Date Prepared:	9/15/2021
Name:	Maria Mavrikaki
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Place of Birth:	Rhodes, Greece, EU

Education:

2003-2007	Bachelor of Science (BSc) in Psychology, University of Crete, Greece, EU (Excellence: 8.78/10).
2008-2010	Master of Science (MSc) in Neuroscience, Faculty of Medicine, University of Crete, Greece, EU. Title of Master Thesis: Behavioral and molecular effects of the D_3/D_2 receptor agonist ropinirole, Neuropharmacology/Svenningsson Lab, Center for Molecular Medicine (CMM), Karolinska Institute, Sweden, EU (Excellence: 9.04/10).
2007- Dec 2011	PhD in Psychology/Neuroscience, Laboratory of Behavioral Neuroscience/Panagis Lab, Department of Psychology, University of Crete, Greece, EU. Title of PhD thesis: Development of a rat model to study Bipolar Disorder (BD) and the effects of mood stabilizers (Excellence: 10/10).

Additional Education:

Sept 2009	International Brain Research Organization (IBRO) Alumni, 1st IBRO–Kemali Mediterranean Summer School. “The synapse from bench to bedside: synaptic transmission, plasticity and synaptopathies”, Naples, Italy, EU.
March-April 2011	Intensive Program in Positron Emission Tomography (PET), European Master in Molecular Imaging (EMMI), National Institute for Nuclear Science and

Technology, Saclay, France, EU.

Dec 2017 Consortium of Harvard Affiliated Offices for Faculty Development and Diversity (CHADD) Mentoring Course, CHADD and Harvard Catalyst, Harvard Medical School, Boston, MA.

August 2019 Teaching Institute: Theory, Practice and Navigating STEM Higher Education, Harvard Medical School Postdoctoral Association and Simmons College, Boston, MA.

Postdoctoral Training:

July 2012-Sept 2014 Postdoctoral Research Fellow, The Scripps Research Institute (TSRI), Scripps Florida, Department of Metabolism and Aging, Butler Lab. Project: Assessment of the involvement of Melanocortin 3 receptor (Mc3r) in motivation for food.

Oct 2014-Feb 2017 Postdoctoral Research Fellow, Department of Psychiatry, Harvard Medical School (HMS), McLean Hospital, Neurobiology of Motivated Behavior Laboratory/Chartoff Lab. Project: Neurobiological mechanisms underlying prescription opioid abuse and sex differences in addiction-like behavior.

Faculty Appointments:

Mar 2017-Oc 2019 Instructor in Psychiatry, Department of Psychiatry, Harvard Medical School.

Nov 2019-Present Instructor in Psychiatry, Department of Pathology, Harvard Medical School.

Other Appointments:

Mar 2017-Oct 2019 Assistant Neuroscientist at McLean Hospital.

Nov 2019-Present Staff Scientist at Beth Israel Deaconess Medical Center (Slack lab).

Nov 2019-Present Person of Interest (POI) at McLean Hospital.

Other Professional Positions:

Jan- Dec 2013	Scientific Symposium Chair 2013, Scripps Florida Society for Research Fellows (SF-SRF).
2016-2019	Co-coordinator, weekly "Work in Progress (WIP)" seminars at McLean Hospital.
2016-2019	Co-coordinator, quarterly "Epigenetic Seminars" at McLean Hospital.
2017-2018	Board of Directors, Hellenic Bioscientific Association in USA (HBA-USA).

Professional Societies:

- International Brain Research Organization (IBRO)
- Society for Neuroscience (SfN)
- Federation of European Neuroscience Societies, (FENS)
- Hellenic Society for Neuroscience (HSN)
- Hellenic Bioscientific Association in USA (HBA-USA)

Editorial Activities:

- Scientific Reports (Nature Publishing; Editorial Board)
  Invited to serve as a Guest Editor for the Special Issue "Sex differences in Physiology and Disease (in preparation)
- Frontiers in Behavioral Neuroscience (Editorial Board)
- Dialogues in Clinical Neuroscience and Mental Health (Editorial Board)

Ad hoc Reviewer

- Biological Psychiatry
- Neuropharmacology
- Scientific Reports
- International Journal of Neuropsychopharmacology
- The World Journal of Biological Psychiatry
- Frontiers in Neuroscience
- Frontiers in Pharmacology
- Psychopharmacology
- Behavioural Brain Research
- Peptides

- Life Sciences
- Molecular Biology Reports
- Inflammation
- PharmaNutrition

Grant Review Activities

- Grant reviewer for National Institute on Drug Abuse (NIDA/NIH; invited to serve as Chair to the review committee, but denied due to upcoming leave of absence; accepted and served as a reviewer for that committee)

Honors and Prizes:

2008	Fellowship for academic excellence (in the 3rd year of BSc in Psychology at University of Crete) administered by the National Fellowship Foundation of Greece.
2008	Academic excellence award by the Special Research Account of University of Crete, for PhD in Neuroscience.
2009	"Manasaki Fellowship" for academic excellence as a graduate student in Neuroscience at the Medical School of University of Crete.
2009	Martinos travel grant to attend the European Brain and Behaviour Society (EBBS) and the 23rd annual Hellenic Society for Neuroscience (HSN) meeting.
2009	Travel grant to attend the 1st IBRO-Kemali Mediterranean Summer School. Award for the best grant proposal. Proposal title: «Discerning the role of the capping protein Epidermal growth factor receptor Pathway Substrate 8 (EPS8) on the formation, maintenance and/or function of the tripartite synapse and possible implications in neurological disease», Naples, Italy, EU, Sept 2009.
2009-2010	Fellowship by Onassis Foundation for the graduate program in Neuroscience at the Medical School of University of Crete for 2009-2010.
2010	Federation of European Neuroscience Society (FENS)/ International Organization of Western European Countries (IBRO WERC) travel grant to attend the 7th FENS forum in Amsterdam, EU, Jul 2010.

2010-2011	Fellowship by Onassis Foundation for PhD in Neuroscience at University of Crete.
2010	Best oral presentation award in the Annual meeting of Hellenic Society for Neuroscience (HSN).
2013	"Maria Nasiakou"/Distinguished PhD thesis award, Hellenic Psychological Association, Greece, EU.
2014-2016	Kaneb Fellowship in Psychiatry, McLean Hospital, Belmont, MA.
2015-2016	Jonathan Edward Brooking Award for Mental Health Research, McLean Hospital, Belmont, MA.
2016	Travel grant to attend the International Narcotic Research Conference (INRC) 2016 Annual Meeting, Bath UK; funded by the National Institute of Drug Abuse (NIDA).
2017	CPDD 2017 Women & Sex/Gender Junior Investigator Travel Award by the National Institute of Drug Abuse (NIDA).
2017-2018	Eleanor and Miles Shore Harvard Medical School Fellowship, for Instructors and Assistant Professors at Harvard Medical School, Boston, MA.

Blog author of Harvard Health Publishing:

January 2019	Blog by Harvard Health Publishing Division of Harvard Medical School, topic: Your genes and addiction (https://www.health.harvard.edu/blog/your-genes-and-addiction-2019012815730)
June 2020	Blog by Harvard Health Publishing Division of Harvard Medical School, topic: Brain Plasticity in Drug addiction: Burden and Benefit (https://www.health.harvard.edu/blog/brain-plasticity-in-drug-addiction-burden-and-benefit-2020062620479)

Report of Scholarship

Peer-Reviewed Scholarship in print or other media:

Research Investigations

1. **Mavrikaki M**, Nomikos GG, Panagis G. (2009). Effects of mood stabilizers on brain reward processes in rats: studies using the intracranial self-stimulation paradigm, *European Neuropsychopharmacology*,19, 205-214.
2. **Mavrikaki M**, Nomikos GG, Panagis G. (2010). Efficacy of the atypical antipsychotic aripiprazole in d-amphetamine-based preclinical models of mania, *International Journal of Neuropsychopharmacology,* 13, 541-548.
3. **Mavrikaki M**, Nomikos GG, Panagis G. (2010). Chronic WIN55,212-2 elicits sustained and conditioned increases in intracranial self-stimulation thresholds in the rat, *Behavioural Brain Research*, 209, 114-118.
4. Giakoumaki S, Roussos P, Zouraraki C, Spanoudakis E, **Mavrikaki M**, Tsapakis E, Bitsios P (2012). Sub-optimal parenting is associated with schizotypic and anxiety personality traits in adulthood: a retrospective report, *European Psychiatry,* 28, 254-260.
5. **Mavrikaki M**, Schintu N, Kastellakis A, Nomikos GG, Svenningsson P and Panagis G (2014). Mood stabilizer-evoked changes in brain stimulation reward and molecular markers of neuroplasticity, *European Neuropsychopharmacology,* 24, 630-638.
6. **Mavrikaki M**, Schintu N, Nomikos GG, Panagis G and Svenningsson P (2014). Ropinirole regulates emotionality and neuronal activity markers in the limbic forebrain, *International Journal of Neuropsychopharmacology,* 17, 1981-1993.
7. Girardet C, **Mavrikaki M**, Smith R and Butler AA (2014). Assessing interaction between Ghsr and Mc3r reveals a role for AgRP in the expression of food anticipatory activity in male mice. *Endocrinology*, 155, 4843-4855.
8. Fanariotou E, **Mavrikaki M**, Panagis G, Mitsakos A, Nomikos GG and Giompres P (2015). Behavioral and neurochemical changes in mesostriatal dopaminergic regions of the rat after chronic administration of the cannabinoid receptor agonist WIN55,212-2, *International Journal of Neuropsychopharmacology,* 18 (6).
9. Kern A, **Mavrikaki M**, Ullrich C, Albarran-Zecker R., Faruzzi-Brantely A. and Smith RG (2015). Hippocampal Dopamine/DRD1 Signaling is Dependent on the Ghrelin Receptor. *Cell,* 163(5):1176-90. ***F1000 Faculty Member; Article Recommendation by William Colmers, PhD; Rated as Exceptional.***
10. **Mavrikaki M**, Girardet C, Kern A, Faruzzi-Brantlely A, Miller CA, Macarthur H, Marks D and Butler AA (2016). Melanocortin-3 receptors in the limbic system mediate feeding related motivational responses during weight loss. *Molecular Metabolism*, 5, 566-579. ***Featured article.***

11. **Mavrikaki M**, Pravetoni M, Page S, Potter D and Chartoff E (2017). Oxycodone self-administration in male and female rats. *Psychopharmacology,* 234(6):977-987*.*
12. Girardet C, **Mavrikaki M**, Stevens J, Miller CA, Marks D and Butler AA (2017) Melanocortin-3 receptors expressed in Nkx2.1(+ve) neurons are sufficient for controlling appetitive responses to hypocaloric conditioning. *Scientific Reports,* 7:44444*.*
13. **Mavrikaki M**, Anastasiadou E, Ozdemir R, Helmholz C, Potter D, Slack F and Chartoff E (2019). Overexpression of miR-9 in the nucleus accumbens increases oxycodone self-administration. *International Journal of Neuropsychopharmacology*. 22(6):383-393. doi: 10.1093/ijnp/pyz015. ****Editor's selection.***
14. **Mavrikaki M**, Pantano L, Potter D, Rogers-Grazado M, Amr S, Anastasiadou E, Slack F, Ressler K, Daskalakis N and Chartoff E (2019). Sex-dependent changes in miRNA expression following stress. *Frontiers in Molecular Neuroscience*. 12:236. doi: 10.3389/fnmol.2019.00236. eCollection 2019. **** Editor's selection for special issue "Brain Disease Mechanisms Editor's picks 2021".***
15. Page S, **Mavrikaki M**, Lintz T, Puttick D, Roberts E, Rosen H, Carroll F, Carlezon WA and Chartoff E. (2019) Behavioral pharmacology of novel kappa opioid receptor antagonists in rats. *International Journal of Neuropsychopharmacology*.
16. **Mavrikaki M**, Lintz T, Constantino, N., Page S and Chartoff E (2021). Effects of morphine abstinence on oxycodone self-administration in male and female rats. *Addiction Biology.*
17. **Mavrikaki M**, Lee J, Solomon I, Slack F (in preparation). Effects of SARS-CoV-2 in the human brain.

Reviews

1. **Mavrikaki, M,** Kastellakis, A Panagis, G (2014). Bipolar Disorder as a neuroplasticity disorder, *Eleutherna (in Greek)*.

2. Chartoff E and **Mavrikaki M** (2015). Sex differences in kappa opioid receptor function and their potential impact on addiction. *Frontiers in Neuroscience,* 9, 466.

3. Butler AA, Girardet C, **Mavrikaki M**, Trevaskis J, Macarthur H and Farr S (2017). A life without hunger: benefits (and pitfalls) to losing melanocortin-3 receptors during adaptation to hyper- and hypo-caloric conditioning. *Frontiers in Neuroscience.*

Abstracts, Poster Presentations and Exhibits Presented at Professional Meetings

Recent Poster Presentations:

1. **Mavrikaki M,** Lintz T, Page S and Chartoff E (2018). Effects of morphine abstinence on oxycodone self-administration in male and female rats, *Harvard Psychiatry Day 2018*.

2. **Mavrikaki M**, Anastasiadou E, Ozdemir R, Helmholz C, Potter D, Slack F and Chartoff E (2019). Overexpression of miR-9 in the nucleus accumbens increases oxycodone self-administration, *Harvard Psychiatry Research Day 2019*.

3. Constantino N, Page S, **Mavrikaki M**, Lintz Tand Chartoff E (2019). Effects of acute oxycodone on brain stimulation reward in male and female rats using intracranial self-stimulation, *SfN Meeting 2019*, Chicago.

4. **Mavrikaki M**, Kanata N, Miliotis C, Vlachos I, Chartoff E and Slack F (2020). The role of miR-9 in opioid abuse. *Research Abstract Competition for Early Career Faculty (REACH OUT),* Beth Israel Deaconess Medical Center (BIDMC), Boston December 7, 2020.

Oral Presentations/Seminars:

1. 1st IBRO-Kemali Mediterranean Summer School: "Modeling mania: effects of mood stabilizers on brain reward processes and tolerance effects after chronic treatment", Naples, Italy, EU, September 2009.
2. Seminar in the Department of Psychology, University of Crete: "Evaluation of increased hedonistic drive in a rat model of bipolar disorder: effects of mood stabilizers", Rethymno, Crete, Greece, EU, November 2009.
3. Annual Meeting of the Hellenic Society for Neuroscience: "Effects of mood stabilizers in a rat model of euphoric mania: Implications for understanding the neurobiology and advancing the pharmacotherapy of bipolar disorder", Athens, Greece, EU, October 2010.
4. Seminars in the Department of Metabolism and Aging at Scripps Florida: "Involvement of melanocortin-3 receptor (Mc3r) in motivation for food", Jupiter, FL, 2012-2014.
5. Seminar at McLean Hospital, Laboratory of Behavioral Genetics: "Involvement of melanocortin-3 receptor (Mc3r) in motivation for food", Belmont, MA, July 2014.
6. 3rd Conference on the Therapeutic Potential of Kappa Opioid in Pain and Addiction: "Sex differences in the kappa opioid mediated negative affective states in rats", Chapel Hill, NC, April 2015.
7. 12th World Conference of Biological Psychiatry: "Sex differences in the kappa opioid mediated negative affective states in rats", Athens, Greece, EU, June 2015.
8. Seminar for Summer Students at McLean Hospital: "Gender differences and mental health" , Belmont, MA, August 2015.
9. Department Seminar at McLean Hospital: "Assessment of potential sex differences in prescription opioid self-administration in rats", Belmont, MA, February 2016.
10. Epigenetics Seminar at McLean Hospital: "Stress- and sex-regulated miRNAs and their potential impact on prescription opioid addiction", Belmont, MA, November 2016.

11. College on Problems of drug dependence (CPDD) meeting*:* "Stress- and sex-dependent changes in miRNA expression and their potential impact on opioid addiction", Montreal, Canada, June 2017.
12. Seminar at VA Boston Medical Center: "Sex differences in adult miRNA expression in the bed nucleus of the stria terminalis (BNST) in male and female rats", Boston, MA, June 2019.
13. Seminar at Massachusetts Institute of Technology (MIT): "The brain reward system", Cambridge, MA, July 2019.
14. Seminar at Beth Israel Deaconess Medical Center/Harvard Medical School: "The role of miRNAs in opioid addiction and stress response", Boston, MA, October 2019.
15. Lecture in the Department of Psychology at University of Crete (Greece): "Sex differences in psychiatric disorders: neurobiological mechanisms", online via Zoom, May 17, 2021.

Narrative Report

An overarching theme of my research is how the brain's reward system drives motivated behavior. This is important because dysfunction of brain reward processes is observed in multiple psychiatric conditions such as drug addiction and bipolar disorder. I have been addressing this theme using different pharmacological and non-pharmacological (e.g. genetic) manipulations. I am using behavioral paradigms such as intracranial self-stimulation (ICSS), intravenous drug self-administration (IVSA), place conditioning, and elevated plus maze to assess brain reward processes, depression- and anxiety-like behaviors in rodents. I use viral mediated gene expression techniques to probe the neural circuits within which genes and microRNAs modulate those behaviors. Furthermore, I utilize molecular techniques such as immunoassays and gene expression assays and *in vitro* cell culture assays to probe the underlying substrates.