

Name:

Assistant Professor Tor Wager, Ph.D.,

Affiliation:

Cognitive and Affective Control Laboratory, Department of Psychology, Columbia University

Biography and overview of research interests:

Dr. Wager received his Ph.D. from the University of Michigan in cognitive psychology, with a focus in cognitive neuroscience, in 2003. He joined the faculty of Columbia University as an Assistant Professor of Psychology in 2004. His primary research interest is in the neural and psychological bases of cognitive and affective control. His research quantifies behavioral performance and brain activity to investigate the neural mechanisms by which humans have flexible control over their behavior. This approach emphasizes the mutual constraints on interpretation afforded by studying behavior and functional anatomy at the same time. His main research interests along those lines are: brain and psychological mechanisms underlying the cognitive control of pain and affect; individual differences in selective attention, inhibition, task switching, and other executive processes; and the relationship between affective regulation and cognitive control. He is also interested in developing image analysis and statistical modeling methods that will improve our ability to use fMRI as a research tool in cognitive and affective neuroscience. Current projects along these lines include: optimization of experimental design for fMRI experiments; meta-analysis of functional imaging data; nonlinear alternatives to hemodynamic response fitting; robust regression techniques in massively univariate linear models; and application of multivariate techniques.

Top 5 publications:

- Wager, T. D. & Smith, E. E. (2003). Neuroimaging and working memory: A meta-analysis. *Cognitive, Affective, and Behavioral Neuroscience*, 3, 255-274.
- Wager, T. D., Sylvester, C. Y., Lacey, S. C., Nee, D. E., Franklin, M., & Jonides, J. (2005). Common and unique components of response inhibition revealed by fMRI. *Neuroimage*, 27(2), 323-340.
- Wager, T. D., Jonides, J., Smith, E. E., & Nichols, T. E. (2005). Towards a taxonomy of attention-shifting: Individual differences in fMRI during multiple shift types. *Cogn Affect Behav Neurosci*, 5(2), 127-143.
- Wager, T. D., Rilling, J., Smith, E. E., Sokolik, A., Casey, K., Kosslyn, S. M., Davidson, R.J., Rose, R. M., Cohen, J. D. Placebo-induced changes in fMRI in the anticipation and experience of pain. *Science*, 303, 1162-1167.
- Wager, T. D., Scott, D. J., & Zubieta, J. K. (2007). Placebo effects on human mu-opioid activity during pain. *Proceedings of the National Academy of Sciences*, 104, 11056-11061.

Talk Title:

Brain mapping and predictors of successful working memory: From meta-analysis to single-trial analysis.