

PSYCGN24: Introduction to Neuroscientific Methods: Vanessa Puetz

View Online



MSc Developmental Neuroscience & Psychopathology : Yr 1. This module is the first course in your Neuroscience series and presents an introduction to a range of methods for studying the brain and cognitive and affective processing, including: structural and functional MRI, brain connectivity, animal models, EEG and neuroendocrine assessments. The goal of this course is to provide an introduction to the most commonly used methods as well as their applications to different samples (e.g. adults and children) and focus on making an informed selection based on the research question one wishes to investigate.

1.

Ward J. Introducing cognitive neuroscience. In: The Student's Guide to Cognitive Neuroscience. 3rd ed. Psychology Press; 2015:1-14.
<https://ebookcentral.proquest.com/lib/ucl/reader.action?docID=1974273&ppg=14>

2.

Posner MI, DiGirolamo GJ. Cognitive neuroscience: Origins and promise. Psychological Bulletin. 2000;126(6):873-889. doi:10.1037/0033-2909.126.6.873

3.

Illes J, Bird SJ. Neuroethics: A modern context for ethics in neuroscience. Trends in Neurosciences. 2006;29(9):511-517. doi:10.1016/j.tins.2006.07.002

4.

Amaro E, Barker GJ. Study design in fMRI: Basic principles. Brain and Cognition. 2006;60(3):220-232. doi:10.1016/j.bandc.2005.11.009

5.

Poldrack R. Can cognitive processes be inferred from neuroimaging data? *Trends in Cognitive Sciences*. 2006;10(2):59-63. doi:10.1016/j.tics.2005.12.004

6.

Miller G. Neuroimaging: Growing pains for fMRI. *Science*. 2008;320(5882):1412-1414. doi:10.1126/science.320.5882.1412

7.

Friston K. Ten ironic rules for non-statistical reviewers. *NeuroImage*. 2012;61(4):1300-1310. doi:10.1016/j.neuroimage.2012.04.018

8.

Hayhoe M, Ballard D. Eye movements in natural behavior. *Trends in Cognitive Sciences*. 2005;9(4):188-194. doi:10.1016/j.tics.2005.02.009

9.

Wass et al. SV. Shorter spontaneous fixation durations in infants with later emerging autism. *Scientific Reports*. 2015;5. doi:10.1038/srep08284

10.

Chen et al. NTM. Attentional bias modification facilitates attentional control mechanisms: Evidence from eye tracking. *Biological Psychology*. 2015;104:139-146. doi:10.1016/j.biopsycho.2014.12.002

11.

Kas et al. MJH. Genetics of behavioural domains across the neuropsychiatric spectrum; of mice and men. *Molecular Psychiatry*. 2007;12(4):324-330. doi:10.1038/sj.mp.4001979

12.

Grayton HM et al. Altered social behaviours in Neurexin 1 α knockout mice resemble core symptoms in neurodevelopmental disorders. PLoS ONE. 2013;8(6).
doi:10.1371/journal.pone.0067114

13.

Weaver et al. ICG. Epigenetic programming by maternal behavior. Nature Neuroscience. 2004;7(8):847-854. doi:10.1038/nn1276

14.

Cohen et al. MM. Early-life stress has persistent effects on amygdala function and development in mice and humans. Proceedings of the National Academy of Sciences. 2013;110(45):18274-18278. doi:10.1073/pnas.1310163110

15.

Panksepp J. Neurodynamics: The electrical languages of the brain. In: Affective Neuroscience. Oxford University Press; 2004:81-96.
<https://www-dawsonera-com.libproxy.ucl.ac.uk/abstract/9780198025672>

16.

Taylor MJ, Baldeweg T. Application of EEG, ERP and intracranial recordings to the investigation of cognitive functions in children. Developmental Science. 2002;5(3):318-334. doi:10.1111/1467-7687.00372

17.

Luck SJ. An introduction to event-related potentials and their neural origins. In: An Introduction to the Event-Related Potential Technique. MIT Press; 2005:1-50.
<https://contentstore.cla.co.uk/secure/link?id=81a608c5-8832-e811-80cd-005056af4099>

18.

Mayberg et al. HS. Deep brain stimulation for treatment-resistant depression. Neuron.

2005;45(5):651-660. doi:10.1016/j.neuron.2005.02.014

19.

Arul-Anandam AP, Loo C. Transcranial direct current stimulation: A new tool for the treatment of depression? *Journal of Affective Disorders*. 2009;117(3):137-145. doi:10.1016/j.jad.2009.01.016

20.

Hamilton A. Matlab for psychologists [Online tutorial]. Published 2004. <http://www.antoniahamilton.com/matlab.html>

21.

MRC Cognition and Brain Sciences Unit. Introduction to scientific computing and Matlab: [workshops schedule]. [Wiki]. <http://imaging.mrc-cbu.cam.ac.uk/methods/MatlabLecturesSchedule>

22.

Gockenbach MS. A practical introduction to Matlab (updated for Matlab 5). [Online tutorial]. <http://www.math.mtu.edu/~msgocken/intro/intro.html>

23.

Anticevic et al. A. The role of default network deactivation in cognition and disease. *Trends in Cognitive Sciences*. 2012;16(12):584-592. doi:10.1016/j.tics.2012.10.008

24.

Koss et al. KJ. Early adversity, hypocortisolism, and behavior problems at school entry: A study of internationally adopted children. *Psychoneuroendocrinology*. 2016;66:31-38. doi:10.1016/j.psyneuen.2015.12.018

25.

Lupien et al. SJ. Can poverty get under your skin? Basal cortisol levels and cognitive function in children from low and high socioeconomic status. *Development and Psychopathology*. 2001;13(03):653-676.
<http://journals.cambridge.org.libproxy.ucl.ac.uk/action/displayAbstract?fromPage=online&aid=82088&fulltextType=RA&fileId=S0954579401003133>

26.

Menon V. Large-scale brain networks and psychopathology: A unifying triple network model. *Trends in Cognitive Sciences*. 2011;15:483-506. doi:10.1016/j.tics.2011.08.003

27.

Panksepp J, Solms M. What is neuropsychanalysis? Clinically relevant studies of the minded brain. *Trends in Cognitive Sciences*. 2012;16(1):6-8. doi:10.1016/j.tics.2011.11.005

28.

Yarkoni et al. T. Cognitive neuroscience 2.0: Building a cumulative science of human brain function. *Trends in Cognitive Sciences*. 2010;14(11):489-496.
doi:10.1016/j.tics.2010.08.004

29.

Babiloni F, Astolfi L. Social neuroscience and hyperscanning techniques: Past, present and future. *Neuroscience & Biobehavioral Reviews*. 2014;44:76-93.
doi:10.1016/j.neubiorev.2012.07.006

30.

Reuter M, Montag C. Neuroeconomics - an introduction. In: M. Reuter, Montag C, eds. *Neuroeconomics*. Springer; 2016.
https://www.amazon.co.uk/Neuroeconomics-Neuroscience-Psychology-Behavioral-Economics/dp/3642359221/ref=sr_1_4?s=books&ie=UTF8&qid=1502447074&sr=1-4&keywords=neuroeconomics