The Neuroscience of Sex

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Fall 2015 Session II: Fridays, November 6th – December 11th | 10:30 a.m. – 12:30 p.m.
Room 124, Leeds House Building

Schedule of topics:

Week 1 (November 6): Introduction to the Course: “Let's Talk About Sex,” How it is Studied in Neuroscience and its Historical Context

This lecture will provide an introduction to the neuroscience of sex, and so will focus on some of the basic techniques researchers have used to understand the brain and the historical context in which some of the major findings were made. Suggested readings will be from: Alexander, Brian, and Young, Larry. (2012). The Chemistry Between Us: Love, Sex, And The Science Of Attraction. Viking, USA. ISBN - 10: 1591845130; ISBN - 13: 9781591845133

Week 2 (November 13): Building a Sexual Brain: The Neuroscience of Gender

The brain plays an essential role in our gender and sexual orientation. The effect of sex hormones on development shapes our brains as well as our sex organs and secondary sexual characteristics and this occurs over the life span. Suggested readings will be from Alexander and Young, 2012.

Week 3 (November 20):

Sexual behaviour emerges at puberty and tends to follow hormone levels. This lecture will focus on male and female sexual desire. Suggested readings will be from Alexander and Young, 2012, and may also include selected scientific articles such as Rupp, H. A., James, T. W., Ketterson, E. D., Sengelaub, D. R., Janssen, E., & Heiman, J. R. (2009). Neural activation in the orbitofrontal cortex in response to male faces increases during the follicular phase. Horm Behav, 56(1), 66-72.

Week 4 (November 27): Be My Baby: Maternal behavior and female pair bonding.

Maternal behavior, in its most simplified form, is caused by the brain’s motivational and sex circuitry and the release of peptide hormone oxytocin in the brain. But research suggests that pair bonding between partners uses the same maternal circuitry in women.

Suggested readings will be from Alexander and Young, 2012, and may also include selected scientific articles such as Keebaugh, A. C., & Young, L. J. (2011). Increasing oxytocin receptor expression in the nucleus accumbens of pre-pubertal female prairie voles enhances alloparental responsiveness and

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Week 5 (December 4): Be My Territory: Male pair bonding

For human men, they also experience strong pair bonding between partners. However the underlying neurocircuitry is different. For males, pair bonding, in its most simplified form, is caused by the brain’s circuitry used for defending territory.

Suggested readings will be from Alexander and Young, 2012, and may also include selected scientific articles such as Acevedo, B. P., Aron, A., Fisher, H. E., & Brown, L. L. (2012). Neural correlates of long-term intense romantic love. Soc Cogn Affect Neurosci, 7(2), 145-159. doi: 10.1093/scan/nsq092

Week 6 (December 18): The Infidelity Paradox.

If pair bonding is so strong and losing love is so painful, activating feelings of loss mediated by the stress system, then why do we ever fall out of love and cheat? Individual variation can determine the susceptibility of people to engage in sexual shenanigans and social and sexual monogamy are not the same thing.

Suggested readings will be from Alexander and Young, 2012.

Recommended readings for continued learning:

Other interesting resources:


And others to be determined.