

## PROPOSITIONS / STELLINGEN

Belonging to the thesis / Behorende bij het proefschrift

### **‘Linking Structure and Function for the DNA Repair Complex Mre11-Rad50-Nbs1’**

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1. Rad50 by itself cannot undergo ATP-dependent oligomerization which is important for DNA tethering.

*This thesis*

2. Mre11 is not strictly required for DNA binding and DNA tethering activities of the MRN protein complex.

*This thesis*

3. The different stable forms of MRN, such as RN, MR and MRN identified *in vitro* suggest that variable architectures exist to achieve its functions and that not all components contribute to all *in vivo* functions associated with MRN.

*This thesis*

4. MRN has several distinct protein-protein interfaces that each have specific influence on its architecture and functions, such as DNA binding and DNA tethering.

*This thesis*

5. ATP binding to MR alters altering multiple protein interfaces resulting in dramatic change in structure and function.

*This thesis*

*Lammens et al. (2011) Cell 145, 54-66.*

*Lim et al., (2011) Genes Dev 25, 1091-1104.*

*Williams et al., (2011) Nat struct Mol Biol 18, 423-431.*

6. "Genetic material from different viruses can mix within livestock hosts to produce viruses with the ability to move between mammals, and potentially between humans."  
*Zhang et al. (2013) Science (published online 05/02/2013)*
7. Considering that rice is one of the main dietary staples in some of the world's poorest regions, the benefits promised with genetically modified rice still outweigh the potential risks.  
*Demont & Steint (2013) New Biotechnology (published online 26/04/2013)*
8. It is more important to elucidate why efficient nitrogen fixation occurs in legume nodules rather than how the nodules are created if the legume-rhizobia symbiosis is to be successfully applied to agriculture.  
*Schumpp & Deakin (2010) Trends in Plant Science 15(4), 189-195.*
9. The hypothalamus has a role in regulating the aging process in mice.  
*Zhang et al. (2013) Nature 497, 211-216.*
10. The side effects that come with memory enhancement are still largely unknown and have been missed or are unobservable in animal studies.  
*Lehrer, J. (2009) Nature 461, 862-864.*
11. 七転び八起き  
"Fall down seven times, stand up eight."  
*Japanese proverb*