## CAN BRAINS GENERATE RANDOM NUMBERS?

Vašek Chvátal<sup>1,2</sup>, Mark Goldsmith<sup>1</sup>

(1) Department of Computer Science and Software Engineering, Concordia University, 1455 De Maisonneuve Blvd. West, Montréal, Québec H3G 1M8, Canada

(2) Canada Research Chair in Discrete Mathematics

Motivated by EEG recordings of normal brain activity, we construct arbitrarily large McCulloch-Pitts neural networks that, without any external input, make every subset of their neurons fire in some iteration (and therefore in infinitely many iterations).