

Psychology W3435
Neurobiology of Reproductive Behavior
Spring 2016

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PSYC W3435 Neurobiology of Reproductive Behavior (seminar)
 4 pts F Champagne Mon 10:10-12:00PM Room 405 Schermerhorn Hall
INSTRUCTOR PERMISSION REQUIRED PRIOR TO REGISTRATION

Reproduction encompasses a broad range of behaviors in the life cycle of an organism from mate selection and copulation to parental care. These seminars will examine various aspects of reproduction across species and the neural mechanisms that regulate these behaviors and allow an organism to adapt to environmental change.

Textbook: Nelson, R.J. (2011) An Introduction to Behavioral Endocrinology. (4th edition)
 Sinauer Associates Inc., Sunderland MA.

Weekly Schedule & Readings

Jan-25-16 Introduction & Overview

Nelson Chapters 1 & 2

Feb-1-16 Overview of Behavioral Endocrinology & Sexual Determination/Differentiation

Nelson Chapters 3 & 4

Wilhelm D1, Palmer S, Koopman P (2007) Sex determination and gonadal development in mammals. *Physiol Rev* 87(1):1-28.

McCarthy MM, Arnold AP (2011) Reframing sexual differentiation of the brain. *Nat Neurosci* 14(6):677-83.

Feb-8-16 Mate Selection & Sexual Orientation

Jacques Balthazart, Larry J. Young (2015) Chapter 48 - Mate Selection, Sexual Orientation, and Pair Bonding. *Knobil and Neill's Physiology of Reproduction* (Fourth Edition) Pages 2157-2210.

Yamazaki K, Beauchamp GK. (2007) Genetic basis for MHC-dependent mate choice. *Adv Genet.* 59:129-45.

Ngun TC, Vilain E (2014) The biological basis of human sexual orientation: is there a role for epigenetics? *Adv Genet.* 86:167-84.

Feb-15-16 **Journal Presentations****Feb-22-16** **Sexual Behavior in Males & Females**[Nelson Chapters 5 & 6](#)

Crews D. (2005) Evolution of neuroendocrine mechanisms that regulate sexual behavior. *Trends Endocrinol Metab.* 16(8):354-61.

Dixson A. (2001) The evolution of neuroendocrine mechanisms regulating sexual behaviour in female primates. *Reprod Fertil Dev.* 13(7-8):599-607.

Feb-29-16 **Pregnancy & Lactation**

Brunton PJ, Russell JA. (2008) The expectant brain: adapting for motherhood. *Nat Rev Neurosci.* 9(1):11-25.

De Weerth C, Buitelaar JK. (2005) Physiological stress reactivity in human pregnancy—a review. *Neuroscience & Biobehavioral Reviews.* (2):295-312

Lonstein J. (2007) Regulation of anxiety during the postpartum period. *Frontiers in Neuroendocrinology.* 28: 115-141

Theodosis DT, Poulain DA. (2001) Maternity leads to morphological synaptic plasticity in the oxytocin system. *Progress in Brain Research.* 133: 49-58

Mar-7-16 **MIDTERM EXAM****Mar-14-16** **SPRING BREAK****Mar-21-16** **Journal Presentations****Mar-28-16** **Parental Behavior**[Nelson, Chapter 7](#)

Lévy F, Keller M, Poindron P. (2004) Olfactory regulation of maternal behavior in mammals. *Horm Behav.* 46(3):284-302.

Saltzman W1, Ziegler TE (2014) Functional significance of hormonal changes in mammalian fathers. *J Neuroendocrinol.* 26(10):685-96.

Wang Z, Aragona BJ. (2004) Neurochemical regulation of pair bonding in male prairie voles. *Physiol Behav.* 83(2):319-28.

Schradin C, Anzenberger G. (1999) Prolactin, the Hormone of Paternity. *News Physiol Sci.* 14:223-231.

Apr-4-16 Inheritance of Variations in Reproduction

Benoit D, Parker KC.(1994) Stability and transmission of attachment across three generations. *Child Dev.* 65(5):1444-56.

Champagne FA. (2008) Epigenetic mechanisms and the transgenerational effects of maternal care. *Front Neuroendocrinol.* 29(3):386-97.

Anway MD, Skinner MK. (2006) Epigenetic transgenerational actions of endocrine disruptors. *Endocrinology.* 147(6 Suppl):S43-9.

Apr-11-16 Journal Presentations**Apr-18-16 Stress & Reproduction; Essay Presentations**[Nelson Chapter 11](#)

Wingfield JC, Sapolsky RM. (2003) Reproduction and resistance to stress: when and how. *J Neuroendocrinol.* 15(8):711-24.

Herrenkohl LR. (1986) Prenatal stress disrupts reproductive behavior and physiology in offspring. *Ann N Y Acad Sci.* 474:120-8.

Vrekoussis T, Kalantaridou SN, Mastorakos G, Zoumakis E, Makrigiannakis A, Syrrou M, Lavasidis LG, Relakis K, Chrousos GP. (2010) The role of stress in female reproduction and pregnancy: an update. *Ann N Y Acad Sci.* 1205:69-75.

Breen KM, Karsch FJ. (2006) New insights regarding glucocorticoids, stress and gonadotropin suppression. *Front Neuroendocrinol.* 27(2):233-45.

Apr-25-16 Environments, Aging, & Reproduction

Bhatt R. (2000) Environmental influence on reproductive health. *International Journal of Gynecology & Obstetrics.* 70(1): 69-75.

Klein SL, Nelson RJ. (1999) Influence of social factors on immune function and reproduction. *Rev Reprod.* 4(3):168-78.

Hijazi RA, Cunningham GR. (2005) Andropause: is androgen replacement therapy indicated for the aging male? *Annu Rev Med.* 56:117-37.

Chakraborty TR, Gore AC. (2004) Aging-related changes in ovarian hormones, their receptors, and neuroendocrine function. *Exp Biol Med (Maywood).* 229(10):977-87.

Spencer RP. (2002) Cessation of reproduction: an analytic view of menopause. *Med Hypotheses.* 59(4):406-10.

May-2-16 Journal Presentations

