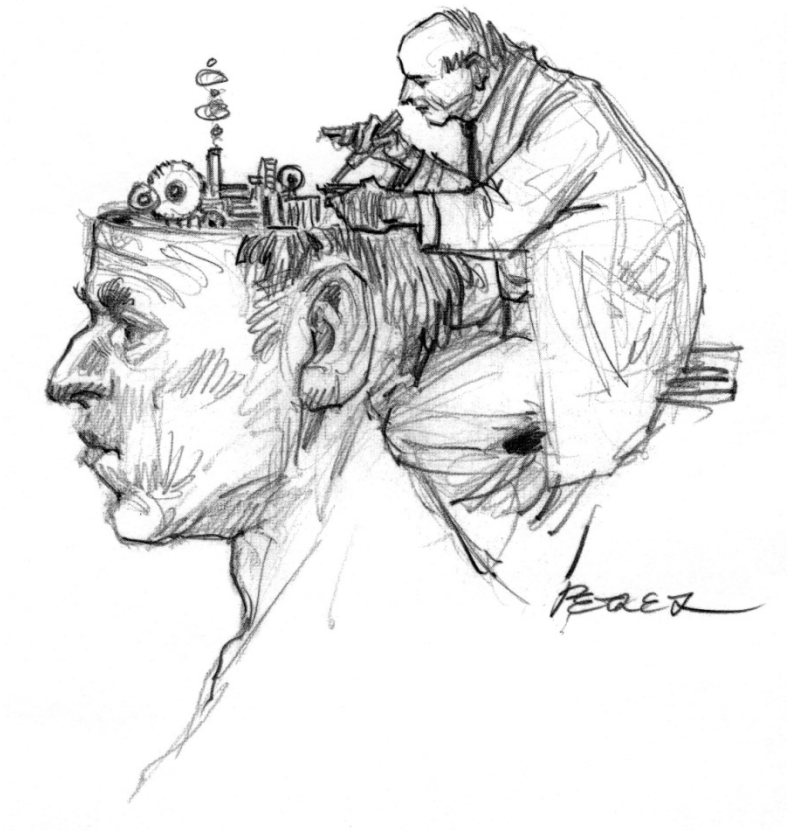
Tkach, Colleen

From: Inform
Subject: FW: Neuroscience Speaker Series: Dr. Avishek Adhikari

Importance: High

From: Tom Borowski

NEUROSCIENCE SPEAKER SERIES



Dr. Avishek Adhikari
Department of Psychology
University of California, Los Angeles

Midbrain circuits controlling feeding
Tuesday, November 4th
4:30 PM

Burns Lecture Hall
Department of Natural Science

Abstract: Investigative exploration and foraging leading to food consumption have vital importance, but are not well-understood. Since GABAergic inputs to the lateral and ventrolateral periaqueductal gray (l/vlPAG) control such behaviors, we dissected the role of vgat-expressing GABAergic l/vlPAG cells in exploration, foraging and hunting. Here, we show that in mice vgat l/vlPAG cells encode approach to food and consumption of both live prey and non-prey foods. The activity of these cells is necessary and sufficient for inducing food-seeking leading to subsequent consumption. Activation of vgat l/vlPAG cells produces exploratory foraging and compulsive eating without altering defensive behaviors. Moreover, l/vlPAG vgat cells are bidirectionally interconnected to several feeding, exploration and investigation nodes, including the zona incerta. Remarkably, the vgat l/vlPAG projection to the zona incerta bidirectionally controls approach towards food leading to consumption. These data indicate the PAG is not only a final downstream target of top-down exploration and foraging-related inputs, but that it also influences these behaviors through a bottom-up pathway.