

MICHAELA FILIOU

CURRENT POSITION

12/2022 - now	Associate Professor of Biochemistry , Department of Biological Applications and Technology, University of Ioannina (UOI)
02/2020 - now	Associated Faculty Member and Group Leader , Biomedical Research Institute, Foundation for Research and Technology-Hellas (BRI-FORTH)
04/2018 - now	Head of the Biochemistry Lab , Department of Biological Applications and Technology, UOI Lab Website , Lab Facebook page

PROFESSIONAL EXPERIENCE

04/2018 - 12/2022	Assistant Professor , Department of Biological Applications and Technology, UOI
04/2018 - 07/2019	Guest Scientist , Max Planck Institute of Psychiatry (MPIP), Munich, DE
01/2015 - 04/2018	Staff Scientist , Stress Neurobiology and Neurogenetics, MPIP
02/2013 - 05/2013	Visiting Research Fellow , Harvard Medical School, Cambridge, MA
09/2012 - 12/2014	Principal Investigator , Proteomics and Biomarkers Group, MPIP DFG Research Grant: 'Unraveling the role of mitochondria in anxiety disorders'
08/2010 - 08/2012	Postdoctoral Research Fellow , Proteomics and Biomarkers Group, MPIP Max Planck Society Postdoctoral Fellowship: 'Validation of mitochondrial biomarkers and pathways in a mouse model of anxiety'
10/2009, 8/2008	Visiting Researcher , Institute of Molecular Psychiatry, University of Bonn, DE

EDUCATION

10/2006 - 07/2010	PhD , Ludwig Maximilian University & International Max Planck Research School for Molecular and Cellular Life Sciences (IMPRS-LS), Munich, DE
Thesis:	'Biomarker discovery for psychiatric disorders: Insights from quantitative proteomics studies in animal models' Grade MAGNA CUM LAUDE: 0.74
Advisors:	Prof. Chris Turck, Prof. Rainer Landgraf
10/2005 - 09/2006	MSc , Human Molecular Genetics, Imperial College London, UK
10/2000 - 07/2005	Integrated MSc , Department of Biological Applications and Technology, UOI Grade EXCELLENT: 8.71/10 , Valedictorian

FUNDING

14 projects, PI in 9, In total ~835.000 € acquired as PI/Work Package leader

2024 -2026	FORTH Synergy Grant Stress response in single-cell transcriptional resolution (STAR) Role: Co-PI (40.000 € for the lab)	80.000 €
2024 - 2025	Hellenic Foundation of Research and Innovation (HFRI) 'Elucidating the interplay of anxiety and eating disorders: Focus on brain and oocyte mitochondria dynamics, BOND' Role: Coordinator PI	245.448 €
2023 - 2024	BRI-FORTH intramural funding 'Elucidating the effects of early handling in adult brain mitochondria of high anxiety mice' Role: PI	10.000 €
2023 - 2026	HFRI, PhD Fellowship to Maria Papageorgiou 'Exploring the role of mitochondrial dynamics in stressful interventions and high anxiety' Role: PhD advisor of the applicant	29.700 €
2023	Galenica grant Crocus and Sideritis for stress and anxiety management (CROSAD) Role: Subcontractor (6.200 € for the lab)	24.000 €

2021	L' Oréal-UNESCO for Women in Science National Award Role: Award Recipient	10.000 €
2020 - 2023	Fondation Santé 'Stress resilience: Mind the mitochondria' Role: PI	50.000 €
2020 - 2023	Regional Excellence Program 'BIOMED-20' , Role: Work Package leader (Work Package budget: ~120.000 €)	3.000.000 €
2020 - 2021	Supporting researchers with emphasis on young researchers (NSRF) 'How do mitochondria regulate stress? Lets ask metabolomics', Role: PI	45.546 €
2018 - 2021	HFRI, 1st Postdoc Grant 'The bioenergetic dimension of stress: focus on mitochondria, ENERGEIA ' Role: PI	180.000 €
2015 - 2017	IKYDA Program (IKY-DAAD) 'Depression: Can a cancer drug be used for rapid antidepressant treatment?' Role: PI of German Team	20.000 €
2012 - 2015	German Research Foundation (DFG) Research Grant 'Unraveling the role of mitochondria in anxiety disorders' Role: PI	99.025 €
2008 - 2013	Federal Ministry of Education and Research (BMBF) 'Systematic investigation of the molecular causes of major mood disorders and schizophrenia , functional studies using transgenic mouse models and proteome analyses' PIs: Prof. Markus Nöthen, Prof. Chris Turck Role: Research Team Member	166.500 €
2006 - 2011	BMBF, Quant-Pro 'Quantitative analysis of dynamic processes in living systems, biomarker discovery and pathway analysis via quantitative proteomics in mouse models for human disease' PI: Prof. Chris Turck Role: Research Team Member	1.884.596 €

SELECTED HONORS/AWARDS

2022	1 st Best Poster Award, 30 th Panhellenic Congress of Psychiatry
2021	L' Oréal-UNESCO for Women in Science National Award
2021	Best Poster Award, 1 st Interdisciplinary Congress, 'Caring for the brain'
2020	Review Editor, <i>Frontiers in Psychiatry, in Molecular Neuroscience, in Physiology</i>
2019	Filiou & Sandi, 2019: Issue Cover, September 2019, Trends in Neurosciences
2017	Young Investigator Award, World Federation of Societies of Biological Psychiatry
2017	Mifek-Kirschner Award, Max Planck Institute of Psychiatry
2017	Best Poster Award, 13 th World Congress of Biological Psychiatry
2017	Best Poster Award, 1 st Panhellenic Meeting, Institute of Stress Biology and Medicine
2015	Educational grant, World Federation of Societies of Biological Psychiatry (WFSBP)
2015	Filiou et al. 2015: Issue Cover, June 2015, Molecular Biosystems
2012	Young Investigator Award, European Proteomics Association
2010	Young Investigator Award finalist, European Proteomics Association (EuPA)
2008 - 2014	12 travel grants for conference participation (e.g. FENS-IBRO, DAAD, ASMS)
2006	Acceptance to IMPRS-LS PhD Program (success rate 3.4%)
2005	Valedictorian of the Department of Biological Applications and Technology (higher graduation grade of the year among ~100 students, 8.71/10, Excellent)
2000	State Scholarships Foundation (IKY) award based on University admission grade (top 1% students, admitted with the 2nd higher grade 195.2/200)
1996	2 nd Award from the Hellenic Mathematical Society

SELECTED FELLOWSHIPS/SCHOLARSHIPS

2013	EMBO Short-Term Fellowship for research at Harvard Medical School
2010 - 2012	Max Planck Society Postdoctoral Fellowship
2007 - 2010	Max Planck Society PhD Fellowship
2005 - 2006	Georgios Stavros Foundation MSc Scholarship
2005, 2004, 2003	Onassis Foundation Scholarships 2005, 2004 & 2003 Lectures in Biology
2000 - 2002	IKY Fellowship for the top 1% grade for academic years 2000-2001 and 2001-2002

SELECTED DISSEMINATION ACTIONS

2024	Educator, 'The limbic structures of the brain: From bench to bedside'
2022 - now	Head, Dissemination Committee, Department of Biological Applications and Technology
2022 - now	Coordinator, Alumni lecture series, Department of Biological Applications and Technology
2022	Organized and conducted the online Narrative Workshop: 'Narratives in Biology: Targeting diverse target audiences in Science Storytelling' ,
2022	Participation in the Roundtable: 'Women in leadership positions', Organizer: Zosimaia Lyceum of Ioannina
2021	Career talk in the PhD Program IMPRS-LS retreat (Ammersee, Germany)
2021	Invited talk in the online event 'Women in Biosciences' with presentations of Greek women bioscientists, Organizer: DUTH
2021	Radio interview on the Biology of Psychiatry, Ioannina Municipal Radio 98.7
2021	Organizer, International Workshop on 'Bioenergetics, Multiomics and the Brain'
2021	'The biology of laughing' , Podcast for the World Laughter Day invited by bio-logia.gr
2021	Contribution to Brain Awareness Week 2021 with a cartoon video explaining research at the Biochemistry lab 'The Mitochondrion and Mr. Mouse'
2020 - now	Social media manager, Department of Biological Applications and Technology
2020	Contribution to the 1st Ioannina Science Festival with the talk: 'Psychological stress & mitochondria'
2019 - now	Member of ALBA Network for promoting diversity and equity in brain sciences
2018 - now	Co-organization of 'Neurotalks', open meetings with a neuroscience focus at UOI
2018	Mentor, FAPESP-Baylat Workshop on 'Neural basis of stress, fear and anxiety' Brazil
2017	Science Café, Munich International School : Presentation/Discussion with high school students, teachers and parents on the life of a scientist
2013 - now	Conducting soft skill seminars on grant writing and grant evaluation

PUBLICATIONS (51)

Last author in: 15, Corresponding author in: 25 , first author in: 16, single author in 2

h index: 26 citations: 1980

[Google Scholar Profile](#)

1. Vlaikou AM, Nussbaumer M, Iliou A, Papageorgiou MP, Komini C, Theodoridou D, Benaki D, Mikros E, Gikas E, Syrrou M, **Filiou MD**[#]. *J Neurosci Res* 2025 (in press)
2. Papageorgiou M[#], **Filiou MD**[#]. Mitochondria dynamics and psychiatric disorders: The missing link. *Neurosci Biobehav Rev* 2024 165:105837.
3. Messinis A*, Panteli E*, Paraskevopoulou A*, Zymariopoulou AK*, **Filiou MD**[#]. Altered lipidomics biosignatures in schizophrenia: a systematic review *Schizophr Res* 2024 271:380-390
4. Thomou C*, Nussbaumer M*, Grammenou E*, Komini C, Vlaikou AM, Papageorgiou MP, **Filiou MD**[#]. Early handling exerts anxiolytic effects and alters brain mitochondrial dynamics in adult high anxiety mice. *Mol Neurobiol* 2024 61:10593-10612
5. Barreto-Domingos L, Müller-Kaasrup H, Rodrigues da Silva N, **Filiou MD**, Nielsen AL, Silveira Guimarães F, Wegerer G, Joca S. Cannabidiol effects on neuroplasticity markers and lipidome in the prefrontal cortex of a rat model fo depression. *Neuropharmacology* 2024 248:109870.

March 2025

6. Theodoridou D, Tsiantis CO, Vlaikou AM, Chondrou V, Zakopoulou V, Christodoulides P, Oikonomou ED, Tzimourta KD, Kostoulas C, Tzallas AT, Tsamis KI, Peschos D, Sgourou A, **Filiou MD**, Syrrou M. Developmental dyslexia: insights from EEG-based findings and molecular signatures—a pilot study. *Brain Sci* 2024 14:139
7. Papageorgiou MP*, Theodoridou D*, Nussbaumer M, Syrrou M, **Filiou MD**#. Deciphering the metabolome under stress: Insights from rodent models *Curr Neuropharmacol* 2024 22:884-903
8. Turck CW#, Webhofer C, Reckow S, Moy J, Wang M, Guillemier C, Poczatek JC, **Filiou MD**#. Antidepressant treatment effects on hippocampal protein turnover: molecular and spatial insights from mass spectrometry. *Proteomics* 2022 22:e2100244
9. **Filiou MD**#, Teplytska L, Nussbaumer M, Otte DM, Zimmer A, Turck CW#. Multi-omics analysis reveals myelin, presynaptic and nicotinate alterations in the hippocampus of G72/G30 transgenic mice. *J Pers Med* 2022 12:244
10. Iliou A*, Vlaikou AM*, Nussbaumer M, Benaki D, Mikros E, Gikas E, **Filiou MD**#. Exploring the metabolomic profile of cerebellum after exposure to acute stress. *Stress* 2021 24:952-964
11. **Filiou MD**#, Nussbaumer M, Teplytska L, Turck CW#. Behavioral and metabolome differences between C57BL/6 and DBA/2 mouse strains: implications for their use as models for depression- and anxiety-like phenotypes. *Metabolites* 2021 11:128
12. Vlaikou AM, Nussbaumer M, Komini C, Lambrianidou A, Konidaris C, Trangas T#, **Filiou MD**#. Exploring the crosstalk of glycolysis and mitochondrial metabolism in psychiatric disorders and brain tumours. *Eur J Neurosci* 2021 53:3002-3018
13. Chousidis I, Chatzimitakos T, Leonardos D, **Filiou MD**, Stalikas CD, Leonardos ID. Cannabinol in the spotlight: Toxicometabolomic study and behavioral analysis of zebrafish embryos exposed to the unknown cannabinoid. *Chemosphere* 2020 252:126417
14. Papadopoulou Z, Vlaikou AM, Theodoridou D, Komini C, Chalkiadaki G, Vafeiadi M, Margetaki K, Turck CW, Trangas T, Syrrou M*, Chatzi L*, **Filiou MD***#. Unraveling the serum metabolomic profile of postpartum depression. *Front Neurosci* 2019 13:833
15. **Filiou MD**#, Sandi C#. Anxiety and brain mitochondria: A bidirectional crosstalk. *Trends Neurosci* 2019 42:573-88
16. Papadopoulou Z, Vlaikou AM, Theodoridou D, Markopoulos GS, Tsoni K, Agakidou E, Drosou-Agakidou V, Turck CW, **Filiou MD**#, Syrrou M#. Stressful newborn memories: pre-conceptual, in utero and postnatal events. *Front Psychiatry* 2019 10:220 §
17. Weckmann K, Deery MJ, Howard JA, Feret R, Asara JM, Dethloff F, **Filiou MD**, Labermaier C, Maccarrone G, Lilley KS, Müller M, Turck CW. Ketamine's effects on the glutamatergic and GABAergic systems - a proteomics and metabolomics study in mice. *Mol Neuropsychiatry* 2019 5: 42-51
18. Weckmann K, Deery MJ, Howard JA, Feret R, Asara JM, Dethloff F, Dethloff F, **Filiou MD**, Lannace J, Labermaier C, Maccarrone G, Webhofer C, Teplytska L, Lilley K, Müller M, Turck CW. Ketamine's antidepressant effect is mediated by energy metabolism and antioxidant defense system. *Sci Rep* 2017 7:15788
19. **Filiou MD**#, Banati RB, Graeber MB#. The mitochondrial 18-kDa translocator protein (TSPO) as a CNS drug target: Finding our way through the neuroinflammation fog. *CNS and Neurological Disorders - Drug Targets* 2017 16:990-999
20. Park DI, Dournes C, Sillaber I, Asara JM, Ising M, Webhofer C, **Filiou MD**, Müller MB, Turck CW. Delineation of molecular pathway activities of the chronic antidepressant treatment response suggests important roles for glutamatergic and ubiquitin-proteasome systems. *Transl Psychiatry* 2017 7:e1078
21. Gikas E#, **Filiou M**#. Mass spectrometry and the Mediterranean. *J Chromatogr B Analyt Technol Biomed Life Sci* 2017 1047:1 (Editorial)
22. Turck CW, Webhofer C, Nussbaumer M, Teplytska L, Chen A, Maccarrone G, **Filiou MD**#. Stable isotope metabolic labeling suggests differential turnover of the DPYSL protein family. *Proteomics Clin Appl* 2016 10:1269-1272
23. Lopes S, Teplytska L, Vaz-Silva J, Dioli C, Trindade R, Morais M, Webhofer C, Maccarrone G, Almeida OF, Turck CW, Sousa N, Sotiropoulos I#, **Filiou MD**#. Tau deletion prevents stress-induced dendritic atrophy in prefrontal cortex: Role of synaptic mitochondria. *Cereb Cortex* 2017 27:2580-2591
24. Nussbaumer M, Asara JM, Teplytska L, Murphy MP, Logan A, Turck CW, **Filiou MD**#. Selective mitochondrial targeting exerts anxiolytic effects *in vivo*. *Neuropsychopharmacology* 2016 41: 1751-1758
25. Park DI*, Dournes C*, Sillaber I, Uhr M, Asara JM, Gassen NC, Rein T, Ising M, Webhofer C, **Filiou MD**, Müller MB, Turck CW. Purine and pyrimidine metabolism: Convergent evidence on chronic antidepressant response in mice and humans. *Sci Rep* 2016 6:35317
26. Kao CY, He Z, Henes K, Asara JM, Webhofer C, **Filiou MD**, Khaitovich P, Wotjak CT, Turck CW. Fluoxetine treatment rescues energy metabolism pathway alterations in a posttraumatic stress disorder mouse model. *Mol Neuropsychiatry* 2016 2:46-59
27. **Filiou MD**#. Can proteomics-based diagnostics aid clinical psychiatry? *Proteomics Clin Appl* 2015 9:885-888

28. Turck CW, **Filiou MD**[#]. What have proteomics and metabolomics (not) taught us about psychiatric disorders? *Mol Neuropsychiatry* 2015 1:69-75
29. **Filiou MD**, Soukupova M, Rewerts C, Webhofer C, Turck CW, Maccarrone G. Variability assessment of ¹⁵N metabolic labeling-based proteomics workflow in mouse brain and plasma. *Mol Biosyst* 2015 11:1536-1542 Cover of June 2015 Issue
30. Wood PL, **Filiou MD**, Otte DM, Zimmer A, Turck CW. Lipidomics reveals dysfunctional glycosynapses in schizophrenia and the G72/G30 transgenic mouse. *Schizophrenia Res* 2014 159:365-369
31. **Filiou MD**, Moy J, Wang M, Guillermier C, Poczatek C, Turck C, Lechene C. Effect of an anti-depressant on mouse hippocampus protein turnover using MIMS. *Surf Interface Anal* 2014 46:S144-146
32. **Filiou MD**[#], Asara JM, Nussbaumer M, Teplytska L, Landgraf R, Turck CW. Metabolic profiles of behavioral extremes in trait anxiety. *J Psychiatr Res* 2014 58:115-122
33. Iris F, **Filiou M**, Turck CW. Differential proteomics analyses reveal anxiety-associated molecular and cellular mechanisms in cingulate cortex synapses. *AJPN* 2014 2:25-42
34. **Filiou MD**, Arefin AS, Moscato P, Graeber MB. 'Neuroinflammation' differs categorically from inflammation: transcriptomes of Parkinson's disease, Alzheimer's disease, schizophrenia and inflammatory diseases compared. *Neurogenetics* 2014 15:201-212
35. Webhofer C*, Zhang Y*, Brusis J, Reckow S, Landgraf R, Maccarrone G, Turck CW, **Filiou MD**[#]. ¹⁵N metabolic labeling: evidence for a stable isotope effect on plasma protein levels and peptide chromatographic retention times. *J Proteomics* 2013 88:27-33
36. O'Neil SE, Palviainen MJ, Ten Have S, **Filiou M**, Gonzalez A, Hodge K, Surinova S, Penque D, Baker MS. Clinical proteomics stretch goals: EuPA 2012 roundtable report. *J Proteomics* 2013 88:37-40
37. **Filiou MD**[#]. The potential of ¹⁵N metabolic labeling for schizophrenia research. *Arch Clin Psychiatry* 2013 40:51-52
38. **Filiou MD**[#], Teplytska L, Otte DM, Zimmer A, Turck CW. Myelination and oxidative stress alterations in the cerebellum of the G72/G30 transgenic schizophrenia mouse model. *J Psychiatr Res* 2012 46:1359-1365
39. **Filiou MD**^{*}, Webhofer C*, Gormanns P*, Zhang Y, Bisle B, Teplytska L, Frank E, Kessler MS, Maccarrone G, Landgraf R, Turck CW. The ¹⁵N isotope effect as a means for correlating phenotypic alterations and affected pathways in a trait anxiety mouse model. *Proteomics* 2012 12:2421-2427
40. **Filiou MD**, Varadarajulu J, Teplytska L, Reckow S, Maccarrone G, Turck CW. The ¹⁵N isotope effect in *Escherichia coli*: A neutron can make the difference. *Proteomics* 2012 12:3121-3128
41. **Filiou MD**[#], Martins-de-Souza D, Guest PC, Bahn S, Turck CW. To label or not to label: Applications of quantitative proteomics in neuroscience research. *Proteomics* 2012 12:736-747
42. Zhang Y, **Filiou MD**, Reckow S, Gormanns P, Maccarrone G, Kessler MS, Frank E, Hamsch B, Holsboer F, Landgraf R, Turck CW. Proteomic and metabolomic profiling of a trait anxiety mouse model implicates affected pathways. *Mol Cell Proteomics* 2011 10:M111.008110
43. **Filiou MD**, Zhang Y, Teplytska L, Reckow S, Gormanns P, Maccarrone G, Frank E, Kessler MS, Hamsch B, Nussbaumer M, Bunck M, Ludwig T, Yassouridis A, Holsboer F, Landgraf R, Turck CW. Proteomics and metabolomics analysis of a trait anxiety mouse model reveals divergent mitochondrial pathways. *Biol Psychiatry* 2011 70:1074-1082
44. Otte DM, Sommersberg B, Kudin A, Guerrero C, Albayram Ö, **Filiou MD**, Frisch P, Yilmaz Ö, Drews E, Turck CW, Bilkei-Gorzó A, Kunz WS, Beck H, Zimmer A. N-acetyl cysteine treatment rescues cognitive deficits induced by mitochondrial dysfunction in G72/G30 transgenic mice. *Neuropsychopharmacology* 2011 36:2233-2243
45. **Filiou MD**[#], Turck CW, Martins-de-Souza D. Quantitative proteomics for investigating psychiatric disorders. *Proteomics Clin Appl* 2011 5:38-49
46. **Filiou MD**, Bisle B, Reckow S, Teplytska L, Maccarrone G, Turck CW. Profiling of mouse synaptosome proteome and phosphoproteome by IEF. *Electrophoresis* 2010 31:1294-1301
47. Zhang Y, Webhofer C, Reckow S, **Filiou MD**, Maccarrone G, Turck CW. A MS data search method for improved ¹⁵N-labeled protein identification. *Proteomics* 2009 9:4265-4270
48. Frank E, Kessler MS, **Filiou MD**, Zhang Y, Maccarrone G, Reckow S, Bunck M, Heumann H, Turck CW, Landgraf R, Hamsch B. Stable isotope metabolic labeling with a novel ¹⁵N-enriched bacteria diet for improved proteomic analyses of mouse models for psychopathologies. *PLoS ONE* 2009 4:e7821
49. Otte DM, Bilkei-Gorzó A, **Filiou MD**, Turck CW, Yilmaz Ö, Holst MI, Schilling K, Abou-Jamra R, Schumacher J, Benzel I, Kunz WS, Beck H, Zimmer A. Behavioral changes in G72/G30 transgenic mice. *Eur Neuropsychopharmacol* 2009 19:339-348
50. Haegler K, Mueller NS, Maccarrone G, Hunyadi-Gulyas E, Webhofer C, **Filiou MD**, Zhang Y, Turck CW. QuantiSpec - Quantitative mass spectrometry data analysis of ¹⁵N-metabolically labeled proteins. *J Proteomics* 2009 71:601-608
51. Durrenberger PF, **Filiou MD**, Moran LB, Michael GJ, Novoselov S, Cheetham ME, Clark P, Pearce RK, Graeber MB. DnaJB6 is present in the core of Lewy bodies and is highly up-regulated in parkinsonian astrocytes. *J Neurosci Res* 2009 87:238-245

BOOK CHAPTERS (5)

1. Zakopoulou V, Tsiantis CO, Venizelou E, Vlaikou AM, Chondrou V, Sgourou A, **Filiou MD**, Tzallas A, Dimakopoulos G, Syrrou M. Early diagnosis and intervention of developmental dyslexia at the preschool age: The role of stress. *Psychology Applications and Developments*, 2025, 203-218, inScience
2. Maccarrone G, Chen A, **Filiou MD**[#]. Using ¹⁵N metabolic labeling for quantitative proteomic analyses. *Methods in Molecular Biology, Multiplex Biomarker Techniques*, 2017, vol 1546, 235-243, Humana Press, NJ
3. Maccarrone G, **Filiou MD**[#]. Protein profiling and phosphoprotein analysis by IEF. *Methods in Molecular Biology, Analytical Methods and Integrated Workflows for Proteomic Profiling*, 2015, vol 1295, 293-303, Humana Press, NJ
4. **Filiou MD**[#], Turck CW. Psychiatric disorder biomarker discovery using quantitative proteomics. *Methods in Molecular Biology, Psychiatric Disorders Methods and Protocols*, 2012, vol 829, 531-539, Humana Press, NJ
5. **Filiou MD**[#], Turck CW. General overview: Biomarkers in neuroscience research. *International Review of Neurobiology, Biomarkers of Neurological and Psychiatric Disease*, 2011, vol 101, 1-17, Academic Press, CA

[#]corresponding author, *equal contribution