In the Fall Semester 2017, we will have a course titled ‘Monitoring and Cognitive Control of Learning and Memory’. This course consists of two course blocks. Block 1 takes place on September 21 – September 22; block 2 takes place on December 21 – December 22. We invited Dr. Stephen Fleming (University College London) and Prof. Dr. John Dunlosky (Kent State University, USA) for the course block in September. For the course block in December, we invited Prof. Dr. Janet Metcalfe and Dr. Stephanie Cosentino, who are both from Columbia University, New York.

Course schedule:

Thursday September 21:

- Keynote Dr. Stephen Fleming, University College London, UK: The structure of human metacognition: Insights from behavior and neuroimaging.
- Keynote Prof. Dr. 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
- Student presentations

Friday September 22:

- Student presentations
- Interactive discussion session

Thursday December 21:

- Keynote Prof. Dr. Janet Metcalfe, Columbia University New York, USA: Metacognition and curiosity.
- Keynote Dr. 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

Participants need to prepare themselves for the lectures by reading pre-selected articles, they are expected to discuss their research in a round table presentation, and they are expected to actively contribute to the discussions. Registration was possible until August 31, 2017.
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-generality 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.