

Rossella Falcone

EDUCATION

- **July 2006:** B.S. Human Biology. University of Rome “Tor Vergata”, Italy.
- **October 2008:** M.S. Neurobiology. University of Rome “La Sapienza”, Italy.
- **February 2013:** Ph.D. in Neurophysiology. Department of Physiology and Pharmacology. University of Rome “La Sapienza”, Italy.

POSTGRADUATE TRAINING

- **November 2012 - November 2013: Scholarship**
Department of Physiology and Pharmacology. University of Rome “La Sapienza”.
Research Project: Investigation of the neural substrates of social interactions and social understanding.
- **January 2014 - January 2019: Postdoctoral Fellow**
National Institute of Mental Health (NIMH), National Institutes of Health (NIH), Bethesda, MD, USA. Laboratory of Neuropsychology - Section on neural coding and Computation.
Research Focus: Examine how the information about visual stimuli is transformed into information about stimulus meaning for reward expectancy, i.e., how the brain learns to use stimuli to predict the future outcome and make a correct choice, providing motivation to act.
- **January 2019 - September 2020: Research fellow, FTE**
National Institute of Mental Health (NIMH), National Institutes of Health (NIH), Bethesda, MD, USA. Laboratory of Neuropsychology - Section on neural coding and computation.
Research Focus: Study of the neurobiological foundations of complex cognitive functions, such as those underlying the evaluation of rewards to drive appropriate behavior, by using classical extracellular neural recording approaches and other state-of-the-art approaches (DREADDs and RNA interference) to establish causal relationships between the functions of specific brain regions and behavior.
- **October 2020 - December 2021: Postdoctoral Fellow**
INSERM - U1208, Medical Institute of Health, Bron, France. **Research Focus:** Role of Noradrenaline on cortical neural dynamics and behavioral flexibility.

BOARD CERTIFICATION

- **September 2010 to date:** Italian Board (**ONB** - Ordine Nazionale dei Biologi) of Professional Biologist.

PROFESSIONAL SOCIETY MEMBERSHIPS

- **April 2021 - Present:** member of Société des Neurosciences - France.
- **2014 - Present:** member of Society for Neuroscience - Washington D.C.

AWARDS AND HONORS

- **September 2019:** SINS 2019 - Perugia (Italy). One of the best 10 posters (500 Euro). Lorenzo Ferrucci, Simon Nougaret, **Rossella Falcone**, Rossella Cirillo, Danilo Benozzo, Aldo Genovesio. Neural correlates of the distinction between self and others in the macaque's frontal cortex.
- **September 2018:** Postdoc Travel Award from “NIMH IRP OFT, TRAINEE TRAVEL AWARD” (1000\$ US).
- **Grant for Scholastic and Academic Award of Academic Year 2007/2008 - 2010** “HOMO SAPIENS SAPIENS” - from Dir. Centr. Welfare e Strutt. Soci.li – Uff.II-Benefici e Prest. Sociali. (1.960 Euro).
- **Grant for Stage in 2009 - 2010** “HOMO SAPIENS SAPIENS - from Dir. Centr. Welfare e Strutt. Soci.li - Uff.II - Benefici e Prest. Sociali. (2.880 Euro).
- **October 2009 - October 2012:** Doctoral Scholarship from Ministero dell'Istruzione dell'Universita' della Ricerca (MIUR), Italy (13.000 Euro per Year).

OTHER PROFESSIONALS ACTIVITIES

- **February 2020:** Poster judge volunteer for the 16th Annual Graduate Student Research Symposium (NIH) – for Neuroscience field.
- As Postdoctoral Fellow and Research Fellow at NIMH, Bethesda, MD, USA:
 - ❖ Recruited, supervised and mentored post-baccalaureate students.
 - ❖ Trained post-baccalaureate students with new techniques, laboratory training, data collection and data analysis.

**Projects (in the way of Posters and/or Talks) Presented by
PostBaccalaureate Students* under my supervision**

1. **Three-Minute Talks (TmT) competition (2021) - Talk** - Bethesda (USA). **Maya Smith***. The influence of Cholinergic signaling of striatal interneurons on reward evaluation.
 2. **Scientific Training Day (2019) - Talk** - Washington D.C. **Mariko McDougall***, Rossella Falcone, David Weintraub, Barry Richmond. Primate lateral prefrontal neurons modulate activity to encode reward attributes of visual stimuli.
 3. **Postbaccalaureate Poster Day (2019) - Poster** - Bethesda (USA). **Mariko McDougall***, Rossella Falcone, David Weintraub, Tsuyoshi Setogawa, Barry Richmond. Lateral prefrontal neurons in monkeys are excited or inhibited by visual cues predictive of reward.
 4. **Scientific training day (2017) - Poster** - Bethesda (USA). **Grace Mammarella***, Rossella Falcone, Mark Eldridge, Richard Saunders, Barry Richmond. Insula may regulate learning delayed reward task in rhesus macaques.
- As Ph.D. student and during scholarship at University of Rome “La Sapienza”, Italy:
 - ❖ Physiology classes for medical students and nurses. Topics: Neurophysiology, the nervous system, the respiratory system, the urinary system, memory and learning, the sleep, and the blood.

RESEARCH

Bibliography - *Original communications in reviewed journals*

1. **Rossella Falcone**, Emiliano Brunamonti, Stefano Ferraina and Aldo Genovesio. Monkeys monitor human goals in a nonmatch-to-goal interactive task. *Plos_ONE*, 7:e32209, 2012.
2. **Rossella Falcone**, Emiliano Brunamonti and Aldo Genovesio. Vicarious learning from human models in monkeys. *Plos_ONE*, 7:e40283, 2012.
3. Emiliano Brunamonti, **Rossella Falcone**, Aldo Genovesio, Stefania Costa and Stefano Ferraina. Gaze orientation interferes with mental numerical representation. *Cognitive processing*, 13:375-379, 2012.
4. Sara Bevacqua, Erika Cerasti, **Rossella Falcone**, Milena Cervelloni, Emiliano Brunamonti, Stefano Ferraina and Aldo Genovesio. Macaque monkeys can learn token values from human models through vicarious reward. *Plos_ONE*, 8: e59961, 2013.

5. **Rossella Falcone**, Sara Bevacqua, Erika Cerasti, Emiliano Brunamonti, Milena Cervelloni, and Aldo Genovesio. Transfer of the nonmatch-to-goal rule in monkeys across cognitive domains. *Plos_ONE*, 8:e84100, 2013.
6. Aldo Genovesio, Satoshi Tsujimoto, Giulia Navarra, **Rossella Falcone** and Steven P. Wise. Autonomous encoding of irrelevant goals and outcomes by prefrontal cortex neurons. *The Journal of Neuroscience*, 34:1970-1978, 2014.
7. **Rossella Falcone**, Emiliano Brunamonti, Stefano Ferraina and Aldo Genovesio. Neural encoding of self and another agent's goal in the primate prefrontal cortex: Human-Monkey interactions. *Cerebral Cortex*, 26:4613-4622, 2016.
8. **Rossella Falcone**, Rossella Cirillo, Stefano Ferraina and Aldo Genovesio. Neural activity in macaque medial frontal cortex represents others' choices. *Scientific Reports*, 7:12663, 2017.
9. **Rossella Falcone**, David B Weintraub, Tsuyoshi Setogawa, John H Jr., Wittig, Gang Chen, and Barry J Richmond. Temporal coding of reward value in monkey ventral striatal Tonicly Active Neurons. *Journal of Neuroscience*, 39:7539-7550, 2019.
10. Walter Lerchner, Abdullah A. Adil, Sekinat Mumuney, Wenliang Wang, **Rossella Falcone**, Janita Turchi and Barry J. Richmond. RNAi and chemogenetic reporter coregulation in primate striatal interneurons. *Gene Therapy*, 29:69-80, 2022.
11. **Rossella Falcone**, Rossella Cirillo, Francesco Ceccarelli and Aldo Genovesio. Neural representation of others during action observation in posterior medial Prefrontal Cortex. *Cerebral Cortex*, 2022.

Bibliography - Review Articles

1. Lorenzo Ferrucci, Simon Nougaret, **Rossella Falcone**, Rossella Cirillo, Francesco Ceccarelli and Aldo Genovesio. Dedicated representation of others in the macaque frontal cortex: from action monitoring and prediction to outcome evaluation. *Cerebral Cortex*, 32: 891-907, 2022.

Bibliography - Abstracts

1. **Rossella Falcone**, Mariko McDougall, David Weintraub, Tsuyoshi Setogawa, Barry J. Richmond. Neural coding of reward value in richly modulated spike patterns in monkey ventrolateral prefrontal cortex. *Advances in Cognitive Neurodynamics (VII). Proceedings of the Seventh International Conference on Cognitive Neurodynamics*, 2019.

Invited Talks

1. **12 March 2020:** Seminar at the University of Lausanne (UNIL), Switzerland. (*Postponed for COVID-19 emergency*). Title: Neural dynamics underlying the evaluation of rewards to drive behavior.
2. **23-24 September 2019:** Seminar at the University of Rome la Sapienza (Italy). Title: Neural coding of Reward Value in monkey Striatum and ventrolateral Prefrontal Cortex.