

CURRICULUM VITAE

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Appointments/Employment

February 2021 – **Assistant Professor**. Center for Computational Psychiatry. Department of Psychiatry, Icahn School of Medicine at Mount Sinai, New York, NY, USA.

Interests: Neural, reinforcement learning and Bayesian models of healthy and aberrant behaviour in human and non-human animals. Model-based fMRI analysis and dynamic causal modelling of brain activity in healthy and clinical population.

September 2018 - January 2021 – **Associate Scientist** (15 months) and **Instructor** (14 months). Department of Psychiatry, Icahn School of Medicine at Mount Sinai, New York, NY, USA.

January 2016 - August 2018 – **Research Associate**. School of Behavioral and Brain Sciences, University of Texas at Dallas, Dallas, TX, USA.

January 2013 - November 2015 – **Research Associate**. Wellcome Trust Centre for Neuroimaging, University College London, London, UK.

October 2007 - October 2012 – **Internship** (12 Months) and **Early Stage Researcher** (49 Months). Istituto di Scienze e Tecnologie della Cognizione, National Research Council, Rome, IT.

Education

PhD in Psychobiology and Psychopharmacology, Sapienza - Università di Roma, IT, Jan 2012.

MSc by Res. in Philosophy, major Philosophy of Mind, University of Edinburgh, UK, Nov 2007.

Laurea in Philosophy, major Cognitive Science, Università degli Studi di Siena, IT, Nov 2005.

Grants

2017-2022 - NIH Research Project Grant Program. R01DA043695-01A1

Role: Co-Investigator. Title: “Computational and Neural Modeling of Cue Reactivity in Addiction”.

2019-2021 - NIDA Exploratory/Developmental Research Grant Award. R21DA049243

Role: Co-Investigator. Title: “Neurocomputational Mechanisms for Addiction Heterogeneity, Impulsivity and Perseverance”.

Publications

- (under review) Na S, Chung D, Hula A, Jung J, Fiore VG, Dayan P, Gu X. Humans Use Forward Thinking to Exert Social Control. (preprint, doi: <https://doi.org/10.1101/737353>)
- (under review) **Fiore VG**, Gu X. Context-invariant neural dynamics underlying the encoding of Bayesian uncertainty, but not confidence. (preprint, doi: <https://doi.org/10.1101/794669>).
- Fiore VG**, De Felice N, Glicksberg BS, Perl O, Shuster A, Kulkarni K, O'Brien M, Pisauro MA, Chung D, Gu X (in press 2021) Containment of COVID-19: simulating the impact of different policies and testing capacities for contact tracing, testing, and isolation. *PLoS One*. doi: 10.1371/journal.pone.0247614
- Fiore VG**, Guertler A-CV, Yu J-C, Tatineni CC, Gu X. 2021. A change of mind: globus pallidus activity and effective connectivity during changes in choice selections. *Eur. J. Neurosci*. 00:1–14. doi:10.1111/ejn.15142
- Yu J-C*, **Fiore VG***, Briggs RW, Braud J, Rubia K, Adinoff B, Gu X. 2020. An insula-driven network computes decision uncertainty and promotes abstinence in chronic cocaine users. *Eur. J. Neurosci*. 52:4923-4936. doi:10.1111/ejn.14917
- Ognibene D, **Fiore VG**, Gu X. 2019. Addiction beyond pharmacological effects: the role of environment complexity and bounded rationality. *Neural Netw*. 116:269-278 doi: 10.1016/j.neunet.2019.04.022
- Fiore VG**, Ognibene D, Adinoff B, Gu X. 2018. A Multilevel Computational Characterization of Endophenotypes in Addiction. *ENeuro*. 5(4).0151-18.2018; doi: 10.1523/eneuro.0151-18.2018
- Fiore VG**, Nolte T, Rigoli F, Smittenaar P, Gu X, Dolan RJ. 2018. Value Encoding in the Globus Pallidus: fMRI reveals an interaction effect between reward and dopaminergic drive. *NeuroImage*. 173:249-257. doi:10.1016/j.neuroimage.2018.02.048
- Fiore VG**, Kottler B, Gu X, Hirth F. 2017. In silico interrogation of insect central complex suggests computational roles for ellipsoid body in spatial navigation. *Front Behav Neurosci*. 11:142. doi: 10.3389/fnbeh.2017.00142
- Fiore VG**, Rigoli F, Stenner MP, Zaehle T, Hirth F, Heinze HJ, Dolan RJ. 2016. Changing pattern in the basal ganglia: motor switching under reduced dopaminergic drive. *Sci Rep*. 6: 23327. doi: 10.1038/srep23327
- Hauser TU, **Fiore VG**, Moutoussis M, Dolan RJ. 2016. Computational psychiatry of ADHD: Neural gain impairments across Marrian levels of analysis. *Trends Neurosci*. 39(2):63-73. doi: 10.1016/j.tins.2015.12.009
- Fiore VG**, Dolan RJ, Strausfeld NJ, Hirth F. 2015 Evolutionary conserved mechanisms for the selection and maintenance of behavioural activity. *Philos Trans R Soc Lond B Biol Sci*. 19;370(1684). pii: 20150053. doi: 10.1098/rstb.2015.0053.
- Fiore VG**, et al. 2015 Corticolimbic catecholamines in stress: a computational model of the appraisal of controllability. *Brain Struct Func*. 220(3):1339-1353. doi:10.1007/s00429-014-0727-7
- Fiore VG**, Sperati V, Mannella F, Mirolli M, Gurney K, Friston K, Dolan RJ, Baldassarre G. 2014. Keep focussing: striatal dopamine multiple functions resolved in a single mechanism tested in a simulated humanoid robot. *Front Psychol*. 5:124. doi: 10.3389/fpsyg.2014.00124
- Taffoni F, Formica D, Schiavone G, Scorcio M, Tomassetti A, Polizzi di Sorrentino E, Sabbatini G, Truppa V, Mannella F, **Fiore VG**, et al. 2013. The “Mechatronic Board”: A Tool to Study Intrinsic Motivations in Humans, Monkeys, and Humanoid Robots. In G. Baldassarre and M.

Mirolli (Eds.): *Intrinsically Motivated Learning in Natural and Artificial Systems*, Springer Berlin Heidelberg pages 411-432

Baldassarre G, Mannella F, **Fiore VG**, Redgrave P, Gurney K, Mirolli M. 2013. Intrinsically motivated action-outcome learning and goal-based action recall: a system-level bio-constrained computational model. *Neural Netw.* 41:168-187. doi: 10.1016/j.neunet.2012.09.015

Fiore VG. 2010. Multiple realizations of the mental states - hunting for plausible chimeras. In M. D'Agostino et al. (Eds.): *New Essays in Logic and Philosophy of Science*, Kings College Publications: London, pages 529-538.

Fiore VG, Mannella F, Mirolli M, Gurney K, Baldassarre G. 2008. Instrumental Conditioning Driven by Neutral Stimuli: A Model Tested with a Simulated Robotic Rat. In M. Schlesinger et al. (Eds.), *Proceedings of the 8th conference on Epigenetic Robotics*, in University of Sussex, UK. *Lund University Cognitive Studies*, 139, pages 13-20.

In Italian

Rizzoni, M. Calvano, R. et al. 2014. *Libro Bianco – Università e Ricerca*. Guidoni U, Fiore VG, et al. (Eds.) Rubbettino editore. ISBN 9788849841237

Selected Conferences

- Panel session - ACNP annual meeting. Orlando, US, December 2019.
- OHBM annual meeting. Rome, IT, June 2019
- FENS forum of Neuroscience. Berlin, DE, July 2018
- SfN, Annual Meeting of the Society for Neuroscience. Washington DC, US, November 2017
- IBAGS, 12th International Basal Ganglia Society Meeting. Mérida, MX, March 2017
- Genetics Society Autumn Meeting. London, UK, November 2015
- FENS, Brain Conference. Rungstedgaard, DK, April 2015
- CNS, annual meeting of the Cognitive Neuroscience Society. Boston, US, April 2014.
- SfN, Annual Meeting of the Society for Neuroscience. San Diego, US, November 2010.
- BCCN, Bernstein Conference on Computational Neuroscience. Frankfurt, DE, October 2009.

Ad hoc reviewer

Basal Ganglia; Cerebral Cortex; Cognitive, Affective, & Behavioral Neuroscience; *Frontiers in Psychology*; *Journal of Neuroscience*; *Neural Networks*; *NeuroImage*; *Psychological Science*

Teaching Experience

2016 – present. Mentorship of PhD and undergraduate students, UTD and Mount Sinai.

Jul 2019 - Introductory methods for the “Computational Psychiatry Summer Course”, MSSM

2017-18 - Temporary lecturer: “Introduction to Neuroscience” course, UTD.

Jul 2017 - Invited talk at the “Computational Psychiatry Summer Course”, UCL.

Jan 2015 - Instructor: “Connectionism: structures to functions”, workshop for MSc students, UCL.

Feb-Mar 2012 - Temporary lecturer: “Computational embodied neuroscience” course, Sapienza - Università di Roma.