

ALFREDO SPAGNA, Ph.D.

Department of Psychology

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APPOINTMENTS

2019 - Present	Lecturer in Discipline of Psychology Director of Undergraduate Studies - Neuroscience and Behavior Major Director of The Living Lab Columbia University Department of Psychology
2017 - 2019	Post-Doctoral Fellow Paris Brain Institute, France PICNIC Lab
2014 - 2017	Post-Doctoral Fellow Mount Sinai Hospital, NYC Functional Neuroimaging Lab

EDUCATION

2014	Visiting Scholar Mount Sinai Hospital: Functional Neuroimaging Lab Queens College, CUNY: Cognitive Neuroscience Lab
2013	Sapienza, University of Rome Ph.D. in Cognitive Psychology and Psychophysiology
2010	Sapienza, University of Rome Master of Science in Cognitive Sciences
2006	Sapienza, University of Rome Bachelor of Arts, Major: Experimental Psychology

FUNDING

Total: \$448,673.14

2022	Templeton World Charity Foundation - Funding Consciousness Science.
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- Tracking the mind's eye: using a new mental imagery battery to characterize eye movements in five mental imagery domains.* (Role: **PI**) \$17,469.09 in research support.
- 2022 Center for Open Science (cos.io)
Tracking the mind's eyes: magnetoencephalographic recordings of the spatiotemporal dynamics of visual mental imagery. (Role: **PI**) \$19,998.50 in research support.
- 2022 Emerging Technology Consortium Grant - Columbia University IT.
Neuro-DBER: A flexible neuroscience- and technology-driven framework for Discipline-Based Education Research. (Role: **PI**) \$18,911 in research support.
- 2022 Columbia University Data Science Institute. *Neuro-DBER: A new area of discipline-based education research that leverages neuroscience to enhance teaching and learning.* (Role: **PI**) \$5,000 in research support.
- 2022 Columbia University Center for Teaching and Learning. *Building a Bridge Between Theory and Practice: Blended Learning Meets Behavioral Neuroscience.* (Role: **PI**) \$15,000 for hybrid course development.
- 2021 Columbia University Undergraduate Global Engagement Office. *Hands-on Consciousness: Developing a Two-Part Seminar Course in Psychology between Morningside Campus and the Columbia Global Center in Paris.* (Role: **PI**) \$150,000 for course development and research support.
- 2021 Columbia University Data Science Institute. *The Social Life of the Diversity, Equity and Inclusion Brain: Mapping DEI Neuroscience in Organizations and in the Popular Press* (Role: **Co-PI**; Dr. Valerie Purdie-Greenaway PI). \$49,800 in research support.
- 2020 Columbia University Data Science Institute. *Building Next Gen of Cognitive Neuroscientists: A Suite of Interdisciplinary Human Brain Imaging courses.* (Role: **PI**) \$150,000 for course development and research support.
- 2020 Columbia University Data Science Institute. *Superior Longitudinal Fasciculi abnormalities associated with the attentional deficit in schizophrenia.* (Role: **PI**) \$2,500 in research support.
- 2020 Columbia University Center for Science and Society. *Transferring Research Topics from Under the Microscope and Unto the Stage: An Exploration of Science Themes Through a Theatrical Perspective.* (Role: **PI**) \$2,995 in research support.
- 2019 Comprehensive Center for Pediatrics, Medizinische Universität Wien, Austria. *Attention Performance and its neurofunctional correlates in preterm infants – a pilot study.* (Role: **Co-PI**; Dr. Lisa Bartha-Doering PI). \$7,000 in research support.

AWARDS AND HONORS

Total: \$72,000

2022	Columbia University - School of General Study - Family Day Spotlight
2020	Columbia University - Faculty Spotlight
2017	Paris Brain Institute Basic and Clinical Research Award
2017	CUNY Research Award
2017	Outstanding Adjunct Assistant Professor for the Department of Psychology, QC, CUNY
2014	Simons Foundation Autism Research Initiative (SFARI) Award (\$60,000 in research support)
2012	Sapienza, University of Rome, Graduate Student Award for Visiting Scholar Opportunity (\$12,000 in research support)
2010	Sapienza, University of Rome, Graduate Student Fellowship

PUBLICATIONS

(723 citations; h-index = 16)

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1. **SPAGNA, A.**, Bayle, D. J., Romeo, Z., Seidel-Malkinson, T., Liu, J., Yahia-Cherif, L., ... & Bartolomeo, P. (2022). The cost of attentional reorienting on conscious visual perception: an MEG study. *Cerebral Cortex*, bhac192.
 2. Purdie-Greenaway, V., & **SPAGNA, A.**, (2022). Building a taxonomy of mental processes supporting social functioning to accelerate the integration between psychology and neuroscience: a commentary on Dang et al. *NeuroImage*, 119152.
 3. **SPAGNA, A.**, Wang, J., Rosario, I. E., Zhang, L., Zu, M., Wang, K., & Tian, Y. (2022). Cognitive Considerations in Major Depression: Evaluating the Effects of Pharmacotherapy and ECT on Mood and Executive Control Deficits. *Brain Sciences*, 12(3), 350.
 4. Giordano, V., Alexopoulos, J., **SPAGNA, A.**, Benavides-Varela, S., Peganc, K., Kothgassner, O. D., ... & Bartha-Doering, L. (2021). Accent discrimination abilities during the first days of life: An fNIRS study. *Brain and Language*, 223, 105039.
 5. Liu, J., **SPAGNA, A.**, & Bartolomeo, P. (2021). Hemispheric asymmetries in visual mental imagery. *Brain Structure and Function*, 1-12.
 6. Russell-Giller, S., Wu, T., **SPAGNA, A.**, Dhamoon, M., Hao, Q., & Fan, J. (2021). Impact of unilateral stroke on right hemisphere superiority in executive control. *Neuropsychologia*, 150, 107693.
 7. **SPAGNA, A.**, Hajhajate, D., Liu, J., & Bartolomeo, P. (2021). Visual mental imagery engages the left fusiform gyrus, but not the early visual cortex: a meta-analysis of

- neuroimaging evidence. *Neuroscience and Biobehavioral Reviews*. DOI: j.neubiorev.2020.12.029
8. Bartolomeo, P., Hajhajate, D., Liu, J., & **SPAGNA, A.**, (2020). Assessing the causal role of early visual areas in visual mental imagery. *Nature Reviews Neuroscience*, 21(9), 517-517. DOI: 10.1038/s41583-020-0349-4
 9. **SPAGNA, A.**, Wu, T., Kim, K., & Fan, J. (2020). Supramodal executive control of attention: evidence from unimodal and crossmodal dual conflict effects. *Cortex*, 266-276. DOI: 10.1016/j.cortex.2020.09.018
 10. **SPAGNA, A.**, Wu, T., Kim, K., Fan, J. (2020). Right hemisphere superiority for executive control of attention. *Cortex*, 122, 263-276. DOI: 10.1016/j.cortex.2018.12.012.
 11. Wu, T., **SPAGNA, A.**, Chen, C., Schulz, K. P., Hof, P. R., & Fan, J. (2020). Supramodal Mechanisms of the Cognitive Control Network in Uncertainty Processing. *Cerebral Cortex*, 30(12), 6336-6349. DOI: 10.1093/cercor/bhaa189
 12. Russell-Giller, S., Wu, T., **SPAGNA, A.**, Dhamoon, M., Hao, Q., & Fan, J. (2020). Impact of unilateral stroke on right hemisphere superiority in executive control. *Neuropsychologia*, 150, 107693. DOI: 10.1016/j.neuropsychologia.2020.107693
 13. Wu, T., Chen, C., **SPAGNA, A.**, Wu, X., Mackie, M. A., Russell-Giller, S., ... & Fan, J. (2020). The functional anatomy of cognitive control: A domain-general brain network for uncertainty processing. *Journal of comparative neurology*, 528(8), 1265-1292. DOI: 10.1002/cne.24804
 14. Chen, Y., **SPAGNA, A.**, Wu, T., Kim, T. H., Wu, Q., Chen, C., ... & Fan, J. (2019). Testing a Cognitive Control Model of Human Intelligence. *Scientific Reports*, 9(1), 2898. DOI: 10.1038/s41598-019-39685-2.
 15. Wu, T., Wang, X., Wu, Q., **SPAGNA, A.**, Yang, J., Yuan, C., ... & Fan, J. (2019). Anterior insular cortex is a bottleneck of cognitive control. *NeuroImage*. DOI: 10.1016/j.neuroimage.2019.02.042 .
 16. Zeng, W., Eilam-Stock, T., Wu, T., **SPAGNA, A.**, Chen, C., Hu, B., Fan, J. (2019). Multi-feature based network revealing the structural abnormalities in autism spectrum disorder. *IEEE transactions on Affective Computing* DOI: 10.1109/TAFFC.2018.2890597 .
 17. **SPAGNA, A.**, Dufford, A., Wu, Q., Wu, T., Zheng, W., Coons E., Hof, P. R., Wu, Y., Fan, J. (2018) Grey matter volume of the anterior insular cortex and social networking. *Journal of Comparative Neurology*. DOI: 10.1002/cne.24402.
 18. **SPAGNA, A.**, He, G., Jin, S., Gao, L., Mackie, M. A., Tian, Y., ... & Fan, J. (2018). Deficit of supramodal executive control of attention in schizophrenia. *Journal of psychiatric research*, 97, 22-29. DOI: 10.3389/fpsyg.2015.00065

19. Casagrande, M., Marotta, A., Canepone, V., **SPAGNA, A.**, Rosa, C., Dimaggio, G., & Pasini, A. (2017). Dysfunctional personality traits in adolescence: effects on alerting, orienting and executive control of attention. *Cognitive Processing*, 1-11. DOI: 10.1007/s10339-017-0797-6.
20. **SPAGNA, A.**, Martella D., Marotta A., Casagrande M., Fuentes, L.J. (2016). Hemispheric Modulations of the Attentional Networks. *Brain and Cognition*, DOI: 10.1016/j.bandc.2016.07.002.
21. Tian, Y., Du, J., **SPAGNA, A.**, Mackie, M. A., Gu, X., Dong, Y., ... & Wang, K. (2016). Venlafaxine treatment reduces the deficit of executive control of attention in patients with major depressive disorder. *Scientific Reports*, 6 (28028) DOI: 10.1038/srep28028.
22. Xuan, B., Mackie, M-A., **SPAGNA, A.**, Wu T., Tian, Y., Hof P. R., Fan J. (2016). The activation of interactive attentional networks. *Neuroimage*; DOI: 10.1016/j.neuroimage.2016.01.017.
23. Eilam-Stock, T., Wu, T., **SPAGNA, A.**, Egan, L. J., & Fan, J. (2016). Neuroanatomical alterations in high-functioning adults with autism spectrum disorder. *Frontiers in Neuroscience*, 10. DOI: 10.3389/fnins.2016.00237.
24. **SPAGNA A.**, Dong Y., Mackie M-A., Li M., Harvey P.D., Tian Y., Wang K., Fan J. (2015): Clozapine improves the orienting of attention in schizophrenia. *Schizophrenia Research*; DOI: 10.1016/j.schres.2015.08.009.
25. Marotta A., Delle Chiaie R., **SPAGNA, A.**, Bernabei L., Sciarretta M., Roca J., Biondi M., Casagrande M (2015): Impaired conflict resolution and vigilance in euthymic bipolar disorder. *Psychiatry Research* 06/2015; DOI: 10.1016/j.psychres.2015.06.026.
26. **SPAGNA A.**, Mackie M-A., Fan J. (2015): Supramodal executive control of attention. *Frontiers in Psychology* 03/2015; 6. DOI: 10.3389/fpsyg.2015.00065.
27. **SPAGNA A.**, Martella D., Sebastiani M., Maccari L., Marotta A., Casagrande M. (2014). Efficiency and interactions of Alerting, Orienting and Executive Networks: The Impact of Imperative Stimulus Type. *Acta Psychologica*, 148: 209-215. DOI: 10.1016/j.actpsy.2014.02.007.

BOOK CHAPTERS

28. Spagna, A. (2022). Visual mental imagery: Inside the mind's eyes. *Handbook of Clinical Neurology*, 187, 145-160.

PRE-PRINT / IN PREPARATION

29. Bartha-Doering, L., Baumgartner, B., Yildirim, S., Giordano, V., **SPAGNA, A.**, Roberts D., Pal-Handl, K., Javorsky, M., Kasprian, G., Seidl, R., Developmental Surface Dyslexia and Dysgraphia in a Child with Corpus Callosum Agenesis: An Approach to Diagnosis and Treatment.

30. Liu, J., Bayle, D. J., **SPAGNA, A.**, Sitt, J. D., Bourgeois, A., Lehongre, K., ... & Bartolomeo, P. The interplay of attention and conscious perception: evidence from human intracerebral recordings and computational modeling. *bioRxiv*.
31. Toba, M. N., Malkinson, T. S., Howells, H., Mackie, M. A., & **SPAGNA, A.** Same, same but different? A multi-method review of the processes underlying executive control.
32. Eisenstadt, B., **SPAGNA, A.**, Stroessner, S. In the Mind's Eye: the relationship between visual mental imagery and stereotyping.
33. Wu T., **SPAGNA, A.**, Mackie, M-A., Fan, J. Resource sharing in cognitive control: behavioral evidence and neural substrates.

PRE-REGISTERED REPORTS

34. **SPAGNA, A.**, Liu, J. Bartolomeo, P. Tracking the mind's eyes: magnetoencephalographic recordings of the spatiotemporal dynamics of visual mental imagery.
35. Rosario, I., **SPAGNA, A.**, (2021) A global-to-local processing bias in conditions of restricted awareness: the case of symmetry and illusory figures. Phase 1 pre-registered report. *Neuroscience of Consciousness*.

TEACHING

Columbia University, NYC, NY

- Behavioral Neuroscience (UN2450; Lecture; Enrollment 110+). Hybrid course redesign for the Department of Psychology. Since Spring 2019.
- Fundamentals of Neuropsychology (UN2470; Lecture; Enrollment 110+). New course designed for the Department of Psychology. Since Spring 2020.
- Fundamentals of Human Neuroimaging (GU4930; Advanced Research Method; Seminar; Enrollment capped at 12). New course designed for the Department of Psychology. Since Fall 2021.
- Neuroscience of Consciousness (GU4225; Seminar; Enrollment capped at 12). New course designed for the Department of Psychology. Since Spring 2020.
- Cognitive Neuroscience (UN2430; Lecture; Enrollment 130+). Fall 2019.
- Seminar in Attention & Perception (new course design). Fall 2019; Fall 2020.

Queens College, CUNY, NY

- Experimental Psychology. 2016
- Cognitive Neuroscience. 2017
- Advanced Experimental Psychology. In 2017

MENTORING

Undergraduate Research Alumni

Isabella Elaine Rosario (now R.A. at Horga Lab, Columbia University), 2019-2021.

Benjamin Eisenstadt (now R.A. at John Packankis Lab, Yale), 2019-2021

Laura Tremblay (now R.A. at Mark D'Esposito Lab, UC Berkeley), 2020-2022

Yasmin Aiman (now Ph.D. student in Neuroscience at Harvard University), 2020-2021

Juan Guerrero (now R.A. at Salzman Lab, Columbia University), 2019-2021

Graduate and Dissertation Committees

Vinay Raghavan - PhD Student

INVITED SPEAKER, CONFERENCES, WORKSHOPS and SEMINARS

1. Guest Lecture: 02/22/2022: Applied Neuroscience Lecture Course: Using Mobile EEG in the classroom to increase engagement and learning. University of Pavia (Italy).
2. Talk @ Conference: 03/24/2021: There is an Elephant in the Room: revising the classic model of human mental imagery. University of Pavia (Italy) – Columbia Science Review Event 2021.
3. Guest Lecture: 03/23/2021: There is an Elephant in the Room: revising the classic model of human mental imagery. University of Pavia (Italy) – Applied Neuroscience Course.
4. Talk @ Lab Meeting: 03/19/2021: The role of Attentional Networks in Mental Imagery. University of Florida, USA, Talk at Lucina Uddin's BCCL Lab.
5. Talk @ Conference: 03/13/2021: Attention, Perception, Consciousness, and Mental Imagery: parsing by using neuroimaging. Columbia Synapse Conference 2021: "The Social Brain".
6. Talk @ Lab Meeting: 02/02/2021: Attention, Perception, Consciousness, and Mental Imagery: parsing by using neuroimaging. University of Liege, Belgium, Talk at Athena Demertzi's Giga Lab.
7. Talk @ Lab Meeting: 01/12/2021: Human Attentional Networks and their Development. Universität Wien - Fakultät für Psychologie. Stefanie Hoehl's Laboratory.
8. Symposium Chairman: 09/05/2019: museum . Federation of the European Societies of Neuropsychology. 5-7 September 2019, Milan, Italy
9. Colloquium: 05 / 2018: Blythedale Children's Hospital, NY, USA. "Supramodal attentional functions across the lifespan".

PRINT & MEDIA COVERAGE

Columbia Global Centers 2022 - *Paris Center Stories: Professor Alfredo Spagna, Psychology Dept.*

Netflix, 2021 - *HUMANS, the world within*

Gray Matters CU Podcast, 2021 - *My Journey in Attention and Consciousness Research*

Stories in Science, 2020 - *How to discover a passion for science*

Gray Matters CU, 2020 - *Being a scientist during the pandemic - with Lila Davachi*

Stuyvesant High School (NY), 2019 - *Watch out, Cognitive Neuroscience of Attention*

AD-HOC REVIEW AND EDITORIAL SERVICE

Nature Communications Biology (1) • Brain Structure and Function (2) • Cortex (7) • Cognitive Processing (2) • Behavioral Research Method (1) • Molecular Autism (1) • Neuropsychologia (2) • Psychological Reviews (1) • Neurobiology of Stress (1) • Experimental Brain Research (1) • Frontiers in Neuroscience (2) • Frontiers in Psychology: Cognition (ad-hoc Editor) • Frontiers in Neuroscience: Cognitive Control Capacity (ad-hoc Editor) • Journal of Visual Experiments (JOVE, ad-hoc Editor).

NETWORK OF COLLABORATORS

Paolo Bartolomeo (Paris Brain Institute, France) • Jin Fan (Mount Sinai / CUNY, USA) • Patrick Hof (Mount Sinai, NY, USA) • Stanislas Dehaene (Neurospin, France) • Laurent Cohen (Paris Brain Institute, France) • Lionel Naccache (Paris Brain Institute, France) • Jacobo Sitt (Paris Brain Institute, France) • Steve Stroessner (UCLA) • Melissa-Ann Mackie (Northwestern, USA) • Ana B. Chica (University of Granada, Spain) • Monica Toba (University of Amiens, France) • Yanghua Tian (Anhui Medical University, Hefei, China) • Tingting Wu (Beijing University) • Lisa Bartha-Doering (University of Vienna, Austria).