



Upcoming Discovery Lecture:

VANDERBILT CUTTING-EDGE DISCOVERY

GENE ENVIRONMENT INTERACTIONS IN
CANCER ETIOLOGY AND PREVENTION

DAVID CORTEZ, PH.D.

*Professor of Biochemistry
Ingram Professor of Cancer Research*

ROBERT J. COFFEY, JR., M.D.

*Professor of Medicine
Professor of Cell and Developmental Biology*

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*Associate Professor of Medicine
Director of Tobacco Research and Treatment*

*May 21, 2015
208 Light Hall / 4:00 P.M.*



ERIC I. KNUDSEN, PH.D.

HOW THE BRAIN CONTROLS ATTENTION: A STUDY IN BIRDS

APRIL 30, 2015

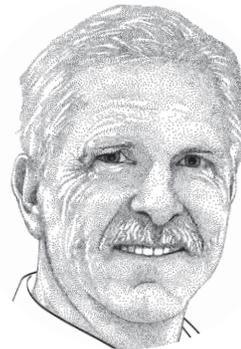
4:00 P.M.

208 LIGHT HALL

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HOW THE BRAIN CONTROLS ATTENTION: A STUDY IN BIRDS

The natural world constantly inundates our senses with information. Attention enables us to select and differentially process the most important information at each moment in time, and to suppress the processing of other, distracting information. The information we use for making decisions, is information to which we have attended. Therefore, understanding how the brain controls attention is important for understanding how we think and what we think about. I will discuss recent discoveries about networks of brain structures that control attention, and why a particular network is best studied in birds. In this network, one specific neural circuit carries out the moment-by-moment selection of the most important information, and suppresses the processing of distracting information. Another circuit causes the selected information to be differentially processed by the brain. I will discuss how these circuits operate and coordinate to control attention. Because this network has been conserved across vertebrate evolution, these brain mechanisms are likely to operate also in humans. These findings reveal fundamental neural principles about how attention works.



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Dr. Knudsen received his Ph.D. from the University of California, San Diego in 1976. He completed a postdoctoral fellowship at the California Institute of Technology in 1979. He joined the Department of Neurobiology at Stanford University as an assistant professor in 1979, became a full professor in 1988, and served as Chair of the Department from 2000-2005. His research has focused on strategies of information processing in the central nervous system, mechanisms of learning and, currently, mechanisms of spatial attention. Dr. Knudsen has received a number of honors and awards, including election to the National Academies of Science.
