

# ON THE BRAIN

THE HARVARD MAHONEY NEUROSCIENCE INSTITUTE LETTER

## Reading and the Brain



There are several important white-matter pathways involved in reading. White matter is a collection of nerve fibers in the brain—so called for the white color of myelin, the fatty substance that insulates the fibers—that help the brain learn and function.

Nadine Gaab, PhD, an HMS associate professor of pediatrics who heads a research unit in the Laboratories for Cognitive Neuroscience at Boston Children's Hospital, likens these tracts to a highway system that connects the back of the brain's reading network to the front. In order to read and comprehend, this highway system must be wide enough for multiple pieces of information to travel simultaneously. The highway must also be smooth, so that information can flow at a high rate of speed. And, she says, "You don't want the information to stop. You don't want a lot of stop lights."

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## Faculty First Person



### A conversation with Margaret Livingstone, PhD '81

Early life experience has long-lasting consequences on the adult brain's ability to process and respond to information in the environment, yet how the timing of such experiences can influence the adult brain remains unclear. Understanding the means by which events during early brain development impinge on the adult brain has important implications for both education and health.

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## In the News

### Odd One Out

A team led by Harvard Medical School biochemists has determined the structure of a unique receptor linked to neurodegeneration, addiction, and pain, opening the door to examining its potential as a drug target. [Read more »](#)

### Gut-Brain Connection Moves into MS Territory

Investigators at Harvard-affiliated Brigham and Women's Hospital have found evidence suggesting that bacteria living in the gut may remotely influence the activity of cells in the brain that are involved in controlling inflammation and neurodegeneration. [Read more »](#)

### Strength in Love, Hope in Science

Husband and wife PhD students embarked on a journey five years ago after the her mother's horrifying decline into dementia and death from a rare brain disease, the tracks of which appear in her own DNA. [Read more »](#)

### 2016 David Mahoney Symposium and Prize

The 2016 David Mahoney Symposium and Prize, held in New York City April 20, honored Emmy Award winner Alan Alda. [Read more and view the event photo gallery »](#)