“But that's just anatomy: *The search for circuits and wiring diagrams in the Drosophila brain*”

Ian Meinertzhagen

University Research Professor, Dalhousie University, Halifax, NS, Canada; and Senior Fellow, Janelia Research Campus of HHMI, Ashburn, VA, USA

日時　**2015 年 3 月 11 日(水) 13:00 - 14:30**

場所　**理学部 5 号館 813 号室**

The brain is a network, one that is formed by the synaptic contacts between neurons. The network these form, the brain’s connectome, therefore becomes a formal definition of any brain, one that is essential for us to know if we are to establish the circuit basis for animal behaviour. Few people would question this, but many still do not accept that the level of effort required to extract the relevant information merits the endeavour to do so. Indeed that level of effort has until recently been unthinkable except for the simplest brains, but with improvements in technology is becoming a reality in the brain of the fruit fly *Drosophila*. Examples will be presented of work mostly on the *Drosophila* visual system that indicates the scale of the problem we face, and the extent of progress in deciphering the fly’s connectome. I will also discuss the role this can play not only in interpreting functional interactions but also in predicting those interactions. A common belief is that when connections are defined from the patterns of either opto- or electrophysiological interactions they support, these either average the pattern of real connections, or assume that the latter are both exclusive and optimal. But only the pattern of real anatomical connections can distinguish between these alternatives, and the actual connections are invariably far more complex than has so far been suspected.

後援：北大トップコラボ事業

連絡先：創成研究機構　田中暢明（nktanaka@cris.hokudai.ac.jp）