

BIOGRAPHICAL SKETCH

NAME: Meye, Frank Julius
 POSITION TITLE: Assistant Professor
 FUNCTION: Group Leader (Tenured since October 1st 2018)

EDUCATION/TRAINING:

INSTITUTION AND LOCATION	DEGREE / PHASE	Completion Date MM/YYYY	FIELD OF STUDY
Brain Center Utrecht, The Netherlands	Tenure Track	09/2018	Neurobiology
Institut du Fer à Moulin (INSERM), Paris, France	Postdoctoral Training	06/2016	Neurobiology
Rudolf Magnus Institute, The Netherlands	Ph.D.	10/2012	Neurobiology
Utrecht University, The Netherlands	M.Sc (cum laude)	09/2007	Neuroscience and Cognition
Utrecht University, The Netherlands	B.Sc (cum laude)	08/2005	Cognitive Neuroscience

Personal statement: Throughout my career I have studied how negative experiences can alter neural circuits linked to reward processing, and how this contributes to aberrant motivational states in rodent models for psychiatric disorders. My approach consists of the multidisciplinary use of patch-clamp electrophysiology in brain slices, in conjunction with viral tools for neural tracing and optogenetic strategies, to investigate how aversive events drive plasticity in delineated neural circuits. Moreover, I combine this with in vivo recording techniques (calcium based fiber photometry and in vivo electrophysiology) and in vivo neural circuit manipulation (optogenetics and chemogenetics), to also investigate neural circuit function during specific reward-related behaviors. My current research goal is to unravel how aversive experiences like stress enhance the desire for rewarding food (i.e. stress-eating).

1a. Publications: Five selected key publications

Meye, F. J., Soiza-Reilly, M., Smit, T., Diana, M. A., Schwarz, M. K. & Mameli, M. (2016). Shifted pallidal co-release of GABA and glutamate in habenula drives cocaine withdrawal and relapse. *Nature Neuroscience*, 19(8):1019-24. ***This work, highlighted in the News & Views of the journal, identified that perturbations in synapses from the basal ganglia to the habenula drive psychological cocaine withdrawal symptoms, and promote relapse sensitivity.*** (IF: 17.839).

Lecca, S., **Meye, F. J.**, Trusel, M, Tchenio, A., Harris, J., Schwarz, M., Burdakov, D., Georges, F., & Mameli, M. (2017). Aversive stimuli drive hypothalamus-to-habenula excitation to promote escape behavior. *eLife*, 6, pii: e30697. doi: 10.7554/eLife.30697. ***This paper characterizes how aversive information is encoded in habenula circuitry, to produce avoidance.*** (IF: 7.725).

Meye, F. J*., Valentinova*, K., Lecca, S*., Marion-Poll, L., Maroteaux, M. J., Musardo, S., Moutkine, I., Gardoni, F., Haganir, R., Georges, F. & Mameli, M. (2015). Cocaine-evoked negative symptoms require AMPA receptor trafficking in the lateral habenula. *Nature Neuroscience*, 18(3):376-8. doi: 10.1038/nn.3923. [*=equal contribution]. ***This paper showed that modifications at excitatory synapses in the habenula, after cocaine intake, give rise to habenular hyperactivity and are instrumental in producing withdrawal symptoms.*** (IF: 17.839).

Meye, F. J., Trezza, V., Vanderschuren, L. J. M. J., Ramakers, G. M. J. & Adan, R. A. H (2012). Neutral antagonism for the cannabinoid 1 receptor is a safe tool to treat obesity. *Molecular Psychiatry*, 18(12), 1294-1301. ***This paper provided direct evidence that constitutive (spontaneous) activity of cannabinoid 1 receptors occurs in neural circuits in the brain, and that its disruption leads to deleterious anxiogenic and depressive-like effects.*** (IF: 13.204)

Meye, F. J. & Adan, R. A. H. (2013). Feelings about food: the ventral tegmental area in food reward and emotional eating. *Trends in Pharmacological Sciences*, 35(1), 31-40. ***This frequently-cited review describes the role of dopamine circuits in reward-based eating.*** (IF: 12.797)

1b. Publications: Full list

Tan, D., Nuno-Perez, Mameli, M. & **Meye, F.J.** (2018). Cocaine withdrawal reduces GABAB R transmission at entopeduncular nucleus - lateral habenula synapses. *European Journal of Neuroscience*, doi: 10.1111/ejn.14120

Soiza-Reilly M., et al., 2018. SSRIs target prefrontal to raphe circuits during development modulating synaptic connectivity and emotional behavior. *Molecular Psychiatry*, doi: [10.1038/s41380-018-0260-9](https://doi.org/10.1038/s41380-018-0260-9).

Meye, F. J., et al., 2017. Neural circuit adaptations during drug withdrawal - Spotlight on the lateral habenula. *Pharmacology Biochemistry and Behavior*, doi.org/10.1016/j.pbb.2017.08.007.

Doly, S., et al., 2017. Serotonin 2B receptors in mesoaccumbens dopamine pathway regulate cocaine responses. *Journal of Neuroscience*, pii: 1354-17.

Lecca, S., **Meye, F. J.**, et al. 2017. Aversive stimuli drive hypothalamus-to-habenula excitation to promote escape behavior. *eLife*, 6, pii: e30697. doi: 10.7554/eLife.30697.

Morel, et al., 2017. Nicotinic receptors mediate stress-nicotine detrimental interplay via dopamine cells' activity. *Molecular Psychiatry*, doi: 10.1038/mp.2017.145

Meye, F. J., et al. 2016. Shifted pallidal co-release of GABA and glutamate in habenula drives cocaine withdrawal and relapse. *Nature Neuroscience*, 19(8):1019-24.

Doly, S., et al., 2015. GABAB receptor cell-surface export is controlled by an endoplasmic reticulum gatekeeper. *Molecular Psychiatry*, doi: 10.1038/mp.2015.72.

Meye, F. J.*., et al., 2015. Cocaine-evoked negative symptoms require AMPA receptor trafficking in the lateral habenula. *Nature Neuroscience*. 18(3):376-8. [*=equal contribution]

Glangetas, C., et al., 2015. *Cell Reports*, 13(10):2287-96.

Lecca, S., **Meye, F. J.** & Mameli, M. 2014. The lateral habenula in addiction and depression: an anatomical, synaptic and behavioral overview. *European J. of Neurosci*, 39(7), 1170-1180.

Meye, F. J., et al., 2014. The vital role of constitutive GPCR activity in the mesolimbic dopamine system. *Translational Psychiatry*, 11(4), e361.

Meye, F. J., et al., 2013. *Frontiers in human neuroscience*, 16(7): 860.

Meye, F. J. & Adan, R. A. H. 2013. Feelings about food: the ventral tegmental area in food reward and emotional eating. *Trends in Pharmacological Sciences*, 35(1), 31-40.

Meye, F. J., et al., 2012. Neutral antagonism for the cannabinoid 1 receptor is a safe tool to treat obesity. *Molecular Psychiatry*, 18(12), 1294-1301.

Meye, F. J., et al., 2012. Morphine withdrawal enhances constitutive mu-opioid receptor activity in the ventral tegmental area. *Journal of Neuroscience*, 32(46), 16120-8.

De Rover, M., **Meye, F.J.**, & Ramakers, G.M. 2008. Presynaptic metabotropic glutamate receptors regulate glutamatergic input to dopamine neurons in the ventral tegmental area. *Neuroscience*, 154(4)1318-23

2. Prizes and Awards

- 2018: Recipient of *ERC Starting Grant*, from European Research Commission
- 2017: Recipient of *Rudolf Magnus Young Talent Fellowship*, from UMCUtrecht
- 2016: *NARSAD Young Investigator Grant* from Brain & Behavior Research Foundation
- 2016: Travel award for the *Dopamine 2016 Meeting* in Vienna
- 2015: Recipient of *VENI grant* from *Netherlands Organisation for Scientific Research (NWO)*
- 2012: Recipient of *Fondation Fyssen* scholarship for postdoctoral research
- 2012: First prize for PhD oral presentations at *Figon Dutch Medicine Days*
- 2011: First prize for PhD poster presentations at *TI Pharma GPCR Forum*
- 2011: Thesis support grants from *Dutch Brain Found. and Dutch Society for Pharmacology*
- 2010: Recipient of IDARS-NIDA award to attend the associated meeting in San Diego
- 2006: Recipient of an *Erasmus scholarship* for master internship in Cambridge, UK

3. Symposium attendance and (invited) presentations

- 2018: Utrecht Brain Conference, Utrecht, The Netherlands. *Invited speaker.*
- 2018: Stress Symposium, Rotterdam, The Netherlands, *Invited speaker.*
- 2018: **Dutch Neuroscience Meeting, Lunteren, The Netherlands. *Invited speaker.***
- 2018: FENS, Berlin, Germany. *Poster presenter.*
- 2017: **Synapse Meeting, Milan, Italy. *Invited speaker.***
- 2017: ONWAR Career Event, Amsterdam, The Netherlands. *Invited speaker.*
- 2017: **Cajal Course *Interacting with Neural Circuits*, Champalimaud, Lisbon. *Invited lecturer.***
- 2017: Nudgelt Meeting, Bristol, 2017. *Invited speaker.*
- 2016: Dopamine Meeting, Vienna, Austria. *Poster presenter.*
- 2016: Kavli-FENS Annual Meeting, Chicheley, UK. *Poster presenter.*
- 2015: **GRC Meeting on Catecholamines, Newry, Maine, USA. *Selected poster presenter.***
- 2015: Society for Neuroscience Meeting, Chicago, USA. *Poster presenter.*
- 2015: **IFM Basal Ganglia Colloquium, Paris, France. *Colloquium Organizer.***
- 2014: Neuroscience school of advanced studies, Cortona, Italy, *Causal Neuroscience: From synaptic plasticity to adaptive behavior. **Selected attendee.***
- 2013: Dopamine Meeting, Alghero, Italy. *Poster presenter.*
- 2010: Society for Neuroscience Meeting, San Diego, USA. *Poster presenter.*
- 2010: IDARS-NIDA Meeting, San Diego, USA. *Selected poster presenter.*