

## Donald Pfaff, Ph.D.

MIND Institute Distinguished Lecturer Series – April 13, 2016

### ***Biographical Information***

Dr. Pfaff graduated from Harvard College *magna cum laude* and received his Ph.D. from the Massachusetts Institute of Technology in 1965. He joined Rockefeller in 1966 as a postdoc and was named assistant professor in 1969. He was granted tenure in 1973 and promoted to full professor in 1978.

Dr. Pfaff is a member of the National Academy of Sciences and a fellow of the American Academy of Arts and Sciences. The author of several books on the brain and behavior, he received the 2005 Award for Excellence in Professional and Scholarly Publishing (medical science category) of the Association of American Publishers for his book, *Brain Arousal and Information Theory*. He received the 2010 Ipsen Foundation Prize in Neuronal Plasticity and the Daniel S. Lehrman Lifetime Achievement Award in Behavioral Neuroendocrinology in 2011.

Dr. Pfaff is a faculty member in the [David Rockefeller Graduate Program](#) and the Tri-Institutional M.D.-Ph.D. Program

### ***Presentation Abstract (4:30pm presentation)***

*A 3-hit theory of autism, focusing on prenatal stress and sex differences*

In the complex and very important world of autism research, Dr. Donald Pfaff brings his background studying sex differences on the hormone effects on neurons, as one of the clearest ways for a neuroscientist to attack the problem. Joining with developmental psychologist Dr. Sylvie Goldman and pediatric neurologist, Dr. Isabelle Goldman, they came up with a "3-hit" theory of the sex differences leading to autism. Namely, an individual who is a male (hit #1), and suffered early stress (hit #2), and had an autism-relevant mutation (hit #3), would be more likely to be diagnosed with autism than an individual with fewer of these hits. Experiments from studying male and female mice with the CNTNAP2 autism-relevant genetic mutation have provided evidence that supports the 3-hit theory. Dr. Pfaff will discuss these experiments and also outline future experiments at the end of the talk.