Jason M. Scimeca

Helen Wills Neuroscience Institute
Department of Psychology
University of California, Berkeley
132 Barker Hall, Berkeley, CA, 94720

jscimeca@berkeley.edu
jasonscimeca.com
@jmscimeca

ACADEMIC POSITIONS AND EDUCATION

- **University of California, Berkeley** (2015-Present)
  Postdoctoral Scholar & Project Scientist in Helen Wills Neuroscience Institute; Advisor: Mark D'Esposito

- **Brown University** (2010-2015)
  Ph.D. in Cognitive Science; Advisor: David Badre

- **Northwestern University** (2008-2010)
  Research Assistant in Psychology Department; Advisors: Joan Chiao & Steven Franconeri

- **University of Chicago** (2004-2008)
  B.A. in Psychology & Biological Sciences – Specialization: Neuroscience; Advisor: David Gallo

PUBLICATIONS

Google Scholar Profile: http://scholar.google.com/citations?user=-Dw1o2AAAAAJ

Accepted Manuscripts

- Kiyonaga, A.[1], **Scimeca, J. M.[1]**, & D'Esposito, M. (accepted Registered Report). Dissociating the causal roles of frontal and parietal cortex in working memory capacity. *Nature Human Behaviour*.
  ([1] Co-first authors)

Journal Articles

- Riddle, J., **Scimeca, J. M.**, Pagnotta, M. F., Inglis, B., Sheltraw, D., Muse-Fisher, C., & D'Esposito, M. (2022). A guide for concurrent TMS-fMRI to investigate functional brain networks. *Frontiers in Human Neuroscience*.

- Riddle, J.[1], **Scimeca, J. M.[1]**, Cellier, D., Dhanani, S., D'Esposito, M. (2020). Causal evidence for a role of theta and alpha oscillations in the control of working memory. *Current Biology, 30*, 1748-1754.
  ([1] Co-first authors)

- Eichenbaum, A., **Scimeca, J. M.**, & D'Esposito, M. (2020). Dissociable neural systems support the learning and transfer of hierarchical control structure. *Journal of Neuroscience*, *40*, 6624-6637.

- Kiyonaga, A. & **Scimeca, J. M.** (2019). Practical considerations for navigating Registered Reports. *Trends in Neurosciences, 42*, 568-572.

- **Scimeca, J. M.**, Kiyonaga, A., D'Esposito, M. (2018). Reaffirming the sensory recruitment account of working memory. *Trends in Cognitive Sciences, 22*, 190-192.

- Kiyonaga, A., **Scimeca, J. M.**, Bliss, D., & Whitney, D. (2017). Serial dependence across perception, attention, and memory. *Trends in Cognitive Sciences, 21,* 493-497.

- **Scimeca, J. M.**, Katzman, P. L., & Badre, D. (2016). Striatal prediction errors support dynamic control of declarative memory decisions. *Nature Communications*, *7*, 13061.

- Mathur, V. A., Cheon, B. K., Harada, T., **Scimeca, J. M.**, & Chiao, J. Y. (2016). Overlapping neural response to the pain or harm of people, animals, and nature. *Neuropsychologia, 81*, 256-273.

- **Scimeca, J. M.** & Franconeri, S. L. (2015). Selecting and tracking multiple objects. *Wiley Interdisciplinary Reviews: Cognitive Science, 6*, 109-118.

- Badre, D., Lebrecht, S., Pagliaccio, D., Long, N. M., & **Scimeca, J. M.** (2014). Ventral striatum and the evaluation of memory retrieval strategies. *Journal of Cognitive Neuroscience, 26*, 1928-1948.

- Cheon, B. K., Im., D., Harada, T., Kim, J., Mathur, V. A., **Scimeca, J. M.**, Parrish, T. B., Park, H., & Chiao, J. Y. (2013). Cultural modulation of the neural correlates of emotional pain perception: The role of other-focusedness. *Neuropsychologia, 51*, 1177-1186.

- **Scimeca, J. M.** & Badre, D. (2012). Striatal contributions to declarative memory retrieval. *Neuron, 75*, 380.

- Franconeri, S. L., **Scimeca, J. M.**, Roth, J. C., Helseth, S. A., & Kahn, L. E. (2012). Flexible visual processing of spatial relationships. *Cognition, 122,* 210-227.

- **Scimeca, J. M.**, McDonough, I. M, & Gallo, D. A. (2011). Quality trumps quantity at reducing memory errors: Implications for retrieval monitoring and mirror effects. *Journal of Memory and Language, 65*, 363.

- Cheon, B. K., Im, D., Harada, T., Kim, J., Mathur, V., **Scimeca, J. M.**, Parrish, T., Park, H., & Chiao, J. Y. (2011). Cultural influences on neural basis of intergroup empathy. *NeuroImage*, *57*, 642-650.

- Franconeri, S. L., Jonathan, S. V., & **Scimeca, J. M.** (2010). Tracking multiple objects is limited only by object spacing, not by speed, time, or capacity. *Psychological Science*, *21*, 920-925.

- Gallo, D. A., McDonough, I. M., & **Scimeca, J.** (2010). Dissociating source memory decisions in prefrontal cortex: fMRI of diagnostic and disqualifying monitoring. *Journal of Cognitive Neuroscience, 22*, 955-969.

Forthcoming Manuscripts

- Scimeca, J. M., Kiyonaga, A., Schuck, L., Ye, J., Andrews, M., Bansal, S., Houghton, J., Hector, H., Schenker, J., & D'Esposito, M. An open resource for assessing correlation and causation in human working memory: neuroimaging, brain stimulation, and quantitative models of behavior.

- Scimeca, J. M., Katzman, P. L., Waters, E., Vaidya, A., & Badre, D. Reward and re-encoding during episodic memory retrieval.

- Scimeca, J. M., Huerta, W., Miller, J. A., & D'Esposito, M. No free lunch: The capacity and costs of selective control in working memory.

TEACHING

2014 Fall **Functional Magnetic Resonance Imaging: Theory and Practice (CLPS1490)**
Graduate Teaching Assistant

2013 Fall **Functional Magnetic Resonance Imaging: Theory and Practice (CLPS1490)**
Graduate Teaching Assistant

2012-2013 **Brown University Presidential Award for Excellence in Teaching**
Annual prize to recognize outstanding pedagogical achievement; awarded to two recipients out of 400 Brown graduate students with teaching appointments

2013 Spring **Elementary Psychology: An Introduction to Mind and Behavior (CLPS0010)**
Graduate Teaching Assistant

2012 Fall **Functional Magnetic Resonance Imaging: Theory and Practice (CLPS1490)**
Graduate Teaching Assistant

MENTORING

Supervised Honors Theses:

UC Berkeley: Senior Honors Theses
- Yasamin Vafai; Wendy Huerta; Naria Quazi; Lielle Ross

Brown University: Senior Honors Theses
- Perri Katzman; Amanda Ruggieri

Supervised Research Assistants:

UC Berkeley: Undergraduate Research Assistants
- Murray Andrews; Stuti Bansal; Jean Ye; Jessica Houghton; Lauren Shuck; Kriti Achyutuni

UC Berkeley: Full Time Research Assistants
- Chris Muse-Fisher; Henrik Hector

Brown University: Undergrad Research Assistants
- Caryn Cobb; Becca Zak; Celia Ford

Brown University: Leadership Alliance Summer Research Early Identification Program
- Ari Meilech

OTHER EDUCATION, TRAINING, AND CERTIFICATES

2012 **NIMH Summer Institute in Cognitive Neuroscience (Santa Barbara, CA)**
Episodic Memory and Adaptive Behavior / Brain Plasticity
2011-12 **Brown University – Sheridan Center for Teaching and Learning**
Sheridan Teaching Seminar – Certificate I Program
2009 **Northwestern University**
School of Continuing Studies

PROFESSIONAL SERVICE

Community and Educational Outreach:

Bay Area Community Resources for Science (2022-Present)
- Facilitate age-appropriate science lessons in public middle schools around Bay Area
- Outreach to local schools and community centers to provide engaging demos and encourage STEM learning

Frontiers for Young Minds (2016-Present)
- Introduce kids and teens to scientific careers, and facilitate the Young Reviewer peer review process for Frontiers in Young Mind articles

Brown Alzheimer's Activists (2010-2013)
- Provided support to local healthcare centers through volunteering and fundraising; awareness campaign for Alzheimer's Disease on Brown campus and throughout RI through lectures and educational events

Alpha Phi Omega — National Co-ed Service Fraternity (2004-2008)
- Performed community service across UChicago, Hyde Park neighborhood, and Chicago

University and Academic Service:

Graduate Student Representative (2011-2013)
- Graduate student liaison to Brown CLPS Department faculty and Brown Graduate Student Council

Cognition Seminar Series Coordinator (2011-2012)
- Coordinated external and internal speakers for the Brown CLPS Cognition Seminar Series

University of Chicago Alumni Schools Committee (2009-Present)
- Conduct interviews and information sessions with prospective undergraduate students

PROFESSIONAL MEMBERSHIPS

- American Association for the Advancement of Science
- Association for Psychological Science
- Cognitive Neuroscience Society
- Society for Neuroscience

RESEARCH SUPPORT

- **R01 MH063901** — **Cognitive Control, Working Memory, and Prefrontal Cortex**
  National Institute of Mental Health, NIH; 6/2018–5/2023 ($2,470,000)
  Written in collaboration with Mark D'Esposito (P.I.)

AWARDS AND HONORS

- Brown University Presidential Award for Excellence in Teaching (2013)
- NIMH Summer Institute in Cognitive Neuroscience Fellowship (2012)
- National Science Foundation Graduate Research Fellowship Honorable Mention (2010)
- University of Chicago College Research Opportunity Grant (2007)
- National Merit Scholarship (2004)

AD-HOC REVIEWER

- Attention, Perception, & Psychophysics
- Behavioural Brain Research
- Cerebral Cortex
- Cognition
- Cognition and Emotion
- Cortex
- Frontiers in Psychology
- Human Brain Mapping
- Journal of Cognitive Neuroscience
- Journal of Experimental Psychology: Human Perception and Performance
- Journal of Neuroscience
- Journal of Vision
- Nature Communications
- Neuropsychologia

- PLOS Computational Biology
- Psychonomic Bulletin & Review
- Scientific Reports

COMMENTARIES ON MY PUBLICATIONS

- Sauseng, P. & Liesefeld, H. R. (2020). Cognitive control: Brain oscillations coordinate human working memory. *Current Biology*.
- Xu, Y. (2018). Sensory cortex is nonessential in working memory storage. *Trends in Cognitive Sciences*.
- Dyson, B. J. (2017). Serial dependence in audition: Free, fast, featureless? *Trends in Cognitive Sciences*.
- Moran, J. (2014). How does the brain learn which memory retrieval strategies are most effective? *PLOS Neuro Community Blog*.

PRESENTATIONS AND INVITED LECTURES

- *The capacity and control of working memory: From correlation to causation*. (June 2020). Invited colloquium for the Department of Psychology, University of Auckland.
- *The capacity and control of working memory: Causal roles of frontal and parietal cortex*. (May 2020). Virtual Working Memory 2020 Symposium.
- *Feature-based attentional control over the contents of visual working memory*. (November 2018). Society for Neuroscience Annual Meeting Nanosymposium, San Diego, CA.
- *The role of reinforcement learning systems in recognition memory*. (June 2014). Brown Leadership Alliance Summer Research Program, Brown University, Providence, RI.
- *Dynamic control of recognition memory decisions: The important role of prediction errors*. (April 2014). CLPS Cognition Seminar, Brown University, Providence, RI.
- *The role of feedback and prediction error signals in controlling recognition memory*. (October 2012). CLPS Cognition Seminar, Brown University, Providence, RI.
- *Tracking multiple objects is limited only by object spacing, not by speed, time, or capacity*. (October 2010). Inaugural meeting of the CLPS Cognition Seminar, Brown University, Providence, RI.

CONFERENCE ABSTRACTS

- Cellier, D., **Scimeca, J. M.**, & Kiyonaga, A. (November 2022). Frontal and parietal TMS perturbs serial biases in color working memory. Poster presented at the Society for Neuroscience meeting, San Diego.
- **Scimeca, J. M.**, Kiyonaga, A., & D'Esposito, M. (April 2022). Dissociating the causal contributions of frontal and parietal cortex in working memory capacity. Poster presented at the Cognitive Neuroscience Society meeting, San Francisco, CA.
- **Scimeca, J. M.**, Ross, L. K., & D'Esposito, M. (October 2019). Neural systems supporting flexible top-down control over the priority of working memory representations. Dynamic poster presented at the Society for Neuroscience meeting, Chicago, IL.
- Kiyonaga, A., **Scimeca, J. M.**, & D'Esposito, M. (June 2019). Dissociating the causal roles of frontal and parietal cortex in working memory capacity: A Registered Report. Poster presented at the Organization for Human Brain Mapping meeting, Rome, Italy.
- **Scimeca, J. M.**, Vafai, Y., Huerta, W., Miller, J. A. & D'Esposito, M. (November 2018). Feature-based attentional control over the contents of visual working memory. Talk presented at the Society for Neuroscience meeting, San Diego, CA.
- Eichenbaum, A., **Scimeca, J.**, & D'Esposito, M. (November 2018). Learning to learn: Lateral frontal and cingulo-opercular cortex support the learning and transfer of hierarchical task structure. Poster presented at the Society for Neuroscience meeting, San Diego, CA.
- Miller, J. A., **Scimeca, J. M.**, Rose, N. S., & D'Esposito, M. (November 2018). Attentional effects on working memory representations: comparing information-detection techniques and metrics. Poster presented at the Society for Neuroscience meeting, San Diego, CA.

- Eichenbaum, A., **Scimeca, J.**, & D'Esposito, M. (March 2018). Prefrontal cortex supports the transfer of hierarchical task structure to novel environments. Poster presented at the Cognitive Neuroscience Society meeting, Boston, MA.
- **Scimeca, J. M.**, Miller, J. A., & D'Esposito, M. (May 2017). The effects of content-dependent competition on working memory capacity limits. Poster presented at Vision Sciences Society meeting, St. Pete Beach, FL.
- Muse-Fisher, C., Riddle, J., **Scimeca, J. M.**, & D'Esposito, M. (March 2017). Identification of frontal-striatal circuits with simultaneous TMS-fMRI. Poster presented at the Cognitive Neuroscience Society meeting, San Francisco, CA.
- **Scimeca, J. M.**, Katzman, P. L., & Badre, D. (November 2013). Evaluating and updating control processes in recognition memory. Poster presented at the 43rd Annual Meeting of the Society for Neuroscience, San Diego, CA.
- **Scimeca, J. M.**, Katzman, P. L., & Badre, D. (April 2013). The role of prediction errors in control of recognition memory decisions. Poster presented at the 20th Annual Meeting of the Cognitive Neuroscience Society, San Francisco, CA.
- Franconeri, S., **Scimeca, J.**, & Jonathan, S. (May 2012). Maintaining selection of multiple moving objects. Poster presented at 2012 Meeting of the Vision Sciences Society, Naples, FL.
- **Scimeca, J. M.**, McShane, L. M., Brew, J. A., & Badre, D. (November 2011). Acquisition and adaptation of rule-guided retrieval strategies in memory. Poster presented at the 41st Annual Meeting of the Society for Neuroscience, Washington, DC.
- Franconeri, S., **Scimeca, J.**, Roth, J., & Helseth, S. (May 2011). Flexible visual processing of spatial relationships. Talk presented at 2011 Meeting of the Vision Sciences Society, Naples, FL.
- Levinthal, B. R., Jonathan, S., **Scimeca, J.**, & Franconeri, S. (May 2011). Competition limits spatial selection. Poster presented at 2011 Meeting of the Vision Sciences Society, Naples, FL.
- Franconeri, S., **Scimeca, J.**, Roth, J., Kahn, L., & Helseth, S. A. (April, 2011). Flexible visual processing of spatial relationships. Talk presented at the 18th Annual Meeting of the Cognitive Neuroscience Society, San Francisco, CA.
- Cheon, B., Im, D., Harada, T., Park, J., Mathur, V., **Scimeca, J.**, Park, H., Chiao, J. (April 2011). The role of culture on the automaticity of empathy: The modulating influence of interdependence. Poster presented at the 18th Annual Meeting of the Cognitive Neuroscience Society, San Francisco, CA.
- Franconeri, S. L., Jonathan, S.V., & **Scimeca, J. M.** (November 2009). Tracking multiple objects is limited only by interobject crowding, and not object speed. Talk presented at the 50th Annual Meeting of the Psychonomic Society, Boston, MA.
- Rotella, K., Richeson, J., **Scimeca, J.**, & Chiao, J. (October 2009). Neural basis of economic trust with religious ingroup and outgroup members. Poster presented at the 39th Annual Meeting of the Society for Neuroscience, Chicago, IL.
- Cheon, B.K., Im, D., Harada, T., Kim, J., Mathur, V. A., **Scimeca, J.**, Park, H., & Chiao, J. Y. (October 2009). Cultural variation in neural response within temporo-parietal junction during intergroup empathy. Talk presented at the 39th Annual Meeting of the Society for Neuroscience, Chicago, IL.
- Mathur, V.A., Harada, T., Cheon, B.K., **Scimeca, J.**, & Chiao, J.Y. (March 2009). Empathic neural response to living things as a function of agency and experience. Poster presented at the 16th Annual Meeting of the Cognitive Neuroscience Society, San Francisco, CA.
- Cheon, B.K., Im, D., Harada, T., Mathur, V.A., **Scimeca, J.**, Park, H., & Chiao, J.Y. (March 2009). Universal and culturally-specific neural basis of ingroup bias in empathy. Poster presented at the 16th Annual Meeting of the Cognitive Neuroscience Society, San Francisco, CA.
- Gallo, D. A., McDonough, I. M., & **Scimeca, J. M.**† (April 2008). Prefrontal Regions Differentially Contribute to Source Monitoring Processes. Poster presented at the 15th Annual Meeting of the Cognitive Neuroscience Society, San Francisco, CA. († Presenting author)