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Molecular basis for the control of motor-based transport of MHC class II compartments

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Stellingen behorende bij het proefschrift:

**Molecular basis for the control of motor-based transport
of MHC class II compartments**

1. Antigen presentation by MHC class II is dictated by processes such as late endosomal proteolysis of Ii and antigen, regulation of late endosomal morphology and pH, and intracellular transport. (this thesis)
2. Rab GTPases, either directly or by orchestrating the recruitment of soluble effector molecules, bring spatial and temporal resolution to intracellular membrane trafficking and transport reactions. (this thesis)
3. The intricate pattern of motility of late endosomal compartments is regulated by networks of macromolecular complexes controlled by the small GTPase Rab7. (this thesis)
4. Cholesterol acts as a messenger sensed by ORP1L to control the transport of late endosomal compartments. This regulatory mechanism explains the characteristic clustering of cholesterol-laden lysosomes in Niemann-Pick type C disease. (this thesis)
5. The work by Rink et al. on Rab5-to-Rab7 conversion adds mechanistic detail to the paradigm of maturation of endocytic compartments. (Rink et al., 2005, Cell, 122:735)
6. The story of the blind man and the elephant is an apt metaphor for cell biologists studying either vesicular trafficking or intracellular transport--each wise man describes an elephant from only the parts that he himself experiences without seeing how these relate to a larger whole. (Cavinston and Holzbaur, 2006, Trends Cell Biol, 16:530)
7. Deductive reasoning in cell biology is riskier than trading on the stock market. (Stinchcombe et al., 2006, Nature, 443:462)
8. Altruistic traits evolve because they benefit the group in spite of the fact that they are deleterious to altruistic individuals. (Darwin, C., 1859, On the Origin of Species)
9. Being a graduate student is like becoming all of the Seven Dwarves. In the beginning you're Dopey and Bashful. In the middle, you are usually sick (Sneezy), tired (Sleepy), and irritable (Grumpy). Finally, everyone calls you Doc, and then you're Happy.
10. The most popular course at Harvard University teaches happiness and well-being and should be implemented in the curriculum of Medical and Science Schools.