42ND ANNUAL DISTINGUISHED SCHOLAR LECTURE SERIES

November 18 (@11am & 3pm), 19 (@11am) 2019
ECHA

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ATTENTIVE LEARNING: TRAJECTORIES, MECHANISMS AND RISK FACTORS
Three 1-hour lectures

For more information, please visit: uab.ca/dsls
Lecture 1: How does attentional control matter to learning?  
Longitudinal and experimental approaches at the transition between the preschool and primary school years  
Nov 18 @ 11:00am - ECHA 1-498

In my first seminar, I will focus on describing and understanding the tight relationships between attentional control and emerging cognition in pre-schoolers and primary school children. Early individual differences in executive skills including inhibitory control, maintenance in working memory and selection of task relevant dimensions relate concurrently to emerging learning outcomes (with mathematical skills used as an example here). In addition, longitudinal findings suggests that these same skills predict later maths outcomes. Using experiments that require new learning, I will explore mechanisms underpinning these longitudinal correlations. In combination, longitudinal and experimental data point to a need for a greater mechanistic understanding of attentional control in new learning, and of the role of growing expertise in guiding attention.

Lecture 2: Using developmental cognitive neuroscience tools to investigate mechanisms of attentive learning  
Nov 18 @ 3:00pm - ECHA 2-420

In this second seminar, I will highlight how, from very early in development we are equipped with exquisite attentional skills, whose improvement is coupled with increased effectiveness of control networks. In childhood, our work suggests that both behavioural and neural indices suggest similarities, as well as differences, in how children and young adults deploy attentional control to optimize maintenance of information in memory. At the same time, attentional effects on memory are not unidirectional: previously learnt information and resistance to distraction during learning guide later attentional deployment, both in adulthood and in childhood. In conclusion, assessing attentional development and its dynamics point to the bidirectional influences between attention, memory and learning.

Lecture 3: Attentional control development under conditions of high risk: Insights from genetic syndromes and poverty  
Nov 19 @ 11:00am - ECHA 1-182

Can we understand the malleability of attentional control skills, by studying how they develop under conditions of high risk? With the increased availability of genetic testing, multiple genetic alterations have been associated with high risk of inattention and hyperactivity. The first line of research focuses on children with Williams syndrome and Down’s syndrome, to suggest that differences in attention between and within these supposedly homogeneous syndrome groups predict variable learning outcomes in emerging literacy or numeracy. Secondly, I will discuss longitudinal data from young children with fragile X syndrome, associated with the silencing of a single gene and high risk of attention deficits in childhood. Longitudinal findings suggests that early group-level and individual differences in attentional processes predict differences in later behavioural difficulties. Finally, I will review recent evidence about executive function development under conditions of high poverty. As a whole, these lines of work point to multiple influences modulating attentional control skills.
Past lecture series:

1975 Frank Geldard (Princeton) - “Sensory Saltation: Metastability in the Perceptual World.”
1978 Harold Kelley (UCLA) - “Personal Relationships: Their Structures and Processes.”
1979 Robert Rescorla (Yale) - “Pavlovian Second-Order Conditioning: Studies in Associate Learning.”
1980 Mortimer Mishkin (NIMH - Bethesda) - “Cognitive Circuits.”
1981 James Greeno (Pittsburgh) - “Current Cognitive Theory in Problem Solving.”
1982 William Uttal (Michigan) - “Visual Form Detection in 3-Dimensional Space.”
1983 Jean Mandler (UC La Jolla) - “Stories, Scripts, and Scenes: Aspects of Schema Theory.”
1984 George Collier (Rutgers) - “Learning and Motivation: Function and Mechanism.”
1985 Alice Eagly (Purdue) - “Sex Differences in Social Behavior: A Social Role Interpretation.”
1986 Karl Pribram (Stanford) - “Holonomic Brain Theory: Cooperative Processing in the Configural Aspects of Perception and Action.”
1987 Abram Amsel (UT Austin) - “Behaviourism, Neobehaviourism and Cognitivism in Learning Theory.”
1989 Robert Efron (UC Martinez) - “The Decline and Fall of Hemispheric Specialization.”
1990 Phil Johnson-Laird (Princeton) - “Human and Machine Thinking.”
1991 Timothy Salthouse (Georgia Institute of Technology) - “Mechanisms of Age-Cognition Relations in Adulthood.”
1992 Scott Paris (Michigan) - “Authentic Assessment of Children’s Literacy and Learning.”
1993 Bryan Kolb (Lethbridge) - “Brain Development, Plasticity, and Behaviour.”
1994 Max Coltheart (Macquarie) - “Our Mental Lexicon: Empirical Evidence of the Modularity of Mind.”
1995 Norbert Schwarz (Michigan) - “Cognition and Communication: Judgmental Biases, Research Methods, and the Logic of Conversation.”
1996 Gilbert Gottlieb (UNC Chapel Hill) - “Prenatal Roots of Instinctive Behavior: A Theoretical and Experimental Exposition of Probabilistic Epigenesis.”
1997 C. Randy Gallistel (UCLA) “Basic Conditioning from an Interval Timing Perspective.”
1998 Harold W. Stevenson (Michigan) - “Learning from other Cultures: Achievement and Society.”
1999 Melvyn A. Goodale (Western Ontario) - “The Origins of Vision.”
2001/02 Mark Snyder (Minnesota) – “Personality, Motivation, and Social Behavior: Understanding Individuals and Their Social Worlds.”
2003 Michael Tomasello (Max Planck Institute for Evolutionary Anthropology) - “Lectures on Children and Chimpanzees.”
2004 Michael J. Ryan (UT Austin) – “Sexual Selection and Sensory Exploitation.”
2007 Richard M. Lerner (Tufts) – “Applying Developmental Science to Promote Positive Youth Development and to Enhance Community Life.”
2008 Denise C. Park (UT Dallas) – “Images of the Aging Mind; Developing a Cultural Neuroscience of Aging; and Following Doctors’ Instructions: Medical Adherence.”
2009 David C. Rubin (Duke) – “Autobiographical Memory.”
2011 Tomáš Paus (The Rotman Research Institute) – “How Environment and Genes Shape the Adolescent Brain”

2013 Arie Kruglanski (Maryland) – “Three Lectures on Motivation.”

2014 Robert Cook (Tufts) “Comparative Visual Cognition: The bird’s eye view”

2017 (Jan.) William H. Warren (Brown) - “The Dynamics of Perception and Action”

2017 (Oct.) Michael Hasselmo (Boston) - “How We Remember: Brain Mechanisms of Episodic Memory

2018 Morten H. Christiansen (Cornell) - "How Does Language Work? Insights from Evolution, Acquisition and Processing"