

# Stellingen behorende bij het proefschrift

## Dynamics of X Chromosome Inactivation

1. The *cis*-Xic, composed of two neighboring topologically associating domains (TADs) containing *Xist* and *Tsix*, respectively, includes all DNA elements and genes regulating *Xist* and *Tsix* *in cis*, and sets the stage for faithful control of X chromosome inactivation by *trans*-acting factors. (*this thesis*)
2. Bi-allelic upregulation of *Xist* might precede mono-allelic *Xist* upregulation and coating of the Xi. (*this thesis*)
3. Naive female embryonic stem cells grown in the presence of inhibitors of signal transduction pathways (2i) are an inferior model for studying X chromosome inactivation. (*this thesis, and Guyochin et al., 2014*)
4. The X inactivation center (*Xic*) might prove to be an outstanding example of a genomic region which can adopt different transcriptional states, either as a functional cause or a consequence of changes in higher order chromatin conformation. (*this thesis*)
5. Mouse early embryos and differentiating embryonic stem cells entail a specific developmental time window in which transcription-mediated chromatin modulation can lay down a persistent influence on gene expression. (*this thesis*)
6. A thing as vast as the human genome took 13 years and roughly 3 billion dollars to be deciphered, in the Human Genome Project 1990-2003. Twelve years and dozens of papers later, the ENCODE (Encyclopedia of DNA Elements) and related projects are still running with no clear endpoints in sight. Apparently, understanding the genome and unraveling the many layers of gene regulation easily dwarves the efforts to first sequence and assemble the human genome.
7. Given the low abundance of many noncoding RNAs in mammalian cells, and scarce or ambiguous experimental data regarding their capacity for gene regulation particularly *in trans*, one should take care to not over-interpret their functional implications.
8. Be less curious about people and more curious about ideas.  
(Marie Curie, *Anecdotal response to a reporter's enquiry*)
9. Erasmisch denken heißt darum unabhängig denken, erasmisch wirken im Sinne der Verständigung wirken.  
*Erasmian thinking therefore means to think independently, Erasmian acting to act in the spirit of understanding.*  
(Stefan Zweig, *Triumph und Tragik des Erasmus von Rotterdam*)
10. Ἐν πᾶσι γὰρ τοῖς φυσικοῖς ἔνεστί τι θαυμαστόν.  
*In all of nature's creations there is something admirable.*  
(Aristotle, *On the Parts of Animals*)
11. The only real border for people living on our planet is outer space. Why then should I rather stand with a fellow German than with any other fellow inhabitant of Europe or this earth?