

## A. PERSONAL DETAILS

### PERSONALIA

1. Name: Frank Julius Meye (m)
2. Birth date: 19-04-1984
3. Born in: Utrecht, The Netherlands
  
4. Professional address  
Department of Translational Neuroscience  
Brain Center | UMC Utrecht  
Universiteitsweg 100; 3584 CG Utrecht; The Netherlands  
Office: Stratenum 4.231  
T +31 (0)88 756 1234
  
5. Contact information
  - a. Phone: +31 (0)6 106 705 20
  - b. Email: [f.j.meye-2@umcutrecht.nl](mailto:f.j.meye-2@umcutrecht.nl)
  
6. Language skills  
Dutch – Native  
English – Fluent (near native)  
French – Fluent (approx. C1 level)



7. Formal degrees and training degrees

- |  |   |                        |
|--|---|------------------------|
| 2005 – 2007: MSc (cum laude) <i>Neuroscience and Cognition</i> | - | Utrecht University, NL |
| 2002 – 2005: BSc (cum laude) <i>Cognitive Neuroscience</i>     | - | Utrecht University, NL |

8. Doctorate

2007 – 2012: PhD in Neurophysiology – University Medical Center Utrecht.  
PhD obtained on 26<sup>th</sup> of September 2012.

*Promotor:* Prof. dr. Dr. Roger Adan

*Copromotor:* Dr. Geert Ramakers

### POSITIONS

#### **Current position**

-2023 – Now: Associate Professor at Dept. Translational Neuroscience, Brain Center, UMCU, NL.

#### **Prior positions**

-2016 – 2023: Assistant Professor (tenured in 2018) at Dept. Translational Neuroscience, UMCU, NL.

-2012 – 2016: Postdoc researcher - *Dr. Mameli Lab* - Institut du Fer à Moulin INSERM, Paris, France

## B. RESEARCH INTERESTS

Background: Throughout my career I have been fascinated by how brains encode the motivational drives to obtain rewards and to avoid negative states. After my undergraduate studies in cognitive neuroscience (UU, NL), I became particularly interested in the underlying neurobiological “nuts and bolts” for these processes. I did a PhD (lab of Dr. Geert Ramakers and Dr. Roger Adan in UMCU Utrecht) on how, the cannabinoid and opioid systems regulate synaptic inputs to the dopamine system and how this influences motivated feeding behavior. In particular we showed that the receptors for these systems are constitutively active even in the absence of a ligand, and that this has important implications for drug design when targeting these systems. I subsequently did postdoctoral training in the lab of Dr. Manuel Mamei (INSERM, Paris, France), combining neurophysiological approaches with neural circuit mapping/manipulation techniques, to explore the role of the habenula in drug addiction. In particular we showed that during cocaine withdrawal there is the emergence of hyperactivity of the lateral habenula, through various mechanisms. We showed that this is crucial for the emergence of negative emotional states, fostering a drive towards seeking out the drug. In 2017 I founded my own research group (UMC Utrecht, NL).

Research: The research of my lab focuses on unraveling the neurobiology of valence processes: positive valence during reward, and negative valence during aversion/stress. We also study the interesting interplay between stressed states and reward seeking. The interaction between these processes goes awry in various brain-related conditions: Psychiatric disorders (e.g. eating disorders, drug addiction, depression), but also other conditions with an important neural component (e.g. obesity), and also in neurological disorders valence processing and control over motivational drives is often perturbed (e.g. Parkinson’s Disease, Alzheimer’s disease and Epilepsy).

The scientific approach of my lab is to use high-resolution neurophysiological measurement techniques to determine, in preclinical models, how stressors change the strength of specific synapses and circuits in the brain. Particularly focusing on those linked to processes of motivation, reward, emotional states, and behavioral control. Furthermore we use brain stimulation techniques to gauge the causal contributions of such brain systems and changes therein for motivated behavior. Thus by mapping, monitoring, and manipulating neural circuits, we seek to ultimately understand the complex processes of reward and stress, and their interplay, both in health and disease.

## C. (INTER)NATIONAL ACTIVITIES

### I. Presentations at (inter)national meetings

- 2025: EBPS, Almeria, Spain. **Invited speaker.**
- 2025: ECNP, Amsterdam, The Netherlands. **Invited speaker.**
- 2024: Lowlands Meeting, Ghent, Belgium. **Invited speaker.**
- 2024: University College Utrecht, Utrecht, The Netherlands. **Invited speaker.**
- 2023: UMCU Brain Center Research Day, Utrecht, The Netherlands. **Invited speaker.**
- 2023: NeuroFrance, Lyon, France. **Invited speaker.**
- 2023: Dutch Neuroscience Meeting, Tiel, The Netherlands. **Invited speaker.**
- 2023: INSELSPITAL, Neuroscience lecture series, Bern Switzerland. **Invited speaker.**
- 2023: Bordeaux Neurocampus, Seminar series, France. **Invited speaker.**
- 2023: Brainscapes NL seminar, The Netherlands. **Invited speaker.**
- 2022: CNCR departmental seminar Free University Amsterdam, Amsterdam, NL. **Invited speaker.**
- 2022: Neuronus IBRO, Krakow, Poland. **Invited session keynote speaker.**
- 2022: Central Military Hospital MGGZ Expertise Center, Utrecht, The Netherlands. **Invited speaker.**
- 2022: Stress-NL Meeting, Utrecht, The Netherlands. **Invited speaker.**
- 2022: Lowlands Molecular Neuroscience Meeting, Antwerp, Belgium. **Invited speaker.**
- 2022: International Winter conference, Soelden, Austria. **Invited speaker.**
- 2022: Dutch Neuroscience Meeting, Tiel, The Netherlands. **Invited speaker.**
- 2022: Young UMCU Meeting. **Invited speaker.**
- 2020: Netherlands Institute of Neuroscience, Amsterdam, NL. **Invited speaker & masterclass**
- 2019: Society for the Study of Ingestive Behavior (SSIB), Utrecht, NL. **Invited speaker.**
- 2019: Mediterranean Synapse Meeting, Marrakech, Morocco. **Invited speaker.**
- 2019: Dutch Neuroscience Meeting, Lunteren, The Netherlands. **Invited speaker.**
- 2018: Utrecht Brain Conference, Utrecht, The Netherlands. **Invited speaker.**
- 2018: FENS Meeting, Berlin, Germany. **Poster presenter.**
- 2018: Final symposium Academic year "Biology is everywhere", Utrecht, NL. **Invited speaker.**
- 2018: Stress Meeting, Rotterdam, The Netherlands. **Invited speaker.**
- 2018: Dutch Neuroscience Meeting, Lunteren, The Netherlands. **Presentation.**
- 2018: Stress Nutrition Meeting, Amsterdam, The Netherlands. **Poster presenter.**
- 2017: European Synapse Meeting, Milan, Italy. **Invited speaker.**
- 2017: ONWAR Career Event, Amsterdam, The Netherlands. **Invited speaker.**
- 2017: Cajal Course, Champalimaud, Portugal. **Invited lecturer.**
- 2017: Nudget 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.**
- 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.**

### II. Organisation of Scientific Meetings:

- 2025: EBPS Panel co-chair, Almeria, Spain
- 2024: Chair organizing committee for Dutch Neuroscience Meeting 2025 (international event).
- 2023: Vice chair organizing committee for Dutch Neuroscience Meeting 2024 (international event).

- 2022: Organizing member of Dutch Neuroscience Meeting 2023 (international event).
- 2022: Organization of X-talk University Medical Center Utrecht (interdisciplinary event)
- 2021: Organizing member of Dutch Neuroscience Meeting 2022 (international event).
- 2021: Organization of X-talk University Medical Center Utrecht (interdisciplinary event)
- 2019: Organizing member of Dutch Neuroscience Meeting 2020 (international event).
- 2019: Co-chair of session Mediterranean Neuroscience Meeting 2019 in Marrakech, Morocco
- 2015: Organizer of 6<sup>th</sup> IFM colloquium, Paris, France “Basal Ganglia in Health and Disease”
- 2013: Organizer of Young Researcher Symposium, Paris, France.

### III. Outreach events:

- 2023: Participation in *ConnectED* seminar for UMCU young group leaders, The Netherlands.
- 2022: Participation in a Research career Q&A for biology PhD students of UU.
- 2022: UT Southwestern Masterclass on scientific career.
- 2022: Participation in a Research Funding Q&A for UMCU / UU colleagues.
- 2022: Young UMCU Meeting ***Invited lecture***
- 2022: Betweter festival lecture, Utrecht, The Netherlands. (***>60k viewings online per March 2023***)
- 2021: UT Southwestern Masterclass on scientific career.

### IV. Invited journal article reviewing (selection):

- Science
- Nature Communications
- Nature Reviews Endocrinology
- Cell Reports
- Trends in Neuroscience
- Biological Psychiatry
- Addiction Biology
- Neuropharmacology
- Communications Biology
- Physiology & Behavior

### V. Invited grant reviewer:

- European Research Council Advanced grant (ERC-ADG)
- European Research Council Consolidator Grant (ERC-COG)
- APC Microbiome Ireland (NSpire)
- Swiss National Science Foundation (SNF)
- French National Research Agency (ANR)
- Israel Science Foundation (ISF)
- Netherlands Organisation for Scientific Research (NWO)
- Alzheimer NL (NL)

### VI. Committee activities

- Dutch Neuroscience Meeting Organization Committee
- Internationalization committee UMC Utrecht
- ZonMW Open Competition Committee member
- UMCU Young Academy (ended 2022)
- UMCU Brain Advisory Board

- Chair of Translational Approaches horizontal line within UMC Utrecht Brain Focus Area

#### VII. Invited panel member on PhD Thesis committees:

2025:	Alonso Lozares	– , The Netherlands
2025:	Anna van Regteren Altena	– Utrecht University, The Netherlands
2022:	Thomas Contesse	– Universite Cote d’Azur, Valbonne, France
2022:	Jian Liang	– Utrecht University, The Netherlands
2020:	Huub Terra	– VU Amsterdam, The Netherlands
2020:	Tamas Dalmay	– Radboud University, The Netherlands
2020:	Dennis Kruijssen	– Utrecht University, The Netherlands
2020:	Myrtille Gumbs	– AMC, University of Amsterdam, The Netherlands
2018:	Sara Brignani	– UMCU, Utrecht University; The Netherlands

## **D. TEAM DIRECTION AND THESIS ACTIVITIES**

#### Postdoc direction:

1. Dr. Gisela Lazzarino
2. Dr. Karlijn Kooij
3. Dr. Danai Riga (Ended 2024)
4. Dr. Rogier Poorthuis (Ended 2024)
5. Dr. Evelien Schut (Ended 2022)
6. Ms. Janna Smeets (Ended 2021)

#### PhD Thesis direction:

1. Constança Ferreira
2. Nikoleta Bourtoli
3. Roberto D’Angelo
4. Wenjie Du
5. Louisa Linders (Ended 2023)
6. Laura Supiot (Ended 2025)
7. Ioannis Koutlas (Ended 2025)

#### PhD Thesis co-direction:

1. Hanne Twenhöfel
2. Emel Souiki
3. Oxana Garritsen
4. Nick Papavoine
5. Laura Pieper
6. Lianne Delwel
7. Arthur Ermakov
8. Minh Nguyen

#### Technician direction

1. Ms. Jana Bersee
2. Ms. Simone Duis
3. Ms. Inge Wolterink-Donselaar
4. Ms. Lefkothea Patrikiou (Ended 2022)

Direction of animal house facility staff (as animal facility coordinator)

1. Desiree van der Linden
2. Jolanda de Wit
3. Jaubert Mahop Ma Mahop

## E. GRANTS, HONORS AND AWARDS

### **Grants received:**

- 2024: Stichting Parkinson Foundation  
2023: Co-recipient (/w Drs. Koelemans, Schiffelers & Braun) of Hersenstichting grant  
2022: Co-recipient (/w Dr. Lesscher) of NWO ENW-M2 grant  
2022: Center of unusual collaborations UcO grant (3x, between 2020-2022)  
2020: Recipient of VIDI grant from Netherlands Organisation for Scientific Research  
2019: Co-Recipient of NWO Gravitation Grant.  
2019: Recipient of CJ Vaillant Grant.  
2018: Recipient of European Research Council (ERC) Starting Grant.  
2017: Recipient of Rudolf Magnus Young Talent grant.  
2015: Recipient of VENI grant from Netherlands Organisation for Scientific Research  
2012: Recipient of Fondation Fyssen postdoctoral scholarship.  
2006: Recipient of Erasmus scholarship for master internship Cambridge, UK.

### **Grants where acting as direct Mentor and Host lab**

- 2023: Rudolf Magnus Young Talent grant of Drs. Huffels & Van 't Klooster.  
2021: NWO-XS Grant for Dr. Danai Riga  
2021: Chinese Research Council fellowship for Ms. Wenjie Du  
2019: Marie Curie Individual Fellowship for Dr. Rogier Poorthuis  
2019: NWO Veni Grant for Dr. Danai Riga

### **Awards received:**

- 2019: Co-Recipient of Young IBRO Connecting Regions Award  
2017: Recipient of Rudolf Magnus Young Talent award.  
2016: Recipient of NARSAD Young Investigator award (by BBR Foundation)  
2012: First prize for PhD oral presentations Figo Dutch Medicine Days.  
2011: First prize for PhD poster presentations. Top Institute Pharma Forum  
2011: Thesis support grants Netherlands Brain Foundation & Dutch Society for pharmacology  
2010: Travel award for the National institute on Drug Abuse symposium. (NIDA).

## F. PUBLICATIONS

### **Output selection (6):**

1. Riga, D. Kooij, K.L., Rademakers, K., Wolterink-Donselaar, I., Basak, O., **Meye, F. J.** (2025). Neuropeptide Y neurons surrounding the locus coeruleus inhibit noradrenergic system activity to reduce anxiety. *Science Advances*, 25;11(30).
2. Koutlas, I., Patrikiou, L., Van der Starre, S.E., Danko, D., Wolterink-Donselaar, I. G., Luijendijk, M. C. M., Adan, R. A. H. & **Meye, F. J.** (2025). Distinct ventral tegmental area neuronal ensembles are indispensable for reward-driven approach and stress-driven avoidance behaviors. *Nature Communications*. 16(1):3147. doi: 10.1038/s41467-025-58384-3.
3. Linders, L. E., Patrikiou, L., Soiza-Reilly, M., Schut, E. H. S., Van Schaffelaar, B. F., Böger, L., Wolterink-Donselaar, I. G., Luijendijk, M. C. M., Adan, R. A. H. & **Meye, F. J.** (2022). Stress-driven potentiation of lateral hypothalamic synapses onto ventral tegmental area dopamine neurons causes increased consumption of palatable food. *Nature Communications*. 13(1):6898.
4. Omrani A, de Vrind VAJ, Lodder B, [.....], Dickson SL, **Meye F.J.**, Adan RAH (2021). Identification of Novel Neurocircuitry Through Which Leptin Targets Multiple Inputs to the Dopamine System to Reduce Food Reward Seeking. *Biological Psychiatry*. 90(12):843-852.
5. **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.
6. **Meye, F. J\***, Valentinova\*, K., Lecca, S\*, Marion-Poll, L., Maroteaux, M. J., Musardo, S., Moutkine, I., Gardoni, F., Huganir, R., Georges, F. & Mameli, M (2015). Cocaine-evoked negative symptoms require AMPA receptor trafficking in the lateral habenula. *Nature Neuroscience*, 18(3),376-8. [\*=equal contribution].

### **Output since group leader (including collaborations)**

1. Riga, D. Kooij, K.L., Rademakers, K., Wolterink-Donselaar, I., Basak, O., **Meye, F. J.** (2025). Neuropeptide Y neurons surrounding the locus coeruleus inhibit noradrenergic system activity to reduce anxiety. *Science Advances*, 25;11(30).
2. Becker, L.B., Martin, M.M., Hughes, A.C., Mulvey, B., Kuo, C-C., Piantadosi, S.C., Bruchas, M.R., Martinowich, K., **Meye, F.J.**, Schwarz, L.A., Weinschenker, D., McCall, J.G., Riga, D. (2025). Neuropeptides as transmitters and regulators of the locus coeruleus noradrenergic system. *Pharmacological Reviews*. 77(5):100081. doi: 10.1016/j.pharmr.2025.100081.
3. Koutlas, I., Patrikiou, L., Van der Starre, S.E., Danko, D., Wolterink-Donselaar, I. G., Luijendijk, M. C. M., Adan, R. A. H. & **Meye, F. J.** (2025). Distinct ventral tegmental area neuronal ensembles are indispensable for reward-driven approach and stress-driven avoidance behaviors. *Nature Communications*. 16(1):3147. doi: 10.1038/s41467-025-58384-3.

4. Rijdsdijk, M., Smits, H.M., Azizoglu, H.R., Brugman, S., van de Burgt Y., Van Charldorp, T.C., Van Gelder, D.J., de Grauw, J.C., Van Lange, E.A., **Meye, F.J.**, Strick, M., Walravens, H.W.A., Winkens, L.H.H., Huygens, F.J.P.M., Drylewicz, J., & Willemen, H.D.L.M. (2025). Identifying patient subgroups in the heterogeneous chronic pain population using cluster analysis. *The Journal of Pain*, 28:104792.
5. Van Charldorp, T.C., Strick, M., de Grauw, J.C., Brugman, S., Van de Burgt, Y., Winkens, L.H.H., **Meye, F.J.**, Rijdsdijk, M., & Willemen, H.D.L.M. (2024). Uneasiness in interdisciplinary research and the importance of metaphors: A case story on building an interdisciplinary chronic pain research team. *PEC Innovation*, 5:100350.
6. Evertse, D., Alves-Martinez, P., Treccani, G., Muller, M.B., **Meye, F.J.**, & Van der Kooij, M.A. (2024). Transient impact of chronic social stress on effort-based reward motivation in non-food restricted mice: involvement of corticosterone. *Neurobiology of Stress*.
7. Dudukcu, O., Raj, D.D.A., Van de Haar, L.L., Grossouw, L.M., Linders, L.E., Garritsen, O., Adolfs, Y., Van Kronenburg, N.C.H., Broekhoven, M.H., Kapteijns, T.H.W., **Meye, F.J.**, & Pasterkamp, R.J. (2024). Molecular diversity and migration of GABAergic neurons in the developing ventral midbrain. *iScience*.
8. Zelina, P., De Ruiter, A.A., Kolsteeg, C., Van Ginneken, I., Vos, H.R., Supiot, L.F., Burgering, B.M.T., **Meye, F.J.**, Veldink, J.H., Van den Berg, L.H., & Pasterkamp, R.J. (2024). ALS-associated C21ORF2 variant disrupts DNA damage repair, mitochondrial metabolism, neuronal excitability and NEK1 levels in human motor neurons. *Acta Neuropathologica Communications*.
9. Damstra, H.G.J.<sup>#</sup>, Passmore, J.B.<sup>#</sup>, Serweta, A.K., Koutlas I., Burute M., **Meye, F.J.**, Akhmanova, A., Kapitein, L.C.. GelMap: Intrinsic calibration and deformation mapping for expansion microscopy. *Nature Methods*, 2023. #Equal contribution.
10. Linders, L. E., Patrikiou, L., Soiza-Reilly, M., Schut, E. H. S., Van Schaffelaar, B. F., Böger, L., Wolterink-Donselaar, I. G., Luijendijk, M. C. M., Adan, R. A. H. & **Meye, F. J.** (2022). Stress-driven potentiation of lateral hypothalamic synapses onto ventral tegmental area dopamine neurons causes increased consumption of palatable food. *Nature Communications*. 13(1):6898. doi: 10.1038/s41467-022-34625-7.
11. Linders, L. E.<sup>#</sup>, Supiot, L. F.<sup>#</sup>, Du, W., D'Angelo, R., Adan, R. A. H., Riga, D.\* , & **Meye, F. J.\*** (2022). Studying synaptic connectivity and strength with optogenetics and patch-clamp electrophysiology. *International Journal of Molecular Sciences*. 23(19):11612. doi: 10.3390/ijms231911612.
12. Koutlas, I., Linders, L.E., Van der Starre, S.E., Wolterink-Donselaar, I.G., Adan, R.A.H., **Meye, F.J.** (2022). Characterizing and TRAPing a social stress-activated neuronal ensemble in the ventral tegmental area. *Frontiers in Behavioral neuroscience*. eCollection 2022. doi: 10.3389/fnbeh.2022.936087.

13. Huffels, C. F. M., Van Dijk, R. E., Karst, H., **Meye, F. J.**, Hol, E. M., & Middeldorp, J. J. (2022). Systemic injection of Aged Blood Plasma in Adult C57BL/6 Mice Induces Neurophysiological Impairments in the Hippocampal CA1. *Journal of Alzheimer's Disease*, 89(1):283-297.
14. Van de Haar, L., Riga, D., Boer, E.J., Adolfs, Y., Sieburgh, T.E., Van Dijk, R.E., Watanabe, K., Van Kronenburg, N.C.H., Broekhoven, M.H., Posthuma, D., **Meye, F.J.**, Basak, O., & Pasterkamp, R.J. (2022). Molecular signatures and cellular diversity during mouse habenula development. *Cell Reports*. 40(1):111029. doi: 10.1016/j.celrep.2022.111029.
15. Montalban E, Giralt A, [.....] **Meye F.J.**, Gambardella N, Roussarie JP, Girault JA. (2022). Translational profiling of mouse dopaminergic neurons reveals region-specific gene expression, exon usage, and striatal prostaglandin E2 modulatory effects. *Molecular Psychiatry*. Apr;27(4):2068-2079. doi: 10.1038/s41380-022-01439-4. Epub 2022 Feb 18.
16. Kallo, I., Omrani, A., **Meye, F.J.**, De Jong, H., Liposits, Z. & Adan, R.A.H. (2022). Identification of novel neurocircuitry through which leptin targets multiple inputs to the dopamine system to reduce food reward seeking. *Brain Structure and Function*, 227(3):1083-1098.
17. Omrani A, de Vrind VAJ, Lodder B, [.....], Dickson SL, **Meye FJ**, Adan RAH (2021). Identification of Novel Neurocircuitry Through Which Leptin Targets Multiple Inputs to the Dopamine System to Reduce Food Reward Seeking. *Biological Psychiatry*. 90(12):843-852. doi: 10.1016/j.biopsych.2021.02.017. Epub 2021.
18. Homberg, J. R. et al. [.....], Genzel, L. (2021). The continued need for animals to advance brain research. *Neuron*. 109(15):2374-2379.
19. Willems J, de Jong APH, Scheefhals N, Mertens E, Catsburg LAE, Poorthuis RB, de Winter F, Verhaagen J, **Meye FJ**, MacGillavry HD. (2020). ORANGE: A CRISPR/Cas9-based genome editing toolbox for epitope tagging of endogenous proteins in neurons. *PLoS Biology*. 18(4):e3000665.
20. Genzel et al., [.....], Homberg, J.R. (2020). How the COVID-19 pandemic highlights the necessity of animal research. *Current Biology*, 30(21):4328.
21. Tan, D., Nuno-Perez, M., Mameri, M. & **Meye, F.J.** (2019). Cocaine withdrawal reduces GABA<sub>B</sub> R transmission at entopeduncular nucleus - lateral habenula synapses. *European Journal of Neuroscience*, 50(3):2124-2133.

### **Output as postdoctoral fellow**

1. Soiza-Reilly, M., Meye, F.J., Olusakin, J., Telley, L., Petit, E., Chen, X., Mameri, M., Jabaudon, D., Sze, J.Y. & Gaspar, P. (2018). SSRIs target prefrontal to raphe circuits during development modulating synaptic connectivity and emotional behavior. *Molecular Psychiatry*, doi:

2. **Meye, F.J.**, Trusel, M., Soiza-Reilly, M. & Mameli, M. (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.
3. Doly, S., Quentin E, Eddine R, Tolu S, Fernandez SP, Bertran-Gonzalez J, Valjent E, Belmer A, Viñals X, Callebert J, Faure P, **Meye FJ**, Hervé D, Robledo P, Mameli M, Launay JM, Maldonado R, Maroteaux L (2017). Serotonin 2B receptors in mesoaccumbens dopamine pathway regulate cocaine responses. *Journal of Neuroscience*, pii: 1354-17.
4. Lecca, S., **Meye, F. J.**, Trusel, M., Tchenio, A., Harris, J., Schwarz, M.K., 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.
5. Morel, C., Fernandez, S.P., Pantouli, F., **Meye, F. J.**, Marti F., Tolu, S., Parnaudeau, S., Marie, H., Tronche, F., Maskos, U., Moretti, M., Gotti, C., Han, M-H., Bailey, A., Mameli, M., Barik, J. & Faure, P. (2017). Nicotinic receptors mediate stress-nicotine detrimental interplay via dopamine cells' activity. *Molecular Psychiatry*, doi: 10.1038/mp.2017.145
6. **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.
7. Doly, S., Shirvani, H., Gata, G., **Meye, F. J.**, Emerit, MB., Enslin, H., Achour, L., Pardo-Lopez, L., Yang, SK., Armand, V., Gardette, R., Giros, B., Gassmann, M., Bettler, B., Mameli, M., Darmon, M., & Marullo, S. (2016). GABAB receptor cell-surface export is controlled by an endoplasmic reticulum gatekeeper. *Molecular Psychiatry*, doi: 10.1038/mp.2015.72.
8. **Meye, F. J\***, Valentinova\*, K., Lecca, S\*, Marion-Poll, L., Maroteaux, M. J., Musardo, S., Moutkine, I., Gardoni, F., Hugarir, R., Georges, F. & Mameli, M (2015). Cocaine-evoked negative symptoms require AMPA receptor trafficking in the lateral habenula. *Nature Neuroscience*, 18(3),376-8. [\*=equal contribution].
9. Glangetas C., Fois G.R., Jalabert M., Lecca S., Valentinova K., **Meye F. J.**, Diana M., Faure P., Mameli M., Caille S. & Georges F. (2015). Ventral Subiculum Stimulation Promotes Persistent Hyperactivity of Dopamine Neurons and Facilitates Behavioral Effects of Cocaine. *Cell Reports*, 13(10):2287-96.
10. 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.
11. **Meye, F. J.**, Lecca, S., Valentinova, K., & Mameli, M. (2013). Synaptic and cellular profile of neurons in the lateral habenula. *Frontiers in human neuroscience*, 16(7): 860.

1. **Meye, F. J.**, Ramakers, G. M. J. & Adan, R. A. H. (2014). The vital role of constitutive GPCR activity in the mesolimbic dopamine system. *Translational Psychiatry*, *11(4)*, e361.
2. **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.
3. **Meye, F. J.**, Trezza, V., Vanderschuren, L. J. M. J., Ramakers, G. M. J. & Adan, R. A. H. (2013). Neutral antagonism for the cannabinoid 1 receptor is a safe tool to treat obesity. *Molecular Psychiatry*, *18(12)*, 1294-1301.
4. **Meye, F. J.**, Van Zessen, R., Smidt, M. P., Adan, R. A. H. & Ramakers, G. M. J. (2012). Morphine withdrawal enhances constitutive mu-opioid receptor activity in the ventral tegmental area. *Journal of Neuroscience*, *32(46)*, 16120-8.
5. 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

### **Narrative contributions to Science (examples)**

Category 1: G protein-coupled receptors (GPCRs) play an important role in regulating synaptic activity in many neural circuits, including those encoding motivation, hunger and aversion. GPCRs, like the cannabinoid 1 and mu-opioid receptors are typically activated by agonists, but tentative evidence suggested they can also spontaneously switch to an active state (constitutive activity). During my doctoral training I have shown that constitutive GPCR activity indeed plays an important role in regulating synaptic activity in neural populations involved in emotions and motivation. We showed that constitutive GPCR activity levels are dynamic, and that abolishing them due to improperly chosen drug treatment can cause unnecessary psychiatric side effects. This work resulted in various publications, including in *Molecular Psychiatry* (Meye et al., 2013) and *Journal of Neuroscience* (Meye et al., 2012).

Category 2: Withdrawal from addictive drug intake leads to an aversive state, with physical and persistent psychological symptoms that can promote resumed drug use to alleviate them. These drug-induced aversive states therefore play a critical role in drug addiction, and it is vital to unravel their neural substrates. During my postdoctoral training with Dr. Mamei in the Institut du Fer à Moulin in Paris, I showed how synaptic plasticity in the lateral habenula plays an important role in the occurrence of these aversive withdrawal symptoms. This work resulted in multiple papers, including two first author papers in *Nature Neuroscience*, (Meye et al., 2015; Meye et al., 2016) and a last-author paper in *European Journal of Neuroscience* (Tan et al., 2018).

Category 3: Stress can drive food reward seeking, including binge eating behavior. My current work focuses on unraveling the neural circuit changes that take place after stressful events that ultimately drive aberrant feeding patterns. My focus in this regard is on the interaction between hypothalamic, midbrain and prefrontocortical circuits. This ongoing work is in part inspired by our review in *Trends in Pharmacological Sciences* paper (Meye & Adan, 2014) and also exemplified by our paper in *Nature Communications* (Linders et al., 2022).



## G. TEACHING

### Functions and qualifications:

From 2022-present I am a co-organizer of the PhD summer school on Neural Circuits.

I obtained my official teaching license in 2020 (basiskwalificatie onderwijs; BKO).

From May 2020 – May 2021 I was appointed as Master internship coordinator for (Covid) internships for Medicine (Geneeskunde) students (Keuze Ma1 / Keuze Ma2; 100 dbu).

### Supervision of Research Internships and theses:

Supervisor Bachelor thesis:	2018 – present: 36 students
Supervisor Master internships:	2016 – present: 62 students
Supervisor Master thesis:	2016 – present: 30 students

### Course Lectures and workgroups

- BSc (biomedical sci) Introduction to Neuroscience Course: 2018-present.
- BSc (biology) Advanced Neuroscience Course: 2018-present.
- BSc (biomedical sci) Central Nervous System Disorders Course. 2019-present.
- BSc (biomedical sci) Research Methods. 2017-2020.
- BSc (biology) Advanced microscopy techniques. 2022.
- BSc (medicine) Brain Disorders. 2021.
- MSc (neurosci) Fundamentals of Neuroscience Course: 2016-present.
- MSc (biology of disease) Essentials of Neuroscience: 2021-present
- MSc (neurosci) From Cell to Behavior: 2019-2021.
- PhD level: Current issues in clinical neuroscience (UMCU). 2020-2021.
- PhD level: Psychiaters in opleiding (UMCU). Wetenschapsforum 2019.
- PhD level: The CAJAL Advanced Neuroscience Training Programme at Champalimaud, Center for the Unknown, Lisbon, Portugal 2017.
- PhD level: "My Animal Experiment". 2022.
- PhD level: UU Neural Circuits Summer school. 2022-present