Propositions

belonging to the PhD thesis

DNA DAMAGE-INDUCED TRANSCRIPTION STRESS

A focus on RNA polymerase II

1. Live-cell imaging of GFP-RPB1 is better suited to obtain a kinetic framework of transcription than conventional procedures to study transcriptional processes, such as ChIP- or run on-sequencing. *This thesis*
2. The highly dynamic turnover of RNA polymerase II during transcription initiation and promoter-proximal pausing facilitates quick adaptation of the transcriptional output to environmental changes. *This thesis*
3. The UV-induced degradation of RNA polymerase II is not only a consequence of blocked elongation, but also of the genome-wide clearance of promoter-paused Pol II. *This thesis*
4. Identification of most NER factors within a single genome-wide CRISPR/Cas9-mediated genetic screen exemplifies the unprecedented potential of this new technology. *This thesis*
5. Fluorescently-tagged CPD and 6-4PP photolyases allow direct and sensitive quantification of UV-induced DNA damage in living cells. *This thesis*
6. The average zebra is not grey. Yet, for handling and interpreting most scientific data it is a necessary simplification.
7. It is a profound and necessary truth that the deep things in science are not found because they are useful; they are found because it was possible to find them. *Robert Oppenheimer*
8. Not to be absolutely certain is one of the essential things in rationality. *Bertrand Russell*
9. The revolutionary possibility of CRISPR/Cas9 technology to engineer the genetic composition of humankind is as thrilling as it is terrifying.
10. Our current food system is unsustainable and without global dietary changes might soon reach a level that is beyond the planetary boundaries that define a safe operating system for humanity. *Springmann et al., Nature, 2018, volume 562, pages 519–525*
11. It is a strange fancy to suppose that science can bring reason to an irrational world, when all it can ever do is give another twist to a normal madness. *John Gray, Straw Dogs: Thoughts on Humans and Other Animals*