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## Exploration of renal space: navigating injury and repair through spatial omics

Rietjens, R.G.J.

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## EXPLORATION OF RENAL SPACE

Navigating injury and repair  
through spatial omics

**ROSALIE G.J. RIETJENS**

1. Spatial metabolomics reveals that metabolism is a context-dependent process both shaped by and shaping tissue organization and cellular function. (*This thesis*)
2. The outcome of renal epithelial regeneration after acute injury depends more on successful remodeling of the microenvironment than on epithelial cell-intrinsic adaptations. (*This thesis*)
3. The power of a standardized protocol lies in knowing which parts can be bent without compromising biological validity. (*This thesis*)
4. The role of lipid metabolism in kidney disease remains underestimated, despite growing evidence that it plays a central role in disease progression, injury and repair. (*This thesis*)
5. Building large omics datasets alone will not fill our gaps in knowledge, as only the right questions can transform data into understanding.
6. Objectief waarnemen is onmogelijk, want elk signaal wordt onvermijdelijk beïnvloed door de context van het weefsel waarin het ontstaat. (Adapted from Maartje de Jong, *NEMO Kennislink* 2015)
7. Biology is regulated anti-entropy: the active maintenance of order in a universe tending toward chaos.
8. Measured molecules lose critical information when detached from their spatial location, which is why multiomics is about context as much as content.
9. “Science is a social affair.” (Ton Rabelink). Scientific progress rarely arises from isolation, but rather from coffee-machine conversations, conference dinners, and collaboration.
10. “Als je leeft naar een vast beeld van wie of wat je bent, ben je meteen minder dan wat je kunt zijn.” (Ronald Goedemondt, *Spek* 2004). In a research world that is constantly and rapidly evolving, it is crucial for scientists to accept, adapt and move on.
11. “Nicht ärgern, nur wundern.” (Johann Wolfgang von Goethe). A reminder to approach the unexpected turns of the academic world with curiosity rather than frustration.
12. “Geavanceerd onderzoek valt niet te plannen.” (Leo Rietjens, *NRC* 1994). The only constant in advanced research is that it rarely goes according to plan.