



«Experiential, Genetic and Epigenetic Effects on Human Neurocognitive Development»

Professor Helen J. Neville

Brain Development Lab; University of Oregon, Eugene, USA

Friday MARCH 22nd 2013 - 14h30-16:00pm

UNIMAIL - SALLE 2170

For several years we have employed psychophysics, electrophysiological (ERP) and magnetic resonance imaging (MRI) techniques to study the development and plasticity of the human brain. Recently, we have conducted a series of studies on the effects of different types of training on brain development and cognition in typically developing, 3-5 year old children who are at-risk for school failure for reasons of poverty.

In the most powerful training program, we target the most changeable and vulnerable systems in 3-5 year old preschoolers (at-risk for school failure for reasons of poverty) whom we study before and after 8 weeks during which the children receive daily attention training and their parents receive training in parenting skills and attention once a week.

Standardized measures of cognition and ERP measures of attention and language document large, significant and enduring effects of these different types of inputs on neurocognitive function when compared to both passive and active control groups. Genetic and Gene X Environment (training) interactions are also evident in these data.

These studies contribute to a basic understanding of the nature and mechanisms of human brain plasticity. In addition, these results lend impetus to the further development and broader deployment of education programs based on evidence from basic research in neuroscience, especially those that impact at-risk populations to reduce academic achievement gaps.

See our DVD about brain development and neuroplasticity at: changingbrains.org