. Prather**. 2001. Effect of follicular isolation method on porcine perantral follicular development, in vitro. 6th International Conference on Pig Reproduction, June 3-6, Columbia, MO, USA. p 49.
117. Park, K.W., L. Lai, H.T. Cheong, G.S. Im, Q.Y. Sun, B.N. Day, **R.S. Prather**. 2001. Optimization of cell fusion/activation methods in nuclear transfer by using transgenic porcine cells. 6th International Conference on Pig Reproduction, June 3-6, Columbia, MO, USA. P 142.
118. Wu, G, Q. Sun, J. Mao, L. Lai, T.C. McCauley, S. Lu, K.-W. Park, **R.S. Prather**, B.A. Didion, B.N. Day. 2001. Reversible inhibition of in vitro maturation of porcine oocytes by a specific MPF kinase inhibitor, butyrolactone I. 6th International Conference on Pig Reproduction, June 3-6, Columbia, MO, USA. P 48.
119. Wu, G, Q. Sun, J. Mao, L. Lai, T.C. McCauley, S. Lu, K.-W. Park, **R.S. Prather**, B.A. Didion, B.N. Day. 2001. The effect of various calcium/magnesium ratios in the embryo culture medium on the development of pig embryos. 6th International Conference on Pig Reproduction, June 3-6, Columbia, MO, USA. P 73.

120. Mao, J., G. Wu, M.F. Smith, **R.S. Prather**, B.A. Didion, B.N. Day. 2001. Effects of media and serum type on porcine preantral follicular development in vitro. *Biol. Reprod.* 64 Suppl 1: 154-155.
121. Park, K.W., L. Lai, H.T. Cheong, G.S. Im, Q.Y. Sun, G. Wu, B.N. Day, **R.S. Prather**. 2001. Cytochalasin B is not necessary during cell injection for nuclear transfer when using transgenic porcine cells. *Biol. Reprod.* 64 Suppl 1:124.
122. **Prather, R.S.** 2001. Preserving/conserving germplasm by incorporating embryo-related technologies. IAAFSC, abstract 51.
123. Tuggle, C.K., J.A. Green, C. Fitzsimmons, R. Woods, **R. Prather**, S. Malchenko, M. B. Soares, C.A. Roberts, K. Pedretti, T. Casavant, D. Pomp, Yuandan Zhang, M. F. Rothschild, C. Harger, W. Beavis. 2001. Production of 18 cDNA libraries and successful EST sequencing of 10,124 clones from porcine female reproductive tissues. IAAFSC.
124. D.B. Carter, **R.S. Prather**, C.F. Franklin. 2001. Specialized periparturient care in a genetically engineered swine colony. Presented at the 52nd annual AALAS National Meeting, Baltimore MD. October 21-25, 2001.
125. Lai, L., Q.-Y. Sun. K.W. Park, **R.S. Prather**. 2002. Artificial activation of in vitro matured oocytes before fertilization can reduce the polyspermy rate. *Theriogenology* 57:674.
126. Viuff, D., L.F. Rickords, L. Lai, H.-T. Cheong, M. Samuel, **R.S. Prather**, T. Greve, P.D. Thomsen. 2002. The activation of ribosomal RNA genes in nuclear transfer porcine embryos. *Theriogenology* 57:455.
127. Park, K.-W., L. Lai, H.-T. Cheong, R. Cabot, Q.-Y. Sun, G. Wu, B.N. Day, **R.S. Prather**. 2002. Developmental ability of nuclear transfer embryos by using ear skin fibroblasts derived from a transgenic pig. *Theriogenology* 57:442.
128. Cabot, R.A., M. Hannink, **R.S. Prather**. 2002. Nuclear export in the porcine oocyte. *Theriogenology* 57:491.
129. Tuggle, C.K., J.A. Green, C. Fitzsimmons, R. Woods, **R.S. Prather**, S. Malchenko, M.B. Soares, C.A. Roberts, K. Pedretti, T. Cassavant, D. Pomp, G. Bertani, S. Olberding, Q. Zhang, M.F. Rothschild, K. Garwood, W. Beavis. 2002. Pig reproduction EST project: Production of 20 cDNA libraries, 14,602 sequences and 49 map locations for genes expressed in major female reproductive tissues. *Plant and Animal Genome*, p 82.
130. Park, K.-W., L. Lai, G. Wu, B.N. Day, **R.S. Prather**. 2002. Effects of FCS on in vitro development of porcine nuclear transfer embryos. *Biol. Reprod. Suppl.* 1, p 234.
131. Wu, G.-M., J. Mao, L. Lai, T.C. McCauley, K.-W. Park, A.R. Rieke, T.C. Cantley, M.F. Smith, **R.S. Prather**, B.A. Didion, B.N. Day. 2002. Magnesium inhibits in vitro fertilization of pig oocytes. *Biol. Reprod. Suppl.* 1, p 311.
132. Mao, J., M.F. Smith, E. Rucker, G.-M. Wu, **R.S. Prather**, B.A. Didion, B.N. Day. 2002. Insulin-like growth factor-1 suppressed apoptosis of granulosa

- cells and stimulated periantral follicular growth in vitro. *Biol. Reprod. Suppl.* 1, p 212.
133. T. McCauley, K. van Leyen, L. Lai, M. Sutovsky, B.N. Day, **R.S. Prather**, R. Oko, P. Sutovsky. 2002. Unique aspects of zygotic development in pig after in vitro fertilization and cloning. *Biol. Reprod. Suppl.* 1, p 311.
 134. Whitworth, K.W., M.C. Lucy, J. Ries, G. Springer, A. Guillen, J.L. Forrester, N. Mathialagan, B.A. Didion, **R.S. Prather**, J.A. Green. 2002. Characterization of cDNA libraries developed from porcine oocytes and embryos: Identification of differentially expressed genes. *Biol. Reprod. Suppl.* 1, p 159.
 135. Green, J.A., K.W. Whitworth, J. Ries, G. Springer, A. Guillen, J.L. Forrester, N. Mathialagan, B.A. Didion, M.C. Lucy, **R.S. Prather**. 2002. Characterization of cDNA libraries developed from porcine uterus and oviduct: Identification of differentially expressed genes. *Biol. Reprod. Suppl.* 1, p 319.
 136. Cabot, R.A., **R.S. Prather**. 2002. Injection of double stranded mRNA molecules corresponding to the importin alpha homologue HSRP1 reduced developmental potential of porcine embryos. *Biol. Reprod. Suppl.* 1, p 148.
 137. Sutovsky, P., A. Wu, K.W. Park, **R.S. Prather**, D.B. Carter, D. Takahashi, T. Dominko, M. Sutovsky, R. Oko. 2002. PT32: Sperm perinuclear theca protein with properties of the sperm-borne, oocyte-activating factor. *Biol. Reprod. Suppl.* 1, p 275.
 138. **Prather, R.S.**, G. Springer, L.J. Forrester, K.M. Whitworth, J. Ries, N. Bivens, A. Guillen, N. Mathialagan, B.A. Didion, J.A. Green. 2002. Construction of porcine specific gene arrays and their use for characterizing gene expression during early development. First International Meeting on Mammalian Embryo Genomics, July 20, Quebec City, Canada. p 15.
 139. Jiang, H., K.M. Whitworth, N. Bivens, J. Ries, J.A. Green, L.J. Forrester, G.K. Springer, B.A. Didion, N. Mathialagan, **R.S. Prather**, M.C. Lucy. 2002. Large-scale generation and analysis of expressed sequence tags from porcine ovaries or ovarian follicles at different stages of development. *ASAS/ADSA J. Anim. Sci.* 80:suppl 1, p 301-302.
 140. Spollen, W.G., G.K. Springer, **R.S. Prather**. 2002. Cytoplasmic polyadenylation elements in swine reproductive tissues. American Medical Informatics Association.
 141. Sutovsky, P., T. McCauley, W. Thompson, K.A. Fisher, B.N. Day, **R.S. Prather**, T. Safranski, M. Sutovsky. 2002. Ubiquitin in mammalian spermatogenesis, fertilization, and preimplantation embryonic development: killing three birds with one stone.
 142. Tuggle, C.K., J.A. Green, C. Fitzsimmons, R. Woods, **R.S. Prather**, S. Malchenko, M.B. Soares, C.A. Roberts, K. Pedretti, T. Casavant, D. Pomp, A.R. Caetano, J.B. Edeal, S. Olberding, Y.D. Zhang, M.F. Rothschild, K. Garwood, W. Beavis. 2002. Improving the human-pig comparative map: Sequencing of 16,000 ESTs and Mapping 100-pig genes with human orthologs. International Society on Animal Genetics.

143. Isom, S.C., **R.S. Prather**, E.B. Rucker. 2003. Heat-induced apoptosis in preimplantation porcine embryos. *Theriogenology* 59:323.
144. Caamano, J.N., G.M. Wu, T.C. McCauley, A.R. Rieke, T.C. Cantley, J. Mao, B.A. Didion, **R.S. Prather**, B.N. Day. 2003. Non-surgical embryo transfer in swine: preliminary results. *Theriogenology* 59:361.
145. Mao, J., M.F. Smith, B. Didion, G. Wu, T.C. McCauley, T.C. Cantley, **R.S. Prather**, M. McDaniel, B.N. Day. 2003. IGF-I and EGF regulated preantral follicular growth and development. *Theriogenology* 59:410.
146. Pedersen, H.G., Z. Rasmussen, D. Viuff, P.D. Thomsen, L. Lai, L. Rickords, **R.S. Prather**, T. Greve. 2003. Chromosome abnormalities in in vitro developed, in vitro produced or parthenogenetically activated porcine embryos. *Theriogenology* 59:430.
147. Mao, J., N. Caamano, T. Cantley, R. Farwell, A. Rieke, M.F. Smith, **R. Prather**, B.N. Day. 2003. Effect of follicular size on developmental competence of porcine oocytes in vitro. *J. Anim. Sci.* 81: suppl. 1 p. 187.
148. Tuggle, C.K., J.A. Green, C. Fitzsimmons, R. Woods, **R.S. Prather**, S. Malchenko, M.B. Soares, T. Kucaba, K. Crouch, C. Smith, D. Tack, N. Robinson, B. O'Leary, T. Sheetz, T. Casavant, D. Pomp, J.B. Edeal, Y. Zhang, Z. Hu, M.F. Rothschild, K. Garwood, W. Beavis. 2003. Completion of the Midwest consortium project: sequencing of 21,499 reproduction ESTs and comparative mapping of 721 selected genes. *J. Anim. Sci.* 81: suppl. 1 p. 2.
149. Im, G.-S., L. Lai, Y. Hao, Z. Liu, D. Wax, A. Bonk, **R.S. Prather**. 2003. In vitro development of porcine nuclear transfer embryos cultured in different media and gas atmospheres. *SSR Biol. Reprod.* 68 Suppl. 1. p 339.
150. Hao, Y., L. Lai, J. Mao, G. Im, A. Bonk, R.S. Prather. 2003. Apoptosis of porcine embryos derived from parthenogenetic activation during preimplantation development in vitro. *SSR Biol. Reprod.* 68 Suppl. 1. p 338.
151. Lai, L., Z. Liu, G.-S. Im, Y. Hao, **R.S. Prather**, 2003. In vitro development of nuclear transfer embryos constructed by using fibroblasts derived from parthenogenetic fetuses as donors. *SSR. Biol. Reprod.* 68 Suppl. 1. p 337.
152. Ruddock, N.T., K. Wilson, **R.S. Prather**, A.J. French. 2003. Expression of the six known isoforms of the Na⁺/H⁺ exchange (NHE) genes in cDNA pools produced from single bovine oocytes and IVP blastocysts. *SSR. Biol. Reprod.* 68 Suppl. 1. p160.
153. Schatten, H., **R.S. Prather**, H.-Y. Fan, C. Tong and Q.-Y. Sun. 2003. Regulation of cytoskeletal functions in pig oocytes. *Microscopy and Microanalysis, Volume 9 (Suppl 2)*, 2003, 1200-1201
154. **Prather, R.S.** 2003. Transgenic pigs for medicine and agriculture. *Transgenic Animal Research Conference III, Lake Tahoe, CA. Aug . 11-14.*
155. Yamada, K, K. Yazawa, C Kamnon, A. Shimizu, S. Moran, M. Nuhn, K. Teranishi, P. Vagefi, R. **Prather**, E.J. Forsberg, R. Hawley, H.J. Schuurman, M. Awwad, J. Greenstein, J. Fishman, D.K.C. Cooper, M. Sykes, D.H. Sachs, K. Yamada. 2003. An initial report of alpha-Gal deficient pig to baboon

- renal xenotransplantation: evidence for the benefit of co-transplanting vascularized donor thymic tissue. *Xenotransplantation* 10(5): 480.
156. Tseng, Y.-L., F.J.M.F. Dor, K. Kuwaki, D. Prabharasuth, A. Alt, D.Ryan, M. Denaro, M. Giovino, J. Wood, **R. Prather**, E.J. Forsberg, K. Yamada, R. Hawley, M. Awwad, C. Patience, H.J. Schuurman, D.H. Sachs, D.K.C. Cooper. 2003. Initial results of xenotransplantation (Tx) in baboons using hearts from 1,3-galactosyltransferase gene-knockout (GT-KO) pigs. *Xenotransplantation* 10(5):486.
 157. Beschorner, W., S.S. Joshi, **R. Prather**, T. Schieber, S.C. Thompson, T. Yang T, L. Zhou, S. Mirvish. 2003 Selective and conditional depletion of pig cells with transgenic pigs and specific liposomes. *Xenotransplantation* 10 (5): 497.
 158. Kuwaki, K., Y.L. Tseng, F.J.M.F. Dor, S. Houser, D. Prabharasuth, A. Alt, R. Hawley, **R. Prather**, E.J. Forsberg, A. Shimizu, K. Yamada, D.H. Sachs, H.J. Schuurman, M. Awwad, D.K.C. Cooper. 2003. Initial results of xenotransplantation (Tx) in baboons using hearts from 1,3-galactosyltransferase gene-knockout (GT-KO) pigs. *Xenotransplantation* 10 (5): 526.
 159. Beschorner, W., **R. Prather**, C. Sosa, S.C. Thompson, T. Schieber, T. Yang. 2003. Transgenic pigs expressing the suicide gene thymidine kinase in the liver. *Xenotransplantation* 10 (5): 530
 160. Vajta, G., T.T. Peura, L. Lai, C. Murphy, R.S. Prather, P.M. Kragh, H. Callesen. 2004. Highly efficient and reliable chemically assisted enucleation method for hand made cloning (HMC). *IETS Reproduction Fertility & Development* 16:159.
 161. Im, G.-S., L. Lai, Z. Liu, Y. Hao, C.N. Murphy, **R.S. Prather**. 2004. Improved in vitro development of porcine nuclear transfer embryos with 6-DMAP following fusion. *Reproduction Fertility & Development*16:144.
 162. Liu, Z.H., L.X Lai, G.S Im, M. Samuel, D. Wax, **R.S. Prather**. 2004. Effect of pig follicle fluid and fetal calf serum on porcine oocyte maturation and subsequent development after activation and somatic cell nuclear transfer. *Reproduction Fertility & Development* 16:278.
 163. Agca, C., J.E. Ries, S. Kolath, J.-H. Kim, G.K. Springer, L.J. Forrester, E. Antoniou, K. Whitworth, N. Mathialagan, **R.S. Prather**, M.C. Lucy. 2004. Ovarian follicle gene expression before and after the preovulatory luteinizing hormone (LH) surge in swine (*sus scrofa domestica*). *Plant and Animal Genome* page 279 (abstract p834).
 164. Shatos, M.A., H. Klassen, P.H. Schwartz, J. Doherty, B. Ziaeeian, I. Kirov, **R.S. Prather**, M.J. Young. 2004. Isolation of cells from retina and brain of the GFP-transgenic pig. *Invest. Ophth. & Vis. Sci.* 25: U647 5406 Suppl. 2. www.arvo.org.
 165. Klassen, H., K. Warfvinge, J.F. Kiilgaard, E. Scherfig, J. Prause, M.A. Shatos, **R.S. Prather**, M.J. Young. 2004. Transplantation of retinal progenitor cells from GFP-transgenic pigs to the injured retina of allogeneic

- recipients. Invest. Ophth. & Vis. Sci. 25: U646 5400 Suppl. 2.
www.arvo.org.
166. Patel, R.V., C. Agca, **R. Prather**, G.K. Springer. 2004. Autoannotation program to determine annotation of clones used in microarray experiments. Univ.MO Life Sciences Week.
 167. Sutovsky P., L. Lai, G. Manandhar, M. Sutovsky, J. Caamaño, B.N. Day and **R.S. Prather**. 2004. Proteasomal activity is required for pronuclear development after IVF, and for donor cell-nuclear remodeling after SCNT. SSR Biol. Reprod. Special Issue p 225-226.
 168. Lai, L, G.S. Im, Z. Liu, Y. Hao, A. Rieke, M. Samuel, D. Wax, C.N. Murphy, **R.S.Prather**.2004. Comparison of in vivo developmental competency of cloned pig embryos derived from three different activation strategies. SSR Biol. Reprod. Special Issue p 212.
 169. Liu, Z.H., Y.H Hao, L.X Lai, D. Wax, M. Samuel, H. Schatten, **R.S Prather**. 2004. Morphology and dynamics of alpha-tubulin and nuclear mitotic apparatus protein during the first cell cycle in porcine nuclear transfer embryos, parthenogenetic embryos and in vitro fertilization embryos. SSR Biol. Reprod. Special Issue p 215.
 170. Hao, Y.H., L.X. Lai, Z.H. Liu, G.S. Im, D. Wax, M. Samuel, **R.S Prather**. 2004. Chromosomal abnormalities and developmental competence in porcine electrically-activated parthenogenetic blastocysts. SSR Biol. Reprod. Special Issue p 214.
 171. **Prather, R.S**. 2004. Genetic modification of pigs for medicine and agriculture. SSR. Biol. Reprod. Special Issue p 81.
 172. Agca, C., K.M. Whitworth, J.-G. Kim, C.N. Murphy, A. Rieke, G.K. Springer, L.J. Forrester, J.A. Green, N. Mathialagan, **R.S. Prather**, M.C. Lucy. 2004. Microarray analysis of gene expression during ovarian development in swine. J. Anim. Sci. 82(suppl 1) 200.
 173. **Prather, R.S**. 2004. Swine as biomedical models. Workshop on Advantages of Domestic Species as Biomedical Models. Michigan State University. October 29-31.
 174. Im, G.S., B.S. Yang, L. Lai, Z. Liu, Y. Hao, **R.S. Prather**. 2005. High osmolarity during early culture stage improves in vitro development of pre-implantation porcine nuclear transfer embryos. International Embryo Transfer Society annual meeting. Reprod. Fert. & Dev. P 169.
 175. Overman, L.M., C. Besch-Williford, L. Lai, H.-T. Cheong, G.-S. Im, K.-W. Park, C. Murphy, J.A. Green and **R.S. Prather**. 2005. Histological Comparisons between Nuclear Transfer and *In Vivo* Porcine Embryos. International Embryo Transfer Society annual meeting. Reprod. Fert. & Dev. P 180.
 176. Caamaño, J.N, M. Hermsen, J. Marcos, A. Meana, F. Goyache, M. Prieto, A. Espí, L.J. Royo, C. Diez, G. Pajares, S. Borragán, **R.S. Prather**, E. Gómez. 2005. A procedure to obtain fibroblasts from wild animals. International Embryo Transfer Society annual meeting. Reprod. Fert. & Dev. P 245.

177. Kim, J.G., K.M. Whitworth, C. Agca, G.K. Springer, R. Patel, N.J. Bivens, L.J. Forrester, **R.S. Prather**, J.A. Green. 2005. Comparative transcriptional profiling of porcine endometrium during the estrous cycle by using cDNA microarray. Plant & Animal Genome P702.
178. Whitworth, K.M., C. Agca, J.G. Kim, G.K. Springer, R. Patel, N. Bivens, L.J. Forrester, J.A. Green, **R.S. Prather**. 2005. Comparison of differential expression patterns in porcine oocytes and early embryos by using cDNA microarrays. Plant & Animal GenomeP722.
179. Bonk, A., M. Samuel, L. Lai, Z. Liu, Y. Hao, E. Antoniou, **R.S. Prather**. 2005. Microarray based detection of differential CpG methylation in pig kidney and spleen tissues. Plant & Animal GenomeP701
180. Riley, L.K., J.K. Critser, **R.S. Prather**, T. Strauch. 2005. The National Swine Resource and Research Center. Swine in Biomedical Research Conference. Jan 27-29, Chicago, Il. Pg 41.
181. Whitworth, K.M., C. Agca, J.G. Kim, R. Patel, G.K. Springer, N. Bivens, L.J. Forrester, N. Mathialagan, J.A. Green, **R.S. Prather**. 2005. Transcriptional profiling of in vitro versus in vivo produced pig embryos by using a 15K member unigene set specific for pig reproductive tissues and embryos. Swine in Biomedical Research Conference. Jan 27-29, Chicago, Il. Pg 38.
182. Carroll, J.A., D.B. Carter, S.W. Korte, S.E. Dowd, **R.S. Prather**. 2005. The acute phase response of cloned pigs following an immune challenge. Southern Section of the American Society of Animal Science.
183. Lai, L., Z. Liu, Y. Hao, D. Wax, **R.S. Prather**. 2005. In vitro Development of Fertilized Nuclear Transfer Embryos Derived from Swine Parthenogenetic Cells. International Conference on Pig Reproduction p 159.
184. Riley, L.K., J.K. Critser, **R.S. Prather**, T. Strauch. 2005. The National Swine Resource and Research Center. International Conference on Pig Reproduction p 163.
185. Ross, J.W., M.D. Ashworth, D.R. Stein, U. DeSilva, P. Ayoubi, **R.S. Prather**, K. Whitworth, C. Agca, J.-G. Kim, J.A. Green, F. White, G.A. Johnson, R.D. Geisert. 2005. Identification and analysis of molecular markers following endocrine disruption of pregnancy in the pig. International Conference on Pig Reproduction p 123.
186. Green, J.A., J.-G. Kim, K.M. Whitworth, C. Agca, **R.S. Prather**. 2005. The use of microarrays to define functionally-related genes that are differentially expressed in the cycling pig uterus. 7th International Conference on Pig Reproduction p 59.
187. Isom, S.C., C. Alinea, J. Dillender, **R.S. Prather**, E.B. Rucker, III. 2005. Differential response of porcine preimplantation embryos to timing variations of an exogenously applied heat stress. SSR meeting. Biology of Reproduction Special issue p 153.
188. Lai, L, S.C. Isom, R. Li, Y. Hao, D. Wax, E.B. Rucker, III, **R.S. Prather**. 2005. In vitro development of porcine nuclear transfer embryos with treatment of different initial culture temperatures after activation. SSR meeting. Biology of Reproduction Special issue p 144.

189. Hao, Y.H., H.Y. Yong, C.N. Murphy, D. Wax, M. Samuel, A. Rieke, E.M. Price, R.M. McAllister, J.R. Turk, E.B. Rucker, III, M.H. Laughlin, **R.S. Prather**. 2006. Production of transgenic clones piglets by using porcine fetal fibroblasts over-expressing endothelial nitric oxide synthase (eNOS). IETS. Reproduction, Fertility and Development Abs #374, p 294.
190. Li, R., L. Lai, D. Wax, Y. Hao, Z. Zhong, C.N. Murphy, A. Rieke, **R.S. Prather**. 2006. Cryopreservation of porcine embryos derived from somatic cell nuclear transfer. IETS. Reproduction, Fertility and Development Abs #101, p 159.
191. Yong, H.Y., C.N. Murphy, A. Rieke, L. Lai, Y. Hao, R. Li, D. Wax, M. Samuel, S. Korte, K. Whitworth, **R.S. Prather**. 2006. Production of transgenic piglet by new sperm injection technique. IETS. Reproduction, Fertility and Development Abs #381, p 297.
192. **Prather, R.S.**, S. Korte, R. Woods, L. Spate, N. Bivens, L.J. Forrester, R.V. Patel, G.K. Springer, C.N. Murphy, J.A. Green. 2006. Identification of the predominant transcripts in bovine oocytes, in vitro derived blastocysts and in nuclear transfer blastocysts. IETS. Reproduction, Fertility and Development Abs #264, p 239.
193. Bonk, A.J., M. Samuel, L. Lai, Y.H. Hao, R. Li, Z.H. Liu, C. Murphy, E. Antoniou, **R.S. Prather**. 2006. DNA methylation in porcine gametes, in vitro, in vivo, parthenogenetic and nuclear transfer produced embryos. IETS. Reproduction, Fertility and Development Abs #1, p 109.
194. Korte, S., G.K. Springer, W. Spollen, R.V. Patel, K. Whitworth, N. Bivens,, L.J. Forrester, C.N. Murphy, J.A. Green, **R.S. Prather**. 2006. Differential transcription in porcine germinal vesicle and metaphase II oocytes. IETS. Reproduction, Fertility and Development Abs #254, p 234
195. Isom, S.C., **R.S. Prather**, E.B. Rucker, III. 2006. Heat stress enhances parthenogenetic development of porcine embryos, but not in vitro fertilized embryos. IETS, Reproduction, Fertility and Development Abs #164, p 190.
196. Jiang, L., I. Polejaeva, P. Jobst, D. Ayers, **R.S. Prather**, X. Yang, X.C. Tian. 2006. Expression of growth-related imprinted genes in decreased newborn and surviving cloned piglets. IEST. Reproduction, Fertility and Development Abs #249, p 232.
197. Men, H., Y. Agca, S.F. Mullen, L.K. Riley, **R.S. Prather**, J.K. Critser. 2006. Porcine embryo quality produced by two embryo culture media as assessed by total cell number and time course of blastocyst hatching. IETS. Reproduction, Fertility and Development Abs #155, p 185.
198. Men, H., Y. Agca, L.K. Riley, **R.S. Prather**, J.K. Critser. 2006. Forskolin induced increase in lipolytic activity in porcine embryos produced in vitro. IETS . Reproduction, Fertility and Development Abs #169, p 192.
199. Kim, J.G., K.M. Whitworth, **R.S. Prather**, J.A. Green. 2006. Differential expression of ornithine decarboxylase-1 and neuromedin U in the non-pregnant and pregnant uterine endometrium of swine. Plant and Animal Genome meeting. Abs# P812, p303.

200. Price, E.M., **R.S. Prather**, M.S. Samuel, M.A. Tanner, S.L. Latcham. 2006. Neurogenic peripheral blood-derived adult stem cells. Experimental Biology annual meeting. 685.2.
201. Price, E.M., **R.S. Prather**, M.S. Samuel, M.A. Tanner, S.L. Latcham. 2006. Angiogenic peripheral blood-derived adult stem cells. Experimental Biology annual meeting. 412.1.
202. Zhong, Z.-S., M. Katayama, Z.H. Liu, Y.H. Hao, L.X. Lai, D. Wax, M. Samuel, Q.Y. Sun, **R.S. Prather**, H. Schatten. 2006. Translocation of mitochondria in cloned porcine embryos. Microscopy Society of America.
203. Ross, J.W., M.D. Ashworth, D.R. Stein, U. DeSilva, P. Ayoubi, **R.S. Prather**, K.M. Whitworth, J.A. Green, F. White, G.A. Johnson, R.D. Geisert. 2006. Alteration of porcine endometrial gene expression associated with conceptus loss following endocrine disruption with exogenous estrogen. SSR Biol. Reprod. Special Issue p108.
204. Lai, L., R. Li, Y. Tan, Y. Hao, Z. Zhong, D. Wax, H. Schatten, **R.S. Prather**. 2006. In vitro developmental potential of porcine nuclear transfer embryos. SSR Biol. Reprod. Special Issue p109-110.
205. Antelman, J., G. Manandhar, Y.J. Yi, M. Sutovsky, **R.S. Prather**, P. Sutovsky. 2006. Involvement of mitochondrial transcription factor (Tfam) in porcine gametogenesis and preimplantation embryo development. SSR Biol. Reprod. Special Issue p110.
206. Li, R., K. Whitworth, L. Lai, L. Spate, A. Rieke, Y. Hao, Z. Zhong, M. Katayama, H. Schatten, **R.S. Prather**. 2006. The concentration and composition of free amino acids and the osmolarities of porcine oviductal and uterine fluid and their effects on the development of porcine parthenogenetic and IVF embryos. SSR Biol. Reprod. Special Issue p110.
207. Hao, Y., N. Mathialagan, E. Walters, J. Mao, L. Lai, D. Becker, J. Critser, **R.S. Prather**. 2006. Osteopontin present in the porcine oviduct reduces polyspermy during IVF of porcine oocytes. SSR. Biol. Reprod. Special Issue p138.
208. Caamano, J.N., A. Salas, J. Marcos, A. Rodriguez, C. Diez, S. Borragan, **R.S. Prather**, E. Gomez. 2006. Flow cytometric cell cycle analysis of cultured brown bear fibroblasts. SSR Biol. Reprod. Special Issue p182.
209. Rogers, C.S., Y. Hao, T. Rokhlina, Z. Yan, J.F. Engelhardt, **R.S. Prather**, M.J. Welsh. 2006. Gene targeting of pig CFTR: progress toward a large animal model of cystic fibrosis. North American Cystic Fibrosis Meeting (November).
210. Blanton, M.W., B.H. Johnstone, J.L. Mund, P.I. Rogers, T.A. Strauch, **R.S. Prather**, L.K. Riley, K.L. March. 2006. Vascularization during tissue injury repair is enhanced by topical treatment with adipose stromal cells. American Heart Association annual meeting.
211. Turk, J.R., S. Korte, K. Kreutzer, M. Linville, C. Murphy, L. Lai, **R.S. Prather**. 2006. Rickets-like dyschondroplasia in transgenic pigs generated by nuclear transfer. American Association of Veterinary Laboratory Diagnosticians (Minneapolis, 10-12-06).

212. Zhong, Z., M. Katayama, R. Li, L. Lai, Y. Hao, D. Wax, L. Spate, K. Whitworth, Q. Sun, **R.S. Prather**, H. Schatten. 2006. Distribution and fate of YFP-transfected donor cell mitochondria in cloned porcine embryos. American Society for Cell Biology (Denver).
213. Hao, Y., C. Murphy, L. Spate, D. Wax, Z. Zhong, M. Samuel, N. Mathialagan, **R.S. Prather**. 2007. Osteopontin improves in vitro development and reduces apoptosis in porcine embryos. Plant and Animal Genome Meetings, San Diego, CA.
214. **Prather, R.S.**, Y. Hao, R. Li, J.W. Ross, J. Whyte. 2007. Heart-healthy pork, and green eggs and ham: genetically modified pigs for medicine and agriculture. Workshop on Advantages of Agriculturally Important Species as Dual-Use Models in Agriculture and Biomedicine. NIH Bethesda, MD April 20, 2007.
215. Whyte, J.J., Y.H. Hao, J.L. Casati, J.R. Turk, M. Samuel, E.B. Rucker III, M.H. Laughlin, **R.S. Prather**. 2007. Inheritance pattern of porcine endothelial nitric oxide synthase (eNOS) over-expressing transgene in offspring of a cloned transgenic boar bred to wild-type sows. SSR Biol. Reprod. Special Issue P239.
216. Hao, Y., Z. Zhong, L. Spate, C. Murphy, D. Wax, R. Li, M. Samuel, **R.S. Prather**. 2007. Osteopontin improves in vitro maturation and development of porcine oocytes via activation of the phosphatidylinositol 3-kinase/Akt signaling pathway. SSR Biol. Reprod. Special Issue P112.
217. Yi, Y.J., G. Manandhar, M. Sutovsky, R. Li, V. Jonakova, R. Oko, C.S. Park, **R.S. Prather**, P. Sutovsky. 2007. Ubiquitin C-Terminal hydrolases-activity is involved in sperm acrosomal function and anti-polyspermy defense. SSR Biol. Reprod. Special Issue P219-220.
218. Whitworth, K.S., R. Li, A. Rieke, D. Wax, W. Spollen, G.K. Springer, P. Sutovsky, J.A. Green, **R.S. Prather**. 2007. Transcriptional profiling of porcine in vivo, in vitro produced and nuclear transfer derived extraembryonic membranes at day 30 of gestation. SSR Biol. Reprod. Special Issue P194.
219. Park, J., S. L. Smith, L. Lai, M. Samuel, D. Wax, **R.S. Prather**, X. Yang, X.C. Tian. 2007. Expression profiles of brain, kidney, and lung of cloned pigs. SSR Biol. Reprod. Special Issue P237.
220. Isom, S.C., A.J. Bonk, W. Whitworth, **R.S. Prather**. 2007. A comparison of global DNA methylation patterns in developmental-competent vs – incompetent nuclear transfer donor cells. SSR Biol. Reprod. Special Issue P228.
221. Rogers, C.S., Y. Hao, T. Rokhjlina, D. Vermeer, Z. Yan, J.F. Engelhardt, **R.S. Prather**, M.J. Welsh. 2007. Production of CFTR-null heterozygous pigs. North American CF Conference.
222. **Prather, R.S.**, R. Li, J.W. Ross, J.J. Whyte, Y. Hao. 2007. Genetically Modified Swine for Medicine and Agriculture. Frontiers in Transgenesis. Danforth Plant Science Center, St. Louis MO 9/26-27/07.

223. **Prather, R.S.**, R. Li, T. Fu, R. Evans, A. Zhao, Y. Dai. 2007. Heart-healthy pork: *hFat-1* transgenic swine. Transgenic Animal Research Conference VI. Granlibakken Conference Center, Tahoe City, CA. Transgenic Research DOI 10.1007/s11248-007-9142-7 16:849-850.
224. Beschorner, W.E., **R.S. Prather**, L. Lai, P. Kudlacek, K. Harbour-Marik, T. Schieber, K.F. Lechtenberg. 2007. Transgenic pigs producing the suicide gene thymidine kinase in the liver, facilitation of human hepatocytes in the pig liver. International Xenotransplantation Association.
225. Dean, D.A., D.A. Scalise, M. Samuel, **R.S. Prather** 2007. Extra Cardiac Cellular Matrix For The Delivery Of Stem Cells. Drexel Med. Annual Research Day. Philadelphia, PA Oct 3 2007
226. Nevola, M., D.A. Scalise, **R.S. Prather**, D.A. Dean. 2007. Extra cardiac cellular matrix for the delivery of stem cells. Discovery Research Day, Drexel University. Oct. 2007.
227. Whitworth, K.M., L.D. Spate, R. Li, A. Rieke, D. Wax, P. Sutovsky, J.A. Green, **R.S. Prather**. 2008. Transcriptional Profiling of Porcine In Vivo, In Vitro Fertilized and Nuclear Transfer Derived Blastocysts and the Donor Somatic Cell Line. International Embryo Transfer Society annual meeting. *Reproduction, Fertility & Development* 20:83.
228. Hao, Y., D. Wax, Z. Zhong, C. Murphy, L. Spate, M. Samuel, A. Rieke, J. Li, **R.S. Prather**. 2008. Pre- and post-implantation development of embryos from cloned porcine skin-originated sphere stem cells. International Embryo Transfer Society annual meeting. *Reproduction, Fertility & Development* 20:97.
229. Spate, L.D., K. Walker, C. McHughes, **R.S. Prather**. 2008. Addition of low density lipoprotein to chemically defined protein embryo culture medium can partially replace bovine serum albumin. International Embryo Transfer Society annual meeting. *Reproduction, Fertility & Development* 20:136-137.
230. McHughes, C.E., G.K. Springer, L. Spate, R. Li, R. Woods, M. Green, S.W. Korte, C.N. Murphy, J.A. Green, **R.S. Prather**. 2008. Identification and quantification of differentially represented transcripts in preimplantation bovine embryos. International Embryo Transfer Society annual meeting. *Reproduction, Fertility & Development* 20:169-170.
231. Whitworth, K.M., L.D. Spate, R. Li, A. Rieke, D. Wax, P. Sutovsky, J.A. Green and **R.S. Prather**. 2008. Transcriptional Profiling of Pig *In Vivo* and Nuclear Transfer Derived Blastocyst Stage Embryos. Swine in Biomedical Research Meeting, San Diego, CA April 2-3.
232. **Prather, R.S.**, J.W. Ross, J.J. Whyte, Y. Hao, and Jianguo Zhao. 2008. Biomedical Research Benefits of Genetically Modified Swine. Swine in Biomedical Research Meeting, San Diego, CA April 2-3.
233. Park, J., S. Davis, T. Suteevun, R. Bruno, **R. Prather**, X. Yang, X.C. Yang. 2008. DNA methylation analyses in lungs of cloned pigs. *Biology of Reproduction Special Issue* p65.

234. Meyerholz D.K., C.S. Rogers, A. Uc, D.A. Stoltz, P.J. Taft, **R.S. Prather**, M.J. Welsh. 2008. Pancreatic lesions in a CFTR $-/-$ pig model. *Veterinary Pathology* 45: 764 (#132)
235. Meyerholz D.K., C.S. Rogers, A. Uc, D.A. Stoltz, **R.S. Prather**, M.J. Welsh. 2008. Porcine cystic fibrosis model: Liver and gallbladder phenotype. *Veterinary Pathology* 45: 764 (#115)
236. Uc, A., D.K. Meyerholz, D.A. Stoltz, C.S. Rogers, **R.S. Prather**, M.J. Welsh. 2008. Porcine Cystic Fibrosis Model: Liver and Gallbladder Phenotype. (Poster of Distinction at North American Society for Pediatric Gastroenterology, Hepatology and Nutrition (NASPGHAN)/ Children Digestive Health and Nutrition Foundation (CDHNF) meeting, San Diego, CA, November 2008).
237. Uc, A., D.K. Meyerholz, C.S. Rogers, D.A. Stoltz, P.J. Taft, **R.S. Prather**, M.J. Welsh. 2008. Pancreatic Lesions in a CFTR $-/-$ pig model. (Oral presentation at NASPGHAN-CDHNF meeting, San Diego, CA, November 2008).
238. Hao, Y., J.W. Ross, P. Sutovsky, D. Wax, Z. Zhong, C. Murphy, A. Rieke, M. Samuel, L. Spate, **R.S. Prather**. 2009. Porcine skin-derived stem cells may be a superior resource to provide donor nuclei for efficient genetic modification of clones. International Embryo Transfer Society annual meeting, *Reprod. Fertil. & Devel.* 21:116.
239. Zhao, J.G., J.W. Ross, Y. Hao, D.M. Wax, L.D. Spate, M.S. Samuel, E.M. Walters, A. Rieke, C.N. Murphy, **R.S. Prather**. 2009. Histone deacetylases inhibitor-Scriptaid benefit the reprogramming of somatic nuclei following nuclear transfer. International Embryo Transfer Society annual meeting, *Reprod. Fertil. & Devel.* 21:129.
240. Spate, L.D., B.K. Bauer, C.N. Murphy, **R.S. Prather**. 2009. N-methyl-D-aspartic acid can be used to partially replace bovine serum albumin in culture medium. International Embryo Transfer Society annual meeting, *Reprod. Fertil. & Devel.* 21:164.
241. Zhao, M.T., S.C. Isom, J. Zhao, Y. Hao, J.W. Ross, J. Whyte, Y. Zhang, **R.S. Prather**. 2009. Cooperative expression of pluripotent related genes and neural crest marker genes in porcine GFP-transgenic skin derived progenitors. International Embryo Transfer Society annual meeting, *Reprod. Fertil. & Devel.* 21:241.
242. DeMarco, P.J., J.W. Ross, M.A. McCall, K. Narfstrom, **R.S. Prather**, M. Samuel, E.M. Walters, J. Zhao, H.J. Kaplan. 2009. Development and assessment of a P23H rhodopsin transgenic mini-swine model of retinitis pigmentosa. Association for Research in Vision and Ophthalmology. Fort Lauderdale, FL. May 3-7.
243. Whyte, J.J., E. Mahan, M. Samuel, K.M. Whitworth, Y. Hao, C. Murphy, **R.S. Prather**, M.H. Laughlin. 2009. Production of cloned pigs carrying an endothelial-specific transgene designed to overexpress human catalase to study the vasodilatory effects of hydrogen peroxide. SSR annual meeting. *Biol. Reprod. Supplement* pg 68.

244. Bauer, B.K., L.S. Spate, S.C. Isom, A. Rieke, S. Blake, W.G. Spollen, C.N. Murphy, and **R.S. Prather**. 2010. mRNA transcripts are expressed differently in *in vivo* vs. *in vitro* cultured porcine pre-implantation embryos. Plant and Animal Genome. P612.
245. Whitworth, K.M., L.D. Spate, A. Rieke, P. Sutovsky, J.A. Green and **R.S. Prather**. 2010. Transcriptional profiling of porcine *in vivo* and nuclear transfer derived placentas at day 30 of gestation. Plant and Animal Genome. P740.
246. **Prather, R.S.** 2010. Genetic modification of pigs via cloning. Plant and Animal Genome. W028.
247. Zhao, M.T., K. Whitworth, **R.S. Prather**. 2010. Porcine skin derived progenitor (SKP) spheres and neurospheres: distinct "stemness" identified by microarray analysis. Plant and Animal Genome. P739.
248. Dobbs, K. **R.S. Prather**. 2010. Characterization of cytoplasmic polyadenylation sites during porcine embryogenesis. International Embryo Transfer Society annual meeting. Reprod. Fertil. & Devel.
249. Isom, S.C., W. Spollen, G. Springer, **R.S. Prather**. 2010. Gene Expression Profiling by Next-Generation Sequencing of cDNA Samples from Inner Cell Mass and Trophectoderm of a Single Day 12 Porcine Embryo. International Embryo Transfer Society annual meeting. Reprod. Fertil. & Devel.
250. DeMarco, P., **R. Prather**, J.W. Ross, E. Walters, M.A. McCall, H. Kaplan. 2010. Functional assessment of a P23H transgenic swine model of retinitis pigmentosa (RP). ARVO
251. Ross, J.W., **R.S. Prather**, E. Walters, C. Rios, P. Bray-Ward, H. Kaplan. 2010. Germline transmission and retinal expression of human P23H rhodopsin in a miniature swine model of retinitis pigmentosa. ARVO
252. Telugu, B.P.V.L., T. Ezashi, A. Alexenko, L. Spate, **R.S. Prather**, R.M. Roberts. 2010. Embryonic and induced pluripotent stem cells analogous to inner cell mass-derived LIF-dependent mouse embryonic stem cells established from the domestic pig-sus scrofa. Biol. Reprod SSR Annual Meeting Abst 146.
253. Yang, C.X., E. Wright, R. Scanlon, B. Selman, **R.S. Prather**, J.W. Ross. 2010. Expression of microRNAs and RNA-binding protein DND1 during oocyte maturation and early embryonic development in the pig. Biol Reprod SSR Annual Meeting Abst 323.
254. Tian, X., J. Park, R. Bruno, R. French, **R.S. Prather**. 2010. Functional genomics and epigenetics in pig cloning research. Biol Reprod SSR Annual Meeting Abst 104.
255. Bauer, B.K., L.D. Spate, C.N. Murphy, **R.S. Prather**. 2011. Arginine supplementation *in vitro* increases porcine embryo development and affects mRNA transcript abundance. International Embryo Transfer Society Annual Meeting. Reprod. Fertil. & Devel. 23:107.PMID: 21366987
256. Mao, J., L. Tracy, J. Zhao, K.M. Whitworth, L. Spate, E.M. Walters, **R.S. Prather**. 2011. Scriptaid and MG132 improve development of porcine embryos reconstructed by somatic cell nuclear transfer. International

- Embryo Transfer Society Annual Meeting. *Reprod. Fertil. & Devel.* 23:131-132.PMID: 21367035
257. Li, C., C. O'Gorman, **R.S. Prather**, J.A. Green, K.D. Wells. 2011. Macroglossia in cloned piglets is associated with hypomethylation at the KCNQ-OT1 CpG island. International Embryo Transfer Society Annual Meeting. *Reprod. Fertil. & Devel.* 23:138.PMID: 21367051
 258. Whitworth, K.M., J. Zhao, L.D. Spate, **R.S. Prather**. 2011. Scriptaid corrects gene expression of a few aberrantly reprogrammed transcripts in nuclear transfer pig blastocyst stage embryos. International Embryo Transfer Society Annual Meeting. *Reprod. Fertil. & Devel.* 23:138.PMID: 21367050
 259. Whyte, J.J., S.C. Isom, W.G. Spollen, S.M. Blake, **R.S. Prather**. 2011. DNA methylome analysis in nuclear transfer donor cells and its relationship to cloning efficiency in swine. International Embryo Transfer Society Annual Meeting. *Reprod. Fertil. & Devel.* 23:138-139.PMID: 21367049
 260. Murphy, C.N., L.D. Spate, B.K. Bauer, **R.S. Prather**. 2011. High Throughput Vitrification of *in vivo* Produced Porcine Embryos. International Embryo Transfer Society Annual Meeting. *Reprod. Fertil. & Devel.* 23:146.PMID: 21367067
 261. Spate, L.D., B.K. Bauer, C.N. Murphy, **R.S. Prather**. 2011. N-methyl-D-aspartic acid and homocysteine can be used together as a replacement for BSA in early porcine embryo culture. International Embryo Transfer Society Annual Meeting. *Reprod. Fertil. & Devel.* 23:172.PMID: 21367120
 262. O'Gorman, C., J. Zhao, M Samuel, E. Walters, **R. Prather**, P. Sutovsky, M. Sutovsky, K.D. Wells. 2011. Construction of a genetically engineered pig expressing GFP-labeled proteasomes. International Embryo Transfer Society Annual Meeting. *Reprod. Fertil. & Devel.* 23:263.PMID: 21367317
 263. Zhao, J.G., E.M. Walters, J. Calcaterra, J.W. Ross, L.D. Spate, M.S. Samuel, A. Rieke, C.N. Murphy, S. Butler, W.H. Velandar, **R.S. Prather**. 2011. Bioengineering of the mammary gland of livestock: Increased propeptide processing of Factor IX in the milk of transgenic pigs by co-expression of Furin. International Embryo Transfer Society Annual Meeting. *Reprod. Fertil. & Devel.* 23:265-266.PMID: 21367321
 264. Telugu, B.P.V.L., T. Ezashi, S. Sinha, A.P. Alexenko, L. Spate, **R.S. Prather**, R.M. Roberts. 2011. LIF-Dependent, Pluripotent Stem Cells Established from Inner Cell Mass of Porcine Embryos. Swine in Biomedical Research Conference July 17-19, Chicago, IL.
 265. Whyte, J.J., J. Zhao, K.D. Wells, M.S. Samuel, K.M. Whitworth, E.M. Walters, M.H. Laughlin, **R.S. Prather**. 2011. Zinc-finger nucleases: new innovations in custom-designed modification of the swine genome. Swine in Biomedical Research Conference July 17-19, Chicago, IL. P 27.
 266. Beaton, B.P., E. Walters, **R.S. Prather**, K. Wells. 2011. Alpha-Galactosyltransferase (α 1,3-Gal) Knockout Genetically Linked to Xenograft Transgenes. Swine in Biomedical Research Conference July 17-19, Chicago, IL. P 28.

267. Li, C., C. O’Gorman, **R.S. Prather**, J.A. Green, K.D. Wells. 2011. BWS symptoms in cloned piglets are associated with hypomethylation at the KCNQ-OT1 CpG island. Swine in Biomedical Research Conference July 17-19, Chicago, IL. P 35.
268. O’Gorman, C.W., J. Zhao, M.S. Samuel, E.M. Walters, **R.S. Prather**, P. Sutovsky, M. Sutovsky, K.D. Wells. 2011. Swine in Biomedical Research Conference July 17-19, Chicago, IL. P 36.
269. Whitworth, K.M., T. Egan, J.M. Teson, J.A. Green, K.D. Wells, **R.S. Prather**. 2011. Disruption the Sialoadhesin and CD163 Genes to Create Pigs Resistant to PRRSV Infectivity. Swine in Biomedical Research Conference July 17-19, Chicago, IL. P 39.
270. Whyte, J.J., S.C. Isom, E.M. Walters, W.G. Spollen, S.M. Blake, **R.S. Prather**. 2011. DNA methylome status and cloning efficiency in swine nuclear transfer (NT) donor cells. Swine in Biomedical Research Conference July 17-19, Chicago, IL. P 40.
271. Zhao, J.G., E.M. Walters, J. Calcaterra, L. Kelso, K. Giroux, M.S. Samuel, S. Butler, W.H. Velander, **R.S. Prather**. 2011. Increased propeptide processing of Factor IX in the milk of transgenic pigs by co-expression of Furin. Swine in Biomedical Research Conference July 17-19, Chicago, IL. P 41.
272. Nicholls, R.D., D.W. Lewis, B.J. Henson, S.M. Gollin, **R.S. Prather**. 2011. Porcine Genomic Domains Orthologous to the Human Prader-Willi Syndrome Chromosome Region. Swine in Biomedical Research Conference July 17-19, Chicago, IL. P 67.
273. Whyte, J.J., S.C. Isom, M. Samuel, A. Asadi, T.J. Kieffer, **R.S. Prather**. 2011. Human insulin expression under control of the *Sus scrofa* proximal GIP promoter in intestinal K cells of transgenic swine. Swine in Biomedical Research Conference July 17-19, Chicago, IL. P 41.
274. Telugu, B.P.V.L., T. Ezashi, S. Sinha, A.P. Alexenko, L. Spate, **R.S. Prather**, R.M. Roberts. 2011. LIF-dependent pluripotent stem cells established from inner cell mass of porcine embryos. Swine in Biomedical Research Conference July 17-19, Chicago, IL. P 41.
275. Whyte, J.J., **R.S. Prather**. 2011. Zinc-Finger Nucleases: New Innovations in Custom-Designed Modification of the Swine Genome. ADSA-ASAS Annual Meeting.
276. Nicholls, R.D., D.W. Lewis, K.L. Weichler, B.J. Henson, S.M. Gollin, **R.S. Prather**. 2011. Characterization of the porcine imprinted and nonimprinted genomic domains orthologous to the human Prader-Willi Syndrome chromosome region. 12th International Congress of Human Genetics and the 61st ASHG Annual Meeting, Montreal, CA, Oct 11-15.
277. **Prather, R.S.** 2011. Technical blocks to efficient pig cloning. CTS-IXA 2011 Joint International Congress, Miami, FL. Oct. 23-26.
278. Whitworth, K. J. Teson, K. Lee, J. Mao, K. Tessanne, L.D. Spate, **R.S. Prather**. 2012. The histone deacetylase inhibitor 4-iodo-Suberoylanilide Hydroxamic Acid (I-

- SAHA) improves total cell number in pig nuclear transfer blastocysts. International Embryo Transfer Society Annual Meeting. *Reprod. Fertil. & Devel.* 24: 125.
279. Spate, L.D., B.K. Bauer, K.M. Whitworth, W.G. Spollen, S.M. Blake, C.N. Murphy, J.L. Dowell, **R.S. Prather**. 2012. Altered mRNA Transcript Expression of *In Vitro* vs. *In Vivo* Matured Porcine Oocytes. International Embryo Transfer Society Annual Meeting. *Reprod. Fertil. & Devel.* 24:210.
280. Zhao, M.-T., X. Yang, K. Lee, J. Mao, J.M. Teson, K.M. Whitworth, M.S. Samuel, L. Spate, C.N. Murphy, **R.S. Prather**. 2012. The *in vivo* developmental potential of porcine skin-derived progenitors. International Embryo Transfer Society Annual Meeting. *Reprod. Fertil. & Devel.* 24:112.
281. Lee, K., J. Teson, L. Spate, C.N. Murphy, **R.S. Prather**. 2012. Granulocyte-macrophage colony-stimulating factor increases developmental potential of porcine embryos in vitro. International Embryo Transfer Society Annual Meeting. *Reprod. Fertil. & Devel.* 24:160-161.
282. Lichtenauer, A.M., L.D. Spate, **R.S. Prather**, J.A. Green. 2012. Inhibition of Cysteine Peptidases Improves Development of Porcine Cumulus-Oocyte-Complexes and Embryo Culture. International Embryo Transfer Society Annual Meeting. *Reprod. Fertil. & Devel.* 24:211.
283. Mao, J., K.M. Whitworth, L. Spate, E.M. Walters, K. Tessanne, J. Zhao, **R.S. Prather**. 2012. Regulation of mitochondrial DNA replication during oocyte maturation by follicular fluid, EGF, and neuregulin affects oocyte maturation and development International Embryo Transfer Society Annual Meeting. *Reprod. Fertil. & Devel.* 24:208.
284. Isom, S.C., J.R. Stevens, R. Li, W. Spollen, **R.S. Prather**. 2012. Transcriptional profiling by high-throughput sequencing of porcine pre- and peri-implantation embryos International Embryo Transfer Society Annual Meeting. *Reprod. Fertil. & Devel.* 24:184.
285. Tessanne, K., B. Bauer, K. Whitworth, L. Spate, A. Brown and **R.S. Prather**. 2012. Characterization of the PRMT-DDAH-NO axis during porcine embryo development. International Embryo Transfer Society Annual Meeting. *Reprod. Fertil. & Devel.* 24:185.
286. Teson, J., K. Lee, L. Spate, **R.S. Prather**. 2012. Dynamics of TET family during preimplantation development of porcine embryos. International Embryo Transfer Society Annual Meeting. *Reprod. Fertil. & Devel.* 24:183-184.
287. Yang, X., J. Mao, E.M. Walters, L.D. Spate, M. Zhao, J. Teson, K. Lee, K.M. Whitworth, and **R.S. Prather**. 2012. Treatment of Donor Cells with *Xenopus* Oocyte Extract Enhanced SCNT Embryo Development. International Embryo Transfer Society Annual Meeting. *Reprod. Fertil. & Devel.* 24:126.
288. Redel, B.K., L.D. Spate, A.N. Brown, and **R.S. Prather**. 2012. Supplementation with folate in vitro increases trophectoderm and total cell number in in vitro derived porcine blastocysts. International Embryo Transfer Society Annual Meeting. *Reprod. Fertil. & Devel.* 24:161.
289. Telugu, B.P., T. Ezashi, A. Alexenko, L. Spate, **R.S. Prather**, R.M. Roberts. 2012. Embryonic and induced pluripotent stem cells analogous to inner cell mass-derived LIF-dependent mouse embryonic stem cells established from the

- domestic pig, *sus scrofa*. International Embryo Transfer Society Annual Meeting. *Reprod. Fertil. & Devel.* 24:220.
290. Walters, E.M., Samuel, M.S., K.D. Wells, L.K. Riley, **R.S. Prather**. 2012. The pig as a biomedical model: How the National Swine Resource and Research Center can help you. DABE meeting in conjunction with the International Embryo Transfer Society Annual Meeting. *Reprod. Fertil. & Devel.* 24:284.
 291. Nicholls, R.D., B.J. Henson, D.W. Lewis, M. Dunn, K.L. Weichler, S.M. Gollin, **R.S. Prather**. 2012. Towards a porcine model for Prader-Willi Syndrome, a syndromic body fat disorder. NIDDK workshop on Rare Syndromic Body Fat Disorders: What can They Teach Us?, NIH, Bethesda, MD, March 1-2.
 292. Telugu, B.P.V.L., T. Ezashi, S. Sinha, A.P. Alexenko, L. Spate, **R.S. Prather**, R.M. Roberts. LIF-dependent, pluripotent stem cells established from inner cell mass of porcine embryos. *Transgenic Research* 21:906.
 293. Park, K.-W., K. Lee, L.D. Spate, C.N. Murphy, **R.S. Prather**. 2012. WTAP gene expression in in vivo and in vitro porcine oocytes. International Congress on Animal Reproduction.
 294. Telugu, B.P., T. Ezashi, A. Alexenko, S. Lee, **R.S. Prather**, R.M. Roberts. 2012. Porcine embryonic and induced pluripotent stem cells analogous to LIF-dependent, naïve embryonic stem cells of the mouse. ISSCR.
 295. Paczkowski, M., K.J. Strauss, J.R. Herrick, **R.S. Prather**, W.B. Schoolcraft, R.L. Krisher. 2012. Gene Expression Suggests Mouse and Bovine Pre-Implantation Embryos Utilize the Warburg Effect. SSR Annual Meeting #66.
 296. Lichtenauer, A.M., L.D. Spate, **R.S. Prather**, J.A. Green. 2012. Inhibition of Cysteine Peptidases Improves Development of Porcine Cumulus-Oocyte-Complexes and Embryo Culture. SSR Annual Meeting #309.
 297. Nicholls, R.D., M. Johnson, B.J. Henson, D.W. Lewis, M. Dunn, **R.S. Prather**, S.M. Gollin. 2012. Genomic and cytogenetic characterization of the porcine imprinted and three non-imprinted domains orthologous to the human Prader-Willi syndrome chromosome region. 26th Annual PWSA Scientific Day Conference. Pennington Biomedical Research Center, Baton Rouge, LA, Oct 19-20.
 298. Lee, K., A. Davis, L.D. Spate, C.N. Murphy, **R.S. Prather**. 2013. TET family is responsible for the appearance of 5-hydroxymethylcytosine during porcine embryo development. Plant and Animal Genome Meeting, San Diego, CA. P0598.
 299. Park, K.-W., K. Lee, L.D. Spate, C.N. Murphy, **R.S. Prather**. 2013. Effect of WTAP gene expression during in vitro maturation on the development of porcine embryos in vitro. SSR Annual Meeting Abs#620, page 260.
 300. Redel, B.K., K. Lee, L.D. Spate, and **R.S. Prather**. 2013. Preimplantation embryo development is dependent on glycine metabolism. SSR Annual Meeting Abs#630, page 264.
 301. Hamm, J., K. Tessanne, C.N. and **R.S. Prather**. 2013. TRIM28, SETDB1, and p53 Expression in Porcine Preimplantation Embryos. SSR Annual Meeting Abs#638, page 267-8.
 302. Mao, J., M.-T. Zhao, K.M. Whitworth, L.D. Spate, K. Lee, E. Walters, **R.S. Prather**. 2013. Oxamflatin treatment enhanced porcine SCNT embryo

- development and decreased DNA methylation. SSR Annual Meeting Abs#699, page 292.
303. Beaton, B.P., E.M. Walters, **R.S. Prather**, K.D. Wells. 2013. Recombinase-mediated gene stacking in swine. Transgenic Animal Conference, Tahoe City, CA.
 304. Whitworth, K.M., K. Lee, J. Mao, L.D. Spate, **R.S. Prather**. 2013. Transcriptome analysis of pig nuclear transfer blastocysts treated with histone deacetylase inhibitors post-fusion and activation. Transgenic Animal Conference, Tahoe City, CA.
 305. Lee, K., J.-H. Kim, **R.S. Prather**. 2013. Minimum length of homology in a donor DNA to facilitate homologous recombination during ZFN mediated gene targeting. Transgenic Animal Conference, Tahoe City, CA.
 306. Kwon, D.-N., K. Lee, N.-J. Kang, Y.-J. Choi, M.-R. Park, E.C. Wright, **R.S. Prather**, J.-H. Kim. 2013. Precision pig CMP-N-acetylneuraminic acid hydroxylase genome engineering for pig-human xenotransplantation. Transgenic Animal Conference, Tahoe City, CA. Transgenic Research 22:230.
 307. Walters, E.M., B.P. Beaton, M.S. Samuel, K.D. Wells, S. Schommer, **R.S. Prather**. 2013. Xenotransplantation resources available through the National Swine Resource and Research Center. International Xenotransplantation Association annual meeting, Osaka, Japan.
 308. Mao, J., M.-T. Zhao, K.M. Whitworth, L.D. Spate, K. Lee, E. Walters, **R.S. Prather**. 2013. Oxamflatin treatment enhances nuclear reprogramming by inhibiting XIST expression and reducing DNA methylation in porcine SCNT embryos. International Embryo Transfer Society, Reno, NV. Reprod Fertil Dev 26:125
 309. Lee, K., A. Davis, C.N. Murphy, **R.S. Prather**. 2013. A Novel method to increase developmental potential of activated oocytes using Zn²⁺ chelator TPEN (N, N, N', N'-tetrakis (2pyridylmethyl) ethylene diamine). International Embryo Transfer Society, Reno, NV. Reprod Fertil Dev 26:189
 310. Beaton, B.P., K. Lee, J.-H. Kim, **R.S. Prather**, K.D. Wells. 2013. Length of donor DNA homology to facilitate bi-allelic gene targeting during TALEN mediated gene targeting. International Embryo Transfer Society, Reno, NV. Reprod Fertil Dev 26:224
 311. **Prather, R.S.**, M.T. Zhao. 2014. Methylated DNA immunoprecipitation-Seq with low input DNA content. XXII Plant and Animal Genome meeting. San Diego, CA, Jan 10.
 312. Krisher, R.L., L.D. Spate, B.K. Redel, K. Lee, K.-W. Park, A. Heuberger, J.R. Herrick, W.B. Schoolcraft, **R.S. Prather**. 2014. Metabolomic profile of porcine blastocysts: role of intracellular lipids and glutamine metabolism. SSR Annual Meeting. P420.
 313. **Prather, R.S.**, E.M. Walters, K.D. Wells. 2014. Biologically relevant swine models of human disease. SSR Annual Meeting. P114.
 314. Lichtenauer, A.M., B.P. Beaton, **R.S. Prather**, E.M. Walters, K.D. Wells, A.M. Moon. 2014. Fibroblast growth factor-8 CRISPR/Cas9 mediated gene targeting in swine. Swine in Biomedical Research Conference, Raleigh, NC. July 6-8. P59.

315. Beaton, B.P., E.M Walters, A.M. Lichtenauer, M.D. Steinhoff, **R.S. Prather**, K.D. Wells. 2014. CRISPR/Cas9 mediated gene staking in swine. Swine in Biomedical Research Conference, Raleigh, NC. July 6-8. P34.
316. Spate, L.D., J. Benne, S. Murphy, J.A. Green, K.D. Wells, **R.S. Prather**. 2014. Altering donor cell metabolism increases development of cloned embryos to the blastocyst stage. Swine in Biomedical Research Conference, Raleigh, NC. July 6-8. P87.
317. Whitworth, K.M., K. Lee, J.A. Benne, B.P. Beaton, L.D. Spate, S.L. Murphy, M.S. Samuel, E.M. Walters, C.N. Murphy, A. Mileham, D. McLaren, K.D. Wells, **R.S. Prather**. 2014. Use of CRISPR/Cas9 system to produce pigs with a genetically modified CD163 gene by somatic cell nuclear transfer with in vitro derived oocyte. Swine in Biomedical Research Conference, Raleigh, NC. July 6-8. P103.
318. Scott, P.A., J. P. Fernandez de Castro, P.J. DeMarco, J.W. Ross, E. Walters, **R.S. Prather**, M.A. McCall, H.J. Kaplan. 2014. Pro-23-His transgenic miniature swine exhibit functional and morphological characteristics similar to humans with autosomal dominant retinitis pigmentosa. Swine in Biomedical Research Conference, Raleigh, NC. July 6-8. P82.
319. Nicholls, R.D., M.A. Johnson, F. Mompert, S.M. Gollin, **R.S. Prather**, M. Yerle. 2014. Somatic cell hybrids as a model system to study genomic imprinting and genome editing of pig chromosomes. Swine in Biomedical Research Conference, Raleigh, NC. July 6-8. P69.
320. Zhao, J., W. Xu, J.W. Ross, E.M. Walters, S.P. Butler, J.J. Whyte, L. Kelso, M. Fatemi, N.C. Vanderslice, K. Giroux, L.D. Spate, M.S. Samuel, C.N. Murphy, K.D. Wells, **R.S. Prather**, W.H. Velander. Bioengineering of the mammary gland of pig: increased pro-peptide processing of Factor IX in the milk of transgenic pigs by co-expression of soluble FURIN. Swine in Biomedical Research Conference, Raleigh, NC. July 6-8. P109.
321. Whyte, J.J., S.C. Isom, W.G. Spollen, **R.S. Prather**. 2014. Epigenetic regulation of gene expression by DNA methylation in porcine nuclear transfer donor cells and embryos produced by SCNT, in vivo and in vitro fertilization. Swine in Biomedical Research Conference, Raleigh, NC. July 6-8. P104.
322. **Prather, R.S.**, K.M. Whitworth, J.A. Green, K.D. Wells. 2014. Genetic engineering the pig to better understand PRRSv infection. North American PRRSv Symposium, Chicago, IL. Dec 5-6.
323. **Prather, R.S.**, K.M. Whitworth, J.A. Green, K.D. Wells. 2015. CRISPR/Cas9-Mediated Genetic Engineering: Is CD163 an Entry Mediator for PRRSv Infection? Plant and Animal Genome Meeting XXIII, San Diego Jan 10. W830.
324. Whyte, J.J., M.E. Hennessy, R.D. Geisert, **R.S. Prather**. 2015. Clustered regularly interspaced short palindromic repeat (CRISPR)/Cas9-directed inactivation of porcine interleukin-1B as a model to study endometrial receptivity and conceptus attachment. *Reprod. Fertil. and Dev.* 27:149-150.
325. Bartol, F.F., L. Spate, A. Samoylov, A. Cochran, V. Petrenko, **R.S. Prather**, T. Samoylova. 2015. Phage-peptide constructs for immunocontraception of wild pigs: effects on events associated with fertilization in vitro. Society for the Study of Reproduction annual meeting. #443.

326. Yuan, Y., J.-K. Park, Y. Tian, L.D. Spate, **R.S. Prather**, T. Ezashi, R.M. Roberts. 2015. Conversion of epiblast type porcine induced pluripotent stem cells into ground state naïve pluripotent stem cells. Society for the Study of Reproduction annual meeting. #37.
327. Whitworth, K.M., J.A. Benne, L.D. Spate, S.L. Murphy, J.A. Richt, E. Walters, K.D. Wells, **R. S. Prather**. 2015. Zygote injection of CRISPR/Cas9 RNA successfully modifies the target gene without delaying blastocyst development or changing the male:female sex ratio in pigs. Society for the Study of Reproduction annual meeting. #444.
328. Kang, J.-T., D.-K. Kwon, A.-R. Park, E.-J. Lee, Y.-J. Yun, D.-Y. Ji, B. Beaton, K.D. Wells, **R.S. Prather**, K.-W. Park. 2015. Development of human insulin secreting pigs for xenon-islet cell transplantation. Society for the Study of Reproduction annual meeting. #386.
329. Whitworth, K.M., J.A. Benne, B.P. Beaton, L.D. Spate, S.L. Murphy, M.S. Samuel, E.M. Walters, C.N. Murphy, K.D. Wells, **R.S. Prather**. 2015. Using the CRISPR/Cas9 system to edit specific genes in pig zygotes. American Society of Reproductive Immunology, Kingston, ON, Canada. June 4.
330. Kang, J.-T., D.K. Kwon, E.J. Lee, Y.-J. Yun, D.Y. Ji, S.M. Ahn, J.S Lee, B.P. Beaton, K.D. Wells, **R.S. Prather**, K.-W. Park. 2015. Development of porcine cells that lack porcine insulin expression and harbor a human insulin expression vector be used for xenon-islet cell transplantation. IPITA-IXA-CTS (Submitted).
331. Nicholls, R.D., M.A. Johnson, F. Mompert, S.M. Gollin, K.D. Wells, **R.S. Prather**, M. Yerle. 2015. Somatic cell hybrids as a model system to evaluate genome editing and genomic imprinting of pig chromosomes in the development of pre-clinical large animal models. Am. Soc. Hum. Genet. 65th Annual Meeting, Baltimore, MD.
332. Samoylova, S. A. Cochran, A. Samoylov, B. Schemera, L.D. Spate, **R.S. Prather**, S. Ditchkoff, V. Petrenko, F. Bartol. 2015. Population control of wild pigs by using phage-based constructs developed to simulate production of anti-sperm antibodies. 22nd Annual Wildlife Society Conference, Winnipeg, Canada.
333. **Prather, R.S.**, K.M. Whitworth, K.D. Wells, A.J. Mileham. 2015. The role of CD163 and SIGLEC1 in Sensitivity to Porcine Reproductive and Respiratory Syndrome Virus Infection. N.A. PRRSV Conference, Chicago, IL, Dec 4-5.
334. **Prather, R.S.** 2016. The Role of *CD163* in the Sensitivity to Porcine Reproductive and Respiratory Syndrome Virus. Plant and Animal Genome Meeting, San Diego Jan 9.
335. Mordhorst, B.R., S.L. Murphy, L.D. Spate, R.M. Ross, K.D. Wells, J.A. Green, **R.S. Prather**. 2016. Reduction of mitochondrial function, proliferation, and gene expression in fibroblasts donor-cells for use in SCNT by CPI-613 and PS48. International Embryo Transfer Society annual meeting. Reproduction, Fertility and Development 28:141-142.
336. Spate, L.D., B.K. Redel, **R.S. Prather**. 2016. Early porcine embryo energy preference and subsequent development. International Embryo Transfer Society annual meeting. Reproduction, Fertility and Development 28:170.

337. Benne, J.A., L.D. Spate, B.M. Elliott, S. Murphy, **R.S. Prather**. 2016. In low oxygen culture, is hypotaurine necessary for in vitro development of porcine embryos? International Embryo Transfer Society annual meeting. *Reproduction, Fertility and Development* 28:171.
338. Whitworth, K., S.L. Murphy, J.A. Benne, L.D. Spate, E. Walters, W.J. Raymond, S.L. Nyberg, K.D. Wells, **R.S. Prather**. 2016. Genome editing of somatic cell nuclear transfer derived zygotes by CRISPR/Cas9 guide RNA injection. International Embryo Transfer Society annual meeting. *Reproduction, Fertility and Development* 28:142-143.
339. Redel, B.K., L.D. Spate, B. Elliott, M. Paczkowski, R.L. Krisher, **R.S. Prather**. 2016. Porcine embryos utilize small amounts of pyruvate, lactate and glucose in vitro. International Embryo Transfer Society annual meeting. *Reproduction, Fertility and Development* 28:171.
340. Bryda, E.C., H. Men, Y. Agca, A.C. Ericsson, J.M. Amos-Landgraf, C.L. Franklin, **R.S. Prather**. 2016. Rat resource and research center. 13th Transgenic Technology Meeting, March 20-23, Prague, Czech Republic.
341. Gruber, P., K. Wells, A. Spate, E. Walters, A. Firment, A.K. Kashyap, G. Baccam, **R.S. Prather**, A. Moon. 2016. The first large-animal, gene-targeted model of congenital heart disease and the future of surgical training. 4th joint meeting of the Congenital Heart Surgeons' Society and the European Congenital Heart Surgeons' Association, Venice, Italy June 22-24. Poster O-32.
342. Spate, L.D., Y. Yuan, **R.S. Prather**, R.M. Roberts. 2016. A combination of three growth factors can enhance porcine embryo development during in vitro culture. Society for the study of Reproduction Annual Meeting, San Diego, CA. #343.
343. Redel, B.K., Y. Yuan, L.D. Spate, **R.S. Prather**, R.M. Roberts. 2016. FGF2, LIF and IGF-1 added together during maturation and culture improve somatic cell nuclear transfer embryo development and overall efficiency. Society for the study of Reproduction Annual Meeting, San Diego, CA. #345.
344. Yuan, Y., L.D. Spate, B.K. Redel, **R.S. Prather**, R.M. Roberts. 2016. A combination of three cytokines enhances porcine oocyte in vitro maturation and developmental competence. Society for the study of Reproduction Annual Meeting, San Diego, CA. #531.
345. **Prather, R.S.** 2016. CD163 A gatekeeper for susceptibility to porcine reproductive and respiratory syndrome virus. *J Anim. Sci.* 94, Suppl 4, 6.
346. Gaudreault, N., K.M. Whitworth, L. Popescu, M. Murgia, J. Niefeld, A. Mileham, K.D. Wells, **R.S. Prather**, R.R.R. Rowland. 2016. Pigs lacking CD163 expression on macrophages show no resistance to infection with African Swine Fever Virus. Global African Swine Fever Research Alliance, September 6-8, Ploufrang, France.
347. Mordhorst, B.R., S.L. Murphy, J.A. Benne, B.K. Redel, L.D. Spate, K.D. Wells, J.A. Green, **R.S. Prather**. 2016. Reduced mitochondrial function and gene expression in porcine donor-fibroblasts treated with CPI-613 or PS48 does not negatively impact subsequent in vitro clone development after somatic cell nuclear transfer. Large Animal Genetic Engineering conference. Bethesda, MD September 19-20.
348. **Prather, R.S.**, K.D. Wells. 2016. Resources for genetically engineered swine. Large Animal Genetic Engineering conference. Bethesda, MD September 19-20.

349. Nicholls, R.D., B.K. Redel, L. Ghaloul-Gonzalez, K.J. Skvorak, S.F. Dobrowolski, M.E. Yates, M.A. Johnson, D.W. Lewis, S.M. Gollin, L.D. Spate, J. Benne, S. Murphy, M.S. Samuel, E.M. Walters, S.A. Hansen, K.D. Wells, J. Vockley, **R.S. Prather**. Porcine model of phenylketonuria (PKU) generated by CRISPR/Cas9 genome editing. Science 2016 (U. Pitt.)
350. Nicholls, R.D., B.K. Redel, L. Ghaloul-Gonzalez, K.J. Skvorak, S.F. Dobrowolski, M.E. Yates, M.A. Johnson, D.W. Lewis, S.M. Gollin, L.D. Spate, J. Benne, S. Murphy, M.S. Samuel, E.M. Walters, S.A. Hansen, K.D. Wells, J. Vockley, **R.S. Prather**. Porcine model of phenylketonuria (PKU) generated by CRISPR/Cas9 genome editing. Pitt Brain Day 2016 (U. Pitt.)
351. **Prather, R.S.** 2016. Precision breeding to advance animal health and welfare. USAHA/AAVLD meeting October 17, Greensboro, NC.
352. **Prather, R.S.** 2016. Genome editing for PRRSV resistance and beyond. North American PRRSV Symposium. Chicago, IL Dec 5-6. Abs #S5.
353. Popescu, L.N., N. Gaudreault, K.M Whitworth, MV. Murgia, J.C. Nietfeld, A. Mileham, M. Samuel, K.D. Wells, **R.S. Prather**, R.R.R. Rowland. Genetically edited pigs lacking CD163 show no resistance following infection with the African Swine Fever Virus isolate Georgia 2007/1. North American PRRSV Symposium. Chicago, IL Dec 5-6. Abs #47.
354. Spate, A.M., K.M. Whitworth, C.W. O’Gorman, A.K. Byrne, **R.S. Prather**, K.D. Wells. 2017. The use of paired CRISPR guide RNAs and the Cas9 system does not always produced site specific deletions of gene sequence in porcine cell and embryo culture. International Embryo Transfer Society annual meeting Abs #26. *Reprod. Fertil. Devel.* 29:120.
355. Spate, L.D., J.A. Benne, S.L. Murphy, **R.S. Prather**. 2017. In vitro matured gilt oocytes can have equal or better developmental competence than sow oocytes with new maturation media. International Embryo Transfer Society annual meeting Abs #86. *Reprod. Fertil. Devel.* 29:150.
356. Mordhorst, B.R., S.N. Bogue, K.D. Wells, J.A. Green, **R.S. Prather**. 2017. Oxygen deprivation does not further augment mitochondrial membrane potential in pharmacologically treated fibroblasts for use in somatic cell nuclear transfer. International Embryo Transfer Society annual meeting Abs #30. *Reprod. Fertil. Devel.* 29:122.
357. Redel, B.K., B. Beaton, L.D. Spate, J. Benne, S. Murphy, C. O’Gorman, **R.S. Prather**, K.D. Wells. 2017. Alternative source of Cas9 mRNA with improved efficiency of modifications and decreased cost. International Conference on Pig Reproduction, Columbia, MO June 11-14. Abst #?
358. Pfeiffer, C.A., B.K. Redel, L.D. Spate, **R.S. Prather**. 2017. Addition of palmitate to porcine embryo culture improves the number of nuclei in the resulting blastocyst stage embryos. International Conference on Pig Reproduction, Columbia, MO June 11-14. Abst #?
359. Yuan, Y., J. Park, Y. Tian, L.D. Spate, **R.S. Prather**, R.M. Roberts, T. Ezashi. 2017. Culture conditions employing small molecules for generating porcine induced pluripotent stem cells reprogrammed by episomal plasmids. International Conference on Pig Reproduction, Columbia, MO June 11-14. Abst #?

360. Meyer, A.E., R.D. Geisert, T.E. Spencer, **R.S. Prather**, K.E. Brooks, L. Spate, J. Benne, S. Murphy. 2017. Generation of aromatase (*CYP19A1*) null embryos for evaluation of estrogen's role in conceptus development and establishment of pregnancy. International Conference on Pig Reproduction, Columbia, MO June 11-14. Abst #?
361. Mordhorst, B.R. K.A. Tessanne, S.K. Behura, K.D. Wells, **R.S. Prather**. 2017. Differential regulation of pathways in porcine fetal fibroblasts in response to culture serum quality. International Conference on Pig Reproduction, Columbia, MO June 11-14. Abst #?
362. Murphy, S.L., B.R. Mordhorst, J.A. Benne, R.F. Cecil, **R.S. Prather**. 2017. Successful blastocyst development of parthenogenetic porcine embryos by non-chemical low calcium activation. International Conference on Pig Reproduction, Columbia, MO June 11-14. Abst #?
363. Whyte, J.J., R.D. Geisert, **R.S. Prather**. 2017. Developmental and morphological changes during preimplantation in a conceptus interleukin-1 β (*IL1BL*) knockout pig embryo model. International Conference on Pig Reproduction, Columbia, MO June 11-14. Abst #?

Other

1. **Prather, R.S.** 1984. Development and evaluation of cryopreservation techniques for bovine embryos. Master's Thesis. Kansas State University.
2. **Prather, R.S.** 1987. Developmental analysis of murine embryos after chimerization with a highly asynchronous blastomere. PhD Dissertation. University of Wisconsin-Madison.

Theses and Dissertations Supervised

Rick A. Schoenbeck. 1992, MS Thesis. Characterization of DNA synthesis and the transition from maternal to embryonic control in the 4-cell porcine embryo.

Mario Mayes. 1994. MS Thesis. Parthenogenetic activation of porcine oocytes by protein kinase inhibitors.

Wendy J. Jolliff. 1997. MS Thesis. Parthenogenetic development of in vitro matured, in vivo cultured porcine oocytes beyond blastocyst

Kristin Whitworth. 1997. MS Thesis. Parthenogenetic activation of porcine oocytes by specific protein kinase inhibitors.

Jae-Hwan Kim. 1999. PhD Dissertation. Involvement of G protein and protein tyrosine kinase signal transduction in pig oocyte activation.

Hyun-Jin Do. 1999. MS Thesis. Expression of pregnancy-associated glycoprotein 1 and 2 genes in in vitro-, in vivo- and parthenogenetically-derived preimplantation pig embryos.

Jon E. Anderson. 2000. PhD Dissertation. Cell cycle regulation in the early porcine embryo.

Nancy T. Ruddock. 2000. PhD Dissertation. Intracellular pH regulation in the early porcine embryo.

David Bart Carter. 2002. MS Thesis. Phenotyping cloned pigs.

Ryan Asa Cabot. 2002. PhD Dissertation. Developmental dynamics of nuclear trafficking in the porcine embryo.

Jennifer Alexis Luth. 2002. MS Thesis. Histone acetylation patterns in preimplantation porcine embryos.

Steven Clay Isom. 2006. PhD Dissertation. The effects of elevated temperature on preimplantation-stage porcine embryos.

Lisa M. Martin. 2006. MS Thesis. Morphologic and histological comparisons between in vivo and nuclear transfer derived porcine embryos.

Aaron J. Bonk. 2007. PhD Dissertation. DNA methylation in the early porcine embryo.

Courtney McHughes. 2007. MS Thesis. Identification and quantification of differentially represented transcripts in preimplantation bovine embryos.

Jin Geol Kim. 2007. MS Thesis. Comparative transcriptional profiling of the uterus according to stage of the estrous cycle and pregnancy status in gilts.

Kyle B. Dobbs. 2010. MS Thesis. The role of cytoplasmic polyadenylation element sequence mRNA abundance in porcine embryogenesis and parthenogenetic development.

Bethany K. Bauer. 2010. MS Thesis. Transcriptional profiling by deep sequencing identifies differences in mRNA transcript abundance in in vivo vs. in vitro cultured porcine blastocyst stage embryos.

Kristin M. Whitworth. 2010. PhD Dissertation. Differential gene and protein expression in pig nuclear transfer extraembryonic membranes and blastocyst stage embryos.

Jennifer Hamm. 2013. MS Thesis. Abundance of *TRIM28*, *SETDB1*, and *TP53* mRNA is dynamically regulated during porcine early embryogenesis and is abnormal in preimplantation embryos produced by *in vitro* fertilization in comparison to *in vivo* derived and nuclear transfer derived embryos.

Ming-Tao Zhao. 2013. PhD Dissertation. Stem cells and DNA methylation reprogramming in pigs.

Bethany K. Redel. 2014. PhD Dissertation. Transcriptional profiling to improve porcine preimplantation embryo development.

INVITED PRESENTATIONS

Speaker – **Nidovirus meeting.** Kansas City, MO, June 4, '17.

Speaker – **New Technologies and Large Animal Models in Biomedical Research.** Michigan State University March 27, '17. "Genome editing- state of the art, promises, pitfalls, & applications."

Speaker – **Banff Pork Seminar.** Banff, Canada, Jan. 10-13, '17. "Editing the genome for PRRSV resistance: where can we go from here?"

Speaker- **University of Pennsylvania- Orphan Disease Center**. Dec. 15, '16. "Genetically engineered swine as biomedical models." Tag team presentation with Kevin Wells.

Keynote Speaker – **Conference of Research Workers in Animal Diseases**. Chicago, IL. Dec. 4, '16. "Genetic engineering for host resistance to PRRSV and other swine diseases."

Speaker – **Immunobiology of Xenotransplantation Steering Committee**. NIH, Rockville, MD. Nov 9, '16. "Advancing the understanding of human health and disease using biomedical swine models."

Speaker – **United States Animal Health Association/American Association of Veterinary Laboratory Diagnosticians joint meeting**. Greensboro, NC, Oct. 17, '16. "Precision breeding to advance animal health and welfare."

Speaker – **Large Animal Genetic Engineering Summit**. Bethesda, MD, Sept. 19-20, '16. "Development of animal models and the National Swine Resource and Research Center."

Speaker – **Elite Jarvis Commercial Swine VIP Top Hog Summit**, Purina, Gray Summit, MO. Sept. 13, '16. "Genetic editing – Using genetics to change risk factors."

Speaker – **Gordon Conference** on Regulatory Processes Modulating Mammalian Reproduction. Waterville Valley, NH Aug. 21-26, '17. "Editing the pig genome for agriculture and biomedicine."

Speaker – **NIH Resource Center Directors Meeting**. Bethesda, MD, Sept. 19-20, '16. "CRSIPR bacon: Knockouts made easy- a sizzling story."

Speaker – **Midwest Boar Stud Managers Conference V**. St. Louis, MO, Aug. 4, '16. "Genetic editing for resistance to porcine reproductive and respiratory syndrome virus."

Speaker – **International Society of Animal Genetics**. Salt Lake City, UT July 23-26, '16. "CD163: a gatekeeper for susceptibility to porcine reproductive and respiratory syndrome virus."

Speaker – **NCERA-57 Mini-symposium**, Interactions of health and reproduction in swine. Columbia, MO May 24, '16. "The pig that could not get PRRS and how reproduction could be affected next."

Speaker – **2016 PIC Symposium**. Nashville, NC May 10-11. "Editing the genome for PRRSV resistance: a new dawn for hog farming."

Speaker – **Association for Research in Vision and Ophthalmology** annual meeting. Seattle, WA. May 2, '16. "The pig as a large animal model"

Speaker – **Top Hog Summit**, Purina, Gray Summit, MO. April 19, '16. "Genetic editing – Using genetics to change risk factors."

Speaker – **Food and Drug Administration**, Rockville, MD. Feb 34, '16. "The role of CD163 in the sensitivity to the porcine reproductive and respiratory syndrome virus."

Speaker – **Plant and Animal Genome** meeting, San Diego, CA. Jan, 9, '16. "The role of CD163 in the sensitivity to the porcine reproductive and respiratory syndrome virus."

Speaker- **North American Porcine Reproductive and Respiratory Syndrome Symposium**. Chicago, IL. Dec. 5, '15. "The role of CD163 in the sensitivity to the porcine reproductive and respiratory syndrome virus."

Speaker – **American Heart Association**. Orlando, FL. Nov. 10, '15. "Transgenic pigs – How to create them and extant cardiovascular disease models."

Speaker – **University of Minnesota**. Minneapolis, MN. Oct. 28, '15. "Genetically engineered swine as models of human disease."

Speaker – **University of Iowa**. Iowa City, IA. Sept. 17, '15. "Genetically engineered swine as models of human disease."

Speaker – **International Society of Radiopharmaceutical Sciences**, 2015 Meeting, University of Missouri, Columbia, MO, May 26-31, '15. "Resources Available at the NSRRC."

Speaker – **Virginia Polytechnic Institute**, Blacksburg, VA, May 1, '15. "Genetic Engineering for Profitable Pork Production: Is Resistance to PRRSv Possible?"

Speaker – **XXIII Plant and Animal Genome Meeting**, San Diego, CA, Jan. 10, '15. "CRISPR/Cas9-Mediated Genetic Engineering: Is CD163 an Entry Mediator for PRRSv Infection?"

Speaker- **Amgen**. Thousand Oaks, CA, Dec. 16, '14. "Genetic Engineering to Study Cardiovascular Disease."

Speaker- **Zoetis**. Kalamazoo, MI, Dec. 10, '14. "Genetic Engineering Pigs: Examples from Medicine and Agriculture."

Speaker- **North American Porcine Reproductive and Respiratory Syndrome Symposium**. Chicago, IL. Dec. 6, '14. "Genetic Engineering Pigs to Better Understand PRRSv Infection."

Speaker- **American Heart Association**. Chicago, IL. Nov. 17, '14. "Generation of genetically engineered pigs as models of human disease".

Speaker- **Mizzou Epigenetics Day**. University of Missouri, Columbia, MO. Nov 6, '14. "Reprogramming DNA methylation during porcine embryogenesis".

Speaker- **A Developmental Tale: Metabolism Takes Centre Stage**. A satellite meeting of the World Congress of Reproductive Biology, Edinburgh, Scotland, Sept 1-2, '14. "Transcriptional profiling as a tool to understand embryo metabolism".

Speaker – **47th Annual meeting of the Society for the Study of Reproduction**. Grand Rapids, MI, July 19-22, '14. "Biologically relevant swine models of human disease".

Speaker – **XXII Plant and Animal Genome Meeting**, San Diego, CA, Jan 10, '14. "Methylated DNA immunoprecipitation (MeDIP) by using low amounts of DNA".

Speaker – **4th Mammalian Embryo Genomics Meeting**, Quebec City, Canada. Oct. 9-11, '13. "Genomic profiling to improve pig embryogenesis".

Speaker – **9th International Conference on Pig Reproduction**, Olsztyn, Poland. June 10-13, '13. "Transcriptional profiling of oocyte maturation and embryonic development elucidates metabolism and control of development".

Speaker – **National Swine Improvement Federation -International PRRS Symposium**, Marriott KC, Kansas City, MO. November 29-30, '12. "Genetic engineering of pigs for PRRSV resistance."

Speaker – **World Animal Health Congress**, InterContinental Hotel, Kansas City, MO. November 27-28, '12. "Creating genetically engineered pig models for custom testing."

Speaker – **BIO 2012 Livestock Biotech Summit**. Crowne Plaza, Kansas City, MO. September 19-21, '12. "The NSRRC and genetic engineering of swine".

Speaker – **Reproductive and Developmental Genomics**, Molecular Reproduction & Development Board Meeting, Cornell, Ithaca, NY. June 14-15, '12. "Genomic Profiling to Improve Assisted Reproductive Technologies in the Pig."

Speaker – **National Institutes of Health**- Councils of Councils meeting. NIH Campus, Bethesda, MD. June 5, '12. "The NSRRC and Genetic Engineering of Swine."

Speaker – **University of Kentucky**, Department of Biology. Lexington, KY. March 28-30, '12. "Development and Implementation of Systems for Genetic Modification in Pigs."

Speaker- **CTS-IXA 2011 Joint International Congress**, Miami, FL. Oct. 23-26, '11. "Technical Blocks to Efficient Pig Cloning."

Speaker – **American Association of Laboratory Animal Sciences, Kansas City area branch**. Kansas City, MO, Sept. 15, '11. "Genetically Engineered Pigs for Research."

Speaker- **Kansas State University**, Manhattan, KS. July 28, '11. "Development and Implementation of Systems for Genetic Modification in Pigs."

Speaker- **Reproduction & Regeneration**, University of Pennsylvania. Philadelphia, PA. June 13-14, '11. "The Multi-Potentiality of Pig Skin-Derived Stem Cells."

Speaker – **Advances in Reproductive Biology and Genetics**. Mizzou Advantage, University of Missouri, May 16-17, '11. Columbia, MO. "Development and Implementation of Systems for Genetic Modification in Pigs."

Speaker – **Plasticity, Fate, Control and Therapeutic Safety of Stem Cells**, DABE Workshop at the International Embryo Transfer Society annual meeting, January 8-12, '11. Orlando, Florida. "The Multi-Potentiality of Skin-Derived Stem Cells."

Speaker – **Mechanisms of Egg Maturation and Fertilization: From Sea to Land**. September 9-12, '10. Friday Harbor Laboratories, San Juan Island, WA. "Genetic Modification of Swine for Agriculture and Medicine."

Speaker – **9th World Congress on Genetics Applied to Livestock Production**. August 1-6, '10. Leipzig, Germany. "Genetic Modification of Swine for Agriculture and Medicine."

Speaker – **College of Agricultural, Consumer and Environmental Sciences – Distinguished Speaker Series**. July 21-22, '10. University of Illinois. "Genetically Engineered Swine Models to Study Diseases like Cystic Fibrosis."

Speaker – **Missouri Life Science Summit** – Animal to Human Health Collaborations. March 8-9, '10. University of Missouri – Kansas City, Kansas City

Missouri. "Genetically engineered swine models to study diseases like cystic fibrosis."

Speaker – **NRSP8/Plant and Animal Genome**. January 10, '10. San Diego, CA. "Genetic Modification of Pigs Via Cloning."

Speaker – **Swine Genome Sequencing Consortium**: A celebration for completing the pig genome sequence. November 2-4, '09. Hinxton, UK. "Transgenesis and Biomedical Models."

Speaker – **University of Pennsylvania School of Veterinary Medicine** – 125th Anniversary Research Symposium. June 17, '09. Philadelphia, PA. "Transgenic and Cloned Pig Models of Cystic Fibrosis and Other Diseases."

Speaker – **8th International Conference on Pig Reproduction**. June 1-3, '09. Banff, Alberta, Canada. "Transcriptional, Post-Transcriptional and Epigenetic Control of Porcine Embryogenesis."

Speaker – **Purdue Agriculture Experiment Station**. May 21, '09. West Lafayette, IN. "Genetically Modified Swine for Medicine and Agriculture".

Speaker – **Molecular Reproduction and Development Conference**. March 19-21, '09. Brown University, Providence, RI. "Transcriptional, Post-Transcriptional and Epigenetic Control of Porcine Embryogenesis."

Speaker – **Billy N. Day Symposium** at the Midwest Section of the American Association of Animal Scientists annual meeting. March 17, '09. Des Moines, IA. "Basic Studies in Reproduction Laid the Foundation for Genetic Modification of Swine: Where Do We Go Next?"

Speaker – **American Society for Reproductive Medicine**. November 8-12, '08. San Francisco, CA. "Heart-Healthy Pork, Pig Organs for Humans, Green Eggs and Ham: How Genetically Modified Pigs Can Benefit You".

Speaker – **National Association of State Universities and Land Grant Colleges**. April 6, '08. Columbia, MO. "Life Sciences Research in Animal sciences at the University of Missouri: Genetically Modified Swine for Medicine and Agriculture".

Speaker – **Swine in Biomedical Science**. April 2-3, '08. San Diego, CA. "Genetic Modification in Swine: Current Status".

Speaker – **Transgenic Animal Conference VI**. August 12-16, '07. Granlibakken Conference Center, Tahoe City, CA. "Heart-healthy pork: *hFat-1* transgenic swine".

Speaker – **Advantages of Agriculturally Important Domestic Species as Dual-Use Models in Animal Agriculture and Biomedicine, NIH**. April 19-20, '07. Lister Hill Auditorium, Bethesda, MD. "Genetic Modification of Swine for Medicine and Agriculture".

Kiracofe Invited Lectures- **Kansas State University**. March 26-28, '07. Manhattan, KS. "Genetic Modification of Swine for Medicine and Agriculture", "Swine Embryogenesis: Technologies to Improve Reproduction", "Gene Expression During Swine Embryogenesis: Transcriptional Profiling and Differential Methylation Hybridization".

Speaker- **Utah State University**. March 1, '07. Logan, UT. "Genetic Modification of Swine for Medicine and Agriculture".

Walter Randall Lecturer for 2006. American Physiological Society, Experimental Biology Annual Meeting, April 1-5, '06. San Francisco, CA. "Transgenic animals for medicine and agriculture: do the ends justify the means?"

Speaker- **Oklahoma State University.** March 9 & 10, '06. Stillwater, OK. "Gene Expression During Pig Embryogenesis: Transcriptional profiling and differential methylation hybridization", and "Genetic Modification of Swine for Medicine and Agriculture".

Speaker – **University of Wisconsin-Madison.** Dec. 8 & 9, '05. Madison, WI. Endocrinology, Reproductive Physiology Training Program. "Gene Expression During Pig Embryogenesis".

Speaker – **American Association of Lab Animal Scientists,** Annual Meeting November 6-10, '05. St. Louis, MO. "Transgenic Approaches to Develop Swine Models".

Speaker – **Institute for Theological Encounter with Science and Technology.** Biological Advance Patenting and the Law. October 14-16, '05. Belleville, IL. "Discussion of Reproductive Biotechnologies for the Institute for Theological Encounter with Science and Technology".

Speaker- **Missouri State University.** Sept. 21 & 22. '05. Springfield, MO. "Genetic Modification of Swine for Medicine and Agriculture" and "Swine and Bovine Genomics Research with a Focus on Female Reproduction"

Speaker- **7th International Conference on Pig Reproduction.** June 14, '05. Rolduc Abbey, The Netherlands. "Pig Reproduction: A Look Back, and Ahead."

Speaker- **University of Iowa.** April 18, '05. Univ. of Iowa Gene Therapy Center Annual Retreat. Iowa City, IA. "Genetic Modification of Swine for Medicine and Agriculture."

Speaker- **Iowa State University.** March 23-24, '05. Ames, IA. "Genetic Modification of Swine for Medicine and Agriculture."

Speaker- **University of Connecticut-Storrs.** February 24-25, '05. Storrs, CT. "Genetic Modification of Swine for Medicine and Agriculture" & "Gene Expression During Pig Embryogenesis as Determined by Using a Pig Reproductive Tissue-Specific Microarray."

Speaker- **Swine in Biomedical Research,** Chicago IL. January 27, '05. "Perspectives on Porcine Transgenesis and Cloning."

Speaker- **Plant & Animal Genome-XIII Swine Workshop Program,** San Diego, CA. January 15, '05. "Gene Expression During Pig Embryogenesis as Determined by Using a Pig Reproductive Tissue-Specific Microarray."

Speaker- **Monsanto Company, Inc.** Chesterfield, MO. November 19, '04. "Gene Expression During Pig Embryogenesis as Determined by a Pig Reproductive Tissue-Specific Microarray".

Speaker- Workshop on **Advantages of Agriculturally Important Domestic Species as Biomedical Models.** Michigan State University, East Lansing, MI. October 29-31, '04. "Swine as Biomedical Models".

Speaker- **American Embryo Transfer Association**. Tampa, FL. October 14-16, '04. "Genetic Modification of Swine for Medicine and Agriculture".

Speaker- **Society for the Study of Reproduction**- Annual Meeting. Vancouver, BC, Canada. Aug. 1, '04. "Genetic Modification of Pigs for Medicine and Agriculture"

Speaker- **American Association of Animal Scientists**- Annual Meeting, St. Louis, MO. July 26, '04. "Swine and Bovine Genomics Research with a Focus on Female Reproduction".

Speaker- **Gordon Research Conference** – Reproductive Tract Biology, New London, CT. June 6-11, '04. "Development, 'or lack thereof', of nuclear transfer-derived embryos".

Speaker- **Washington University**, St. Louis, MO, December 17, '03. "Genetic Modification of Swine for Medicine and Agriculture".

Speaker- **Korean Conference on Innovative Science and Technology**. Jeju Island, South Korea. November 12-14, '03. "Genetic Modification of Swine for Medicine and Agriculture".

Speaker- **Food & Drug Administration**. October 7, 2003, Rockville, MD. "Transgenic Pigs for Medicine and Agriculture".

Speaker- **International Conference on Transgenic Animal Production**. August 10-14, '03. Tahoe, CA. "Transgenic Pigs for Medicine and Agriculture".

Speaker- **American Meat Science Association**, June 18, '03. Columbia, MO. "Use of Cloning and Transgenesis in Pigs"

Speaker-**Nebraska Physiological Society**, May 23, '03. Lincoln, NB. "Specific Genetic Modifications to Swine: Application to Medicine and Agriculture".

Distinguished Lecturer- **University of Florida's Animal Molecular and Cell Biology Graduate Program**- 1st Annual Research Symposium. May 2-3, '03. The Whitney Laboratory, Marineland, FL. "Swine and Bovine Genomics Research with a Focus on Female Reproduction"

Speaker- **University of Florida**, May 2, '03. Gainesville, FL. "Transgenic Pigs for Medicine and Agriculture"

Speaker- **Genetics at Science City**, Union Station, Kansas City, MO. April 28, '03. "Transgenic Pigs for Medicine and Agriculture"

Grand Rounds-Ob/Gyn, **Case Western Reserve University**, MacDonald Women's Hospital. March 5, '03. Cleveland, OH. "Transgenic Pigs for Medicine and Agriculture"

Speaker- **International Embryo Transfer Society**, January 13, '03. Auckland, New Zealand. "Transgenic Pigs for BioMedicine and Agriculture".

Speaker – **Linda Hall Library**. December 9, '02. Kansas City, MO. "Swine with Specific Genetic Modifications: Cloning & Xenotransplantation".

Speaker- **American Heart Association** Annual Meeting, November 17-20, '02. Chicago, IL. "Xenotransplantation: Genetic Modification to Overcome the Barriers".

Speaker- **Minority Donor Awareness Society**, October 4, '02. Kansas City, MO. "Xenotransplantation- Genetic Modification in Swine".

Speaker- **Iowa State University**. September 17, '02. Ames, IA. "Transgenic Pigs for Biomedicine and Agriculture".

Speaker- **Monsanto Company**. September 4, '02. Chesterfield, MO. "Transgenic Pigs for Biomedicine and Agriculture".

Speaker- **First International Workshop on Embryo Genomics in Farm Animals**, July 20, '02. Quebec City, Quebec, Canada. "Large Scale EST Project to Discover Genes of Importance to Pig Reproduction".

Speaker- **Harvard Medical School**. Massachusetts General Hospital/Transplantation Biology Research Center/Immerge BioTherapeutics, May 24, '02. Charlestown, MA. "Transgenic Pigs for Biomedicine and Agriculture".

Speaker- **University of Illinois**, May 1, '02. "Transgenic Pigs for Biomedicine and Agriculture".

Speaker- **Secretary's Advisory Committee on Xenotransplantation**, March 11, '02. National Institutes of Health, Bethesda, MD. "Transgenic Pigs for Biomedicine and Agriculture".

Speaker- **Mo-Kan Reproductive Biology Workshop**, November 3, '01. Columbia, MO. "Nuclear Transfer in Swine- Cloning & Transgenesis: Theory, Practice & Potential".

Visiting Expert Program. **The Ohio State University**. October 2-4, '01. Wooster and Columbus, OH. "Nuclear Transfer in Swine- Cloning & Transgenesis: Theory, Practice & Potential".

Speaker- **International Animal Agriculture and Food Science Conference**, July 25, '01. Indianapolis, IN, "Preserving/Conserving Germplasm by Incorporating Embryo-Related Technologies".

Speaker- **6th International Conference on Pig Reproduction**. June 3-6, '01. Columbia, MO. "Cellular Mechanisms of Fertilization and Parthenogenesis".

Speaker- **University of Nebraska-Lincoln**. April 11, '01. Lincoln, NB. "Development of Embryo-based Bio-technological Advances in Swine Embryogenesis".

Speaker- **Michigan State University**, March 28, '01. East Lansing, MI. "Development of Embryo-based Bio-technological Advances in Swine Embryogenesis".

Speaker – **International Congress on Animal Reproduction**. July 2-4, '00. Stockholm, Sweden. "Parthenogenetic Activation of Swine Oocytes".

Speaker- **Nuclear Transfer and Transgenesis**. June 18-21, '00. Park City, Utah. "Changes in the Structure of Nuclei after Transfer to Oocytes".

Speaker- **Banbury Conference- Mammalian Cloning: Can It Be Made More Efficient?** March 12-15, '00. Cold Spring Harbor, NY. "Nuclear Transfer in Swine".

Speaker- **Missouri Veterinary Medical Association**. January 21, '00. Tan Tara, Missouri. "Development of Embryo-Technologies in Swine"

Speaker – **Purdue University**. October 21, '99. West Lafayette, Indiana. "Differentiation of Swine Embryos and Progress in Cloning/Transgenesis".

Speaker – **Institute for Theological Encounter with Science and Technology**. "The Genome: Plant, Animal, Human". August 1-5, '99. Loyola University of Chicago, Chicago, IL "Genetic Modification of Domestic Animals".

Speaker/Panelist – **Tau Beta Pi 30th Annual Paul D. Scholz**

Symposium. "Human Cloning and Genetic Engineering". April 27, '99, University of Iowa, Iowa City, IA. "Development of the Cloning/Nuclear Transfer/Transgenic Technology".

Speaker - **International Embryo Transfer Society-Satellite Session.** January 13, '99. Chateau Mont Sainte-Anne. Quebec, Canada. "Development of the techniques for nuclear transfer in pigs".

Speaker – **The American Society of Human Genetics.** October 28, '98. "Transgenic animals by nuclear transfer (cloning): theory, practice & potential".

Speaker – **Association of University Technology Managers, Inc.** September 14, '98. Kansas City, MO. "The Patent Frenzy – A Few Case Studies".

Speaker – **Utah State University.** September 8, '98 Logan, UT. "Development of Embryo Technologies in Pigs".

Speaker- **Nuclear Transfer and Embryonic Stem Cells.** April 15-17, '98. Monash University, Australia. "Strategies for Activating Nuclear Transfer Oocytes".

Speaker- **International Embryo Transfer Society.** . January 18, '98. Boston, MA. "Practical Aspects of In Vitro Production of Pig Embryos".

Speaker & Panelist- **Cloning and Biotechnology: Opportunities, Challenges and Choices.** November 13, '97. University of Nebraska-Lincoln. "Cloning Mammals: Theory, Practice & Potential".

Speaker- **Mammalian Cloning: Implications for Science and Society.** June 26, '97. Crystal Gateway Marriott Hotel, Arlington, VA. "Nuclear and Cytoplasmic Modifications After Nuclear Transfer".

Speaker- **Roslin Institute,** Roslin, Scotland. May 29, '97. "Activation of Pig Oocytes".

Speaker- **Lincoln University,** Jefferson City, MO. February 25, '97. "Chimera Production in Swine, and the Potential for Xenographs."

Speaker- **Korean Society of Animal Reproduction,** Seoul, South Korea. February 14, '97. "Artificial Activation of Pig Oocytes Arrested at Meiotic Metaphase II".

Speaker- **Korea Research Institute Bioscience and Biotechnology,** TaeJeon, South Korea. February 13, '97. "Development and Applications of Embryo Technologies in Pigs".

Speaker- **4th Midwestern Meeting on Conceptus and Uterine Development,** Iowa State University, Ames, IA. March 21, '94. "Artificial Oocyte Activation in Pigs".

Speaker- **Louisiana State University,** Baton Rouge, LA. November 5, '93. "When is Development of the Domestic Pig Conceptus Dependent Upon New Transcription?"

Speaker - **International Society for Heart Research,** American Section, '93 annual meeting. Columbia, MO. June 20-24, '93. "Strategies for Producing Large and Small Transgenic Animals".

Speaker- **4th International Conference on Pig Reproduction**, Columbia, MO. May 23-26, '93. "Nuclear Control of Preimplantation Development in the Pig".

Speaker- **University of Montreal**, CRRRA, Saint-Hyacinthe, Quebec, Canada. March 23, '93. "The Transition from Maternal Control of Development to Zygotic Control of Development in the Domestic Pig".

Speaker- **Biotransplant, Inc. & Harvard Medical School**, Boston, MA. November 17, '92. "Cloning Pig Embryos".

Speaker - **NCR 150, Animal Biotechnology: Technology Transfer and Industrial Needs**, National Livestock & Meat Board, Chicago, IL. May 17-19, '92. "Nuclear Transplantation as a Method of Producing Genetically Identical Livestock".

Speaker- **Chicago College of Osteopathic Medicine**, Downers Grove, IL. March 30, '92. "Nuclear Transfer for Cloning Domestic Animals: Nuclear Remodeling and Reprogramming".

Speaker - **International Symposium on: 'Cloning Mammals by Nuclear Transplantation'**, Fort Collins, CO, January 15, '92. "Nuclear Modifications after Nuclear Transfer".

Speaker - **Kansas State University**, Departmental Seminar & Guest Lecturer, April 1-3, '91, Manhattan, KS. "The Transition From Maternal-to-Zygotic Control of Development", "Cloning Livestock Embryos by Nuclear Transfer", "Nuclear Remodeling & Reprogramming After Nuclear Transfer".

Speaker- **Gordon Research Conference**, Quantitative Genetics and Biotechnology, January 11, '91, Oxnard, CA. "Nuclear Transplantation in Animals".

Speaker - **Mo-Kan Reproductive Biology Workshop**, June 16, '90, University of Missouri-Columbia. "Cloning Embryos by Nuclear Transfer".

Speaker - **University of Nebraska**, Biotechnology Seminar Series, March 7, '90, Lincoln, NE. "Nuclear Transfer and Nuclear Reprogramming in Domestic Animals".

Speaker - **Banbury Conference** - Applications of Basic Research in Development. October 15-18, '89, Cold Spring Harbor, NY. "Cloning by Nuclear Transfer in Laboratory and Domestic Animals".

Speaker- **2nd International Symposium on Genetic Engineering of Animals**, June 25-28, '89. Cornell University, Ithaca, NY. "Reprogramming and Cloning the Entire Genome".

Speaker- **3rd International Conference on Pig Reproduction**. April 11-14, '89. University of Nottingham, U.K. "Cloning of Embryos".

Faculty - **The American Fertility Society**, Regional Postgraduate Course, Hands on IVF, Cryopreservation and Micromanipulation. April 25-29, '88, Madison, WI. "Nuclear Transfer in Early Mammalian Embryos".

Speaker- **Application of Egg- and Embryo-Technologies to Domestic Animals**. Department of Obstetrics and Gynecology, January '87. The Royale Veterinary and Agricultural University, Copenhagen, Denmark. "Nuclear Transplantation in Domestic Animal Embryos".

University of Missouri

Director: Transgenic Animal Facility, '90 - '94. This was a service facility to produce transgenic mice for on-campus investigators.

Supervisor: Unit D facilities of ASRC, Sept. '94 - Present. These are the large animal and surgery units in the Animal Science Research Center.

Unit F of ASRC, '16- present.

Committees,

Campus

Review the status of the University of Missouri Research Board grant program. June '14

Special Advisory Group to the Chancellor, Jan. '05-'10.

DNA Core Advisory Committee, April 7, '99-Present.

Molecular Biology Core Advisory Committee, Aug. '04-Feb. '07.

Provost's Life Sciences Task Force, Dec. '00-Dec. '04.

Transgenic Animal Core Facility Oversight Committee, '99-'02.

Life Sciences Mission Enhancement Planning Committee, April '98-Aug. '99.

Advisory Committee for Office of Research, Aug. '98- Aug. '01.

Electron Microscopy Core Facility Oversight Committee, Nov. '96-'97 & '98-Jan. '99.

Animal Care and Use Committee, Jan.'97-April '98.

Curators' Professor screening advisory committee. '10, '11.

Advisory Committee for the 2011-2013 Presidential Award for Faculty Excellence.

College

CAFNR Promotion and Tenure Committee. Sept. '02-Aug. '04.

Departmental

Chair Advisory Committee, July '16-??

Promotion and Tenure Committee, July '96-'99.

Swine Farm Operations Committee, June '89-present.

Vehicle Committee, Chairman, Jan.'90-'95.

GCI/RIF/Research Advisory Committee, Aug. '90-'96.

Research Advisory Committee: GCI/RIF/GIF, Chairman, '96-'98; '02-'04; '11-'14.

Unit D1-3 Space Committee, Oct. '91-Sept. '94.

Unit D1-3 Space Committee, Chairman, Sept. '94-present.

Unit F Space Committee, July '15-present.

ASRC Space Committee, Sept. '94-present.

Faculty Awards Committee, Oct.'94-'97.

Policy Committee on Patents, etc., Aug 7, '95.
Policy Committee on Support of Farms, Aug 8, '95.

Food for the 21st Century, Animal Reproduction Cluster
Fellowships and Other Awards, Chairman '00-'10.
Pilot Projects/Special Equipment, Jan. '91-'92.
Pilot Projects/Special Equipment, Chairman '94.
Invited Speakers, Jan.'91-'92.
Invited Speakers, Chairman, Aug. '94-Dec. '94.
Publications, Chairman, Oct. '92-'94.
Publications, '95-'05.
Support Facilities, Oct.'92-'94.
Fellowships, Chairman '95-'98.
Transgenic Lab,'95-'98.

Search Committees

F21C Reproductive Biology Cluster, One Position, '92-'93, Filled by
Matt Lucy
F21C Reproductive Biology Cluster, Two Positions, '96-'98, Filled By
Guang Zhao & the other position was re-advertised.
Dean of the College of Veterinary Medicine, '98-'99- Filled by Joe
Kornegay.
McKee Endowed Professor, Department of Veterinary Pathobiology,
'03-'04, Filled by John Critser.
Gamete & Embryo Cryobiology, Department of Veterinary
Pathobiology, '03-'04, Filled by Yuksel Agca.
F21C Reproductive Biology Cluster, Two Positions. '04-'05. Committee
Chair. Filled by Roccio Rivera and Kevin Wells.
ObGyn Faculty, Three Positions. Filled by Gary Clark, Bret Barrier and
Susan Nagel. '04-'05.
Chair of Veterinary Pathobiology, Department of Veterinary
Pathobiology, '05. Filled by George Stewart.
F21C Reproductive Biology Cluster, One Position, Committee Chair.
'08-'12. Filled by Chris Elsieck.
Gilbreath-McLorn Endowed Professor of Comparative Medicine,
Department of Veterinary Pathobiology, '11- '13. Filled by Leslie
Lyons.

Teaching,

413 Reproductive Biology Seminar W90: Coordinated Graduate Seminar. 1 hr
433 Gamete & Embryo Biology F90: Developed and Team Taught This Graduate
Level Class. 2 hr

- 433 Gamete & Embryo Biology F92: Team Taught This Graduate Level Class. 2 hr
- 440 Biology of Gestation W93: Developed & Team Taught This Graduate Level Class. 2 hr
- 433 Gamete & Embryo Biology F94: Team Taught This Graduate Level Class. 2 hr
- 400 Experimental Surgery F94: Coordinated this class taught by Dr. Youngquist. 1 hr
- 384 AI & Reproductive Management F95: Revamped & Team Taught This Upper Level Undergraduate Class. 3 hr
- 400 Experimental Surgery F95: Coordinated this class taught by Dr. Youngquist. 1 hr
- 400 Experimental Surgery F96: Coordinated this class taught by Dr. Youngquist. 1 hr
- 400 Gametes, Embryos & Gestation F96 (AS433 + Gestation): Team taught this Graduate Level Class. 3 hr
- 384 AI & Reproductive Management F96: Taught this undergraduate level class. 3 hr
- 301 Genetics W97: Taught the first 5 lectures for Dr. Lamberson. 3 hr.
- 384 AI & Reproductive Management F97: Team Taught This Upper Level Undergraduate Class. 3 hr
- 400 Experimental Surgery F97: Coordinated this class taught by Dr. Youngquist. 1 hr
- 301 Genetics W98: Taught the first 5 lectures for Dr. Lamberson. 3 hr.
- 384 AI & Reproductive Management F98: Team Taught This Upper Level Undergraduate Class. 3 hr
- 400 Experimental Surgery F98: Coordinated this class taught by Dr. Youngquist. 1 hr
- 384 AI & Reproductive Management F99: Team Taught This Upper Level Undergraduate Class. 3 hr
- 400 Experimental Surgery F99: Coordinated this class taught by Dr. Youngquist. 1 hr
- 384 AI & Reproductive Management F00: Team Taught This Upper Level Undergraduate Class. 3 hr
- 400 Experimental Surgery F00: Coordinated this class taught by Dr. Youngquist. 1 hr
- 440 Gamete & Embryo Biology F00: Taught This Graduate Level Class. 2 hr
- 384 AI & Reproductive Management F01: Team Taught This Upper Level Undergraduate Class. 3 hr
- 384 AI & Reproductive Management F02: Team Taught This Upper Level Undergraduate Class. 3 hr
- 213 Genetics W03: Taught the first 6 lectures of this course for Dr. Lamberson. 3 hr.
- 384 AI & Reproductive Management F03: Team Taught This Upper Level Undergraduate Class. 3 hr

- 213 Genetics W04: Taught the first 5 lectures of this course for Dr. Lamberson. 3 hr.
- 4384 AI & Reproductive Management F04: Team Taught This Upper Level Undergraduate Class. 3 hr
- 3213 Genetics W05: Taught the first 5 lectures of this course for Dr. Lamberson. 3 hr
- 4384 AI & Reproductive Management F05: Team Taught This Upper Level Undergraduate Class. 3 hr
- 3213 Genetics W06: Taught the first 5 lectures of this course for Dr. Lamberson. 3 hr
- 4384 AI & Reproductive Management F06: Team Taught This Upper Level Undergraduate Class. 3 hr
- 3213 Genetics W07: Taught the first 5 lectures of this course for Dr. Lamberson. 3 hr
- 4384 AI & Reproductive Management F07: Team Taught This Upper Level Undergraduate Class. 3 hr
- 3213 Genetics W08: Mentored Erin Sellner to teach the first 5 lectures of this course for Dr. Lamberson. 3 hr
- 4384 AI & Reproductive Management F08: Team Taught This Upper Level Undergraduate Class. 3 hr
- 4384 AI & Reproductive Management F09: Team Taught This Upper Level Undergraduate Class. 3 hr
- 4384 AI & Reproductive Management F10: Team Taught This Upper Level Undergraduate Class. 3 hr
- 4001 Topics in Research F10: Team Taught This Biotechnology Capstone Class with Dr. Jon Green. 3 hr
- 4384/7384 AI & Reproductive Management F11: Team Taught This Upper Level Undergraduate/Graduate Class. 3 hr
- 4384/7384 AI & Reproductive Management F12: Team Taught This Upper Level Undergraduate/Graduate Class. 3 hr
- 4384/7384 AI & Reproductive Management F13: Team Taught This Upper Level Undergraduate/Graduate Class. 3 hr
- 4384/7384 AI & Reproductive Management F14: Team Taught This Upper Level Undergraduate/Graduate Class. 3 hr
- 4384/7384 AI & Reproductive Management F15: Team Taught This Upper Level Undergraduate/Graduate Class. 3 hr
- 4384/7384 AI & Reproductive Management F16: Team Taught This Upper Level Undergraduate/Graduate Class. 3 hr

Graduate Faculty,

Summer 1989 to present.

Doctoral Faculty,

January 1, 1991 to present.

Postdoctoral Students/ Research Scientists

<u>Name</u>	<u>Current Position</u>
Lee F. Rickords 1/91-9/92.	Associate Professor: Utah State University
Todd T. Stumpf 1/91-1/92.	Research Coordinator: Continental Grain
Jiewen Li 10/93-12/96.	Postdoc with Alan Bradley, Baylor College of Medicine
Zoltan Macháty 10/93-4/97.	Associate Professor- Purdue University
Yong-Mahn Han 3/97-9/98.	Research Scientist: KIST, Tae-Jeon, Korea
Tao Tao 6/97-4/99.	Director Clinique de Fertilité, Moncton, NB, Canada.
Jae-Hwan Kim 5/99-8/99	Assistant Professor, Pochon CHA University, Korea
Birgit Kühholzer 10/98-10/00	Homemaker.
Zhi-Xin Wei 3/99-5/01	Postdoc, University of Chicago
Kwang-Wook Park 4/99-4/02	Faculty, Suncheon National University, Korea
Liangxue Lai 12/98-4/02	Investigator, Guangzhou Institute of Biomedicine and Health, China.
Gi-Sun Im 5/02-12/03	Korea National Livestock Research Institute
Zhonghua Liu 8/02-6/04	Associate Professor- Northeast Ag. Univ., Harbin, China
Hwan-Yul Yong 12/03-11/05	Postdoctoral Fellow: Univ. Missouri- Mike Roberts
Rongfeng Li 1/05-12/07	Associate Professor- Inner Mongolia University, China.
Jason Ross 12/06-7/08	Associate Professor, Department of Animal Science, Iowa State University
S. Clay Isom 9/06-12/09	Associate Professor, Department of Veterinary and Animal Sciences, Utah State University
Jianguo Zhao 9/07-8/11	State Key Laboratory of Reproductive Biology, Institute of Zoology, Chinese Academy of Sciences, Beijing, P.R.China
Kim Tessanne 1/11-11/12	Technical Representative for Life Technologies
Kiho Lee 1/11-12/13	Assistant Professor at Virginia Polytechnical Inst.
Jiude Mao 1/1/10-8/31/14	Postdoc with Peter Sutovsky, Univ. MO
Jeff J. Whyte 9/06-3/17	Currently seeking a position
Kristin Whitworth 2010-Present	
Bethany Redel 12/15/2014-Present	

Research Assistant Professor,

Zoltan Machaty 4/97-8/00.	Assistant Professor, Department of Animal Science, Purdue University
Liangxue Lai 4/02-12/06.	Investigator, Guangzhou Institute of Biomedicine and Health, China.

Visiting Scientists,

	<u>Home Position</u>
Seung-Ju Moon 8/94-7/95	Chonnam National University, Korea

Prudence Aquino-Aquino 10/97	St. Luke's MedicalCenter, Quezon City, Philippines
Gabor Vajta 11/97	Danish Institute of Agricultural Sciences, Tjele, Denmark
Jorge Piedrahita 12/97	Texas A&M, College Station, TX
James L. Sartin 9/99	College of Veterinary Medicine, Auburn University
Richard Taylor 10/99	E.A.R.T.H. Costa Rica
Jin-Ki Park 7/99-7/00	Korea NLRI-RDA
Hee-Tae Cheong 7/00-8/01	Kangwon National University, Korea
Yan-Hong Hao 10/01-12/02	Northeast Ag. Univ. Harbin, China
Clifton Murphy 1/95-Present	College of Veterinary Medicine, UMC
Gabor Vajta 5/03	Danish Institute of Agricultural Sciences, Tjele, Denmark
Yan-Hong Hao 6/03-1/09	Northeast Ag. Univ. Harbin, China
Yi Tan 1/06-4/06	Chongqing University of Medical Sci., China
Mingtao Zhao 11/07-6/10	Institute of Biotechnology, Northwest A&F University, Yangling, Shannxi, 712100, P. R. China.
Xiao-Yu Yang 2/21/11-8/1/11	Fujian Medical University, Fuzhou, P.R. China
Jan Secher 9/12-12/12	Copenhagen University, Denmark
Kwang-Wook Park 8/1/11-7/31/13	Sunchon National University, South Korea
Caroline Lucas 2/15-9/15	Federal University of Pelotas, Pelotas, Brazil

Graduate Student Honors.

Rick Schoenbeck	*Finalist Student Poster Competition, International Embryo Transfer Society '93.
Jon Anderson	*Awarded 2 nd place in the Research and Creative Activity Forum '99, University of Missouri-Columbia. *Awarded the Donald K. Anderson Graduate Student Teaching Award '98, University of Missouri-Columbia. *Awarded the Superior Graduate Achievement Award '97. University of Missouri-Columbia.
Nancy Ruddock	* Animal Science Graduate Student Association-Social Committee, '97-'99, President '99-'00 *Awarded a Brown Fellowship and spent a month in the laboratory of Dr. Alan Trounson, Monash medical Center, Australia.
David Bart Carter	* Awarded the Donald K. Anderson Graduate Student Teaching Award '01, University of Missouri-Columbia.
Ryan Asa Cabot	* College of Agriculture, '02. Food and Natural Resources, Research Expo XI poster session winner.
Jin-Geol Kim	* Neal A. Jorgensen Genome Travel Grant- to Present data at the Plant and Animal Genome Meeting, San Diego, CA. '05.

Aaron Bonk	*2 nd Place Poster Competition, Division of Animal Science- Grad Forum June 30, '05.
Aaron Bonk	*Finalist Student Poster Competition, International Embryo Transfer Society, Orlando, FL. '06.
Kristin Whitworth	*Finalist Student Poster Competition, International Embryo Transfer Society, Denver, CO. '08. Named a Runner-Up, i.e. 2 nd place.
Kristin Whitworth	*First Place. Graduate Student Forum, '08. Oral Presentations, Division of Animal Sciences, University of Missouri.
Mingtao Zhao	Recipient of the F.B. Miller PhD fellowship beginning 8, '10.
Bethany Bauer	*Finalist Student Poster Competition, International Embryo Transfer Society, Orlando, FL. '11.
Bethany Bauer	*Recipient of a Douglas D. Randall Young Scientists Development Fund Travel Award- IETS '11.
Mingtao Zhao	*Finalist Student Poster Competition, International Embryo Transfer Society, Phoenix, AZ. '12.
Mingtao Zhao	*Runner-Up (2 nd place) in the Student Competition, International Embryo Transfer Society, Phoenix, AZ. '12.
Kristin Whitworth	*Recipient of a Douglas D. Randall Young Scientists Development Fund Travel Award- Transgenic Animal Conference '13.
Bethany (Bauer) Redel	*First Place. Graduate Student Forum, '13. Poster Presentation, Division of Animal Sciences, University of Missouri.
Mingtao Zhao	*Recipient of the Gamma Alpha Gamma Dissertation Year Fellowship. 2013-2014, \$5,000.
Bethany (Bauer) Redel	*First Place. Graduate Student Forum, '14. Poster Presentation, Division of Animal Sciences, University of Missouri.
Bethany Mordhorst	*Recipient of the National Corn Board Scholarship, New Orleans, March 1-4, '16.
Bethany Mordhorst	*First Place. Student Poster Competition, '16. 42 nd International Embryo Transfer Society annual meeting, Louisville, KY.
Bethany Mordhorst	*Third Place. Graduate Student Forum, '16. Poster Presentation, Division of Animal Sciences, University of Missouri.

Graduate Advising,
As Major Professor (13 MS and 9 PhDs graduated)

MS	Rick A. Schoenbeck	1992	Director Reproduction Resources, Hebron, IL
MS	Mario Mayes	1994	Research Scientist, University of Laval, Quebec, Canada
MS	Wendy Jolliff	1997	Homemaker
MS	Kristin Whitworth	1997	Sr. Research Specialist/PhD student at the University of Missouri
PhD	Jae-Hwan Kim	1999	Assistant Professor, Pochon CHA University, Korea
MS	Hyun-Jin Do	1999	Research Specialist, Pochon CHA University, Korea
PhD	Jon Anderson	2000	Embryo Technology Research Scientist, Sygen
PhD	Nancy Ruddock	2000	Postdoc in Australia, Melbourne (Alan Trounson)
MS	Bart Carter	2002	Director, Office of Animal Resources, Kansas State University
PhD	Ryan Cabot	2002	Professor, Department of Animal Science, Purdue University
MS	Jennifer Luth	2002	Postdoc at Washington Univ. St. Louis, MO
MS	Lisa Overman-Martin	2006	Veterinarian, North Carolina
PhD	S. Clay Isom	2006	Associate Professor, Utah State University
PhD	Aaron Bonk	2007	Technical Service Rep. with Promega.
MS	Jin-Geol Kim	2007	Research Specialist, University of Missouri
MS	Courtney McHughes	2007	Sales consultant, Mt. Pleasant, TX
MS	Kyle B. Dobbs	2010	Graduate Student with Dr. Pete Hanson, Florida State University
MS	Bethany K. Bauer	2010	PhD Student, Division of Animal Sciences, University of Missouri with Dr. Prather
PhD	Kristin Whitworth	2010	Research Scientist at the University of Missouri with Dr. Prather
MS	Jennifer Teson-Hamm	2013	National Foundation for Fertility Research
PhD	Mingtao Zhao	2013	Postdoc- Joe Wu- Stanford.
PhD	Bethany K. Redel	2014	Postdoctoral Fellow at the University of Missouri with Dr. Prather
PhD	Bethany Mordhorst	Current	
PhD	Paula Chen	Current	

As Committee Member

MS	Steve Terlouw	1989
MS	Shyh-Jye Lee	1992
PhD	Gregg Eckardt	1992
PhD	Doug Leaman	1993
PhD	Stacey Hamilton	1993
PhD	Steve Terlouw	1993
PhD	Julie Galvin	1993

PhD	Tim Safranski	1994
PhD	Melody Stallings-Mann	1995
PhD	Rongti Liang	1995
MS	Nicole M. Ferguson-Kohout	1998
MS	Christopher Hueser	1999
PhD	Will Rieke	2000
MS	George Perry	2000
PhD	Melissa Larson	2000
MS	Jennifer Antelman	2007
PhD	Steve Mullen	2007
MS	Madhavi Kommareddy	2008
PhD	Bhanu Prakash Telugu	2008
MS	Julie Birt	2010
MS	Md Almamun	2011
PhD	Shawn Zimmerman	2012
MS	Benjamin Beaton	2012
MS	Anna Lichtenauer	2013
MS	Veronica Negron Perez	2013
MS	Justin Hennings	2013
PhD	Benjamin Beaton	2015
MS	Addison Byrne	2016
PhD	Daniel Kline	2016
PhD	Wonhee Song	2016
PhD	Kelsey Brooks	2016
MS	Ashley Hobbs	Current