

# Cologne Evolution Colloquium

Molecular Basis of  
Evolutionary Innovations  
SFB 680

Chris Jakobs

Institute of Biology, University of Leiden

## **The serosa, an evolutionary novelty of insects, protects the egg against dehydration and infection**

Insects are the most diverse group of animals on earth. They inhabit nearly all terrestrial habitats. One of the factors underlying this success is the ability of insect eggs to survive in adverse conditions. For a long time the ability to survive adverse conditions has been attributed to maternal investment in the form of a protective eggshell. Contrary to common belief, insect eggs are far from helpless. The insect egg itself develops a cellular layer around the egg called the serosa, which is an evolutionary novelty of insects. In the red flour beetle (*Tribolium castaneum*), it is possible to prevent the development of the serosa by knocking down the gene *zerknüllt* by RNA interference. Utilizing this method to compare eggs with and without a serosa, we found that this serosa protects the developing embryo from dehydration and infection. We propose that the serosa contributed to the great success of insects.

Wednesday, February 4, 2015, 17:00  
University of Cologne, Institute for Genetics  
Seminar Room 0.46

Hosted by Siegfried Roth