

COLLABORATORS/KEY PERSONNEL - BIOGRAPHICAL SKETCH

Provide the following information for all Collaborators/Key Personnel.

NAME Laura Hewitson, Ph.D.	POSITION TITLE Director of Research		
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY
University of Essex, Colchester, Essex, UK University of York, Heslington, York, UK	B.S. Ph.D.	1989 1993	Biological Sciences Biology

A. Positions and Honors.

Positions:	
1994-1995	Research Associate, Department of Meat and Animal Science, University of Wisconsin, Madison, WI
1995-1997	Research Associate, Department of Zoology, University of Wisconsin, Madison, WI
1997-1999	Staff Scientist I, Department of Reproductive Biology, Oregon Regional Primate Research Center, Oregon Health Sciences University, Portland, OR
1999-2001	Staff Scientist II, Department of Reproductive Biology, Oregon Regional Primate Research Center, Oregon Health Sciences University, Portland, OR
1999-2001	Research Associate Professor, Department of Obstetrics and Gynecology, Oregon Health Sciences University, Portland, OR
2001-2009	Associate Professor, Department of Ob/Gyn & Reproductive Sciences, University of Pittsburgh School of Medicine, Pittsburgh, PA
2001-2010	Member, Magee-Womens Research Institute and Foundation, University of Pittsburgh, Pittsburgh, PA
2003-2009	Department of Environmental & Occupational Health, Graduate School of Public Health, Pittsburgh, PA
2008-2010	Affiliate Scientist, Southwest Foundation for Biomedical Research, San Antonio, TX
2008-Pres	Affiliate Scientist, Washington National Primate Research Center, Seattle, WA
2009-2010	Adjunct Associate Professor, Department of Ob/Gyn & Reproductive Sciences, University of Pittsburgh School of Medicine, Pittsburgh, PA
2010-Pres	Director of Research, The Johnson Center for Child Health and Development, Austin, TX
2011-Pres	Adjunct Associate Professor, Department of Psychiatry, University of Texas Southwestern, Dallas, TX
Honors:	
1990-93	Medical Research Council (MRC) UK Fellowship
1994	K.M. Stott Prize for Best Doctoral Thesis (University of York)

B. Selected Peer-Reviewed Publications (in chronological order).

1. Hewitson, L., Simerly, C., Tengowski, M.W, Sutovsky, P., Navara, C.S., Haavisto, A.J. and Schatten, G. (1996) Microtubule and chromatin configurations during rhesus intracytoplasmic sperm injection: Successes and Failures. *Biol Reprod* 55:271–280.
2. Navara, C.S., Hewitson, L.C., Simerly, C.R., Sutovsky, P. and Schatten, G. (1996) The Implications of a Paternally Derived Centrosome during Human Fertilization: Consequences for Reproduction and the Treatment of Male Factor Infertility. *Am J Reprod Immunol* 37:39

3. Sutovsky, P., R. Oko, L. Hewitson and G. Schatten. (1997) The removal of the sperm perinuclear theca and its association with the bovine oocyte surface during fertilization. *Dev Biol* 188:75-84.
4. Simerly, C., Hewitson, L., Sutovsky, P., Navara, C. and G. Schatten. (1997) Predicted Forms of Male Infertility as a Result of Disorders in the Paternally Inherited Human Centrosome. In: *New Horizons in Reproductive Medicine* (C. Coutifaris, L. Mastroianni, eds) , New York, NY, p.445-457
5. Hewitson, L., Haavisto A, Simerly C, Jones J and Schatten G (1997) Microtubule organization and chromatin configurations in hamster oocytes during fertilization, parthenogenetic activation and after insemination with human sperm. *Biol Reprod* 57:967-975.
6. Hewitson, L., Simerly, C. and Schatten, G. (1997) Inheritance defects of the sperm centrosome in humans and its possible role in male infertility. *Intl J Androl* 20, Suppl. 3:35-43.
7. Simerly, C., L.C. Hewitson, P. Sutovsky, C.S. Navara and G. Schatten. (1997). Male infertility as a result of disorders in the paternally inherited human centrosome. *S. African J Sci* 92:548-557.
8. Hewitson L, Takahashi D, Dominko T, Simerly C, and Schatten G. (1998) Fertilization and embryo development to blastocysts after intracytoplasmic sperm injection in the rhesus monkey. *Hum Reprod* 13:3449-3455.
9. Sutovsky, P, Simerly, C, Hewitson, L. and Schatten, G. (1998) Assembly of nuclear pore complexes and annulate lamellae promotes normal pronuclear development in fertilized mammalian oocytes. *J Cell Sci* 111:2841-2854.
10. Schatten G, Hewitson L, Simerly C, Sutovsky P and Huszar G. (1998) Cell and Molecular Biological Challenges of ICSI: A.R.T. Before Science? *J Law Med Ethics* 26:29-37.
11. Hewitson, L., Simerly, C., Sutovsky, P., Dominko, T. and G. Schatten. (1999) Molecular Reconstitution and Inheritance of the Centrosome during Fertilization: Implications for Fertility. In: *Gametes: Development and Function*, (A. Lauria, F. Gandolfi, G. Enne and L. Gianaroli, eds). Serono Symposia, pp 371-392.
12. Hewitson, L, Dominko, T, Takahashi, D, Ramalho-Santos, J, Sutovsky, P, Fanton, J, Jacob, D, Monteith, D, Neuringer, M, Battaglia, D, Simerly, C, and G. Schatten. (1999) Births of ICSI monkeys: unique checkpoints during the first cell cycle of fertilization. *Nature Med* 5(4):431-433.
13. Sutovsky, P., Ramalho-Santos, J., Moreno, R., Oko, R., Hewitson, L., and Schatten, G. (1999) On-stage selection of single round spermatids using a vital, mitochondrion-specific fluorescent probe MitoTracker™ and high resolution differential interference contrast (DIC) microscopy. *Hum Reprod* 14(9):2301-2312.
14. Hewitson, L, Simerly, C, and G. Schatten.(1999) Cytoplasmic endowment of organelles. In: *Plenary Proceedings of the 11th World Congress on In Vitro Fertilization and Human Reproductive Genetics* (R. Jansen and D. Mortimer, eds), pp348-359.
15. Chan, A.W.S., Luetjens, C.M., Dominko, T., Ramalho-Santos, J., Simerly, C.R., Hewitson, L. and G. Schatten (2000). Foreign DNA Transmission by Intracytoplasmic Sperm Injection: Injection of Sperm Bound with Exogenous DNA Results in Embryonic GFP Expression and Live Rhesus Births. *Mol Hum Reprod* 6(1):26-33.
16. Dominko, T., Ramalho-Santos, J., Chan, A., Moreno, R.D., Luetjens, C.M., Simerly, C., Hewitson, L., Takahashi, D., Martinovich, C. White, J., and G. Schatten (1999). Optimization strategies for production of mammalian embryos by nuclear transfer. *Cloning*, 1:143-152.
17. Dominko, T., Chan, A., Simerly, C., Luetjens, C.M., Hewitson, L., Martinovich, C., and G. Schatten (2000). Dynamic imaging of the metaphase II spindle and maternal chromosomes: Implications for enucleation efficiency verification, avoidance of parthenogenesis and successful embryogenesis. *Biol Reprod* 62(1):150-154
18. Hewitson, L., Simerly, C., Dominko, T., and G. Schatten (2000). Cellular and molecular events after in vitro fertilization and intracytoplasmic sperm injection. *Theriogenology* 53:95-104.
19. Terada, Y., Simerly, C., Hewitson, L. and Schatten, G (2000). Sperm aster formation and pronuclear decondensation during rabbit fertilization and development of a functional assay for human sperm. *Biol Reprod* 62:557-563.
20. Hewitson, L., Simerly, C., and G. Schatten (2000). Cytoskeletal aspects of assisted fertilization. *Semin Reprod Med* 18 (20):151-159.
21. Ramalho-Santos J, Moreno RD, Sutovksy P, Chan AQ, Hewitson L, Wessel GM, Simerly CR, Schatten G (2000). SNAREs in mammalian sperm: possible implications for fertilization. *Dev Biol* 223(1):54-69.
22. Terada, Y., Simerly, C. Hewitson, L., and Schatten, G (2000). Sperm aster formation and pronuclear decondensation during rabbit fertilization and development of a functional assay for human sperm. *Biol Reprod* 62:557-563.
23. Ramalho-Santos, J., Simerly, C.R., Hewitson, L., and Schatten, G (2001). Acrosome components after intracytoplasmic sperm injection: the decondensation frontier. *Fertil Steril* 76(1):196-197.

24. Ramalho-Santos, J., Sutovsky, P., Simerly, C., Oko, R., Wessel, GM, Hewitson, L., Schatten, G (2001) ICSI Choreography: Fate of Sperm Structures after Monospermic Rhesus ICSI and First Cell Cycle Implications. *Hum Reprod* 15:2610-26-20.
25. Hewitson, L., Martinovich, C., Simerly, C., Takahashi, D., Schatten, G (2002). Intracytoplasmic injection of rhesus testicular sperm (TESE-ICSI) and elongated spermatids (ELSI) results in healthy offspring. *Fertil Steril* 77:794-801.
26. Terada Y, Nakamura SI, Hewitson L, Simerly C, Horiuchi T, Marukami T, Okamura K, and G. Schatten (2002). Human sperm aster formation after intracytoplasmic sperm injection with rabbit and bovine eggs. *Fertil Steril* 77: 1083-1085.
27. Simerly, C., Dominko, T., Navara, C., Payne, C., Capuano, S., Gosman, G., Chong, K.Y., Compton, D., Hewitson, L., and Schatten, G. (2003) Molecular Correlates of Primate Nuclear Transfer Failures. *Science* 300:297.
28. Terada, Y., Nakamura, S., Morita, J., Simerly, C., Hewitson, L, Murakami, T., Yaegashi, N., Schatten, G., Okamura, K. (2003) Intracytoplasmic sperm injection: stiletto conception or a stab in the dark. *Arch Androl* 49:167-177.
29. Hewitson, L. Simerly, C.R., and Schatten, G (2003). ICSI, male pronuclear remodeling and cell cycle checkpoints. *Adv Exp Med Biol* 518:199-210.
30. Terada, Y., Nakamura, S., Simerly, C., Hewitson, L., Murakami, T., Yaegashi, M., Okamura, K., Schatten, G. (2004) Centrosomal function assessment in human sperm using heterologous ICSI with rabbit eggs: a new male factor infertility assay. *Mol Reprod Dev* 67(3):360-365.
31. Hewitson, L (2004) Primate models for assisted reproductive technologies. *Reproduction* 128(3):293-299.
32. Sackett G, Ruppenthal G, Hewitson L, Simerly C, Schatten G (2006). Neonatal behavior and infant cognitive development in rhesus macaques produced by assisted reproductive technologies. *Dev Psychobiol* 48(3):243-265..
33. Dettmer AM, Houser LA, Ruppenthal GC, Capuano S, Hewitson L (2007). Growth and developmental outcomes of three high-risk infant rhesus macaques (*Macaca mulatta*). *Am J Primatol* 69(5):503-518.
34. Simerly, C., Navara, C., Castro, C., Turpin, J., Redinger, C., Mich-Basso, J., Jacoby, E., Grund, K., McFarland, D., Oliver, S., Ben-Yehudah, A., Carlisle, D., Frost, P., Hewitson, L. and Schatten, G. (2009) Establishment and Characterization of Baboon Embryonic Stem Cell Lines: An Old World Primate Model for Regeneration, Transplantation and Stem Cell Research. *Stem Cell Res. Stem Cell Res.* 2009
35. Hewitson L, Lopresti BJ, Stott C, Mason NS, Tomko J. (2010) Influence of pediatric vaccines on amygdala growth and opioid ligand binding in rhesus macaque infants: A pilot study. *Acta Neurobiol Exp (Wars)* 70(2):147-164.
36. Simerly CR, Castro CA, Jacoby E, Grund K, Turpin J, McFarland D, Champagne J, Jimenez JB Jr, Frost P, Bauer C, Hewitson L, Schatten G. (2010) Assisted Reproductive Technologies (ART) With Baboons Generate Live Offspring: A Nonhuman Primate Model for ART and Reproductive Sciences. *Reprod Sci* 17(10):917-930.
37. Hewitson L, Houser LA, Stott C, Sackett G, Tomko JL, Atwood D, Blue L, White ER (2010). Delayed acquisition of neonatal reflexes in newborn primates receiving a thimerosal-containing Hepatitis B vaccine: Influence of gestational age and birth weight. *J. Toxicol. Environ Health, Part A*, 73(19):1298-1313.
38. Hewitson L (2013) Scientific challenges in developing biological markers for autism. *OA Autism* 1(1):7.
39. Gadad BS, Hewitson L, Young KA, German DC (2013) Neuropathology and animal models of autism: genetic and environmental factors. *Autism Res Treat.* 2013;2013:731935. doi: 10.1155/2013/731935. Epub 2013 Sep 16. Review.
40. Hewitson L, Thissen JB, Gardner SN, McLoughlin KS, Glausser MK, Jaing CJ (2014) Screening of viral pathogens from pediatric ileal tissue samples after vaccination. *Adv Virol* 2014;2014:720585. doi: 10.1155/2014/720585. Epub 2014 Mar 23.
41. Curtis B, Liberato N, Rulien M, Morrisroe K, Kenney C, Yutuc V, Ferrier C, Marti CN, Mandell D, Burbacher TM, Sackett GP, Hewitson L (2015) Neurodevelopment and learning in infant rhesus macaques exposed to low-dose thimerosal via vaccination. *Envtl Health Perspect* in press.