



# CDB SEMINAR

Speaker: **David Wilkinson**

< Division of Developmental Neurobiology, National Institute for Medical Research >

Title: **“Neurogenesis and boundary formation  
in hindbrain segmentation”**

Date: Monday, December 12  
Time: 16:00-17:00  
Place: 1F Auditorium of Building C, CDB

Dr. Wilkinson, the head of the Developmental Neurobiology Division at the Medical Research Council's National Institute for Medical Research (NIMR) at Mill Hill, London is famous for his work on hindbrain segmentation, looking at the role of cell signaling and differential cell adhesion in generating the rhombomeric organization in the brain. He talks about how segments are maintained and the molecular mechanisms that are involved, mechanisms that are most likely to be found in other systems.

## Summary:

The establishment of organised patterns of cell types at appropriate locations in the nervous system is achieved by its initial subdivision into regional domains, each specified to form a distinct set of derivatives. Sharp interfaces form and are maintained between adjacent regional domains. In some tissues, local interactions induce the formation of distinct boundary cells at the interface that act as a signalling centre to further refine pattern. We have uncovered molecular mechanisms that underlie the sharpening of segment interfaces, and the formation and functions of boundary cells in the developing zebrafish hindbrain. We found that there is reciprocal signalling between differentiating neurons and neural progenitors at boundaries in which each population regulates the formation and spatial organisation of the other. In ongoing studies, we are further dissecting the control of boundary formation and neurogenesis.

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