

Robert Zatorre, PhD



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Link(s):

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[Zatorre Lab](#)

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[Cognitive Neuroscience Research Group](#)

Biography:

Robert Zatorre is a cognitive neuroscientist whose laboratory studies the neural substrate for auditory cognition, with special emphasis on two complex and characteristically human abilities: speech and music. He and his collaborators have published over 280 scientific papers on topics including pitch perception, auditory imagery, absolute pitch, perception of auditory space, and the role of the mesolimbic reward circuitry in mediating musical pleasure. His research spans all aspects of human auditory processing, from studying the functional and structural properties of auditory cortices, to how these properties differ between the hemispheres, and how they change with training or sensory loss. His lab makes use of functional and structural MRI, MEG and EEG, and brain stimulation techniques, together with cognitive and psychophysical measures. In 2006 he became the founding co-director of the international laboratory for Brain, Music, and Sound research (BRAMS), a unique multi-university consortium with state-of-the-art facilities dedicated to the cognitive neuroscience of music. In 2011 he was awarded the IPSEN foundation prize in neuronal plasticity. In 2013, he won the Knowles prize in hearing research from Northwestern University, and in 2017 he was elected to the Royal Society of Canada. In 2020, he was awarded the C.L. de Carvalho-Heineken Prize in Cognitive Sciences, the most prestigious international science prize in The Netherlands.

Selected publications:

Zatorre, R. (2024). *From perception to pleasure: the neuroscience of music and why we love it*. Oxford University Press.

Albouy, P., Mehr, S. A., Hoyer, R. S., Ginzburg, J., Du, Y., & Zatorre, R. J. (2024). Spectro-temporal acoustical markers differentiate speech from song across cultures. *Nature Communications*, 15(1), 4835.

Ara, A., Provias, V., Sitek, K., Coffey, E. B., & Zatorre, R. J. (2024). Cortical–subcortical interactions underlie processing of auditory predictions measured with 7T fMRI. *Cerebral Cortex*, 34(8), bhae316.

Mori, K., & Zatorre, R. (2024). State-dependent connectivity in auditory-reward networks predicts peak pleasure experiences to music. *Plos Biology*, 22(8), e3002732.

Mas-Herrero, E., Dagher, A., Farrés-Franch, M., & Zatorre, R. J. (2021). Unraveling the temporal dynamics of reward signals in music-induced pleasure with TMS. *Journal of Neuroscience*, 41(17), 3889-3899.

Coffey, E. B., Arseneau-Bruneau, I., Zhang, X., Baillet, S., & Zatorre, R. J. (2021). Oscillatory entrainment of the frequency-following response in auditory cortical and subcortical structures. *Journal of Neuroscience*, 41(18), 4073-4087.

Puschmann, S., Regev, M., Baillet, S., & Zatorre, R. J. (2021). MEG intersubject phase locking of stimulus-driven activity during naturalistic speech listening correlates with musical training. *Journal of Neuroscience*, 41(12), 2713-2722.

Research areas:

Cognitive Neuroscience