

# CURRICULUM VITAE

GIUSEPPE PAGNONI

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## STUDI E FORMAZIONE

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|---------------|--|
| 2015–presente | Professore Associato presso il Dip. di Scienze Biomediche, Metaboliche e Neuroscienze, Università di Modena e Reggio Emilia.   |
| 2008–2015     | Ricercatore presso il Dip. di Scienze Biomediche, Metaboliche e Neuroscienze, Università di Modena e Reggio Emilia.  |
| 2002–2008     | Assistant Professor presso il Dept. of Psychiatry and Behavioral Sciences, Emory University, Atlanta, GA.  |
| 2000–2002     | Postdoc Fellowship negli Stati Uniti presso il Dept. of Psychiatry and Behavioral Sciences, Emory University, Atlanta, GA.   |
| 1998–1999     | Borsa di Ricerca del Dipartimento di Scienze e Tecnologie Biomediche, Università di Udine (Tutor: Prof. Carlo A. Porro).   |
| 1994–1998     | Dottorato in Neuroscienze, Università di Parma (Direttori: Prof. Giacomo Rizzolatti e Ruggero Corazza). Tesi: <i>Percezione ‘semantica’ e percezione ‘esplorativa’: uno studio di imaging funzionale sul riconoscimento implicito di stimoli visivi.</i> |
| 1992          | Laurea in Fisica, Università di Modena.  |

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## RICERCA

Neuroimaging funzionale. Ruolo cognitivo dei gangli della base nella codifica probabilistica di eventi salienti, nei paradigmi di condizionamento e nei processi decisionali. Meccanismi centrali dell'elaborazione del segnale nocicettivo. Interazioni della funzione immunitaria con il rendimento cognitivo e i disturbi dell'umore nel modello dell'interferone-alfa. Correlati neurali, neuropsicologici e fisiologici associati alla pratica della meditazione. Imaging funzionale di modelli di interazione sociale. Correlati neurali della sindrome di affaticamento cronico. Meccanismi cerebrali alla base della percezione e della regolazione volontaria dello sforzo mentale.

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## INDICI BIBLIOMETRICI (ISI WEB OF SCIENCE)

*h*-index: 29

Number of articles: 49

Sum of times cited: 3955

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## ARTICOLI IN RIVISTE INTERNAZIONALI

1. Chen X, Hackett PD, DeMarco AC, Feng C, Stair S, Haroon E, Ditzen B, **Pagnoni G**, Rilling JK. Effects of oxytocin and vasopressin on the neural response to unreciprocated cooperation within brain regions involved in stress and anxiety in men and women. *Brain Imaging Behav*, 2016, 10:581-593.
2. **G Pagnoni**, FT Guareschi. Remembrance of things to come: a conversation between Zen and neuroscience on the predictive nature of the mind, *Mindfulness*, 2015, 1-11, doi:10.1007/s12671-015-0438-z.
3. Kemmer PB, Guo Y, Wang Y, **Pagnoni G**. Network-based characterization of brain functional connectivity in Zen practitioners. *Frontiers in Psychology*, 2015, 6.
4. Feng G, Hackett PD, DeMarco AC, Chen X, Stair S, Haroon E, Ditzen B, **Pagnoni G**, Rilling J. Oxytocin and vasopressin effects on the neural response to social cooperation are modulated by sex. *Brain Imaging Behav*, 2014, doi:10.1007/s11682-014-9333-9.
5. **Pagnoni G**, Porro CA. Cognitive modulation of pain and predictive coding: Comment on “Facing the experience of pain: A neuropsychological perspective” by Fabbro and Crescentini. *Phys Life Rev*, 2014, 11(3):555-7.
6. Miller AH, Jones JF, Drake DF, Tian H, Unger ER, **Pagnoni G**. Decreased basal ganglia activation in subjects with Chronic Fatigue Syndrome: association with symptoms of fatigue. *PLoS One*, 2014, 9(5):e98156.
7. Favilla S, Huber A, **Pagnoni G**, Lui F, Facchin P, Cocchi M, Baraldi P, Porro CA. Ranking brain areas encoding the perceived level of pain from fMRI data. *Neuroimage*, 2014, 90:153-162.
8. Huber A, Lui F, Duzzi D, **Pagnoni G**, Porro CA. Structural and functional cerebral correlates of hypnotic suggestibility. *PLoS One*, 2014, 9(3):e93187.
9. Rilling JK, DeMarco AC, Hackett PD, Chen X, Gautam P, Stair S, Haroon E, Thompson R, Ditzen B, Patel R, **Pagnoni G**. Sex differences in the neural and behavioral response to intranasal oxytocin and vasopressin during human social interaction. *Psychoneuroendocrinology*, 2014, 39:237-248.
10. Khachouf OT, Poletti S, **Pagnoni G**. The embodied transcendental: a Kantian perspective on neurophenomenology. *Front Hum Neurosci*, 2013, 7, 611.

11. Agnati LF, Guidolin D, Battistin L, **Pagnoni G**, Fuxe K. The neurobiology of imagination: possible role of interaction-dominant dynamics and default mode network. *Front Psychol*, 2013, 4, 296.
12. Molinari E, Baraldi P, Campanella M, Duzzi D, Nocetti L, **Pagnoni P**, Porro CA. Human parieto-frontal networks related to action observation detected at rest. *Cereb Cortex*, 2013, 23:178–186.
13. Capuron L, **Pagnoni G**, Drake DF, Woolwine BJ, Spivey JR, Crowe RJ, Votaw JR, Goodman MM, Miller AH. Dopaminergic mechanisms of reduced basal ganglia responses to hedonic reward during interferon-alpha administration. *Arch Gen Psychiatry*, 2012, 69:1044–1053.
14. Confalonieri L, **Pagnoni G**, Barsalou LW, Rajendra J, Eickhoff SB, Butler AJ. Brain Activation in Primary Motor and Somatosensory Cortices during Motor Imagery Correlates with Motor Imagery Ability in Stroke Patients. *ISRN Neurol*, 2012, 613595.
15. Inman CS, James GA, Hamann S, Rajendra JK, **Pagnoni G**, Butler AJ. Altered resting-state effective connectivity of fronto-parietal motor control systems on the primary motor network following stroke. *Neuroimage*, 2012, 59:227–237.
16. **Pagnoni G**. Dynamical properties of BOLD activity from the ventral posteromedial cortex associated with meditation and attentional skills. *J Neurosci*, 2012, 32(15):5242–5249.
17. Rilling J, DeMarco A, Hackett P, Thompson R, Ditzen B, Patel R, **Pagnoni G**. Effects of intranasal oxytocin and vasopressin on cooperative behavior and associated brain activity in men. *Psychoneuroendocrinology*, 2012, 37:447–461.
18. Inman CS, James GA, Hamann S, Rajendra JK, **Pagnoni G**, Butler AJ. Altered resting-state effective connectivity of fronto-parietal motor control systems on the primary motor network following stroke. *Neuroimage*, 2012, 59:227–237.
19. Raison CL, Borisov AS, Majer M, Drake DF, **Pagnoni G**, Woolwine BJ, Vogt GJ, Massung B, Miller AH. Activation of central nervous system inflammatory pathways by interferon-alpha: relationship to monoamines and depression. *Biol Psychiatry*, 2008, 65(4):296–303.
20. **Pagnoni G**, Cekic M, Guo Y. “Thinking about non-thinking”: neural correlates of conceptual processing during Zen meditation. *PLoS ONE*, 2008, 3(9):e3083.
21. Guo Y, **Pagnoni G**. A unified framework for group independent component analysis for multi-subject fMRI data. *Neuroimage*, 2008, 42(3):1078–93.
22. Majer M, Welberg LA, Capuron L, Miller AH, **Pagnoni G**, Reeves WC. Neuropsychological performance in persons with chronic fatigue syndrome: results from a population-based study. *Psychosomatic Medicine*, 2008, 70(7):829–36.

23. Rilling JK, Dagenais JE, Goldsmith DR, Glenn AL, **Pagnoni G**. Social cognitive neural networks during in-group and out-group interactions. *Neuroimage*, 2008, 41(4):1447–61.
24. Rilling JK, Lacreus A, Barks SK, Elfenbein HA, **Pagnoni G**, Votaw JR, Herndon JG. Effect of the menstrual cycle on resting brain glucose metabolism in female rhesus monkeys, *Neuroreport*, 2008, 19(5):537–41.
25. Majer M, Welberg LA, Capuron L, **Pagnoni G**, Raison CL, Miller AH. IFN-alpha-induced motor slowing is associated with increased depression and fatigue in patients with chronic hepatitis C. *Brain Behav Immun*, 2008, 22(6):870–80.
26. Rilling JK, Goldsmith DR, Glenn AL, Jairam MR, Elfenbein HA, Dagenais JE, Murdock CD, **Pagnoni G**. The neural correlates of the affective response to unreciprocated cooperation. *Neuropsychologia*, 2007, 46(5):1256–66.
27. Rilling JK, Barks SK, Parr LA, Preuss TM, Faber TL, **Pagnoni G**, Bremner JD, Votaw JR. A Comparison of Resting State Brain Activity in Humans and Chimpanzees. *Proc Natl Acad Sci U S A*, 2007, 104(43):17146–51.
28. **Pagnoni G**, Cekic M. Age effects on gray matter volume and attentional performance in Zen meditation. *Neurobiology of Aging*, 2007, 28(10):1623–7.
29. Capuron L, **Pagnoni G**, Demetrashvili M, Lawson DH, Fornwalt F, Woolwine BJ, Berns GS, Nemeroff CB, Miller AH. Basal Ganglia Hypermetabolism and Symptoms of Fatigue during Interferon-alpha Therapy. *Neuropsychopharmacology*, 2007, 32(11):2384–92.
30. Rilling JK, Glenn AL, Jairam MR, **Pagnoni G**, Goldsmith DR, Elfenbein HA, Lilienfeld SO. Neural correlates of social cooperation and non-cooperation as a function of psychopathy. *Biological Psychiatry*, 2007, 61(11): 1260–1271.
31. Berns GS, Chappelow J, Cekic M, Zink CF, **Pagnoni G**, Martin-Skurski ME. Neurobiologic Substrates of Dread. *Science*, 2006, 312(5774):754–8.
32. Zink CF, **Pagnoni G**, Chappelow JC, Martin-Skurski ME, Berns GS. Human striatal activation reflects degree of stimulus saliency. *Neuroimage*, 2006, 29(3):977–983.
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34. Berns GS, Chappelow JC, Zink CF, **Pagnoni G**, Martin-Skurski ME, Richards J. Neurobiological correlates of social conformity and independence during mental rotation. *Biol Psychiatry*, 2005, 58(3):245–253.
35. Zink CF, **Pagnoni G**, Martin-Skurski ME, Chappelow JC, Berns GS. Human striatal responses to monetary reward depend on saliency. *Neuron*, 2004, 42(3):509–517.

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38. Dhamala M, **Pagnoni G**, Wiesenfeld K, Zink CF, Martin M, Berns GS. Neural correlates of the complexity of rhythmic finger tapping. *Neuroimage*, 2003, 20(2):918–926.
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43. Dhamala M, **Pagnoni G**, Wiesenfeld K, Berns GS. Measurements of brain activity complexity for varying mental loads. *Phys Rev E Stat Nonlin Soft Matter Phys*, 2002, 65(4 Pt 1):041917.
44. Calandra-Buonaura G, Basso G, Gorno-Tempini ML, Serafini M, **Pagnoni G**, Baraldi P, Porro CA, Nichelli P. Human brain language processing areas identified by functional magnetic resonance imaging using a lexical decision task. *Funct Neurol*, 2002, 17(4):183–191.
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## CAPITOLI DI LIBRI

1. Haroon E, **Pagnoni G**, Heim C, Berns GS, Mayberg H. Brain Imaging in Psychopharmacology, in *The American Psychiatric Publishing Textbook of Psychopharmacology*, Fourth Edition, Eds: Schatzberg AF and Nemeroff CB, American Psychiatric Publishing, Inc., 2009.
2. **Pagnoni G**, Berns GS. Brain imaging in Psychopharmacology, in *The American Psychiatric Publishing Textbook of Psychopharmacology*, Third Edition, Eds: Schatzberg AF and Nemeroff CB, American Psychiatric Publishing, Inc., 2003.
3. **Pagnoni G**. Metafore e neurofisiologia, in *La Metafora nelle Scienze Cognitive*, Ed: Morabito C, McGraw-Hill Libri Italia, Milano, 2002.

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## PRESENTAZIONI ORALI E PARTECIPAZIONI AD INVITO A SEMINARI E CONVEGNI

- “Predictive coding as a theoretical framework for contemplative research”, European Neurophenomenology, Contemplative, and Embodied Cognition Network (ENCECON) Meeting, Château de la Bourlie, Francia, 6–10 giugno, 2016.
- “Codifica predittiva dei processi mentali e meditazione”, convegno *Mindfulness: il cielo della mente*, Ospedale Villa Igea, Modena, 20 novembre 2015.
- “Codifica predittiva dei processi cognitivi”, convegno *Scienza e Meditazione*, Pavia, 9–10 ottobre 2015.
- “Suspending judgment in the mental courtroom: meditation through the lense of predictive coding”, *Contemplative Summer Institute*, Karma Guen, Velez, Malaga, Spagna, 16–20 settembre 2015.
- “Remembrance of things to come: the restless brain between memory and (self-fulfilling) prophecy”. *Mind and Life Summer Research Institute*, Garrison (NY), USA, 16 giugno 2014.
- “Remembrance of things to come: the restless brain between memory and (self-fulfilling) prophecy”. *Mindfulness Symposium*, Radboud University, Nijmegen, Olanda, 22 maggio 2014.
- “Inquieta-mente, tra memoria e profezia: perché la Mindfulness funziona e perché è anche un rischio”. *Mindfulness-Mania*, Milano, 21 marzo 2014.
- “Dynamic BOLD changes during meditation and attentional skills”. Brain Connectivity in Epilepsy and Sleep. Camera di Commercio, Modena, 21 novembre 2013.

- “Molto rumore per nulla? Attività cerebrale intrinseca e percezione del mondo”. *Fine dell’immagine: tra media, neuroscienze e filosofia*, Palazzo Ducale, Genova, 27 maggio 2013.
- Lezione magistrale “The Self-Fulfilling Brain: Predictions, categories and what all this has to do with meditation”. *First International Conference on Mindfulness*, Roma, 8–12 maggio 2013.
- Seminario di studi *Models of consciousness and clinical implications*, Lorentz Center, Leiden, Olanda, 2–6 aprile 2013.
- “Attività cerebrale spontanea e attenzione nell’esercizio meditativo”. *Neuro-riduzioni, possibilità e limiti: l’indagine dell’esperienza cosciente a partire da Neuromania*, Università di Padova, 10 luglio 2012.
- “The emptiness in mindfulness: an inquiry into the interaction of spontaneous thoughts and attentional processes during Zen meditation”. *Mind and Life Summer Research Institute*, Garrison, NY, USA, 13 giugno 2011.
- “Pensare il non-pensiero: uno studio sulle basi neurali dell’elaborazione concettuale nella meditazione”. *La mindfulness: radici contemplative, evidenze neuroscientifiche e applicazioni cliniche*, Università di Roma “La Sapienza”, Dipartimento di Psicologia, Roma, 13 dicembre 2010.
- “Thinking about not-thinking: making sense of Zen meditation through the practice of neuroimaging”. *Neuroscience, Consciousness and Spirituality*, Freiburg, Germania, 26 febbraio 2010.
- “Molto rumore per nulla? Dati recenti e interpretazione dell’attività cerebrale spontanea osservata con l’fMRI”. Università di Modena e Reggio Emilia, Dipartimento di Scienze Biomediche, Modena, 12 ottobre 2007.
- Seminario “La risonanza magnetica funzionale”, *Tecniche di ricerca sperimentale nelle neuroscienze cognitive*, terzo corso della Associazione Psicologia Italiana (API), Bertinoro (FC), 8–10 ottobre 2007.
- “The Default Mode(s) of Meditation: Patterns of brain activity in the meditative state”. *From basic research to clinical interventions: cognitive-affective neuroscience and clinical applications of meditation*, University of Massachusetts Medical School, Worcester, MA, USA, 29 marzo 2007.
- “The askesis of meditation: neurophysiological hypothesis on Zen training”. *Aspects of Mind-Matter Research Symposium*, Wildbad Kreuth, Germania, 25 giugno 2003.
- “Imaging the brain in mood and neuropsychiatric disorders”. *Psychoneuroimmunology Research Society Meeting* (PNIRS), Amelia Island, FL, USA, 6 giugno 2003.
- “Uncertain Pleasures: Koolaid treats, brain imaging and other surprises”. Per il ciclo *Frontiers in Neuroscience*, Neuroscience graduate program, Emory University, Atlanta, GA, USA, 26 aprile 2002.

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## ATTIVITÀ DIDATTICA

- Metodologie Medico-Scientifiche di Base, Corso di Laurea in Medicina e Chirurgia 2° anno, Università di Modena e Reggio Emilia, 2011–presente.
- Fisiologia cardiovascolare nel Corso Integrato di Fisiologia Umana e Fisiopatologia, Laurea in Medicina e Chirurgia 2° anno, Università di Modena e Reggio Emilia, 2008–presente.
- Neuroscienze della meditazione, Master in “Mindfulness: pratica, clinica e neuroscienze”, Dipartimento di Psicologia, Università di Roma, La Sapienza, 2015–2016.
- Seminario “Tecniche di studio della funzione cerebrale nell’uomo: fMRI”, Dottorato in Neuroscienze, Università di Modena e Reggio Emilia, Novembre 2009.