From: Inform
Subject: EM: Dept. of Natural Sciences Seminar Friday 11/01

From: Lauran Soto

DEPARTMENT OF NATURAL SCIENCES SEMINAR ANNOUNCEMENT:

"How well do neurons, humans, and artificial neural networks predict?"

Sarah Marzen
Assistant Professor of Physics
Dept. of Natural Sciences

Friday, November 1st
Burns Lecture Hall (NS E007)
12:15-1:15 PM

Abstract: Sensory prediction is thought to be vital to organisms, but few studies have tested how well organisms and parts of organisms efficiently predict their sensory input in an information-theoretic sense. In this talk, we report results on how well cultured neurons ("brain in a dish") and humans efficiently predict artificial stimuli. We find that both are efficient predictors of their artificial input. That leads to the question of why, and to answer this, we study artificial neural networks, finding that LSTMs show similarly efficient prediction but do not model how humans learn well. Instead, it appears that an existing model of cultured neurons and a model of humans as order-R Markov modelers explain their performance on these prediction tasks.

Find additional seminar information here: https://www.kecksci.claremont.edu/seminars/

Best,
Lauran Soto - Administrative Assistant (she/they)
Department of Natural Sciences, Pitzer and Scripps Colleges
925 N. Mills Ave, Claremont, CA 91711
Office Phone: (909) 621-8489

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<lsoto@natsci.claremont.edu>)