ON THE BRAIN

THE HARVARD MAHONEY NEUROSCIENCE INSTITUTE LETTER

Hunger and the Brain

Bradford Lowell, MD, PhD, remembers his astonishment the first time his lab "turned on" hunger-promoting neurons in a mouse. The genetically engineered rodent, which was already full, devoured food pellets as if it hadn't eaten anything all day, quelling any doubts about the neurons' importance.

"I recall thinking it was the most amazing thing I had ever seen," says Lowell, an HMS professor of medicine at Beth Israel Deaconess Medical Center.

That 2011 feeding frenzy was a turning point in Lowell's decades-long quest to understand how the intense drive of hunger compels us to eat—and makes dieting so difficult. It is one of many "wow" moments he has encountered while decoding the incredibly complex tangle of circuits in the brain that control appetite.

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Faculty First Person

Matthew Pecot, PhD, Assistant Professor of Neurobiology

The brain comprises billions of cells called neurons that communicate with each other through specialized connections called synapses. Neurons that are connected by synapses form neural circuits that serve as highways of information flow in the brain and support everything from seeing and hearing, to learning a language, and even remembering your name. My laboratory is interested in learning the molecular rules that govern how neurons choose the correct synaptic partners and organize into circuits during development.

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In the News

Brain Gain

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Sweet Smell

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