

## Europass Curriculum Vitae

First name(s) / Surname(s) | Maria Morena

E-mail <u>maria.morena@uniroma1.it</u>

m.morena@hsantalucia.it

Nationality Italian

Research/Work experience

Dates | Jan 2021 - Present

Occupation or position held Researcher (Ricercatore in Convenzione)

Main activities and responsibilities | Research Activity in the field of Behavioural Neuropsychopharmacology and Neurophysiology

Name and address of employer | Laboratory of Neuropsychopharmacology, Fondazione Santa Lucia, IRCCS, Via Ardeatina 306, 00179

Rome, Italy

Type of business or sector | Preclinical Neuropsychopharmacology Research

Dates | Dec 2020 - Nov 2021

Occupation or position held | Seal of SAPIExcellence Fellow

Main activities and responsibilities | Research Activity in the field of Behavioural Neuropsychopharmacology and Neurophysiology

Name and address of employer | Dept. of Physiology and Pharmacology "V. Erspamer", Sapienza University of Rome Piazzale Aldo

Moro, 5 00185 Rome, Italy

Type of business or sector | Preclinical Neuropsychopharmacology Research

Dates | Apr 2014 – Nov 2020

Occupation or position held Post-Doctoral Fellow

Main activities and responsibilities | Research Activity in the field of Behavioural Neuropsychopharmacology and Neurophysiology

Name and address of employer Dr. Matthew Hill; Hotchkiss Brain Institute Dept. of Cell Biology and Anatomy, University of Calgary

3330 Hospital Dr. NW T2N 4N1 Calgary (AB) Canada

Type of business or sector | Preclinical Neuropsychopharmacology Research

Dates | Feb 2014 - Mar 2014

Occupation or position held Research Internship

Main activities and responsibilities | Research Activity in the field of Behavioural Neuropsychopharmacology

Name and address of employer | Prof. Patrizia Campolongo; Dept. of Physiology and Pharmacology "V. Erspamer", Sapienza

University of Rome Piazzale Aldo Moro, 5 00185 Rome, Italy

Type of business or sector | Preclinical Neuropsychopharmacology Research

Dates | Apr 2013 – Oct 2013

Occupation or position held Research Internship

Main activities and responsibilities | Research Activity in the field of Behavioural Neuropsychopharmacology

Name and address of employer | Dr. Matthew Hill; Hotchkiss Brain Institute Dept. of Cell Biology and Anatomy, University of Calgary

3330 Hospital Dr. NW T2N 4N1 Calgary (AB) Canada

Type of business or sector | Preclinical Neuropsychopharmacology Research

Dates Oct 2012 – Nov 2012

Occupation or position held Research Internship

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Main activities and responsibilities Research Activity in the field of Behavioural Neuropsychopharmacology

Name and address of employer | Prof. Gustav Schelling; Dept. of Anesthesiology, Ludvig-Maximilian University, Munich Germany

Type of business or sector | Preclinical and Clinical Neuropsychopharmacology Research

Dates Nov 2010 - Feb 2014

Occupation or position held PhD student

Main activities and responsibilities | Research Activity in the field of Behavioural Neuropsychopharmacology

Name and address of employer | Prof. Patrizia Campolongo; Dept. of Physiology and Pharmacology "V. Erspamer" Sapienza University

of Rome Piazzale Aldo Moro, 5 00185 Rome, Italy

Type of business or sector | Preclinical Neuropsychopharmacology Research

Dates | Feb 2009 - Oct 2010

Occupation or position held Master student

Main activities and responsibilities Research Activity in the field of Behavioural Neuropsychopharmacology

Name and address of employer | Prof. Patrizia Campolongo/Prof. Vincenzo Cuomo; Dept. of Physiology and Pharmacology "V.

Erspamer" Sapienza University of Rome Piazzale Aldo Moro, 5 00185 Rome, Italy

Type of business or sector | Preclinical Neuropsychopharmacology Research

**Leave of Absence** | Maternity leave Jan 2020 - Nov 2020

Education & professional habilitations

Date Nov 2020 - present

Title of qualification awarded | Exam committee member - Expert in the field of "Pharmacology and Pharmacognosy" (Cultore della

materia - membro commissione di esame: "Farmacologia e Farmacognosia")

Date Oct 2020 - present

Title of qualification awarded | Exam committee member - Expert in the field of "Toxicology" (Cultore della materia – membro

commissione di esame: "Tossicologia")

Date | Sept 2020 - present

Title of qualification awarded Exam committee member - Expert in the field of "Special Pharmacology and Pharmacotherapy"

(Cultore della materia – membro commissione di esame: "Farmacologia Speciale e Farmacoterapia")

Date | Sept 2020 - present

Title of qualification awarded | Exam committee member - Expert in the field of "General and Molecular Pharmacology" (Cultore della

materia – membro commissione di esame: "Farmacologia Generale e Molecolare")

Date | May 2019 – May 2028

Title of qualification awarded | Italian scientific habilitation to associate professorship

Principal subjects/occupational skills | Pharmacology, Clinical Pharmacology and Pharmacognosy (05/G1)

covered

Date Feb 05 2014

Title of qualification awarded | PhD in Toxicology

Principal subjects/occupational skills | Pharmacology, Behavioral Pharmacology, Neuropsychopharmacology, Toxicology

covered

Name and type of organisation providing education and training "Sapienza" University of Rome, Italy

Date Dec 2011

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Title of qualification awarded

Principal subjects/occupational skills

**Board-Certified Pharmacist Doctor** 

Pharmacist qualification

Name and type of organisation providing education and training

"Sapienza" University of Rome, Italy

Date

Oct 28 2010

Title of qualification awarded

Bachelor & Master degree in Pharmaceutical Chemistry and Technology (CTF) (110/110 summa cum laude)

Principal subjects/occupational skills covered

Pharmacology, Behavioral Pharmacology, Organic and Inorganic Chemistry, Physics, Maths, Statistical Analysis Pharmaceutical Chemistry, Vegetal- Animal and Molecular Biology, Pharmaceutical legislation, Pharmaceutical industries organization and marketing.

Name and type of organisation providing education and training

Faculty of Pharmacy, "Sapienza" University of Rome, Italy

### Personal skills and competences

Mother tongue(s)

Italian

Other language(s)

Self-assessment

European level (\*)

English French

	Understanding			Speaking				Writing
Listening		Reading	S	Spoken interaction		Spoken production		
	C1	C1		C1		C1		C1
	A1	B1		A1		A1		A1

(\*) Common European Framework of Reference for Languages

Social skills and competences

Good abilities for synthetic and global views over concrete situations. Problem-solving attitude. Ability to establish and maintain good working relationships.

Organisational skills and competences

Leadership. Sense of organization. Project and team management.

Technical skills and competences

Preclinical Behavioural Neuropsychopharmacology research: Stereotaxic surgery procedures, Perfusion Fixation Procedures, Behavioural tasks, Optical Microscopy, Biochemical assays, Immunohistochemistry, in vivo electrophysiology.

#### Additional Information

#### **Teaching experience**

- 1. **"Pain management"**, Graduate Specialization School in Hospital Pharmacy, Sapienza University of Rome; Teacher (titolare) of the course (Nov 2021 Dec 2021)
- 2. **Toxicology**, Graduate Specialization School in Chemical Risk Assessment and Management, Sapienza University of Rome. Teacher (Titolare) of the course (May 2021-Jul 2021)
- Pharmacology and Toxicology, Master Course in Pharmaceutical Chemistry, Faculty of Medicine and Pharmacy, Sapienza University of Rome. Lecturer (Mar 2021)
- 4. Grad Course Neuro II: Stress and Reward, University of Calgary. Lecturer (March 2015)
- 5. **Pharmacology and Toxicology**, Master Course in Pharmacy, Faculty of Medicine and Pharmacy, Sapienza University of Rome. Teaching assistant-lecturer (Sept 2012-Feb 2013)
- 6. **Toxicology**, Master Course in Pharmacy, Faculty of Medicine and Pharmacy, Sapienza University of Rome. Teaching assistant-lecturer (Sept 2011-Feb 2012)

### Academic supervisory and mentoring activity

**Co-Tutor, Phd student in Pharmacology and Toxicology;** student name: Eleonora Riccardi, Sapienza University of Rome, Sept 2021- present

**Co-Tutor, Phd student in Pharmacology and Toxicology;** student name: Eleonora Blasi, Sapienza University of Rome, Sept 2021- present

**MSc Thesis committee member and co-supervisor**, thesis in Pharmacology. Title of the thesis: Post-traumatic stress disorder and comorbidities: evaluation of emotional alterations and hormonal stress response in female rats susceptible or resilient to develop trauma-related disorders; student Alessia Milione, Sapienza University of Rome, Dec 2020- present

**MSc Thesis committee member and co-supervisor**, thesis in Pharmacology. Title of the thesis: Post-traumatic stress disorder and comorbidities: evaluation of emotional alterations in male animal models of susceptibility and resilience to develop trauma-related disorders; student Arianna Pisaneschi, Sapienza University of Rome, Dec 2020- Oct 2021

**MSc Thesis committee member and co-supervisor,** thesis in Toxicology. Title of the thesis: *Effects of the psychostimulants amphetamine and MDPV on memory and ultrasonic vocalizations in adult rats*; student Livia D'Alfonso, Sapienza University of Rome, Dec 2020- July 2021

**MSc Thesis external committee member and co-supervisor**, thesis in Pharmacology. Title of the thesis: *Endocannabinoid modulation of short-term recognition memory in rats: Influence of stress and circadian rhythm*; student Alessia Santori, Sapienza University of Rome, Apr 2017- Oct 2017

**BSc Thesis co-supervisor**, thesis in Neuroscience. Title of the thesis: Sex-Specific Effects of the Endocannabinoid System on Fear Memory Dynamics; student Andrei Nastase, University of Calgary, Sept 2017-May 2018

**Co-evaluator MSDC 528 – Independent Studies in Medical Science**, Bachelor of Health Science, University of Calgary – Student: Sonia Martins, Apr 2018 – Sept 2018

Supervisor of 7 undergraduate students during my Postdoc

Training of 5 Master students during my PhD and 6 Master student during my Postdoc

### Scientific Journal Editorial and Reviewer Board Member

PLOS ONE (IF: 3.240) – Editorial Board Member – Academic Editor

Applied Sciences (IF: 2.679) - Editorial Board Member

Frontiers in Behavioral Neuroscience - Behavioral Neuroscience Archive (IF: 3.558) - Review Editor

Frontiers in Behavioral Neuroscience - Learning and Memory (IF: 3.558) - Review Editor

Frontiers in Pharmacology - Experimental Pharmacology and Drug Discovery (IF: 5.810) - **Review Editor** 

### Scientific journal referee activity (alphabetical order)

Behavioural Pharmacology (IF: 2.293)

Brain, Behavior and Immunity (IF: 7.217)

Brain Research Bulletin (IF: 4.077)

British Journal of Pharmacology (IF: 8.739)

British Journal of Psychology (IF: 4.267)

Endocrine (IF: 3.633)

European Neuropsychopharmacology (IF: 4.600)

European Journal of Neuroscience (IF: 3.386)

Experimental and Clinical Psychopharmacology (IF: 3.157)

Frontiers in Molecular Neuroscience (IF: 5.639)

Frontiers in Pharmacology - Translational Pharmacology (IF: 5.810)

Journal of Psychopharmacology (IF: 4.153)

Molecular Neurobiology (IF: 5.590)

Neurobiology of Stress (IF: 5.441)

Neuropharmacology (IF: 5.250)

Neuropsychopharmacology (IF: 7.853)

Neuroscience Letters (IF: 3.046)

Neurotoxicity Research (IF: 3.911)

Neurotoxicology and Teratology (IF: 3.763)

Oncotarget (IF: 3.765)

Physiology and Behavior (IF: 3.244)

PLoS One (IF: 3.240)

Psychoneuroendocrinology (IF: 4.905)

### Scientific research and grant referee activity

Canadian Institutes of Health and Research (CIHR) "Doctoral Research Awards – A" National Awards Grant Reviewer

Research and professional activity of research-oriented institutes of the Czech Academy – **Evaluator for Medical and health sciences panel** 

#### **Memberships**

European Behavioural Pharmacology Society (EBPS)

European Brain and Behaviour Society (EBBS)

Italian Society of Neuroscience (SINS)

Italian Society of Pharmacology (SIF)

International Cannabinoid Research Society (ICRS)

Society for Neuroscience (SFN)

Canadian Consortium for the Investigation of Cannabinoids (CCIC)

International Society of Psychoneuroendocrinology (ISPNE)

Mediterranean Neuroscience Society (MNS)

#### Prizes/Awards/Fellowships

- 1. **GRC Trainee Conference Support** to attend the Gordon Research Conference on Cannabinoids 2019 awarded by Gordon Research Conference Jul 21-26, 2019 (US\$ 200)
- GRS Trainee Conference Support to attend the Gordon Research Seminar on Cannabinoids 2019 awarded by Gordon Research Seminar – Jul 20-21, 2019 (US\$ 375)
- Seal of Excellence, awarded by the European Commission, as the institution managing the EU Framework Programme for Research and Innovation 2014-2020, for a research project submitted under the Horizon 2020's Marie Skłodowska-Curie actions, individual fellowship 2018, Mar 19 2019
- 4. **2018 Postdoctoral Researcher of the Year Award** (second place) awarded by the Hotchkiss Brain Institute (University of Calgary)-Jan 2019

- ICRS Poster Presentation Award 2018 awarded by the International Cannabinoid Research Society - 28th Annual symposium of the International Cannabinoid Research Society in Leiden (The Netherlands) – Jun 30-Jul 5, 2018 (US\$ 100)
- ICRS Travel Award to support the attendance to the 28th Annual symposium of the International Cannabinoid Research Society in Leiden (The Netherlands) – Jun 30-July 5, 2018 (US\$ 500)
- Young Research Award 2017 awarded by the Dept. of Physiology and Pharmacology, Sapienza University of Rome-Mar 2018 (€ 2000)
- 8. **FENS-IBRO/PERC Travel grant** to support the attendance of the 11th FENS Forum of Neuroscience, Berlin 2018 Mar 29 2018 (€ 750)
- HBI Conference Travel Award awarded by the Hotchkiss Brain Institute, University of Calgary

   Nov 8, 2017 (CAN \$ 500)
- 10. **Otsuka 2017 Prize for Young Scientist** awarded by the Italian Society of Pharmacology (SIF) Oct 27, 2017 (€ 5000)
- 11. **GRC Trainee Conference Support** to attend the Gordon Research Conference on Cannabinoids 2017 awarded by Gordon Research Conference Aug 20-25, 2017 (US\$ 500)
- 12. **GRS Trainee Conference Support** to attend the Gordon Research Seminar on Cannabinoids 2017 awarded by Gordon Research Seminar Aug 19-20, 2017 (US\$ 260)
- Mathison Centre Trainee Travel Award to support the attendance to the 6th Conference of the Mediterranean Neuroscience Society awarded by the Mathison Centre for Mental Health Research & Education, University of Calgary, Calgary, Canada – July 29, 2017 (CAN\$ 1,000)
- ICRS Travel Award to support the attendance to the 27th Annual symposium of the International Cannabinoid Research Society in Montreal (Canada) – June 22-27, 2017 (US\$ 350)
- 15. **MNS2017 Travel Award** to support the attendance to the 6th Conference of the Mediterranean Neuroscience Society in Malta June 12-15, 2017 (€ 500)
- 2016 Postdoctoral Researcher of the Year Award (second place) awarded by the Hotchkiss Brain Institute (University of Calgary)-Jan 2017
- 17. **HBI Trainee Publication Award 2016** awarded by the Hotchkiss Brain Institute (University of Calgary)-Jan 2017 (CAN\$ 100)
- 18. **2016 Dr. Hubert van Tol Travel Grant** awarded by the Brain Canada Foundation Sept 2016 (CAN\$ 5,000)
- 2016 SFN Trainee Professional Development Award awarded by the Society for Neuroscience

   Aug 2016 (US\$ 1,000)
- ACNP Travel Award awarded by the American College of Neuropsychopharmacology Jun 2016
- 21. **ICRS Travel Award** to support the attendance to the 26th Annual symposium of the International Cannabinoid Research Society in Bukovina (Poland) June 27-30, 2016 (US\$ 500)
- 20. 2015 Postdoctoral Researcher of the Year Award awarded by the Hotchkiss Brain Institute (University of Calgary)-Jan 2016

- 23. **Young Research Award 2015** awarded by the Dept. of Physiology and Pharmacology, Sapienza University of Rome-Jan 2016 (€ 2000)
- HBI Trainee Publication Award 2015 awarded by the Hotchkiss Brain Institute (University of Calgary)-Jan 2016 (CAN\$ 100)
- 25. "SIF-Farmindustria-2015" Prize for Young Scientist awarded by the Italian Society of Pharmacology (SIF) Sept 18, 2015 (€ 5,000)
- 26. **EBBS Travel Fellowship** to attend the EBBS/EBPS meeting 2015 in Verona (Italy) awarded by the European Brain and Behaviour Society (EBBS) May 25, 2015 (€ 500)
- CCIC Trainee Conference Support to attend the Gordon Conference on Cannabinoids 2015 awarded by the Canadian Consortium for the Investigation of Cannabinoids (CCIC) – May 11, 2015 (CAN\$ 1500)
- 28. Outstanding Postdoctoral Research Talk Prize, Canadian Spring Conference on Behaviour and Brain February 19-21, 2015, Fernie (BC), Canada
- Mathison Centre Trainee Travel Award to support the attendance to the Gordon Conference on Cannabinoids 2015 awarded by the Mathison Centre for Mental Health Research & Education, University of Calgary, Calgary, Canada – December 15, 2014 (CAN\$ 1,000)
- 30. **ICRS Travel Award** to support the attendance to the 24th Annual symposium of the International Cannabinoid Research Society in Baveno (Italy) June 28-July 3, 2014 (US\$ 500)
- 31. **Eyes High Post-doctoral two-year salary grant** awarded by the University of Calgary, Calgary, Canada April 2014-March 2016 (CAN\$ 100,000)
- 32. Research fellowship awarded by University of Romatre, Rome, Italy-April 2014 (€ 3,000)
- 33. **SIF Oral communication prize** awarded by the Italian Society of Pharmacology (SIF), 36° Congresso nazionale della società italiana di farmacologia "Il ruolo della ricerca farmacologica per la crescita e la salute in Italia" October 23-26, 2013, Turin, Italy (€ 500)
- 34. SIF Research fellowship for PhD students to conduct research for a 6-month period at the University of Calgary, Calgary, Canada (Supervisor Dr. Matthew N. Hill) awarded by the Italian Society of Pharmacology (Società Italiana di Farmacologia, SIF)-April 2013-October 2013 (€ 6,000)
- 35. **ICRS Travel Award** to support the attendance to the 23rd Annual symposium of the International Cannabinoid Research Society in Vancouver June 21-26, 2013 (US\$ 550)
- 36. **DAAD Research fellowship** for PhD students to conduct research at a German higher education institution (Supervisor Prof. Gustav Schelling) awarded by the German Academic Exchange Service (Deutscher Akademischer Austausch Dienst, DAAD)-October 2012 (€ 1,000)
- 37. **Travel Award** to support the attendance at the Conference "Frontiers in Stress and Cognition: From Molecules to Behavior" September 23-26, 2012, Ascona, Switzerland (€ 300)
- 38. Individual three-year fellowship in Pharmacology and Toxicology released by "Sapienza" University of Rome November 2011- October 2013 (€ 40,900)

Research & salary grants

Ricerca Giovani Ricercatori (PI) GR-2019-12369216 - Italian Ministry of Health - 2021-2023 (€ 449.980)

Seal of SAPIExcellence grant (PI) - Sapienza University of Rome, Italy - Jan 2021-Jan 2022 (€ 50,000)

Canadian Institutes of Health and Research (CIHR) Postdoctoral national competitive grant (PI) – Apr 2016-Feb 2019 (CAN\$ 131,250)

Alberta Innovates Health Solutions (AIHS) Postdoctoral provincial competitive grant (PI) – Apr 2016-Mar 2019 (CAN\$ 165,000)

"Mathison Centre for Mental Health Research & Education" Postdoctoral competitive grant (PI), declined - University of Calgary, Canada –Apr 2016 (CAN\$ 110,000)

"Cumming School of Medicine Postdoctoral Scholarship" Postdoctoral competitive grant (PI), declined - University of Calgary, Canada – Apr 2016 (CAN\$ 37,500)

#### Organization of meetings/symposia

- Under 40 Symposium Organizer And Chair 19th Congress of the Italian Society for Neuroscience – Sept 9-11, 2021, virtual congress. Symposium title: "Exploring the behavioral signature of abnormal brain endocannabinoid signaling
- Gordon Research Seminar Amygdala Function in Emotion, Cognition & Disease: "Sex Differences, Physiological Mechanisms and Pathological Conditions of the Amygdala" – August 3-4 2019 – Meeting Chair
- 7th Mediterranean Neuroscience Society Conference Jun 23-27, 2019, Marrakech, Morocco Symposium. Organizer for "New perspectives on fear memory-related neuronal networks: Integrating electrophysiological, molecular and behavioral approaches" oral session
- Hotchkiss Brain Institute Summer Student Symposium August 15 2017, Calgary (AB), Canada. Scientific judge committee member
- 5. **27th Annual ICRS Symposium on the Cannabinoids** June 22-27, 2017, Montreal (QB), Canada. **Symposium Chair** for "Anxiety, Fear and PTSD" session
- 27th Annual ICRS Symposium on the Cannabinoids June 22-27, 2017, Montreal (QB), Canada. Programme Committee member
- 7. 6th Mediterranean Neuroscience Society Conference June 12-15, 2017, Malta. Symposium Organizer and Chair for "Neurological mechanisms of the impact of stress on memory and emotionality in health and disease: Insights from animal and clinical studies" oral session
- 8. Canadian Spring Conference on Behaviour and Brain February 18-20, 2016, Fernie (BC), Canada. Symposium Chair for "EEG" oral session
- 9. **Canadian Spring Conference on Behaviour and Brain** February 18-20, 2016, Fernie (BC), Canada. **Symposium Chair** for "Facilitating recovery" oral session
- 10. **24th Annual ICRS Symposium on the Cannabinoids** June 28 July 3, 2014, Baveno, Italy. **Scientific judge committee member**
- 11. "The Emotional Brain: From neurobiology to new therapeutic opportunities September 5-6, 2011, Rome, Italy. Scientific secretariat

#### **Bibliometric indicators**

Hirsch (H) index: 19 (Scopus); 21 (Google Scholar)

Total number of citations: 1234 (Scopus); 1552 (Google Scholar)

Mean IF: 7.139

### Publications (peer reviewed journals)

- Farrell J.S., Colangeli R., Dong A., George A.G., Addo-Osafo K., Kingsley P.J., Morena M., Wolff M.D., Dudok B., He K., Patrick T.A., Sharkey K.A., Patel S., Marnett L.J., Hill M.N., Li Y., Teskey G.C., Soltesz I. In vivo endocannabinoid dynamics at the timescale of physiological and pathological neural activity. Neuron 2021; 109:2398-403. Article selected for cover page. (IF: 17.173)
- 2. **Morena M.,** Nastase A.S., Santori A., Shansky R., Hill M.N. Sex-dependent effects of endocannabinoid modulation of conditioned fear extinction in rats. **British Journal of Pharmacology** 2021, 178:983-96. (**IF: 8.739**)
- 3. Vecchiarelli H.A., **Morena M.,** Keenan C.M., Chiang V., Tan K., Qiao M., Leitl K., Santori A., Pittman Q.J., Sharkey K.A., Hill M.N. Comorbid Anxiety-Like Behavior in a Rat Model of Colitis is Mediated by an Upregulation of Corticolimbic Fatty Acid Amide Hydrolase. **Neuropsychopharmacology** 2021, 46:992-1003. (**IF: 7.853**)
- Mancini G.F., Marchetta E., Riccardi E., Trezza V., Morena M., Campolongo P. Sex-divergent long-lasting effects of single prolonged stress in adult rats. Behav Brain Res 2021, 401:113096. (IF: 3.332)
- Morena M., Colucci P., Mancini G.F., De Castro V., Peloso A., Schelling G., Campolongo P. Ketamine anesthesia enhances fear memory consolidation via noradrenergic activation in the basolateral amygdala. Neurobiology of Learn and Memory 2020, 178: 107362. (IF: 2.877)
- Santori A., Morena M., Hill M.N., Campolongo P. Hippocampal endocannabinoid signaling regulates time-of-day- and stress-dependent effects on rat short-term memory. Int J Mol Sci 2020; 21:7316. (IF: 5.923)
- Colangeli R., Morena M., Pittman Q.J., Hill M.N., Teskey G.C. Anandamide signalling augmentation rescues amygdala synaptic function and comorbid emotional alterations in a model of epilepsy. J Neurosci 2020; 40:6068-6081. (IF: 6.167)
- 8. Yasmin F., Colangeli R., **Morena M.**, Filipski S., van der Stelt M., Pittman Q.J., Hillard C.J., Teskey G.C., McEwen B.S., Hill M.N, Chattarji S. Stress-induced modulation of endocannabinoid signalling leads to delayed strengthening of synaptic connectivity in the amygdala. **Proc Natl Acad Sci U S A** 2020; 117:650-655. (**IF: 11.205**)
- Mayo L.M., Asratian A., Lindé J., Morena M., Haataja R., Hammer V., Augier G., Hill M.N., Heilig M. Elevated anandamide, enhanced recall of fear extinction, and attenuated stress responses following inhibition of fatty acid amide hydrolase (FAAH): a randomized, controlled experimental medicine trial. Biol Psychiatry 2020; 87:538-547. (IF: 13.382)
- Santori A., Colucci P., Mancini G.F., Morena M., Trezza V., Palmery M., Puglisi-Allegra S., Hill M.N., Campolongo P. Anandamide modulation of circadian- and stress-dependent effects on rat short-term memory. Psychoneuroendocrinology 2019; 108:155-162. (IF: 4.905)
- 11. Habib A.M., Okorokov A.L., Hill M.N., Bras J.T., Lee M., Li S., Gossage S.J., van Drimmelen M., Morena M., Houlden H., Ramirez J.D., Bennett D.L.H., Srivastava D., Cox J.J. Microdeletion in a FAAH pseudogene identified in a patient with high anandamide concentrations and pain insensitivity. Br J Anaesth 2019; 123:e249-e253. (IF: 9.166)
- 12. **Morena M.** and Hill M.N. Buzzkill: the consequences of depleting anandamide in the hippocampus. **Neuropsychopharmacology** 2019, 44:1347-1348. (**IF: 7.853**)

- Morena M., Aukema R.J., Leitl K.D., Rashid A.J., Vecchiarelli H.A., Josselyn S.A., Hill M.N. Upregulation of anandamide hydrolysis in the basolateral complex of amygdala reduces fear memory expression and indices of stress and anxiety. J Neurosci 2019; 39:1275–1292. (IF: 6.167)
- Sticht MA., Lau DJ., Keenan CM., Cavin JB., Morena M., Vemuri VK., Makriyannis A., Cravatt BF., Sharkey KA., Hill MN. Endocannabinoid regulation of homeostatic feeding and stressinduced alterations in food intake in male rats. Br J Pharmacol 2019; 176:1524-1540. (IF: 8.739)
- 15. Ratano P., Petrella C., Forti F., Petrocchi Passera P., **Morena M.**, Palmery M., Trezza V., Severini C., Campolongo P. Pharmacological inhibition of 2-arachidonoilglycerol hydrolysis enhances memory consolidation in rats through CB2 receptor activation and mTOR signaling modulation. **Neuropharmacology** 2018; 138:210-218. (**IF: 5.250**)
- Berger A.L., Henricks A.M., Lugo J.M., Wright H.R., Warrick C.R., Sticht M.A., Morena M., Bonilla I., Laredo S.A., Craft R.M., Parsons L.H., Grandes P.R., Hillard C.J., Hill M.N., McLaughlin R.J. The lateral habenula directs coping styles under conditions of stress via recruitment of the endocannabinoid system. Biol Psychiatry 2018; 84:611-623. (IF: 13.382)
- Morena M., Berardi A., Colucci P., Palmery M., Trezza V., Hill M.N., Campolongo P. Enhancing endocannabinoid neurotransmission augments the efficacy of extinction training and ameliorates traumatic stress-induced behavioral alterations in rats. Neuropsychopharmacology 2018; 43:1284-96. (IF: 7.853)
- Atsak P., Morena M., Schoenmaker C., Tabak E., Oomen C., Jamil S., Hill M.N., Roozendaal B. Glucocorticoid-endocannabinoid uncoupling mediates fear suppression deficits after early – life stress. Psychoneuroendocrinology 2018; 91:41-49. (IF: 4.905)
- Morena M., Berardi A., Peloso A., Valeri D., Palmery M., Trezza V., Schelling G., Campolongo P. Effects of ketamine, dexmedetomidine and propofol anesthesia on emotional memory consolidation in rats: Consequences for the development of posttraumatic stress disorder. Behav Brain Res 2017; 329:215-220. (IF: 3.332)
- 20. **Morena M.**, Leitl K. D., Vecchiarelli H. A., Gray J. M., Campolongo P., Hill M. N. Emotional arousal state influences the ability of amygdalar endocannabinoid signaling to modulate anxiety. **Neuropharmacology** 2016; 111:59-69. (**IF: 5.250**)
- Silveira M.M., Adams W.K., Morena M., Hill M.N., Winstanley C.A. Δ9-Tetrahydrocannabinol decreases willingness to exert cognitive effort in male rats. J Psychiatry Neurosci 2016; 41:150363. (IF: 6.186)
- 22. Xia S., Zhou Z., Leung C., Zhu Y., Pan X., Qi J., **Morena M.,** Hill M. N., Xie W., Jia Z. p21-activated kinase 1 restricts tonic endocannabinoid signaling in the hippocampus. **eLife** 2016; pii:e14653. (IF: 8.140)
- 23. **Morena M.**, Patel S., Bains J. S., Hill M. N. Neurobiological interactions between stress and the endocannabinoid system. **Neuropsychopharmacology** 2016; 41:80-102. **(IF: 7.853)**
- Vecchiarelli H. A., Gandhi C. P., Gray J. M., Morena M., Hassan K., Hill M. N. Divergent responses of inflammatory mediators within the amygdala and medial prefrontal cortex to acute psychological stress. Brain, Behavior and Immunity, 2016; 51:70-91. (IF: 7.217)
- 25. **Morena M.**, De Castro V., Gray M.J., Palmery M., Trezza V., Roozendaal B., Hill M.N. and Campolongo P. Training associated-emotional arousal shapes endocannabinoid modulation of spatial memory retrieval in rats. **J Neurosci** 2015; 35:13962-74. (**IF: 6.167**)

- Qi M., Morena M., Vecchiarelli H. A., Hill M. N., Schriemer D. C. A robust capillary liquid chromatography/tandem mass spectrometry method for quantitation of neuromodulatory endocannabinoids Rapid Commun Mass Spectrom 2015; 29:1889-97. (IF: 2.419)
- 27. Manduca A., **Morena M.**, Campolongo P., Servadio M., Palmery M., Trabace L., Hill M.N., Vanderschuren L.J.M.J, Cuomo V., Trezza V. Distinct roles of the endocannabinoids anandamide and 2-arachidonoylglycerol in social behavior and emotionality at different developmental ages in rats. **Eur Neuropsychopharmacol** 2015, 25:1362-74. (**IF: 4.600**)
- 28. Gray J.M., Vecchiarelli H.A., **Morena M**., Lee T.T.Y., Hermanson D., Kim A.B., McLaughlin R.J., Hassan K., Kühne C., Wotjak C.T., Deussing J.M., Patel S., Hill M.N. Corticotropin releasing hormone drives anandamide hydrolysis in the amygdala to promote anxiety **J Neurosci** 2015; 35:3879-92. (**IF: 6.167**)
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- Morena M. and Campolongo P. Disturbi d'Ansia (Anxiety Disorders). In: Calignano (Ed.) Manuale di Farmacoterapia (Pharmacotherapy Handbook). Idelson-Gnocchi, 2019. ISBN: 9788879476874; pp. 677-702.
- Morena M. and Campolongo P. Endocannabinoid modulation of memory for emotionally arousing experiences. In: Fattore and Campolongo (eds.) Cannabinoids Modulation of Emotion, Memory, and Motivation. Springer-Verlag New York. 2014, ISBN 978-1-4939-2293-2.
- Morena M. "Endocannabinoid modulation of stress influence on mechanisms of fear extinction" invited talk, symposium – 40th National Congress of the Italian Society of Pharmacology (SIF) – Mar 09-13, 2021, Virtual meeting
- Morena M., Colangeli R., Nastase A. S., Santori A., Teskey G. C., Hill M. N. "Inhibition of the endocannabinoid anandamide degradation restores stress-mediated impairments of contextual fear memory extinction and hippocampal in vivo long-term synaptic plasticity" selected talk – Canadian Spring Conference on Behaviour and Brain - Feb 22-24, 2019, Fernie (BC), Canada

#### **Book Chapters**

# Oral communications at national/international meetings & academic institutions

- Morena M., Colangeli R., Nastase A. S., Santori A., Teskey G. C., Hill M. N. "Inhibition of the endocannabinoid anandamide degradation restores stress-mediated impairments of contextual fear memory extinction and hippocampal in vivo long-term synaptic plasticity" selected Data Blitz talk - ACNP meeting 2018 – Dec 9-13, 2018, Hollywood (Florida) USA
- Morena M. "Enhancing endocannabinoid neurotransmission augments the efficacy of extinction training and ameliorates traumatic stress-induced behavioral alterations in rats", invited talk – Young Research Award 2017, Dept. Physiology and Pharmacology, Sapienza University of Rome – Aug 12 2018, Rome, Italy
- Morena M. "Overexpression of the endocannabinoid anandamide degrading enzyme in the basolateral amygdala paradoxically decreases anxiety and fear memory" selected lightning talk— The 2018 International Conference on Learning and Memory – Apr 18-22, 2018, Huntington Beach, California, USA
- Morena M. "Impact of different stress intensities on cognition and emotion: a focus on endocannabinoids" invited talk, symposium – 38<sup>th</sup> National Congress of the Italian Society of Pharmacology (SIF) – Oct 25-28, 2017, Rimini, Italy
- Morena M., Leitl K. D., Rashid A., Josselyn S. A., Hill M. "Fatty acid amide hydrolase overexpression in the basolateral nucleus of the amygdala induces paradoxical effects on anxiety and fear memory in rats" selected talk – Gordon Research Seminar Cannabinoid function in the CNS - Aug 19-20, 2017, Waterville Valley (NH), USA
- Morena M., Leitl K. D., Rashid A., Josselyn S. A., Hill M. "Fatty acid amide hydrolase overexpression in the basolateral nucleus of the amygdala induces paradoxical effects on anxiety and fear memory in rats" selected talk – 27<sup>th</sup> Annual symposium of the International Cannabinoid Research Society 2017 - June 22-27, 2017, Montreal (QB), Canada
- Morena M. "Modulation of cognition and emotion by the endocannabinoid signaling is dependent on stress and arousal state" invited talk, symposium – 6th Conference of the Mediterranean Neuroscience Society 2017 - June 12-15, 2017, Malta
- Morena M. "Paradoxical effects of fatty acid amide hydrolase overexpression in the basolateral nucleus of the amygdala in anxiety and fear memory in rats" selected talk – Munich Winter Conference on Stress – March 19-22, 2017, Garmisch-Partenkirchen, Germany
- Morena M., Leitl K. D., Rashid A., Josselyn S. A., Hill M. "Fatty acid amide hydrolase overexpression in the basolateral nucleus of the amygdala paradoxically decreases anxiety and reduces fear expression in rats" selected talk – Canadian Spring Conference on Behaviour and Brain - February 23-25, 2017, Fernie (BC), Canada
- Morena M. "Cannabis and PTSD: From neurobiology to clinical implications" invited talk -Medical Cannabis & Clinical Research in Canada, Clinical Research Association of Canada – February 2, 2017, Calgary (AB), Canada
- 13. **Morena M.** "Endocannabinoid modulation of cognition and emotion: Influences of stress and arousal state" **invited talk** HBI Postdoctoral Researcher of the Year, Hotchkiss brain Institute, University of Calgary May 13, 2016, Calgary (AB), Canada
- Morena M. "Endocannabinoid modulation of cognition and emotion is influenced by arousal state" invited talk – Youth Mental Health Day 2016, The Mathison Centre for Mental Health Research and Education, University of Calgary – March 7, 2016, Calgary (AB), Canada
- 15. **Morena M.** "Training-associated emotional arousal shapes endocannabinoid modulation of spatial memory retrieval in rats", **invited talk** Dept. Physiology and Pharmacology, Sapienza University of Rome March 1 2016, Rome, Italy

- Morena M. "Stress effects on memory: The role of the endocannabinoid system", invited talk, symposium – Psychoneuroendocrinology 2015, 61:20; PS4.3.2 - ISPNE Conference: Stress and the Brain, from Fertility to Senility – September 8-11, 2015, Edinburgh, Scotland
- 17. **Morena M.**, De Castro V., Gray J. M., Trezza V., Roozendaal B., Hill M. N. and Campolongo P. "Learning under stress differentially affects cannabinoid modulation of spatial memory retrieval in rats", **selected talk** Canadian Spring Conference on Behaviour and Brain February 19-21, 2015, Fernie (BC), Canada
- Morena M., Peloso A., Trezza V., Hill M. N. and Campolongo P. "Learning under stress differentially affects cannabinoid modulation of spatial memory retrieval in rats", selected talk – 24th Annual symposium of the International Cannabinoid Research Society 2014 - June 28-July 3, 2014, Baveno, Italy
- Morena M., Peloso A., Campolongo P., Cuomo V. "Context-associated emotional arousal shapes endocannabinoid modulation of spatial memory retrieval in rats", selected talk – 36th Conference of the Italian Society of Pharmacology" - October 23-26, 2013, Turin, Italy

#### More than 50 poster presentations at national/international meetings

#### **Outreach activities**

- On line article. Title: "Struggling to forget: Memory researcher studies PTSD causes and cure"; UToday (University of Calgary on line news service), March 17 2016. <a href="https://www.ucalgary.ca/utoday/issue/2016-03-17/struggling-forget-memory-researcher-studies-ptsd-causes-and-cure">https://www.ucalgary.ca/utoday/issue/2016-03-17/struggling-forget-memory-researcher-studies-ptsd-causes-and-cure</a>
- Newspaper article. Title: "U of C studies marijuana link to possible PTSD cure"; Calgary Herald, March 17 2016. <a href="http://calgaryherald.com/health/u-of-c-studies-marijuana-link-to-possible-ptsd-cure">http://calgaryherald.com/health/u-of-c-studies-marijuana-link-to-possible-ptsd-cure</a>
- 3. Newspaper article. Title: "Testing pot to help PTSD"; Calgary Sun, March 17 2016.
- 4. On line video interview. Title: "Maria Morena, PhD"; AIHS Channel, March 17 2016. https://www.youtube.com/watch?v=o5OqFcyn2I4&feature=youtu.be
- On line article. Title: "Da Teggiano al Canada per dare una mano alla scienza. La storia della
  ricercatrice Maria Morena Alla University of Calgary Maria studia per curare il Disturbo da Stress
  Post Traumatico"; OndaNews, March 29 2016. <a href="http://www.ondanews.it/da-teggiano-al-canada-per-dare-una-mano-alla-scienza-la-storia-della-ricercatrice-maria-morena/">http://www.ondanews.it/da-teggiano-al-canada-per-dare-una-mano-alla-scienza-la-storia-della-ricercatrice-maria-morena/</a>
- On line article. Title: "Premi e riconoscimenti per una ricercatrice di Teggiano. Il Canada "incorona" Maria Morena"; Italia2TV, March 29 2016. <a href="http://www.italia2tv.it/2016/03/29/premi-riconoscimenti-ricercatrice-teggiano-canada-incorona-maria-morena/">http://www.italia2tv.it/2016/03/29/premi-riconoscimenti-ricercatrice-teggiano-canada-incorona-maria-morena/</a>
- On line article. Title: "Un Vallo di cervelli (in fuga): Maria Morena"; La Mosca del Mattino-Blog, March 29 2016. <a href="https://passorrentino.wordpress.com/2016/03/29/un-vallo-di-cervelli-in-fuga-maria-morena/">https://passorrentino.wordpress.com/2016/03/29/un-vallo-di-cervelli-in-fuga-maria-morena/</a>
- 8. Radio interview. **Radio Alfa**, Salerno, Italy. Program: Salernitani nel mondo. Title: "Salernitani nel Mondo: la ricercatrice Maria Morena in Canada studia i meccanismi dei ricordi", March 30 2016. https://www.youtube.com/watch?v=zFHIPPrZlbg
- 9. Radio interview. **CKUA**, Edmonton (AB), Canada. Program: Innovation Anthology. Title: "Brain research into ptsd memories", April 5 2016

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 Magazine article. Title: "Wiping out the fear, using our brain chemistry to help battle PTSD". Apple magazine, Summer 2016, issue 22, page 37. <a href="http://www.applemag-digital.com/applemag/summer\_2016?pg=37#pg37">http://www.applemag-digital.com/applemag/summer\_2016?pg=37#pg37</a>