

BIOGRAPHICAL SKETCH

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NAME: Eric E. Nilsson

eRA COMMONS USER NAME (credential, e.g., agency login): ENILSSON

POSITION TITLE: Research Assistant Professor

EDUCATION/TRAINING (*Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.*)

INSTITUTION AND LOCATION	DEGREE (if applicable)	Completion Date MM/YYYY	FIELD OF STUDY
University of Idaho, Moscow, ID	B.S. + B.S.	1983	Bacteriology + An. Sci.
Washington State University, Pullman, WA	D.V.M.	1987	Veterinary Medicine
University of Idaho, Moscow, ID	Ph. D.	1992	Zoology (Devel. Biol.)

A.

Personal Statement. Has extensive research experience in transgenerational epigenetic inheritance, ovarian developmental biology and reproductive physiology. Dr. Nilsson's veterinary training allows evaluation of normal and pathological changes in reproductive organs. These skills bear directly on performing the proposed research.

B.**Positions and Honors.****Research/Professional Experience:**

- 04-Present **Research Assistant Professor:** Laboratory of Dr. Michael K. Skinner, School of Biological Sciences, Washington State University, Pullman Washington. Research to determine the signaling factors that affect ovarian and follicular development in mammals. Also, reproductive toxicology studies to determine how environmental toxicants can induce epigenetic changes that cause increases in disease transgenerationally.
- 99-04 **Post Doctoral Fellow:** Dr. Michael K. Skinner, School of Biological Sciences, Washington State University, Pullman, WA. Perform studies to determine the signaling factors that affect ovarian and follicular development in mammals. Also, perform pilot studies on treatments for ovarian cancer in the nude mouse model.
- 98-99 **Post Doctoral Fellow:** Dr. Grant Mastick, Biology, University of Nevada at Reno, Reno, NV. Perform developmental biology studies on the control of axon pathfinding in early mouse brain.
- 96-98 **Post Doctoral Fellow:** Yamamoto Behavior Genes Project, ERATO, Mitsubishi-kasei Institute of Life Sciences, Machida-shi, Tokyo, Japan
Conducted study on the mechanisms by which genes control sexual behavior in *Drosophila melanogaster* making use of ectopic transgene expression, immunocytochemistry, *in-situ* hybridization and behavioral analysis.
- 92-96 **Researcher:** Dr. Robert Speth, Department of Veterinary and Comparative Anatomy, Physiology and Pharmacology, Washington State University, Pullman, WA.
Performed studies on the effects of the drug Quinapril on reproductive cyclicity of brain hormone receptors using receptor binding assays, autoradiography, computer image analysis and statistical analysis.
- 1993 **Instructor:** School of Veterinary Medicine, Washington State University, Pullman, WA. Taught section on antibiotics in Veterinary Pharmacology class.

Honors:

Jacob Monson Scholarship: 1978 and 1979

American Society of Animal Science Scholarship: 1983

C.

Contributions to Science.

Major Contributions: (1) Elucidated the epigenetic transgenerational inheritance mechanism and biological impacts; (2) Elucidated ovarian primordial follicle development mechanisms; (3) Elucidated transgenerational ovarian disease mechanisms; (4) Elucidated ovarian follicle cell interactions.

Publications (selected from 44):

<http://www.ncbi.nlm.nih.gov/sites/myncbi/1PiX8IHGveyAh/bibliography/41624451/public/?sort=date&direction=ascending>.

Skinner MK, Nilsson EE (2015) Epigenetic Transgenerational Toxicology. In: Comprehensive Toxicology, Editor Tom Knudson. Publisher Elsevier, Edition 3, Chapter 13.007 (In Press).

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Nilsson E and Skinner MK (2015) Environmentally Induced Epigenetic Transgenerational Inheritance of Disease Susceptibility. *Translational Research* 165, pp. 12-17. PMID: 24657180

Gillette R, Miller-Crews I, Nilsson E, Skinner MK, Crews D. (2015) Distinct actions of ancestral vinclozolin and juvenile stress on neural gene expression in the male rat. *Frontiers in Genetics* 2;6:56. PMID: 25784924

Manikkam M, Haque M, Guerrero-Bosagna C, Nilsson EE, Skinner MK (2014) Pesticide methoxychlor promotes the epigenetic transgenerational inheritance of adult onset disease and sperm epimutations through the female germline. *PLoS ONE* 9(7):e102091. PMID: 25057798

Nilsson E, Larsen G, and Skinner MK (2014) Roles of Gremlin1 and Gremlin2 in Regulating Ovarian Primordial to Primary Follicle Transition. *Reproduction*. 147(6):865-74. PMID: 24614542

Feeney A, Nilsson E, and Skinner MK (2014) Cytokine (IL16) and Tyrphostin Actions on Ovarian Primordial Follicle Development. *Reproduction*. 148(3):321-331. PMID: 24970835

Bao J, Zhang Y, Schuster AS, Ortogero N, Nilsson EE, Skinner MK and Yan W (2014) Conditional inactivation of Miwi2 reveals that MIWI2 is only essential for prospermatogonial development in mice. *Cell Death and Differentiation*. 21(5):783-796. PMID: 24464225

Gillette R, Miller-Crews I, Nilsson EE, Skinner MK, Gore AC, and Crews D (2014) Sexually dimorphic effects of ancestral exposure to vinclozolin on stress reactivity in rats. *Endocrinology* 155(10):3853-66. PMID: 25051444

Feeney A, Nilsson E, and Skinner MK (2014) Epigenetics and Transgenerational Inheritance in Domesticated Farm Animals. *Journal of Animal Science and Biotechnology (JASB)* 23;5(1):48. PMID: 25810901

Eric Nilsson, Bin Zhang, and Michael K. Skinner (2013) Gene Bionetworks that Regulate Ovarian Primordial Follicle Assembly. *BMC Genomics* 14:496. PMID: 23875758

Michael K. Skinner, Carlos Guerrero-Bosagna, Md. Haque, Eric Nilsson, Ramji Bhandari, and John McCarrey (2013) Environmentally Induced Transgenerational Epigenetic Reprogramming of Primordial Germ Cells and Subsequent Germline. *PLoS ONE* 15;8(7):e66318. PMID: 23869203

Nilsson E, Larsen G, Manikkam M, Guerrero-Bosagna C, Savenkova MI, Skinner MK. (2012) Environmentally induced epigenetic transgenerational inheritance of ovarian disease. *PLoS One*. 7(5):e36129. PMID: 22570695

Nilsson EE, Schindler R, Savenkova MI and Skinner MK (2011) Inhibitory Actions of Anti-Müllerian Hormone (AMH) on Ovarian Primordial Follicle Assembly. PLoS ONE 6(5): e20087. PMID: 21637711

Nilsson EE, Savenkova MI, Schindler R, Zhang B, Schadt EE and Skinner MK (2010) Gene Bionetwork Analysis of Ovarian Primordial Follicle Development. Plos One 16;5(7):e11637. PMID: 20661288

Schindler R, Nilsson EE and Skinner MK (2010) Induction of ovarian primordial follicle assembly by connective tissue growth factor CTGF. PLoS ONE 24;5(9):e12979. PMID: 20886044

Nilsson EE and Skinner MK (2009) Progesterone Regulation of Primordial Follicle Assembly In Bovine Fetal Ovaries. Molecular and Cellular Endocrinology. 313 (2009) 9–16. PMID: 19747959

Nilsson EE, Dole G and Skinner MK (2009) Neurotrophin NT-3 Promotes Ovarian Primordial to Primary Follicle Transition. Reproduction 138(4):697-707. PMID:19584175

Michael K. Skinner, Eric E. Nilsson and Ramji K. Bhandari (2009) Cell-Cell Signaling in the Testis and Ovary. In Ralph A. Bradshaw and Edward A. Dennis, editors: Handbook of Cell Signaling 2nd edition, Oxford: Academic Press, 2009, pp. 2663-2678.

Westfall S, Nilsson EE and MK Skinner (2008) Role of triptolide as an adjunct chemotherapy for ovarian cancer. Chemotherapy 54:67-76. PMID:18073474

Skinner MK, Schmidt M, Savenkova M, Sadler-Riggleman I, and EE Nilsson. (2008) Regulation of granulosa and theca cell transcriptomes during ovarian antral follicle development. Molecular Reproduction and Development 75(9):1457-72. PMID: 18288646

Dole G, Nilsson EE, and MK Skinner (2008) Glial derived neurotrophic factor promotes the ovarian primordial to primary follicle transition. Reproduction 135(5):671-82. PMID: 18304989

Nilsson EE, Anway MD, Stanfield J and MK Skinner (2008) Transgenerational Epigenetic Effects of the Endocrine Disruptor Vinclozolin on Pregnancies and Female Adult Onset Disease. Reproduction 135(5):713-21. PMID: 18304984

Nilsson EE, Rogers N and MK Skinner (2007) Actions of the anti-Müllerian hormone (AMH) on the ovarian transcriptome to inhibit primordial to primary follicle transition. Reproduction 134:209-221. PMID: 17660231

Nilsson EE, Stanfield J, and MK Skinner (2006) Interactions between progesterone and tumor necrosis factor- α in the regulation of primordial follicle assembly. Reproduction 132:877-886. PMID: 17127748

Nilsson EE, Detzel C, and MK Skinner (2006) Platelet-derived growth factor modulates the primordial to primary follicle transition in rat ovaries. Reproduction 131:1007-1015. PMID:16735540

Kezele PR, Ague J, Nilsson EE and MK Skinner (2005) Alterations in the ovarian transcriptome during primordial follicle assembly and development. Biology of Reproduction 72:241-255. PMID: 15371273

Kezele P, Nilsson EE and MK Skinner (2005) Keratinocyte growth factor acts as a mesenchymal factor to promote ovarian primordial to primary follicle transition. Biology of Reproduction 73:967-973. PMID: 16000551

Nilsson EE and MK Skinner (2004) Kit ligand and basic fibroblast growth factor interactions in the induction of ovarian primordial to primary follicle transition. Molecular and Cellular Endocrinology 214:19-25. PMID: 15062541

Nilsson EE, Doraiswamy V, and MK Skinner (2003) Transforming Growth Factor-Beta (TGF β 1, TGF β 2 and TGF β 3) expression during bovine ovarian antral follicle development. Molecular Reproduction and Development 66:237-246. PMID: 14502602

Nilsson EE and MK Skinner (2003) Bone Morphogenetic Protein –4 acts as an ovarian follicle survival factor and promote primordial follicle development. *Biology of Reproduction* 69:1265-1272. PMID: 12801979

Nilsson, E, Westfall S, Sadler-Riggleman I, Larsen T, McDonald C. and Skinner MK (2002) An In Vivo Mouse Reporter Gene (Human Secreted Alkaline Phosphatase) Model to Monitor Ovarian Tumor Growth and Response to Therapeutics. *Cancer Chemo & Pharmacology* 49:93-100. PMID: 11862422

Nilsson, E., Kezele, P. and Skinner, M.K. (2002) Leukemia Inhibitory Factor (LIF) Induces the Primordial to Primary Follicle Transition in Rat Ovaries. *Molecular and Cellular Endocrinology* 188:65-75. PMID: 11911947

Kezele P.R., Nilsson, E.E., and MK Skinner (2002) Insulin But Not Insulin-like Growth Factor – 1 Promotes the Primordial to Primary Follicle Transition. *Molecular and Cellular Endocrinology* 28;192(1-2):37-43. PMID: 12088865

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Parrott JA, Nilsson, E. Mosher R., Magrane G., Albertson D., Pinkel D., Gray JW, and Skinner M.K. (2001) Stromal epithelial interactions in the progression of ovarian cancer: Influence and source of tumor stromal cells. *Molecular and Cellular Endocrinology* 175:29-39. PMID: 11325514

Nilsson, E., Doraiswamy V., Parrott, J.A., and Skinner, M.K. (2001) Expression and Action of Transforming Growth Factor Beta (TGF β 1, TGF β 2, TGF β 3) In Normal Ovarian Surface Epithelium and Ovarian Cancer. *Molecular and Cellular Endocrinology* 182:145-155. PMID: 11514049

Nilsson EE, Asztalos Z, Lukacsovich T, Awano W, Usui-aoki K, Yamamoto D. (2000) Fruitless is in the regulatory pathway by which ectopic mini-white and transformer induce bisexual courtship in *Drosophila*. *J Neurogenet.* 2000 Jan;13(4):213-32. PMID: 10858821

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D.

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