

BIOGRAPHICAL SKETCH

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NAME Charles E. Wood, Ph.D.		POSITION TITLE Professor and Chair Dept. of Physiology and Functional Genomics	
eRA COMMONS USER NAME cewood			
EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)			
INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
University of California at Berkeley	A.B.	1970-1974	Biochemistry
University of California at San Francisco	Ph.D.	1975-1980	Endocrinology
University of California at San Francisco	Postdoc	1980-1983	Fetal Physiology

Please refer to the application instructions in order to complete sections A, B, and C of the Biographical Sketch.

A. Positions and Honors

1983-1988: Assistant Professor of Physiology, University of Florida College of Medicine.
1988-1993: Associate Professor of Physiology, University of Florida College of Medicine.
1993-present: Professor of Physiology and Functional Genomics, University of Florida College of Medicine.
2000-2004: Interim Chair, Department of Physiology and Functional Genomics, University of Florida College of Medicine
2004-present: Chair, Department of Physiology and Functional Genomics, University of Florida College of Medicine

1979-1980: Chancellor's Research Fellowship (UCSF)

1980: Who's Who in American Colleges and Universities

1986-2001: Editorial Board, *Am. J. Physiol. (Reg., Int., Comp. Physiology)*

1987-1990: Editorial Board, *Domestic Animal Endocrinology*

1988-1993: Established Investigator of the American Heart Association

1992-1996: Peer Review Research Committee, Florida Affiliate American Heart Association

1992-1994: NIH Biochemical Endocrinology study section, ad hoc member.

1995-1999: NIH Human Embryology and Development study section, regular member

1996-1999: Research Committee, Florida/Puerto Rico Affiliate American Heart Association

1997-2000: Chair, Peer Review Committee #1, Florida/Puerto Rico Affiliate American Heart Association

2002-2004: Vice Chair, Research Committee, Florida/Puerto Rico Affiliate American Heart Association

2004-2006: Chair, Research Committee; Member, Board of Directors, Florida/Puerto Rico Affiliate AHA

B. Selected peer-reviewed publications (of 120 total, in chronological order)

Wood, C.E., D. Barkoe, A. The, H. Newman, S. Purinton, and M.I. Castro. Fetal pulmonary immunoreactive adrenocorticotrophic hormone: molecular weight and cellular localization. *Regul. Pept.* **73**:191-196, 1998.

Tong, H., F. Lakhdir, and **C.E. Wood**. Endogenous prostanoids modulate the ACTH and AVP responses to hypotension in late-gestation fetal sheep. *Am. J. Physiol.* **275**:R735-R741, 1998.

Tong, H., E. Richards, and **C.E. Wood**. Prostaglandin endoperoxide synthase 2 abundance is increases in brain tissues of late-gestation fetal sheep in response to cerebral hypoperfusion. *J. Soc. Gynecol. Invest.* **6**:127-135, 1999

Purinton, S.C., H. Newman, M.I. Castro, and **C.E. Wood**. Ontogeny of estrogen sulfatase activity in ovine fetal hypothalamus, hippocampus, and brainstem. *Am. J. Physiol. (Reg., Int., Comp. Physiol.)* **276**:R1647-R1652, 1999.

Wood, C.E. and H. Tong. Central nervous system regulation of reflex responses to hypotension during fetal life. *Am. J. Physiol. (Reg., Int., Comp. Physiol.)* **277**:R1541-R1552, 1999.

Wood, C.E. The control of parturition in ruminants. *Journal of Reproduction and Fertility Suppl.* **54**:115-126, 1999.

Tong, H., and **C.E. Wood**. Indomethacin attenuates the cerebral blood flow response to hypotension in late-gestation fetal sheep. *Am. J. Physiol. (Reg., Int., Comp. Physiol.)* 277:R1268-R1273, 1999.

Purinton, S.C. and **Wood, C.E.** Ovine estrogen sulfotransferase in brain regions important for hypothalamus-pituitary-adrenal axis control. *Neuroendocrinology* 71:237-242, 2000.

Deauseault, D., Giroux, D., and **C.E. Wood**. Ontogeny of immunoreactive prostaglandin endoperoxide synthase isoforms in ovine fetal pituitary, hypothalamus, and brainstem. *Neuroendocrinology* 71:287-291, 2000.

Tong, H., H. Dhillon, and **C.E. Wood**. Induction of PGHS-2 mRNA in response to cerebral ischemia in late-gestation fetal sheep. *Prostaglandins and Other Lipid Mediators*, 62:165-172, 2000.

Wood, C.E., C.J. Saoud, T. Stoner, and M. Keller-Wood. Estrogen and androgen influence hypothalamic AVP and CRF concentrations in fetal and adult sheep. *Regulatory Peptides* 98:63-68, 2001.

Orbach, P., **C.E. Wood**, and M. Keller-Wood. Nitric Oxide Reduces Vascular Reactivity During Ovine Hypoadrenocorticism. *Clin. Exp. Pharm. Phys.* 28:459-462, 2001

Keller-Wood, M., and C.E Wood. Pituitary-adrenal physiology during pregnancy. *The Endocrinologist* 11:159-170, 2001.

Lakhdar, F., H. Tong, and **C.E. Wood**. Baroreceptor and prostanoid control of fetal renal cortical blood flow and plasma renin activity. *Reprod Fertil Dev.* 13(2-3):119-24, 2001

Slovin, P.N., C.-J. Huang, J.R. Cade, **C.E. Wood**, O. Nasiroglu, M. Privette, P. Orbach, and J.W. Skimming. Sodium pyruvate is better than sodium chloride as a resuscitation solution in a rodent model of profound hemorrhagic shock. *Resuscitation* 50:109-115, 2001.

Wood, C.E. The ovine fetal reflex responses to haemorrhage are not mediated by cardiac nerves. *J. Physiol. (Lond.)* 541:613-622, 2002.

Tong, H., and **C.E. Wood**. Induction of immunoreactive PGHS-1, PGHS-2, and Fos in response to cerebral ischemia in late-gestation fetal sheep. *J. Soc. Gynecol. Invest.* 9(6):342-50, 2002.

Jensen, E., **C.E. Wood**, and M. Keller-Wood. The normal increase in adrenal secretion during pregnancy contributes to maternal volume expansion and fetal homeostasis. *J. Soc. Gynecol. Invest.* 9(6):362-371, 2002.

Purinton, S.C. and **C.E. Wood**. Oestrogen augments the fetal ovine hypothalamus-pituitary-adrenal axis in response to hypotension. *J. Physiol. (Lond.)* 544(Pt 3): 919-29, 2002.

Wood, C.E., K.E. Gridley, and M. Keller-Wood. Biological activity of 17 β -estradiol-3-sulfate in ovine fetal plasma and uptake in fetal brain. *Endocrinology*. 144(2):599-604, 2003..

Husted, D., J. Upshaw, and **C.E. Wood**. Cellular localization of thromboxane synthase in ovine spinal cord and hindbrain. *Brain Research*, 971:107-115, 2003.

Langham, M.R., D.W. Kays, E.A. Beierle, M.K. Chen, T.C. Mullet, K. Rieger, **C.E. Wood**, and J.L. Talbert. Twenty years of progress in congenital diaphragmatic hernia at the University of Florida. *Am. Surg.* 69:45-52, 2003

Braith, R.W., R.M. Mills, C.S. Wilcox, G.L. Davis, J.A. Hill, and **C.E. Wood**. High-dose angiotensin-converting enzyme inhibition restores body fluid homeostasis in heart-transplant recipients. *Journal of the American College of Cardiology* 41:426-432, 2003.

Wood, C.E., and D. Giroux. Central Nervous System Prostaglandin Endoperoxide Synthase-1 and -2 Responses to Oestradiol and Cerebral Hypoperfusion in Late-Gestation Fetal Sheep. *J. Physiol. (Lond.)* 549:573-581, 2003.

Jensen, E., **C.E. Wood**, and M. Keller-Wood. Alterations in maternal corticosteroid levels influence fetal urine and lung liquid production. *J. Soc. Gyn. Inv.* 10:480-489, 2003.

Wood, C.E., D. Giroux, and K.E. Gridley. Fetal Brain Regional Responses to Cerebral Hypoperfusion: Modulation by Estrogen. *Brain Research*. 993:84-89, 2003.

Reimnsider, S., and **C.E. Wood**. Colocalization of Prostaglandin Endoperoxide Synthase and Immunoreactive Adrenocorticotrophic Hormone in Ovine Fetal Pituitary. *J. Endocrinol.* 180:303-310, 2004.

Paddock, H., E.A. Bierle, M.K. Chen, T. Mullett, C.E. Wood, D.W. Kays, and M.R. Langham, Jr. Administration of Prenatal Betamethasone Suppresses the Adrenal-Hypophyseal Axis in Newborns with Congenital Diaphragmatic Hernia. *J. Ped. Surg.* 39:1176-1182, 2004.

Jensen, E., C.E. Wood, and M. Keller-Wood. Chronic Alterations in Maternal Corticosteroid Levels Influence Uterine Blood Flow and Placental and Fetal Growth. *Am. J. Physiol. Reg., Int., Comp. Physiol.* 288(1):54-61, 2004.

Wood, C.E. and D. Giroux. Influence of Cerebral Hypoperfusion and Estradiol on Expression of Nitric Oxide Synthase Isoforms in Ovine Fetal Central Nervous System. Neuroendocrinology, submitted.

Wood, C.E. Estrogen-HPA Interactions in the Fetus: The Interplay Between Placenta and Fetal Brain. J. Soc. Gyn. Invest. 12(2):67-76, 2005

Ali, N., Keller-Wood, M., and C.E. Wood. Ontogenetic Changes in Extrapituitary Expression of Pro-opiomelanocortin in the Developing Ovine Fetus. Peptides. 26(2):301-306, 2005.

Keller-Wood M, Wood CE, Hua Y, Zhang D. Mineralocorticoid receptor expression in late-gestation ovine fetal lung. J Soc Gynecol Investig. 12(2):84-91, 2005

Sun, Z., X. Wang, C.E. Wood, and J.R. Cade, Jr. Genetic AT1a receptor deficiency attenuates cold-induced hypertension. Am. J. Physiol. Reg., Int., Comp. Physiol. 288(2):R433-9, 2005

Reimnsnider, S., and C.E. Wood. Does Reduction of Circulating Prostaglandin E2 Reduce Fetal Hypothalamic-Pituitary-Adrenal Axis Activity? J. Soc. Gynecol. Invest. 12(4):e13-9, 2005.

Wood, C.E., G.F. Chen, and M. Keller-Wood. Expression of Nitric Oxide Synthase isoforms is reduced in late-gestation ovine fetal brainstem. Am. J. Physiol. Reg., Int., Comp. Physiol. 289(2):R613-R619, 2005.

C.E. Wood, R. Cousins, D. Zhang, and M. Keller-Wood. Ontogeny of Expression of Organic Anion Transporters 1 and 3 in Ovine Fetal and Neonatal Kidney. Exp. Biol. Med. 230:668-673, 2005.

Zhang, D., and C.E. Wood. Prostaglandin endoperoxide synthase 2 responses to oxygen-glucose deprivation are mediated by mitogen-activated kinase ERK1/2 in neuronal cells. Brain Research, 1060:100-107, 2005.

Keller-Wood, M, M. Powers, J. Gersting, N. Ali, and C.E. Wood. A Genomic Analysis of the Neuroendocrine Development of the Fetal Brain-Pituitary-Adrenal Axis in Late Gestation. Physiological Genomics 24(3):218-24, 2005.

Reimnsnider S.K., and C.E. Wood. Differential Modulation of Ovine Fetal ACTH Secretion by PGHS-1 and PGHS-2. Neuroendocrinology *in press*.

Wood, C.E. and D. Giroux. Influence of Cerebral Hypoperfusion and Estradiol on Expression of Nitric Oxide Synthase Isoforms in Ovine Fetal Central Nervous System. J. Soc. Gynecol. Invest., *in press*.

Gersting, J.A., C.E. Schaub, and C.E. Wood. Ontogeny of Prostaglandin G/H Synthase Enzyme Expression in the Ovine Fetal Central Nervous System and Pituitary. Brain Research *submitted*.

Wood, C.E. and M. Keller-Wood. Ontogeny of Androgen Receptor Expression in the Ovine Fetal Central Nervous System and Pituitary. Neuroscience Letters *submitted*.

Jensen, E., C.E. Wood, and M. Keller-Wood. VEGF is Upregulated and eNOS is Downregulated in the Ovine Placenta by Alteration of Maternal Adrenal Steroids. J. Physiol. (Lond.) *submitted*.

C. Research Support. Ongoing research projects pertinent to the proposed research.

WOOD, C.E.

ONGOING

2 R01 HD33053 (Wood, PI) 5/1/01-4/30/06
NIH/NICHD

Fetal Cardiovascular and Endocrine Reflex Responses to Cerebral Hypoperfusion

The specific aims are to: 1) test the relative contributions of PGHS-1 and -2 in the control of fetal reflex responses to hypotension; 2) to test the effect of baro- and chemoreceptor afferents in the expression of PGHS-1 and -2 in brain; 3) quantify the phosphorylation state of PGHS-1 and -2 in response to hypotension; and 4) test the effect of prostanoids on GABA_A receptor-mediated chloride uptake in brain regions important for cardiovascular control.

R01 HD42135 (Wood, PI) 4/1/02-3/31/07
NIH/NICHD

Estrogen Influences on Fetal Adrenocorticotropin

The major goal is to investigate the interaction between increases in fetal estrogen production and increases in activity of the ovine fetal hypothalmo-pituitary-adrenal axis.

1 R01 DK62080 (Keller-Wood, PI) 3/1/03-2/28/08

NIH/NIDDK

Cortisol at MR mediate fetal physiologic/genomic effects

The goal of this study is to identify the roles of mineralocorticoid and glucocorticoid receptors in the control of electrolyte and fluid balance by the fetal lung and kidney, and on control of the fetal pituitary-adrenal axis using both physiologic endpoints (lung liquid composition, urine production and composition and plasma ACTH), and molecular markers of steroid action in these cells (sgk, ENaC and 5HT1A protein and mRNA).

2 R01 DK38114 (Keller-Wood, PI) 7/1/99 – 6/30/08

NIH/NIDDK

Control of Corticotropin during Pregnancy

The major goals of this project are to determine the role changes in corticosteroid receptors in the brain during pregnancy, and to test the hypothesis that progesterone alters mineralocorticoid function and ACTH secretion in pregnancy. (proposed studies are renewal of this grant)

PENDING

5 R01 HD33053-10A1 (Wood, PI)

11/1/07-10/30/11

NIH/NICHHD

Fetal Cardiovascular and Endocrine Reflex Responses to Cerebral Hypoperfusion

The specific aims are to answer the following questions: 1) is there an association of glutaminergic pathways and prostanoids in the mediation of the reflex responses to cerebral hypoperfusion? 2) Is the ability of the fetus to maintain blood pressure and blood gases during hypovolemia impaired by blockade of prostaglandin biosynthesis or NMDA receptors? 3) What is the molecular and cellular basis of the upregulation of PGHS-2 in response to hypotension?

2 R01 HD50414-01A1 (Wood, PI)

7/1/06-6/30/11

NIH/NICHHD

Fetal Endocrinology of Sulfoconjugated Estrogens

The specific aims are: 1) to elucidate the expression of Organic Anion Transporters 1-4 (OAT1-4) in fetal brain and other tissues; 2) to elucidate the roles of OAT's and steroid sulfatase (STS) in the uptake of estradiol-3-sulfate by the fetal brain; and 3) to test OAT's as mediators of estradiol-3-sulfate action in the fetal HPA axis.

COMPLETED

5 R03 HD38733 (Wood, PI)

4/1/00-3/31/02

NIH/NICHHD

Fetal Neuroendocrine Responses to Sulfoconjugated Estrogens

The goals of this project were to establish a neuroendocrine action of sulfoconjugated estrogens in the sheep fetus.

1 R03 HD38734 (Keller-Wood, PI) 4/6/01-3/31/03

NIH/NICHHD

Steroid effects on vascular reactivity and nitric oxide production

The major goal is to test for an interaction between estrogens and corticosteroids in control of vascular reactivity and nitric oxide production in blood vessels.