



Beckley Foundation Scientific Publications

THE BECKLEY FOUNDATION SCIENTIFIC PROGRAMME

Since the late 1960s, Amanda Feilding has had a deep interest in studying the changes in cerebral circulation and brain function underlying changes in states of awareness and cognition. In 1978 she wrote a booklet entitled *Blood and Consciousness*.

Within the Beckley Foundation scientific programme, she has built up a network of collaborative partnerships with leading scientists and institutions around the world.

Her research work investigates how psychoactive substances affect consciousness, the benefits and risks associated with their use, and how this knowledge may be used to develop new treatments for physical and mental disorders.

SUCCESSSES

- **In 2013, the first ethical approvals for a brain-imaging study using LSD** (collaboration with Imperial College, London).
- The first study to use fMRI and MEG imaging measures to examine **changes in cerebral blood flow, brain activity and functional connectivity using psilocybin** (collaboration with Imperial College London)
- This research has produced outstanding results, including i) the discovery of psilocybin as a **potential new treatment for depression**, which is about to be tested in a clinical trial funded by the UK's Medical Research Council; and ii) new neuroscientific explanations of why **MDMA and psilocybin** can be such **valuable aids to psychotherapy**.
- The first study in modern times to **harness the power of a psychedelic substance as an aid in the treatment of addiction** (collaboration with Johns Hopkins University, Baltimore).
- Some of the earliest studies into the **beneficial properties of cannabidiol (CBD)**, and into how cannabis-related harms can be reduced by ensuring a **balanced ratio between THC and CBD** (collaboration with Kings College, London)

Amanda Feilding's Scientific Papers and Publications

***Beckley Foundation/Imperial College Psychopharmacological Programme:
Amanda Feilding's collaboration with Prof Dave Nutt and Dr Robin Carhart-Harris***

Published papers

Functional connectivity measures after psilocybin inform a novel hypothesis of early psychosis

Carhart-Harris RL, Feilding A, Nutt DJ *et al.*, *Schizophrenia Bulletin*, 27 October 2012 epub

Neural correlates of the psychedelic state as determined by fMRI studies with psilocybin

Carhart-Harris RL, Feilding A, Nutt DJ *et al.*, *Proceedings of the National Academy of Sciences of the USA*, 2012, 109(6) 2138–43.

Implications for psychedelic-assisted psychotherapy: functional magnetic resonance imaging study with psilocybin

Carhart-Harris RL, Feilding A, Nutt DJ *et al.*, *British Journal of Psychiatry*, 2012, 200(3):238–44.

The administration of psilocybin to healthy hallucinogen-experienced volunteers in a mock-fMRI environment: a preliminary investigation of tolerability

Carhart-Harris RL, Feilding A, Nutt DJ *et al.*, *Journal of Psychopharmacology*, 2011, 25(11):1562–67

Writing/Submitted

Resting-state hippocampal functional connectivity after psilocybin

Carhart-Harris RL, Feilding A, Nutt DJ *et al.*

The mind revealing itself to itself: A causal role for deep layer pyramidal cells in the human psychedelic state

Muthukumaraswamy SD, Carhart-Harris RL, Feilding A, Nutt DJ *et al.*

The effects of psilocybin on effective connectivity in the Default Mode Network during resting state

Kaelen M, Carhart-Harris RL, Feilding A, Nutt DJ *et al.*

The effect of MDMA on recollecting emotionally-potent autobiographical memories: an fMRI study with implications for MDMA-assisted psychotherapy

Carhart-Harris RL, Feilding A, Curran VH, Nutt DJ *et al.*

**Beckley Foundation Collaboration with University College London:
Prof Val Curran and Dr Celia Morgan**

Harms and benefits associated with psychoactive drugs: findings of an international survey of active drug users

Morgan CJA, Feilding A, Curran VH *et al.*, *Journal of Psychopharmacology*, 25 Feb 2013
epub

Investigating the interaction between schizotypy, divergent thinking and cannabis use

Schafer G, Feilding A, Morgan CJA *et al.*, *Consciousness and Cognition*, 2012, 21:292–98.

Cognitive and subjective effects of mephedrone and factors influencing use of a new ‘legal high’

Freeman, TP, Morgan, CJA, Vaughn-Jones *et al.*, *Addiction*, 2012, 107:792–800.
(Beckley Foundation-sponsored study)

**Beckley Foundation Collaboration with King’s College, Institute of Psychiatry:
Dr Paul Morrison**

Cannabidiol inhibits THC-elicited psychosis and hippocampal-dependent memory impairment

Englund A, Morrison P, Feilding A *et al.*, *Journal of Psychopharmacology*, 2013
Jan;27(1):19–27

Communication breakdown: delta-9-tetrahydrocannabinol effects on pre-speech neural coherence

Stone J, Morrison P, Feilding A *et al.*, *Molecular Psychiatry*, 2012 Jun;17(6):568–9.

Delta-9-tetrahydrocannabinol disruption of time perception and of self-timed actions

Stone JM, Morrison PD, Feilding A *et al.*, *Pharmacopsychiatry*, 2010 Aug, 43(6):236–7.

Does intravenous (D)9-tetrahydrocannabinol increase dopamine release? A SPET study

Barkus E, Morrison PD, Vuletic D *et al.*, *Journal of Psychopharmacology*, 2011, 25(11):1462–8.
(Beckley Foundation-sponsored study)

Disruption of Frontal Theta Coherence by Δ (9)-Tetrahydrocannabinol is Associated with Positive Psychotic Symptoms

Morrison PD, Nottage J, Stone JM *et al.*, *Neuropsychopharmacology*, 2011, 36(4):827–36.
(Beckley Foundation-sponsored study)

Opposite effects of delta-9-tetrahydrocannabinol and cannabidiol on human brain function and psychopathology

Bhattacharyya S, Morrison PD, Fusar-Poli P, *et al.*, *Neuropsychopharmacology*, 2010, 35(3):764–74.

(Beckley Foundation-sponsored study)

Beckley Foundation Collaboration with Sechenov Institute of Evolutionary Physiology and Biochemistry, Russian Academy of Sciences: Amanda Feilding in collaboration with Prof Yuri Moskalkenko

Professor Yuri Moskalkenko is an internationally recognised expert in the field of cerebral circulation and has written several much-cited books on the subject. This is a selection of publications from their collaboration:

Non-Invasive Evaluation of Human Brain Fluid Dynamics and Skull Biomechanics in Relation to Cognitive Functioning

Moskalkenko Y, Feilding A and Halvorson P. Monograph. Published by Beckley Foundation Press (2009)

Effects of cranial trepanation on the functioning of cerebrovascular and cerebrospinal fluid systems

Moskalkenko Y, Feilding A, *et al.*, *International Journal of Psychophysiology*, 2008, 69(3):302.

Relation of age cognitive disorders with cranial compliance, cerebrospinal fluid mobility and cerebral circulation

Moskalkenko Y Feilding A *et al.*, *International Journal of Pathophysiology*, 2008, 69(3):307.

The effect of craniotomy on the intracranial hemodynamics and cerebrospinal fluid dynamics in humans

Moskalkenko YE, Feilding A *et al.* *Human Physiology*, 2008, 34(3):299–305.

Biomechanical properties of human cranium: aging aspects

Moskalkenko YE, Feilding A *et al.* *Journal of Evolutionary Biochemistry and Physiology*, 2008, 44(5):605–14.

Effect of the skull trephination opening on the interaction between intracranial, vascular and CSF systems

Moskalkenko, Y, Feilding A *et al.*, 2006, *Journal of Neurotrauma* 23(6):1000.

Slow-wave oscillations in the craniosacral space: a hemo- liquorodynamic concept of origination

Moskalkenko YE, Feilding A *et al.* *Neuroscience and Behavioral Physiology*, 2009, 39(4):377–81.

Noninvasive dynamic evaluation of functioning in the intracranial system

Moskalenko YE, Feilding A *et al.*, Proceedings of the 4th International Conference “Development and applying of high technologies in science, industry and education”, St Petersburg, 2007, vol. 10:214–15.

Age-dependent correlation between cerebral blood circulation, cerebrospinal fluid dynamics and the cranial compliance

Moskalenko YE, Feilding A *et al.* Proceedings of the 6th European Congress of the International Association of Gerontology and Geriatrics, “Healthy Aging for All Europeans”, St Petersburg, 2007, *Advances in Gerontology* 20(3):58.

Beckley Foundation Collaboration with Freiburg University: Prof Thilo Hinterberger

Neurophysiological correlates to psychological trait variables in experienced meditative practitioners

Thilo Hinterberger, Amanda Feilding *et al.*, In *Neuroscience, Consciousness and Spirituality*, H. Walach, S. Schmidt & W. Jonas (eds), Berlin: Springer (2011), pp. 129–57.

Beckley Foundation Collaboration with Medizinische Hochschule, Hanover: Prof Torsten Passie

Cluster headache attack cessation and remission extension of months or longer in six treatment-refractory patients administered only three doses of BOL-148

Karst M, Passie T. *Poster presented at the 15th International Headache Congress, Berlin, 2011.*

Beckley Foundation Collaboration with University of California at Berkeley: Dr Matthew Baggott

Protocol for LSD research; first ethical approvals obtained in 2007.

Further collaborative work on MDMA, MDA and oxytocin.

BECKLEY FOUNDATION FELLOWS

Dr Robin Carhart-Harris, Imperial College London

Mendel Kaelen, Imperial College London