

Course Schedule Fall Course 2017
‘Monitoring and Cognitive Control of Learning and Memory’
Swiss Graduate School for Learning, Memory, and Cognition

For this fall course of the Swiss Graduate School for Cognition, Learning, and Memory, we have invited four international guest speakers who do state-of-the-art research in the field of cognitive control and metacognition. The course program consists of keynotes and literature discussion sessions. Furthermore, the participating students are asked to present their own work in round-table sessions.

Participants can register in KSL before August 31, 2017. Course materials will be made available in ILIAS.

Participants receive a confirmation of participation and 2 ECTS upon completion of the course, when a minimum of 75% of the course activities have been attended.

Course participants are expected to prepare themselves by studying the course materials, and they are expected to actively participate in the sessions.

If you have questions please contact Mariëtte van Loon, mariette.vanloon@psy.unibe.ch

Course schedule

Thursday September 21:

- Keynote Stephen Fleming, University College London, UK: The structure of human metacognition: Insights from behavior and neuroimaging.
- Keynote John Dunlosky, Kent State University, USA: How Important is Accurate Monitoring for Effective Control? Overview of Outcomes, Methods, and Issues Relevant to the Control of Learning
- Round table student presentations

Friday September 22:

- Round table student presentations
- Interactive discussion session

Thursday December 21:

- Keynote Janet Metcalfe, Columbia University New York, USA: Metacognition and curiosity.
- Keynote Stephanie Cosentino, Columbia University New York, USA: Metacognition in Alzheimer’s Disease
- Round table student presentations

Friday December 22:

- Round table student presentations
- Interactive discussion session

Abstracts

Stephen Fleming

The structure of human metacognition: Insights from behavior and neuroimaging
I will review how studying the neural basis of monitoring requires careful control of potentially confounding effects of task performance. I'll then explore the structure of metacognitive abilities and ask whether they share common or distinct components across domains (e.g. perception or memory). Discussions of domain-generalty will be informed by behavioral, neuroimaging and neuropsychological studies

John Dunlosky

How Important is Accurate Monitoring for Effective Control? Overview of Outcomes, Methods, and Issues Relevant to the Control of Learning
Although intuition suggests that accurate monitoring is essential for effective control, recent evidence suggests that even highly accurate monitoring may not help students effectively control their restudy. I will critique this evidence and the methods used to support it; discuss new evidence that evaluates testable predictions from this critique, which indicates several conditions that are necessary to demonstrate effective control; and I will end by discussing an agenda for future research aimed at filling gaps in our knowledge about monitoring-control relationships.

Janet Metcalfe

Metacognition and Curiosity

Spontaneously occurring metacognitive feelings are rare. When they do occur, though, such feeling states have a distinctive function: they are goads to cognitive action provoking a 'need to know.' Research findings on two such spontaneous metacognitive feeling states will be discussed. The first is the feeling that accompanies the commission of high confidence errors. When people are certain that they are right, but then find out that they are wrong, several consequences ensue. The most notably, they engage in extraordinary and successful efforts to learn: They hypercorrect. The encoding effort is associated with distinctive neurocognitive markers. The second spontaneous metacognitive state that will be explored is the tip-of-the-tongue state. This state is, similarly, associated with the need to know, with enhanced encoding, and with distinctive neurocognitive patterns. It will be argued that these spontaneous metacognitive states have an adaptive function of focusing the person's efforts effectively. They drive our curiosity (as indicated by enhanced interest, attention, perseverance and

learning). And, they provide an emotional marker indicating that information is within our grasp-- in our Region of Proximal Learning-- where our efforts at learning are likely to succeed.

Stephanie Cosentino

Metacognition in Alzheimer's Disease

While cognitive decline in dementia is universal, the subjective perception of such decline, and therefore the accuracy of one's metacognition, is highly variable across individuals. There is growing evidence that metacognition is a critical determinant of important behaviors and clinical outcomes among individuals with dementia. In the context of dementia of the Alzheimer's type, a high proportion of individuals have disordered metacognition; that is, they are unaware of their cognitive deficits, and this lack of awareness threatens patient decision making and autonomy. Disordered metacognition has been linked to specific neuroanatomic compromise as well as patterns of cognitive testing that inform the substrates of self-awareness. Studies examining the etiology, nature, measurement, and consequences of disordered metacognition in Alzheimer's disease will be reviewed.