I gladly accept the office entrusted to me by the Rector Magnificus of the University.

In my daily life I work as a nephrologist; That is a doctor who takes care of people with kidney disease and kidney failure. As you undoubtedly now, these patients very often depend upon transplantation of a kidney to be able to regain a more or less acceptable life. And as you undoubtedly also know there is a structural shortage of organs to perform such transplantations, rendering these patients dependent upon dialysis with a poor quality of life and a poor prognosis. This has been by and large the status quo for the last 40 years or so. However, this year's honorary doctor Prof Melissa Little has made scientific discoveries that have amazed the research world and have provided a new perspective to these problems. Let me first take you back to 2006 when a Japanese scientist, Shinya Yamanaka, made a spectacular discovery, for which he was awarded the Nobel prize: how to reverse time in a cell. In the early embryo, cells still have so called pluripotency, that means that cells still have the ability to become all kind of different tissues. However, as the embryo develops, cells commit to develop into specialized tissues or organs and they lose this plasticity. Yamanaka managed to discover the key of regeneration and was able to turn a differentiated skin cell into an immature pluripotent stem cell again, a so called iPS cell. The next question is of course what one can do with such stem cells. Would it be possible to turn a person's cells into a stem cell and then grow new tissue again? For example, new neurons for people with neurodegenerative disease, new beta cells for patients with diabetes… or for that matter a new kidney for patients with kidney disease. The latter seemed 5 years ago still a very remote possibility. This is where prof Melissa Little comes into the story. As a scientist, she has been working throughout her

career in the field of embryology and kidney development, making seminal contributions on how stem cells communicate with one another in the developing embryo and mapping the molecules involved at the different stages of kidney development. In 2007 she initiated a research program to see if she could recreate the developing kidney in a dish by directing the then just discovered iPS cells. In 2014, Melissa and her team managed to generate for the first time the very beginning of kidney formation in a dish. In the following year, during which she also spend time in Leiden as a Boerhaave professor, she and her team took this further and were able to recreate complete kidney microtissues in a dish. The publication of this finding In Nature made worldwide headlines and her protocols are now being used globally. But more importantly, this discovery created a potentially radically different perspective for patients with kidney disease. Cure instead of chronic care. Scientists, clinicians and biotech industry worldwide have now embarked together on a long-lived dream; building replacement tissue and hence restoring function for patients with chronic diseases such as kidney disease.